

down as the law that in all cases of sudden and great danger, not caused by a man's own negligence, he is required to exhibit ordinary presence of mind and ordinary skill, "but it is manifest that in such a case he may do, or omit to do, something which may contribute to the collision, without thereby showing himself deficient in ordinary skill, care, or nerve." Such an act of omission is held not to be negligence. In support of this statement of the law, the author cites *The Sisters*, 1 Prob. Div. 117; *The Jesmond and The Earl of Elgin*, L. R. 4 P. C. 1, 7; *The Marpesia*, Id. 212; *Vennall v. Garner*, 1 Crompt. & M. 21; *The City of Antwerp and The Friedrich*, *Inman v. Reck*, L. R. 2 P. C. 25,—and illustrates the principle by a statement of other cases. That rule applies in this case. The captain was below but a short time,—not longer than was necessary for the purpose he had in view. When he came on deck he at once gave the order to fasten the cables to the anchors. The night was foggy, and pitch dark. They could not see where they were, nor where they were going. They had been cast adrift in the night, suddenly, without their fault, and the captain was doing the best he could under the circumstances. He was not guilty of bad seamanship, or of negligence. Upon the whole case, and even if the theory above advanced be wholly untenable, the conclusion of the court is that the casting adrift of the steamer and the wharfboat was by a vis major, that the collisions resulted from inevitable accident, and that the decree should be against the libellant and the interveners, with costs; and it is so ordered.

MCCORMICK HARVESTING MACH. CO. v. C. AULTMAN & CO. et al.

SAME v. AULTMAN, MILLER & CO. et al.

(Circuit Court of Appeals, Sixth Circuit. July 2, 1895.)

Nos. 171, 172.

1. PATENTS—INTERPRETATION.

It is not material that a patentee has not described in full all the beneficial functions to be performed by the parts of his machine, if those functions are evident in the practical operation thereof, and are seen to contribute to the success of his device. *Eames v. Andrews*, 7 Sup. Ct. 1073, 122 U. S. 40, followed.

2. SAME—PIONEER PATENTS—INFRINGEMENT.

The rule as to infringement of patents for pioneer inventions, which point the way to new products or results, is analogous to that applied to cases involving process patents, in which the discoverer is only required to point out one practicable method of using his process, and may claim tribute from all who thereafter use the process, whether with his apparatus or with a different or improved means.

3. SAME — LIMITATION OF CLAIMS—USE OF REFERENCE LETTERS — PIONEER PATENTS.

The mere use of reference letters in the claims of a combination patent does not of itself, where the invention is really of a primary and pioneer character, limit the scope of the claims to the exact form shown. On the contrary, nothing will restrict a pioneer patentee's rights, save the use of language in his specifications and claims which permits no other reasonable construction than that he positively intended to limit the scope of his invention to the particular form shown, thus indicating a willingness to abandon to the public any other form. 58 Fed. 773, reversed.

4. SAME—INFRINGEMENT SUITS—ESTOPPEL BY GRANTING LICENSES.

Defendants set up, as anticipating the patent sued on, another patent owned by complainant. It appeared that this patent, together with numerous others relating to the same art, owned by complainant and other parties, had by agreement been conveyed to a trustee to issue licenses to others for the use of all the patents, and that in this way licenses had been granted under the alleged anticipating patent, but not to the defendant. *Held*, that complainant was not estopped by reason of such licenses from showing, as against the claim of anticipation, that the patent in question was inoperative; and that the fact of such licenses was only evidential in character, as an admission, and its force as evidence was rebutted by the character of the arrangement under which the licenses were granted.

5. SAME—SURRENDER FOR REISSUE—REJECTION OF REISSUE CLAIMS—EFFECT ON ORIGINAL PATENT.

Quære: If a patentee applies for a reissue of his patent, and includes among the claims under the new application the same claims as those which were included in the old patent, and the examiner of the patent office rejects some of such claims, and allows others, both old and new, does the patentee, by abandoning his application for a reissue, and by procuring a return of his original patent, hold his patent invalidated as to those claims which the examiner rejected? (The above question is certified by the circuit court of appeals to the supreme court for decision.)

6. SAME—AUTOMATIC GRAIN TWINE BINDERS.

The Gorham patent, No. 159,506, for an automatic grain twine binder, was not anticipated by the Spaulding patent of 1870, or any other patent; nor was it strictly limited by anything in the prior art to the exact forms of construction shown. On the contrary, it was a primary invention of high merit, obtaining results wholly new, and in a different way. The patent is therefore entitled to a liberal construction. Claims 3, 10, and 11 analyzed and construed, and *held* infringed, and claims 25 and 26 *held* not infringed, by the Appleby binder. 58 Fed. 773, reversed.

7. SAME.

The Baker reissue, No. 110,106, for an improvement in twine binders, is void for want of invention.

Appeals from the Circuit Court of the United States for the Western Division of the Northern District of Ohio.

Robert H. Parkinson, for appellant.

Thomas A. Banning (Edmund Wetmore, U. L. Marvin, and Ephraim Banning, of counsel), for appellees.

Before TAFT and LURTON, Circuit Judges, and SEVERENS, District Judge.

TAFT, Circuit Judge. These are appeals from decrees dismissing two bills brought to restrain the future infringement of two patents, and to recover damages for past infringements. See 58 Fed. 773. The complainant, the McCormick Harvesting Machine Company, is the owner of patent No. 159,506, for an automatic grain twine binder, issued to Marquis L. Gorham, February 9, 1875, and of patent No. 110,106, for an improvement in twine binders, reissued May 9, 1892, to W. R. Baker. The principal defendant in one action was C. Aultman & Co., and in the other was Aultman, Miller & Co. As there was a close business relation between these two defendant corporations, the actions were by agreement of counsel treated as one suit, and heard as one cause.

The court below dismissed the bill as to the Gorham patent—First, because the examiner of the patent office had refused to allow the claims of the old patent, here alleged to be infringed, on an application for a reissue of the patent made by Gorham's executrix in 1881, whereupon the application was withdrawn, and the old patent was returned to the patentee; and, second, because, in view of the prior art, the language of the claims involved must have a construction so limited as not to embrace the defendants' machines. The bill, so far as it sought relief from infringements of the Baker patent, was dismissed on the ground that the patent was invalid for want of novelty and invention. 58 Fed. 773.

In the discussion of the Gorham patent and its infringement, for a reason which will become obvious, we shall first consider the second ground upon which the conclusion of the circuit court rested, namely, that, even if the application for a reissue be disregarded as an estoppel, the machines of the defendants do not infringe the claims of the Gorham patent. The object of the Gorham invention was stated in his specification as follows:

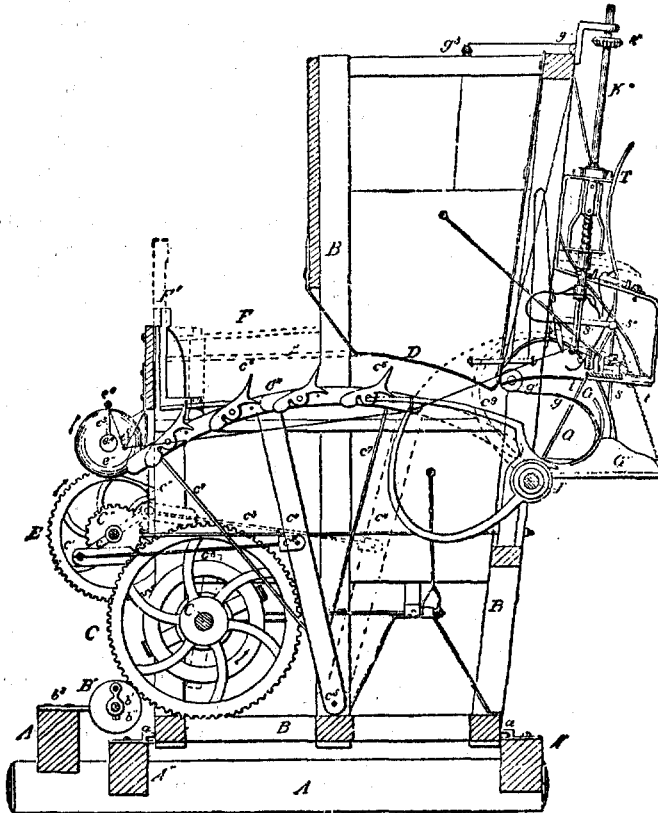
"The object of this invention is to produce a machine for binding grain that will automatically receive the cut grain from the harvester, determine the size of the gavels or bundles, perfectly and securely tie the bundles, and, when so tied, discharge them from the machine, without any interference or agency other than the machinery that operates it."

In 1874, when Gorham filed his application, there had been upward of 200 devices patented which had the object thus stated, but not one had successfully accomplished it in a practical way in the harvest field. There were two or more machines, patents for which had been taken out at an earlier date, which bound bundles of varying sizes automatically with wire, but they were wholly useless for twine, because of the great tension upon the binding cord necessarily involved in the principle of their operation. The disadvantages connected with the use of the wire as the binding material hardly need to be stated, because so obvious, and were shown with emphasis by the fact that, until automatic twine binders were invented, nearly all binding was done by hand, and when automatic twine binding became practicable, the few wire binders went entirely out of use. Grain, as it is cut by the knives of the harvester, usually falls on a platform moving at right angles to the direction of the horses and master wheel, and, after it crosses the space behind the knives, is automatically elevated over the master wheel by endless apron or otherwise, and is thence discharged downward onto a binding table. Until a practicable automatic twine binder was made, the binding was done by hand. In many cases the binders rode on the harvester, taking the gavel from the binding table and binding it there. In other cases, what was called a "hand binder" was used. In using this, an operative adjusted the gavel for the machine, then actuated it by his hand, and this bound the bundle. The great aim of all inventors was to produce a machine which should automatically form the gavels, bind them with twine, and should discharge them, thus bound, by the same power which pulled the harvester, cut the grain, elevated it, and cast it on the binding table, to wit,

the horses. The difficulties to be overcome in reaching this result were principally in the condition of the grain as it was delivered up the elevator of the harvester onto the table. It was rarely, if ever, presented to the binder with the stalks regularly arranged in parallel lines. The heads, waists, and butts seldom reached the gavel-forming and binding mechanism at the same time. The stalks were so intermingled often as to form a tangled web. The diameter of a gavel cut off from the mass by a separator cleaving down through it the entire length of the stalks at right angles to its line of movement would vary greatly at the heads, butts, and waists, and therefore any automatic devices which, in forming and sizing the bundles, acted on the butts, waists, and heads at the same time, failed to produce bundles of the same size at the waist, where the binding was to be done, and where uniformity in size was essential to secure a proper operation of the binding mechanism if twine was used.

Having said so much about the problem which Gorham sought to solve, we come to his machine, a vertical sectional view of which is given in Fig. 5 of the drawings of his patent.

Fig. 5.



The Gorham binder is supported on the longitudinal sills of the harvester, which are extended for the purpose, so that the grain receptacle of the binder is brought into position to receive the grain as discharged from the harvester elevator. It is supported on ways with an adjusting lever, by which it can be slid backward and forward, by the hand of the driver, for the purpose of bringing the packing and tying mechanism into such a position with respect to the elevator of the harvester that the grain shall be received by this mechanism at the proper distance from the butts and heads of the grain, whether the grain be long or short. The grain is first delivered from the elevator of the harvester into a trough-shaped receptacle (F in the drawing) lying beneath and forming the front of the binder. In the bottom of this receptacle are two curved ribs, onto which the grain drops. Between the ribs lie two segments of a circle, designated in the drawing as C⁴, each of which is mounted on arms pivoted at their lower end to the frame of the binder. In front of the machine, and beneath the receptacle above described, is an iron shaft extending the entire width of the machine, with two cranks on the shaft set 180 degrees apart. Each of these cranks is connected by a pitman with the arm of one of the segments. When the shaft is revolved, as it is by a gear connection with the master wheel of the harvester, the two segments are forced to reciprocate in opposite directions, one advancing while the other is retreating. Each segment is provided with teeth, marked C³ on the drawing, which are pivoted upon it near their centers in such manner that the point or acting part of the teeth will catch against the grain which is dropped upon the curved ribs when the teeth are moving from the front towards the rear of the binder, and will drop down and not disturb the grain when they are moving from the rear to the front of the binder. The result of the movement of the shaft is that the teeth on one of the segments are going forward while those on the other are retreating, and their operation is to seize wisps of grain and force them towards the rear of the machine. And this effect will continue so long as the shaft revolves and any grain is lying upon the curved ribs. At the back of the receptacle above described into which the grain flows from the elevator of the harvester, and immediately over the path of the teeth-bearing segments, are two flat strips of iron, described in the specifications and drawings as the guides, D, secured at each end to upper cross bars of the binder frame. These guides, D, extend in a curved line, parallel and concentric with the line of the ribs and segments beneath, to what is called the binding or bundle receptacle, G, of the machine. The wisps of grain seized by the teeth pivoted on the segments are carried into the throat or passageway formed by these guides, D, and the ribs and segments beneath, and are pressed through the throat into the bundle receptacle. This receptacle is nearly circular in form, being formed on one side of a curved end of a piece, C⁵, extending from between the ribs towards the receptacle, G, and, on the side opposite, of a flexible strap, g, with a stiff metal curved piece, G', immediately behind it. The strap at its upper end is attached to a cord, g', which, by a system of pulleys, passes up over the machine,

and is secured to the upper end of an arm called the "trip lever." The trip lever is held in position by a coiled spring, so that the flexible strap takes an upright or nearly an upright position against the incoming grain, and is held there by the yielding pressure of the spring until the force of the grain against the strap as it is pressed rearward, by the segment teeth overcomes the tension of the spring and trips the lever. Thereby a clutch is operated, and the binding mechanism proper is thrown into gear with the master wheel of the harvester. The binding mechanism consists, first, of the needle or cord-bearing arm working on a rock shaft beneath and in front of the binding receptacle. The needle is a curved arm of sickle shape, one end secured to the rock shaft, L, and the other having an eye in it, and a grooved path back of the eye, in which lies the cord which it carries. The point or eye of the needle, when not in operation, is just below the two ribs and the two teeth-bearing segments, and between them. When the needle or binding arm is set in motion, it pierces the grain moving in the throat above described, and passes through the slot between the two strips of iron, called the "guides," D, which form the roof of the throat, and which strip the point of the needle of any grain which may adhere thereto. The point of the binding arm passes rearward over the binding receptacle, registers with a knotting bill which forms another important part of the binding mechanism, deposits the cord which it carries upon this bill, and fastens it in a cord holder located just beyond the bill in the path of its movement. The rearward movement of the needle carries its sickle-shaped arm across the mouth of the binding receptacle, and compresses the grain therein contained against the stiff resisting arm, G', forming the back of that receptacle.

The cord with which the grain is to be bound extends from a reel suspended on the front part of the binder, through the eye of the needle or binding arm, across the binding receptacle, to the cord holder beyond the knotting bill above referred to, so that the grain, as it is forced into the binding receptacle by the segment teeth, lies on the cord, and the movement of the needle upward through the grain carries the cord completely around the grain which is to be bound in the bundle receptacle, and back again to the knotting bill and cord holder, where the knot is tied. By a system of cams on the knotting-bill shaft and otherwise, the movements of the various parts of the binding mechanism are so timed that, after the powerful compression by the binding arm of the gavel or bundle, the slack of the cord thus caused is used to make the knot, and then an arm actuated by the revolution of the knotter shaft, and carrying a knife and a stripping device, cuts the cord and strips it from the knotting bill. Immediately two clutches, securing the floor of the platform, upon which rests the back part of the binding receptacle, to the machine, are released, the binding receptacle opens outward at the bottom, swinging on a shaft above it, to which it is hinged. Two bent arms or fingers, attached to the platform on each side of the binding receptacle, by the swinging of the platform strike downward against the bundle hanging in the opening thus made, and throw it to the ground. The motion imparted to the binding mechanism continues

by the same system of cams, and returns the floor of the platform to its former place, the clutches resuming their hold, while the needle arm swings back to its place beneath and between the ribs and the teeth of the segments, with the cord again extending through the needle eye to the knotting bill and the cord holder, and lying as before in the bundle receptacle, so that the grain is again packed over it therein. To prevent the teeth of the segments from continuing to thrust the inflowing grain forward in the throat after the needle rises and the binding begins, a cut-off, F', is provided, which lifts all the grain not embraced within the sweep of the rising binding arm out of the range of attack by the segment teeth. It consists of a vertically moving rack, suspended in the primary receptacle, F, where the grain flows in from the harvester. The iron rods forming the rack are made parallel with each other and with the line of the ribs and segments, and are open towards the needle arm, and, when the rack is in its usual position, rest on the floor of the primary receptacle below the ribs and segments; but, when it is lifted, the rods, as they rise, take up the grain from off the ribs and hold it suspended out of reach of the teeth of the segments. After the platform has risen, the segment teeth carry all the grain that remains on the ribs between the needle and the binding receptacle into the latter, and thus clear the ribs. This effects the complete separation of the gavel or bundle to be bound from the unbound grain flowing into the primary receptacle from the harvester elevator. When the needle returns to its place beneath the throat between the two receptacles, the gear connection by which the cut-off was elevated is detached, and the cut-off falls of its own weight, bringing the grain which has accumulated on it during the binding operation within the reach of the teeth of the segments, and the operation of seizing the grain wisp by wisp, compressing it in the throat, and forwarding it to and packing it in the binding receptacle proper, is resumed. The binding mechanism of Gorham's binder is set in motion by the pressure of the grain in the binding receptacle against the flexible strap. This pressure is at the waist of the bundle, and is necessarily in direct ratio to the size of the waist, the pressing and packing force of the segment teeth being substantially uniform. From the time the grain is delivered from the harvester elevator, with the center of its stalks opposite the tying mechanism, until the bundle is bound, the entire power of the master wheel of the machine is applied at the middle of the grain stalks, and only there, to secure compactness and uniformity of size in the waist of the forming bundle. The steps are three: First, the segment teeth separate the tangled grain into the wisps which are snatched at their middle from the mass; second, the teeth reunite these wisps at their middle by forcing them through the throat formed by the segments and the guides, D, and into the bundle receptacle, against the strap, g, where the forming waist overcomes the spring and trips the lever; third, and finally, the binding arm compresses the bundle at its waist against the sturdy resistant, G', just before the knot is tied. The result of this treatment of the grain is that the bundles are always of the same size at the waist, whether the grain being cut is thin

or thick, short or tall. There is little, if any, tension of the binding cord in forming or compressing the bundle.

It is strenuously objected that none of the functions, except that of conveying, which we have attributed to the segmental teeth and the guides, D, are performed by them, and that Gorham did not intend they should be. It is true that Gorham does not describe the wisp by wisp seizing function of the segmental teeth, and he does not allude specifically to the fact that the guides, D, would compress the wisps of grain as they were forced forward through the throat into the binding receptacle at their waist, and thus effect an initial or preliminary compression. The court below held that, in the mind of the inventor and in fact, the segmental teeth were only conveyors, and had no function to perform in connection with the packing of the grain at its waist. We cannot concur in this view, nor do we think that the patentee in his specifications limits himself to this one function. The specifications describing the operation are as follows:

"The binding cord being in place, by passing it from the spool through the guides, over the cord carrier, and through its eye, over and beyond the hook of the knot tier to the cord holder, and there securely held, the binder adjusted properly upon the frame of the harvester to deliver the grain centrally with the line of the knot-tying device, the machine is put in motion by the forward movement of the harvester. The cut grain flows into the receptacle of the binder, and is fed towards the bundle receptacle by the movement of the feed dogs and against the curved holder, binding cord, and adjustable binding strap, which, when the unbound grain is pressed against the strap sufficiently, causes the trip lever to which it is attached to move and allow the other parts of the device to operate. As the movement of other parts is now effected, a vertically working rack in the receptacle is raised, which holds back the inflowing grain, while that which has passed off the rack is advanced by the feed dogs to make a clear open space behind it, so that the cord carrier can grasp it and compress it in the binding receptacle while the knot is tied on the cord that surrounds it. * * * The feed dogs force the grain from the point where the long central finger of the rack parted the grain forward of and beyond the end of the cord carrier, opening a space through which the cord carrier and cord safely pass without obstruction by the straw."

It seems to us manifest from this language and the necessary operation of the machine that Gorham intended that his feed dogs should discharge, not only the function of conveying the grain, but also that of packing it under the guides and into the binding receptacle. Their movement reached quite beyond the head of the needle, and down towards the receptacle. No other means for creating the pressure against the triggering resistant is shown or suggested. It is not stated that the grain is compressed against the guides, D, but their form and direction make it a necessary result of the mechanism described. The same thing is true of the wisp by wisp snatching function of the segmental teeth. The evidence satisfactorily shows that this is, and must be, the operation of these teeth. It is not material that Gorham did not describe in full all the beneficial functions to be performed by the parts of his machine, if those functions are evident in the practical operation thereof, and are seen to contribute to the success of his device. *Eames v. Andrews*, 122 U. S. 40, 7 Sup. Ct. 1073. It is difficult to believe that a man of Gorham's inventive genius did not perceive the useful functions which the parts

of his machine so well performed, even though he did not specifically mention them all.

An argument is made by counsel for the appellees that there is nothing in the Gorham patent which would prevent an infringement of that patent by the use of three conveyers with toothed segments. Whether such a device would be operative, and, if operative, would be an infringement of the Gorham device, is entirely aside from the point. The machine described by Gorham in his patents is a machine in which the conveying, the packing, the compressing, and wisp snatching are all done at the waist of the bundle, as well as the binding, and it is the size and pressure at the waist of the bundle which determines the time of the tripping. It is a plainly unsound argument to say that, because Gorham does not expressly limit his patent to the device which he actually shows, with only one system of conveyors, packers, and compressors at the waist of the bundle, therefore he is not entitled to the benefit of the invention involved in the use of one. The whole structure of the patent, with the manifest principle of its successful operation, excludes the possibility that Gorham did not rely on the waist compression and treatment of the grain as a main feature of his patent.

As already stated, the prior art before the Gorham invention embraced some 200 patents for the automatic binding of grain. In this large number of patents, the Gorham patent was the first which successfully bound grain with twine in the field. It is vigorously contended, however, that in this very extensive history of the art there was much so suggestive of Gorham's forms that he is entitled to nothing but a literal construction of his claims. For the purpose of fully considering the weight of this argument, we propose now to examine those forms in the prior art which are relied on as anticipations or suggestions of the parts of Gorham's machine.

The first patent relied upon as an anticipation of the segmental teeth is the Glover patent of 1858. It was a machine for conveying or elevating grain. It consisted of a frame within which were arranged three pairs or more of toothed parallel bars, so connected to two crank shafts that when the shafts were revolved they gave to the bars in each series an alternating vertical and longitudinal motion, which carried the grain resting on the bars in the direction of the rotation of the shafts. The bars were bent upward at one end beyond the second crank shaft, so as to elevate the grain; and to prevent the slipping back and entangling of the grain, as it was being elevated, a shield was suspended by a spring over the elevating part of the bars and parallel to the upward movement of the grain. The shield held the grain to the spikes of the bars as it was carried up, but when it was necessary, to avoid choking, it yielded and allowed the excess to pass through. The shield was curved outward at the lower end, to allow the grain to pass under it. The Jones and Low & Adams patents were very similar to the Glover patent. They each had three pairs of alternating bars with teeth. In the Jones patent, a covering to the elevating bar was provided, quite like the shield of Glover. Instead of a shield, Low & Adams provided what are called "grates," secured to the frame by springs,

and pressing the grain to the teeth. In these devices, also, the grain was delivered to the binding table to be bound by hand. The Whitney patent was for the same purpose, but was somewhat differently arranged. The bars were in three pairs or series, but the crank shaft was used to give them a reciprocating sliding motion forward and back, but no vertical motion. Teeth were pivoted to them, so that when the bars were sliding forward they would catch the grain and push it on, but when retreating the teeth would be lowered, and would pass under the grain. Many other forms of grain elevators are shown in the prior art, some with endless belts with spikes in them, and others with two endless canvas aprons with cleats athwart them, working in the same direction, and carrying the grain between them, but none of them is as much like Gorham's toothed segments as those already mentioned.

None of these patents can, it seems to us, narrow the scope of the invention of Gorham in the use of his toothed segments in his organization. The prior devices were merely for elevating and conveying the grain. They neither effected nor were intended to effect the compression of the bundle at the waist, and the pressing and packing of the same against a triggering resistant. They effected no wisp by wisp separation, for this is impracticable in any device which attacks the tangled mass of cut grain at both ends and the middle. Manifestly, a snatching at the tangled mass of irregularly deposited grain at the same time at the heads, butts, and waists would pull the whole as a mass, rather than separate wisps therefrom. Gorham's toothed segments undoubtedly had a conveying function, and to this extent these prior devices suggested his different form; but the segments with the guides, D, also had the waist separating and packing functions, which were absent in the prior art. The shield of the Glover device and the grate of Low & Adams had some apparent likeness to the guides, D, of the Gorham patent, but in function there was but little resemblance. In the two prior patents, these coverings of the conveying devices were spring yielding, and were used to hold the grain to the straight teeth of the conveying bars on the inclined plane up which they elevated the grain. They were made with springs for the express purpose of allowing choking masses of grain of unequal size to pass up from the harvester platform. They were not intended to compress the grain into a narrow throat with a view to uniformity of size at its waist, and they did not in fact accomplish this result. The guides, D, have two functions. They form the rigid roof of the compression throat, to co-operate with the packing function of the segment teeth, and they strip the needle arm of adhering grain as it passes between them on its way to the knotting bill and cord holder. Neither of these functions is performed by the shield of the Glover patent or the grate of the Low & Adams. It is said that it involved nothing but mechanical skill to reduce the three pairs of conveying bars to one, and that, this being done in the old patents, Gorham's device would be shown. This is a palpably fallacious argument. The invention consisted, not in devising means for effecting the wisp by wisp attack and compression at the waist,—the advantage of these

steps being known,—but in hitting upon a machine which for the first time showed that advantage, and made it clear that such an attack and compression would give an important initial step in the formation of a bundle which should be uniform in size at the point where uniformity alone was needed. After Gorham had shown by the successful operation of his machine this mode of properly preparing a bundle, it then became a matter of mechanical skill, or, it may be, tributary invention, to discover in the prior art other conveying devices, which, when applied only at the waist of the bundle, would effect the same wisp by wisp separation and packing in even a more satisfactory way than that of Gorham.

Reference was made by defendants' experts and the court below to certain prior patents for automatic binders which were supposed to limit the scope of Gorham's invention, and some consideration must be given to them.

The first is that of Watson & Renwick, patented in 1853. In this the grain was carried from the harvester platform by two endless aprons and deposited on an elevated platform, whence it slid down freely and uncompressed into the receptacle, semicylindrical in form, where it was compressed and bound. The compression was effected by the lowering upon the grain lying loosely in this receptacle of a semicylindrical frame of inverted crutches, which squeezed the bundle from end to end. The cut-off was swung across the grain passage, and the size of the bundle was determined by a certain number of revolutions of the master wheel of the harvester. The machine was not operative, and certainly embraced none of the essential features of Gorham's bundle-forming, sizing, and compressing mechanism.

In the McPhetridge patent, which was a wire binder, the grain was delivered by four endless belts upon the binding wire stretched across the orifice of a receptacle. The weight of the grain caused the wire to belly down into the receptacle. At intervals of time measured by the revolutions of the master wheel, a binding arm closed about the gavel suspended in the wire, knotting or twisting the wire and cutting it. In this patent the grain accumulating after the binding arm had crossed the mouth of the bundle receptacle was cut off by a segmental offset from the back of the arm, which is almost literally reproduced in defendants' machine as a substitute for Gorham's cut-off rack. It is evident that here we have not a single feature of the binding and compressing devices of Gorham. Such compression as there is in McPhetridge's device is effected by the wire, and this is manifestly entirely unadapted to a twine binder, where the tension must be slight or the cord will break.

In the Carpenter patent, which is a wire binder, the same thing is true. In that, the grain is elevated by two endless aprons to a point above the binding mechanism, whence it is carried down by one of the aprons, under a series of loosely swinging rollers, arranged to keep the grain from becoming entangled in the binding mechanism, and to straighten it, into a cradle, where it lies unconfined, and is taken up by a revolving rake, which sweeps it into a passageway against the binding wire. The passageway is formed on one side

by two or more compressor rods, which yield and open as the rakes sweep the gavel against the wire and press it onto the point where the binding arm, actuated at regular intervals, measured by the revolutions of the master wheel, embraces the bundle with the wire and knots and cuts it. There is no wisp by wisp separation and packing of the grain at the waist in this device. The wire itself is used to effect the waist formation, and no twine could stand the tension thus made necessary. There is no self-sizing of the bundle at the waist or elsewhere. The action of the rake is on the whole length of the bundle, and all the peculiarly Gorham features are absent.

A patent for bundling kindling wood is also relied upon as showing an anticipation of some of the elements of Gorham's patent. In it the wood is carried by two endless belts onto a series of curved plates, pivoted one above the other in a circular opening corresponding in size and opposite to a so-called bundling tube. As the wood is delivered the curved plates yield by its weight until the opening is full and the plates are bent back against the periphery of the opening, where a lever is tripped, and mechanism is set in operation which forces a plunger endwise against the wood secured in the opening, carrying the wood into a tube, where it is subsequently bound. This device does suggest the use of the weight of the material to be bound to spring a lever and to set binding or other mechanism in motion, but it has no relation to Gorham's device, and certainly has no bearing upon his mode of forming and compressing the waist of his bundle.

Another patent referred to by the court below and alluded to for various purposes by defendants' experts is the Gordon binder. This is a wire binder in which the grain is carried up an elevator and through a curved passageway into an open receptacle where it first falls or slides onto a series of bars, called "gavellers," revolving on a shaft, which are actuated at regular intervals, and so deposit the grain on them, and, turning round, are ready to receive another gavel. The gavel deposited falls on the binding wire stretched across below it, and is bound by the swinging across of a binding arm. Some pressure is effected between the binding arm and a reciprocating arm, and a cord between them, which is supposed to relieve some of the tension on the wire, but it is obvious that the original compression is almost wholly by the wire, and that this device could not be used as a twine binder. Moreover, the wisp by wisp action, the preliminary packing at the waist by the toothed segments and the guides, D, and against the triggering resistant, are none of them found here. It is sought to make the gullet of the Gordon patent, operating in conjunction with the Gordon pickers, an anticipation of the toothed segments and the guides, D, in the Gorham patent, or, at least, a justification of the use by the defendants of their pickers and their breast. The complete answer to this claim is that the roof of the grain passage in the Gordon patent was only as a means of holding the grain to the pickers as the pickers cleared the grain from the passage. Neither the pickers nor the roof had any effect to pack the grain, nor were they intended to do so. The roof extended from one end of the grain to the other

as the pickers operated on the waists, the butts, and the heads, and the effect of their co-operation was merely to throw the loose grain out of the mouth of the grain passage into a loose heap on the surface of one of the gavellers below it. They had nothing to do with the formation of the bundle or its compression at its waist.

Finally we come to the Spaulding patent of 1870, upon which the defendants have most relied as anticipating and suggesting much in Gorham's patent. The Spaulding device was for a wire binder. It had an endless apron, with cleats, to convey the grain as it fell from the knives to the foot of a vertical elevator apron with straight teeth. Opposite the elevator apron was a swinging board or flap to hold the grain to the teeth. At the top of the passageway between the flap and the elevator apron was a curved hood of thin metal, mounted on the shaft from which the flap swung. Its other end rested on the so-called binding table at the head of the grain passage. Three slots in this hood, one at each end and one in the middle, afforded to two discharging arms and a binding arm in the middle an opportunity to swing from a position of rest on the rock shaft of the hood across the passageway to the surface of the binding table opposite. The proposed action of the machine was this: The grain was to be elevated into the receptacle above the elevator passage by the elevator apron, against the binding wire stretched across the passage from the end of the binding arm on the rock shaft of the hood to the twisting and cutting device on the other side. The grain was to press up against this wire and under the hood until the hood should be lifted and the rock shaft turned. The turning of the rock shaft, by a system of levers, set in motion the mechanism holding and supporting the binding arm and the discharging arms, and swept them across the grain passage and through the flow of the upcoming grain, forming a gavel and inclosing it in the wire which the binding arm carried to the twisting and cutting device, and then sweeping the gavel on off the table. A counterweight is shown in the patent, intended to lift the shaft which carries the discharge and binding arms, after the bundle is swept off, up above the grain accumulating in the hood behind them, and to restore them to their place of rest on the rock shaft of the hood, ready to begin the binding and sweeping of another gavel. This device was claimed by the patentee to self-size every bundle with exact uniformity, and properly to bind and discharge it. In the first place, the machine suggested by the patent was a wire binder, and the use of the cord to compress the bundle at the waist would be quite out of the question in a twine binder. In the next place, the binding mechanism is conceded to have been wholly inoperative. The defendants were given full opportunity to show an operative machine for binding, and did not even attempt it. It appears further in evidence that the Spaulding machine never bound a bundle. It was an abandoned experiment. This is most clearly shown by the fact that hereafter Spaulding took out one or more patents for devices for hand binding. But, while this is hardly denied, it is said that the Spaulding patent suggested the possibility of self-sizing uniform bundles by pressure against a triggering resistant, and that the de-

vice of Spaulding was operative, to the extent, at least, of such self-sizing. After a careful examination of the Spaulding patent, we are convinced that the only suggestion contained in the Spaulding patent was the possibility that by some future invention the increasing size of an incipient bundle might be used to effect a proportionate pressure upon a trigger or trip lever, so that when the gavel was of a certain size the pressure would increase to the point of tripping the lever and operating other mechanism, till then at rest. How this possibility could be really made valuable and practicable the Spaulding patent does not show. The means provided in it for its avowed object were wholly inadequate. It is demonstrable that the vertical elevator provided in the patent will not elevate the grain to the binding table unless the flap, which is loose, is changed in form so that it flares at its lower end, and is there secured by spring connection with the frame of the machine. Unless the teeth or spikes which are shown as straight in the drawings are bent downward, the elevating apron will carry the grain around the upper roller, and down on the other side. If the teeth are bent back, then the elevating power of the apron is so much reduced that it cannot force the grain upward against the wire stretched across the passage so as to overcome the tension which the wire must have to make the mechanism operative. But even suppose that the grain is forced against the wire with sufficient force to belly the wire, and assume an incipient bundle form, the irregular mode in which the cut grain will reach the hooded chamber from the elevator apron (as to which all the witnesses agree)—sometimes heads first, sometimes butts first, and never waist first, because of the resistance of the wire at the waist—will lift the hood now at one interval and then at another, and never with any uniform relation to the size of the bundle at the waist, where it is to be bound. The experiments of the defendants to show the utility and operativeness of the Spaulding patent were limited to elevating straw, on a different elevator from that shown in this patent, into a chamber, without the wire across its entrance made necessary by his patent, onto a table differently constructed from that in his patent as to the angle of its plane. When the hood was lifted by the grain thus accumulated, and its rock shaft actuated a series of levers which swept three arms from the rock shaft across to the binding table through the slots in the hood, this was said to show the practical character of the Spaulding patent. The arms would not even sweep the dry straw from the table, and the machine became completely choked unless the operator took out each gavel with his fingers after the arms had swung onto the so-called binding table. All that the experiment demonstrated was that, if one could force grain enough under a hood mounted on a rock shaft which would yield on slight pressure, one could thereby trip a lever attached to the rock shaft, and set in motion any desired mechanism properly arranged for actuation by the tripping of the lever. The Spaulding patent showed nothing more of value to Gorham than this, if, indeed, it can be said to have furnished to him the practical means for illustrating even this not very complicated mechanical phenomenon. There was nothing in the

Spaulding patent which showed the treatment of the bundle at the waist by segment teeth and the guides, D, or their equivalent, or by compression at the waist in a receptacle like that of Gorham. The tripping feature alone is present in both, but its use is so different in mode and result, in the sizing of the bundle and its binding, that the suggestion of the feature by Spaulding to Gorham was very remote from Gorham's application of it. It is said that it would take no mechanical skill to reduce Spaulding's hood to the width of a single narrow arm operated on by the waist of the gavel, and as little to reduce the teeth on the elevator apron to a single line or belt. Thus changed, the Spaulding machine would not do Gorham's work, and would be inoperative as a binder. But concede that it would, still the change involved the highest order of invention. It would not involve invention if one knew what Gorham first showed the world, namely, that the only successful twine binder was one which, from the reception of the grain from the harvester to its deposit in a tied bundle, would apply all available power to the preliminary and final forming and compressing of the waist of the bundle, and should use such waist in its progressive growth as the measure of the alternations of the necessary intermittent mechanism.

The complainant company is the owner of the Spaulding patent, with a great many others in the same art. Some time before bringing this suit, it made an arrangement with the owners of other patents by which all were conveyed to a trustee to issue licenses to others for the use of all their patents. In some of these licenses the Spaulding patent was included as one of a number, and it is now argued that the complainant company cannot be heard to deny the operativeness of the Spaulding patent. As the defendants were not among complainant's licensees, no estoppel arises in this suit, and the fact is only evidential as an admission against complainant which can be explained or rebutted. The evidence in the case as to the Spaulding patent, and its inoperative character, in our view, completely overcomes any inference thus sought to be drawn, while the omnibus character of the licenses, including so many patents, much weakens the evidential force of the otherwise natural implication of a license that the licensor asserts the operativeness of the device licensed.

Defendants' experts maintained that the Spaulding device had been shown to be operative in a binder, known as the "Miller Binder," made and sold in considerable quantities in 1881 and 1882. The description of the Miller patent showed a wide difference from the Spaulding device, which was emphasized by the admission elicited from defendants' witnesses that, when these machines were made, the defendants who made them had no license to use the Spaulding patent.

The Gorham binder was, as already stated, the first one in the history of the art which successfully bound grain in the field with twine automatically. There is abundant evidence to show that the binder did actual and satisfactory field work on farms in 1874, in 1875, and in later years. After 1875 Gorham made one or two changes in the machine. He dispensed with the flexible leather

strap, and substituted a metallic trigger or finger in its stead, operating the trip lever by a rock shaft, upon which this finger was mounted, instead of by the cord attached to the leather strap. He reduced the number of teeth on each segment from four to three. From 1878 until the present time, automatic twine binders have been in the most extensive use throughout the civilized world. They have been called the "Appleby Twine Binder," because Appleby in 1879 secured a patent on such a binder. And this binder, with improvements, is practically the only one now in use. The defendants manufactured the Appleby binder, and the question in the case is whether the Appleby binder does not find its substantial prototype in the Gorham binder. Every manufacturer of the modern Appleby binder became a licensee of Gorham, except the present defendants, and after the complainant became the owner of the Gorham patent the defendants made a written contract with Mrs. Gorham, the executrix of Gorham, by which they agreed that if she would obtain a retransfer of the patent to herself they would buy it from her, and pay her therefor \$100,000. The original Gorham binder was a heavy, crudely-constructed machine, and bore little superficial resemblance to the modern lightly-constructed but strong and smoothly-running twine binder. But an examination of its parts and their operation convinces us that in it is the modern twine binder, modified only by the mechanical and economical skill of the manufacturer and the tributary inventive faculty of a mere improver. On the whole case, we are satisfied that the Gorham binder was a primary or pioneer patent of the highest merit, that it attained a result wholly new in a new way, and that, in the consideration of alleged infringements of it, the patentee is entitled to all the liberality of treatment accorded to that comparatively rare class of patents. With respect to such a patent, the well-settled rule is that the patentee who has, by the success of his patent, pointed out the combination of functions needed to reach the new result, and has claimed the combination of mechanical parts performing those functions, may enjoin the use of another machine producing the same result where the second machine differs from the first only in a substitution, for parts or elements in the patented device, of parts or elements which, though different in form and kind, perform the same functions in substantially the same way. It may be that the substituted parts are well-known equivalents of those shown in the patent for the performance of the functions to which they are respectively applied, in which case there is manifestly no inventive faculty shown in the change; or it may be that, being shown by the successful operation of the patent the exact nature of the functions to be performed by a part of the patented device, the infringer, by the use of his inventive faculty, hits upon something as a substitute which will perform the same functions more completely and satisfactorily. In the latter case, he is a tributary inventor; but he is none the less an infringer if he uses the whole machine, with his substituted part, to accomplish the same new result. The rule as to infringements of pioneer inventions which point the way to new products or results is analogous to that applied in cases of infringe-

ments of process patents, in which the discoverer is only required to point out one practical method of using his process, and is permitted to claim tribute from all who thereafter use the process, whether with his apparatus or with a different or improved means. In *Machine Co. v. Lancaster*, 129 U. S. 263, 290, 9 Sup. Ct. 299, the supreme court said:

"Where an invention is one of primary character, and the mechanical functions performed by the machine as a whole are entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements, although the subsequent machine may contain improvements in the separate mechanisms which go to make up the machine."

See, also, *Consolidated Valve Co. v. Crosby Valve Co.*, 113 U. S. 157, 5 Sup. Ct. 513; *Royer v. Belting Co.*, 135 U. S. 319, 10 Sup. Ct. 833; *Machine Co. v. Murphy*, 97 U. S. 120; *Sessions v. Romadka*, 145 U. S. 29, 12 Sup. Ct. 799; *Clough v. Barker*, 106 U. S. 166, 1 Sup. Ct. 188; *Winans v. Denmead*, 15 How. 330; *McCormick v. Talcott*, 20 How. 402, 405; *Railway Co. v. Sayles*, 97 U. S. 554, 556.

Having settled the character of the Gorham invention, and the principle to be applied in considering infringements of it, we come next to a consideration of the essential features of the defendants' machine. In it, the grain is delivered from the harvester onto what is called a binding deck or table. The table has three slots in it, underneath which is the shaft extending from one side to the other of the binder. On the shaft are two cranks, 180 degrees apart, to which are attached legs carrying at their upper ends packing teeth rigidly fixed thereto. The legs are pivoted on a radius bar, and the operation of the shaft is such that one packing tooth is advancing up and through one of the slots while the other is retreating down and under it, and vice versa. While a packing tooth is advancing, it is above the surface of the table, and while retreating is below the surface. The line of its motion is that of an irregular ellipse. On each leg are two teeth. The first tooth is sharp, and rises higher than the second, which is broader, and bears about the same relation to the first tooth as a thumb does to the finger in an outstretched hand. Immediately over the path in which the packing teeth move is what is called a "breast," or rigid roof, with which the packing teeth co-operate in the seizing, forwarding, and compressing of the grain against a yielding finger mounted on a rock shaft, which, at a certain compression of the grain, sets in motion a clutch throwing the binding mechanism into gear, and raising a sickle-shaped needle from its position of rest in the slot of the binding table between the two slots in which move the packing teeth. The needle, as it rises, pierces the grain above it, strips it in the breast or rigid roof, passes on, and carries the cord about the bundle to the knotting device and cord holder, compresses the bundle between it and the stiff back of the binding receptacle. In some forms of the machine, this stiff back is the trigger or yielding arm which, having served the purpose of a trigger, and thrown the clutch, becomes fixed in its position, and able to act as a sturdy resistant. In other forms, the trigger and sturdy resistant are two different pieces of metal. After the cord has been knotted, cut, and stripped, the binding receptacle,

instead of swinging backward, as in the Gorham machine, and leaving an opening between the main body of the machine and the platform of the binding receptacle for the precipitation of the bundle, swings on a rock shaft and hinge beneath the main frame of the binder, withdrawing the finger or fingers which form the back of the receptacle out of the way of the bundle and throwing it to the ground. Instead of the cut-off rack which Gorham used, the defendants keep the grain out of the throat or passageway after the rising of the needle by a segmental arm or curved projection on the back of the needle itself (a reproduction of the same element in the McPhetridge patent), which forms a complete barrier to the entrance of the inflowing grain to the throat or passageway while the needle or compressor arm is doing its binding and tying.

Does this machine infringe Gorham's patent? Appleby, defendants' licensor, had long been engaged before 1874 on the problem of devising a practical automatic twine binder. In that year he visited Gorham at Rockford, Ill., and examined his machine while in successful operation in the field. Subsequent thereto, he devised his own machine, after a number of unsuccessful experiments, and settled down to the form which we find in that of the defendants. His machine, as used by him in 1878, had but one packer on each leg, and this is its appearance in the drawings and specifications of the patent taken out in 1879; but, finding the machine to be inoperative in this form, he added the second tooth to each of the legs. These circumstances tend strongly to show that Appleby took Gorham's idea as developed in his patented and operative machine. When we look at both machines, we can trace a close resemblance. Part for part, element for element, function for function, the Appleby machine parallels that of Gorham.

There are five claims of the Gorham patent which the complainant avers in its bill that the defendants infringe. They are the third, tenth, eleventh, twenty-fifth, and twenty-sixth claims. The twenty-fifth and twenty-sixth claims relate to the mechanism for cutting and stripping the cord after the knot has been tied by the knotter bill, and will be considered hereafter. The other claims are as follows:

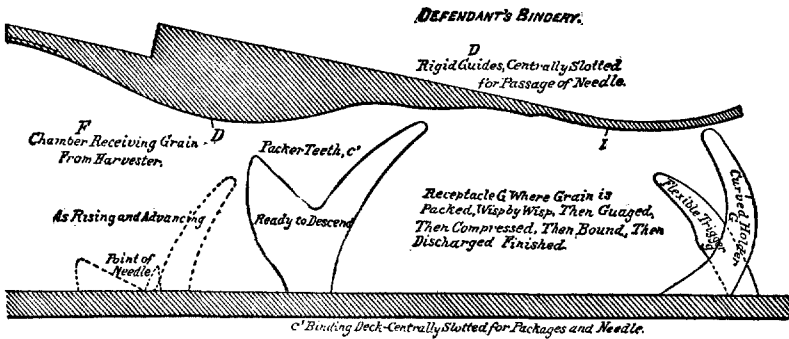
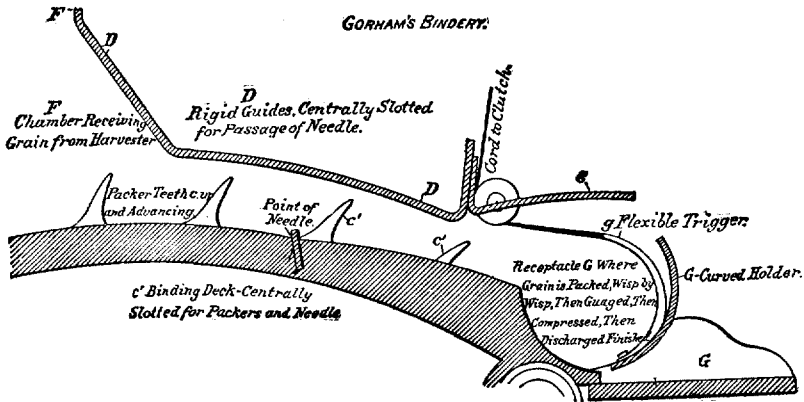
(3) "The reciprocating segments, C⁴, having the feed teeth, C⁶, in combination with the guides, D, as and for the purposes specified."

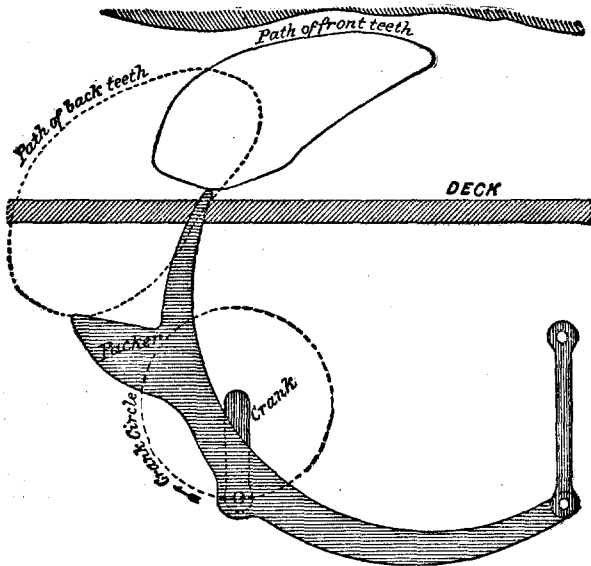
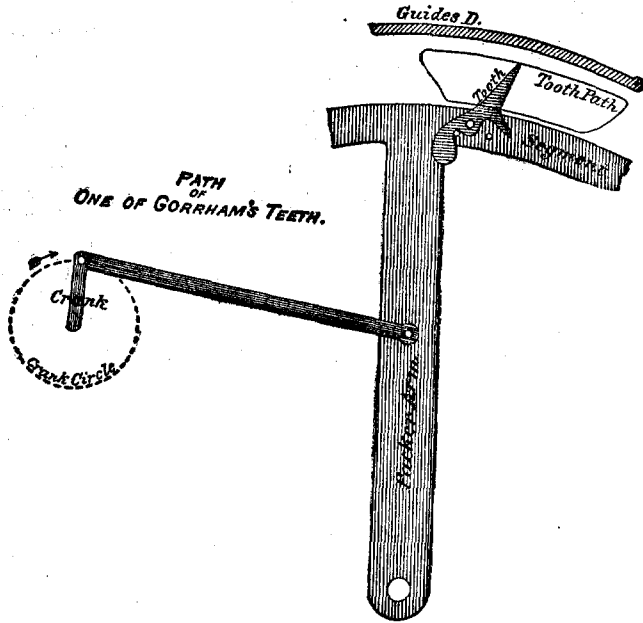
(10) "The flexible strap, g, arranged in receptacle, G, to operate trip lever, H, in the manner substantially as and for the purposes described."

(11) "The combination of the binding strap and cord, g, with the bundle receptacle, G, and tooth-feeding segments, C⁴, substantially as and for the purposes described."

We cannot doubt that defendants' packers and breast infringe Gorham's third claim, and are the equivalents of his segment teeth and guides, D. The packing teeth have a much shorter forward and rearward movement than the segment teeth of Gorham, and some other means is therefore used to bring the grain within the reach of the packing fingers after it has left the harvester. In the ordinary form of defendants' machine, this is done by inclining the binding deck downward so that gravity brings the grain to the packing teeth.

The packing teeth have the function of conveying the grain from the point where it reaches them to the binding receptacle. This is clearly shown by the fact that the machine will work even when the inclination of the deck is upward, instead of downward, from the harvester, provided only that the grain be delivered within reach of the back teeth of the packers. A very common form of the machine manufactured by the defendants, called a "low-down twine binder," has its binding deck inclined upward from the harvester. The packers, it is conceded, perform the wisp by wisp and the packing functions at the waist of the incipient bundle. They therefore discharge exactly the same functions which are discharged by the segmental feed dogs of Gorham, in much the same way. The following drawings fairly illustrate the operation of Gorham's and defendants' teeth from the mouths of the throats formed by guides and defendants' breast to their respective binding receptacles:





The defendants' experts trace the packing teeth of the defendants to the pickers of the Gordon patent, and it is true that their operation above and beneath the plane in which the grain moves is quite like that of the defendants. Gordon's pickers never, however, were used for anything but for conveying. They were never used for packing, and therefore they were never used to discharge the wisp by wisp function which is only important in the subsequent packing of the grain, and is only effective with one series of packers, while in the Gordon patent there were three series operating, not only at the waist, but also at the butts and heads, of the grain. Given a knowledge of the peculiar and useful functions of the feed dogs and guides, D, in accomplishing automatic twine binding in the Gorham mechanism, it hardly required more than mechanical skill to see in the mechanism of the prior art that the pickers of Gordon or the reciprocal bars of Jones, to which the defendants' packers are also likened, could be used to perform the same function as the segmental teeth of Gorham. It is true that these were functions which Gordon's pickers and Jones' bars had never been used before to discharge, but the fact that the Whitney feed teeth did successfully discharge those functions at once suggested that the Gordon pickers and the Jones reciprocal bars which were recognized mechanical substitutes for those teeth, would, if reduced to one series, operating upon the waist alone, effect the same or a similar result.

In *Machine Co. v. Lancaster*, 129 U. S. 263, 9 Sup. Ct. 299, already cited, Mr. Justice Blatchford said:

"It may be true that the defendant's peculiar form of stitch was unknown before; and it may also be true that his arrangement for carrying the buttons with their eyes upward, and turning the eyes into a horizontal plane by the twisting of the conveyor way, was not before known. Of course, they were not before known in a machine for automatically sewing buttons to a fabric, because Morley's machine was the first to do that. But still the defendant employs for the above purposes known devices which, in mechanics, were recognized as proper substitutes for the devices used by Morley to effect the same results. * * * In this sense, the mechanical devices used by the defendant are known substitutes or equivalents for those employed in the Morley machine to effect the same result; and this is the proper meaning of the term 'known equivalent,' in reference to a pioneer machine such as that of Morley. Otherwise, a difference in the particular devices used to accomplish a particular result in such a machine would always enable a defendant to escape the charge of infringement, provided such devices were new with the defendant in such a machine, because, as no machine for accomplishing the result existed before that of the plaintiff, the particular device alleged to avoid infringement could not have existed or been known in such a machine prior to the plaintiff's invention."

We come now to the tenth and eleventh claims. The experts and counsel on both sides agree, and we concur with them, in thinking that to sustain the tenth claim, which is for the flexible strap, g, arranged in receptacle, G, to operate trip lever, H, there must be read into it the means of pressing it into action, namely, the tooth-feeding segments, so that the tenth claim is for substantially the same parts as the eleventh claim, which is for "the combination of the binding strap and cord, g, with the bundle receptacle, G, and tooth-feeding segments, C⁴, substantially as and for the purposes described." It seems to us that into the eleventh claim should also be

read, as an element, the guides, D, because the proper co-operation of the segment teeth, flexible strap, and binding receptacle necessary to the result sought could hardly be secured without those guides. The combination claimed would then be: (1) The tooth-feeding segments; (2) the guides, D; (3) the flexible strap, g; (4) the bundle receptacle, G. The bundle receptacle, G, as described in Gorham's patent, has as its essential parts, in addition to the flexible strap: (a) The sturdy resistant back of the strap to co-operate with the compressor arm of the cord conveyor in the final compression; (b) the means for discharging the bundle after it is bound and tied. We are now to consider whether these, or substantially equivalent, elements of this combination, are found in the machines of the defendants for the performance of substantially the same functions in automatic twine binding. We have already seen the equivalents of the segment teeth and the guides, D, in defendants' packers and breast. We come then to the flexible strap, g. Its function is to assist in the waist compression of the bundle as the wisps of grain are forced against it, and then, upon the yielding of the spring with which the cord, g', connects it, to trip a lever, and start the binding mechanism. For exactly this same purpose, the defendants use a metal finger mounted on a rock shaft. The leather and the metal triggers were mechanical equivalents. The transmission of the force of compression to trip the spring lever by means of the rocking of a shaft upon which the yielding resistant was stiffly mounted was a well-known substitute for a strap and pulley. The rock-shaft connection between the yielding arm and the lever actuating the binding mechanism was suggested in the Spaulding patent. Even if it involved patentable invention to substitute the one for the other, it was but tributary invention, which did not prevent infringement, for the two devices discharge the same functions in substantially the same way. Next we come to the bundle receptacle, G. The space between the packers and resisting finger of the defendants corresponds in every function with the binding receptacle of Gorham. Here the grain is received, wisp by wisp, partially compressed at the waist by the packers and breast. Here it is still further compressed against the triggering resistant, and by the yielding spring, upon which the resistant acts, the bundle is seized at the waist. Here the cord is carried about the bundle. Here the waist of the bundle is further compressed between the compressor arm of the cord carrier and a sturdy resistant forming the back of the receptacle. In the same way in both machines, tension on the cord in the compression is reduced to a minimum. In some of the defendants' machines the two functions of the triggering resistant and the sturdy compressing resistant are performed by the same metallic finger, which, by means of the rocking of the shaft, and a rigid limit of its motion, at one time is made to serve the one purpose, and at another time the other. In other machines of defendants, there are two different metallic fingers, one the trigger, and the other the stiff compressor. In either case, it is quite manifest to us that, however great the ingenuity shown, and the degree of usefulness attained in the change from the

form of Gorham's devices, the substituted parts are but the equivalents of his in his combination; patentable improvements, doubtless, but only improvements. If in the eleventh claim, by the reference to the bundle receptacle, G, is also to be included the means for discharging the bound bundle, we have no difficulty in holding that the mode by which the bundle is discharged from the defendants' machine is, within the rules which apply to the infringement of a pioneer combination patent, nothing more than the mechanical equivalent of the means for accomplishing the same purpose in the Gorham device. The receptacle platform in the Gorham device swings outward and backward, leaving an opening below for the bundle to fall through, while the receptacle platform, or its equivalent, in the defendants' machine, swings downward and forward, out of the path and away from the bundle, which, without support, falls to the ground.

It is further pressed upon the court that the mere fact that the claims of the Gorham patent are expressed by reference to the lettered parts of the machine, as shown in the drawings, must lead to a literal and formal construction of the claims, and limit their scope exactly to the form of the device used and suggested by Gorham. This was the view of the learned justice who delivered the opinion in the court below, and he cited the cases of *Weir v. Morden*, 125 U. S. 106, 8 Sup. Ct. 869, and *Hendy v. Iron Works*, 127 U. S. 375, 8 Sup. Ct. 1275, in support of his conclusion. We are unable to concur in this application of those cases. They did not involve pioneer or even meritorious patents. They were for devices which were at the best mere improvements on previous well-known devices, and, no matter what the claims had been, they would have been limited to the particular forms therein described. In the latter case, the court found that there was no invention or patentability in the elements claimed, and, as an additional reason for holding the patent invalid, suggested that the element claimed was linked in combination with a particular form of cylinder by letter reference to the drawing, and, therefore, that, in such a case, the combination was limited to the particular character of the cylinder. Certainly neither of these cases establishes a hard and fast rule that where a patentee claims the combination of certain elements shown in his patent, describing them by reference letters in the drawings, he thereby deprives himself of the benefit of the liberal doctrine of equivalents applicable to pioneer patents, if otherwise he is entitled to its application. See *Delemater v. Heath*, 20 U. S. App. 14, 7 C. C. A. 279, 58 Fed. 414. Whether he specifically claims in his patent the benefit of equivalents or not, the law allows them to him according to the nature of his patent. If it is a mere improvement on a successful machine, a mere tributary invention, or a device the novelty of which is confined by the past art to the particular form shown, the range of equivalents is narrowly restricted. If it is a pioneer patent with a new result, the range is very wide, and is not restricted by the failure of the patentee to describe and claim combinations of equivalents. Nothing will restrict the pioneer patentee's rights in this regard save

the use of language in his specifications and claims which permits no other reasonable construction than one attributing to the patentee a positive intention to limit the scope of his invention in some particular to the exact form of the device he shows, and a consequent willingness to abandon to the public any other form, should it be adopted and prove useful. Instances of such a limitation may be found in *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, and in *Brown v. Manufacturing Co.*, 6 U. S. App. 427, 16 U. S. App. 234, 6 C. C. A. 528, 57 Fed. 731. But there is no such limitation in the patent under discussion, and the rule applies which was so fully explained in *Winans v. Denmead*, 15 How. 330, where the court said:

"Patentees sometimes add to their claims an express declaration to the effect that the claim extends to the thing patented, however its form or proportions may be varied. But this is unnecessary. The law so interprets the claim without the addition of these words."

Again, in *Vulcanite Co. v. Davis*, 102 U. S. 222-230, the supreme court said that a patentee was protected against equivalents, whether he claims them or not. A most satisfactory discussion of this general subject may be found in the opinion of the circuit court of appeals of the First circuit in *Reece Button Hole Mach. Co. v. Globe Button Hole Mach. Co.*, 10 C. C. A. 194, 61 Fed. 958, where Judge Putnam, on behalf of that court, examines the two lines of cases of which *Winans v. Denmead* and the *Keystone Bridge Case* are respective types, and reconciles them, so far as they may be reconciled. See, also, *Manufacturing Co. v. Adams*, 151 U. S. 139, 14 Sup. Ct. 295; *Miller v. Manufacturing Co.*, 151 U. S. 186, 14 Sup. Ct. 310.

With respect to the third, tenth, and eleventh claims, we therefore conclude that they are valid, and that the defendants infringe them, unless by the application for reissue, and the subsequent abandonment of it, either the scope of the claims was narrowed to a literal reading of them, or the validity of the claims was entirely destroyed. The effect of this reissue application we shall consider later.

We come now to consider the twenty-fifth and twenty-sixth claims. They are as follows:

(25) "The combination of arm, Q, on shaft, K", with arm, R', and bent arm, R", on rock shaft, R, and carrying the projecting cord arm, r'", to force the cord from the knot-tying device, substantially as described."

(26) "The combination of arm, Q, on shaft, K", with arm, R', and bent arm, R", on rock shaft, R, carrying the knife, r, for cutting the cord, and arm, r'", for forcing the cord off the hook, substantially as described."

These claims relate to the tying mechanism, and to that part of it only by which the knot, after it is tied, is stripped off of the knotting or tying bill, and the cord connecting it with the cord holder is cut. The shaft, K", of the knotting bill is centrally bored to receive the shaft of the cord hook, n⁴, that extends upward into the shaft, K". The knot-tying shaft, K", has at its lower end another cord hook, z, projecting from one side and upward to receive and hold thereon the cord, so that, as the hook is revolved in tying the knot, the cord passes under the hook and forms the loop of the knot. In the lower

attached to the rock shaft, and bending downward below the path of the revolution of arm Q, while another bent arm, R", passes on the opposite side of the rock shaft downward, and curves towards, underneath, and past the knot-tying shaft, K". On arm R", near its terminal end, is an upwardly projecting knife, r', to cut the cord, while further back from the end than the knife is a curved and upwardly projecting arm, r"', to force the cord off the knot-tying hook after the cord is cut by knife r'. r⁴ is a spiral spring fast at one end to the bent knife arm, R", and the other end fixed to the frame, B. This device for cutting and removing the cord is operated by the revolution of the arm, Q, on shaft, K", which strikes against the lower part of arm R', and carries it forward, rocking the shaft and forcing the arm R", on the opposite side of the rock shaft that carries the knife and bent arm, to advance towards the knot shaft, the knife passing on one side of the shaft, and severing the cord between the shaft and the cord-holding wheels, and passing forward until the bent arm passes on the other side of the shaft, and forces the cord off the hook; and as this is accomplished the arm Q has lost its hold of arm R', when the spiral spring, r⁴, acts to pull the knife and bent arm on arm R" back to their former position.

In the defendants' machine the means for moving the cutter and stripper is a cam flange on the face of a disk revolving, not on the knotter shaft, but on another shaft, which drives other portions of the mechanism, and which, through a beveled segmental gear, also turns the knotter shaft. This bevel gear is only segmental, and passes the co-operating gear on the knotter shaft at a different time from that when the cam operates the two-armed lever upon which is the knife and stripper, so that the knotter shaft is at rest in defendants' machines when the knife and stripper are moving, while in Gorham's they move at the same time.

Gorham took his knotting bill from a patent of one Behel, issued in 1864, in which the two cord hooks forming the bill and co-operating to hold, twist, and knot the cord were connected by a spring tending to hold them together. One of the cord hooks was pivoted to the knotter arm, the bent end of which formed the other cord hook. The bill was opened by the pressure of the knotting bill against the strained cord in such a way as to operate upon one end of the pivoted cord hook against the spring which held the two together, so that as the knotter shaft turned, twisting the cord around it, the cord ends were caught in the open bill, and as the knotter shaft continued to turn the knot was tied. Then, by swinging the knotter shaft on a segment, the cord between the bill and the knot holder was carried against a stationary knife and cut. By the swinging back of the bill, the knot was stripped off of it. There was a patentable improvement in Gorham's bill over Behel's bill, in the mode by which the cord hooks were opened by the use of a cam and a sliding sleeve, and in the working of the spindle of one cord hook in the shaft of the other. But that Behel's knotter bill suggested and was the foundation for Gorham's is not disputed. Behel used a stationary knife, against which he carried his cord by swinging his bill, and

he used the backward swing of the bill itself to strip the cord from it, while Gorham substituted the bent-arm arrangement above shown. There were in the history of the art many knot-tying devices, and in every one of them it was necessary to cut the cord and to strip it from the device which knotted it. Gorham used the revolution of the knotted shaft, with the bent arm, to operate at the right time another bent arm carrying the knife and cord along the side of and parallel to the knotter bill. The defendant did not use the knotter shaft to operate his stripping and cutting device, but took another shaft, which, at a different time from that when the stripper and knife were to be actuated, turned the knotter bill.

In Hickey's knotting device the cutter was operated on a pivoted lever moved by a cam on a shaft other than the knotter shaft.

In Greenhut's grain binder, patented in 1868, the knife is actuated by a two-arm lever which is moved upon a cam flanged on the face of a cogwheel moving on a shaft other than the knotter shaft. This is in many respects quite like that of the defendant.

We think that the state of the art was such, with reference to knotters and strippers, at the time when Gorham invented his knotter-bill knife and stripper, that he is not entitled to claim as an infringement of his knife and stripper any device substantially different in form from that which he used. It is true that the knife and stripper of the defendant is moved by the shaft which also moves the knotter shaft, and that in Gorham's the knife and stripper is moved by the knotter shaft, and that this states generally the difference between the two; but, considering the prior art, it does not state the difference with sufficient detail to prove or disprove their likeness for the purpose of deciding the question of infringement. No claim is made that the knotter bill itself is an infringement, and we are limited in this discussion to the question whether the knife and stripper infringe. Were Gorham's knotter bill and his knife and stripper pioneer patents, the resemblance between them and the same parts of defendants' machine would be sufficient, perhaps, to justify regarding them as equivalents; but they are not pioneer devices. Gorham and the defendants, or their licensor, Appleby, were acquainted with the prior art, and with that in view, they reached the same result, and one not new, in different ways. One improved on one device, and the other on another. We are considering Gorham's stripper and cutter in its character as an independent device for performing the function it discharges in his machine. The twenty-fifth and twenty-sixth claims are not for a combination of all the parts of his machine to accomplish his new result. If they were, the knotter and stripper in Gorham's machine would, of course, be an equivalent of the defendants' as an element of the combination. Considered alone, however, and not in combination, as it must be under these claims, we hold that the defendants do not infringe it.

We come now to the question, what effect, if any, shall be given to the application for reissue which was made by Gorham's widow, Helen M. Gorham, in 1881? In this application the eleventh claim was as follows:

"The combination with the receiving chamber and binding receptacle of the guides, D, and vibrating segments provided with feed teeth, substantially as set forth."

This was rejected by the patent office on the ground that it was anticipated by the patents of Elward, Childs, Gordon, Whitney, and Barta.

The fourteenth claim was:

"In a grain binder, the combination with a receiving chamber and binding receptacle of feeding mechanism and actuating mechanism constructed and arranged to pack the grain into the binding receptacle, substantially as set forth."

This claim was rejected on account of the patents of Heath, Childs, Spaulding, Whitney, and Barta.

The fifteenth claim was:

"In a grain binder, the combination with the binding receptacle of the binder-actuating mechanism a yielding strap, and intermediate mechanism for automatically throwing the binding mechanism in gear with the prime mover, and the toothed segments arranged and adapted to pack the grain into the binding receptacle, substantially as set forth."

This was rejected on the ground of the patents of Spaulding, Low & Adams, Elward, and Barta.

The twentieth claim was:

"In a grain binder, the combination with the binding receptacle of a two-armed oscillating feeding mechanism, constructed and arranged substantially as described, and outer guides, located substantially parallel to the line of movement of the oscillating feeding arms, substantially as set forth."

This was rejected on account of Low & Adams' and Elward's patents.

The thirteenth claim of the original patent was:

"The vibrating segments having feed teeth in combination with guides, D, as and for the purpose hereinbefore specified."

This was rejected on account of the Low & Adams and Whitney patents.

The sixteenth claim was:

"The combination with a binding receptacle of a feeding mechanism and actuating mechanism arranged to pack the grain into the receptacle, substantially as hereinbefore set forth."

This was rejected on account of Childs', Hannah's, and Whitney's patents.

The seventeenth claim was:

"The combination of the flexible strap with the binding receptacle and toothed feeding segments, substantially as and for the purpose hereinbefore set forth."

This was held to be incomplete, superfluous so far as to its operation, and to have been anticipated by Barta's patent.

An examination of the file wrapper and contents of the reissue application satisfies us that the examiner in the patent office held, in effect, by the rejection of the above claims, that the third, tenth, and eleventh claims of the original patent, which we have found to be valid, and to state the gist of the pioneer patent which Gorham

invented, were anticipated in the prior art. There were other claims, old and new, which the assistant examiner allowed, and this was the condition of the application for reissue when the application was withdrawn by the following letter from the counsel for Mrs. Gorham:

"In the Matter of the Application of Marquis L. Gorham for Reissue of Letters Patent Granted Herein February 9th, 1875. No. 159,506. Grain Binders.

"To the Honorable Commissioner of Patents—Sir: The above application having been refused, we request that the original patent may be returned to us, in accordance with the provisions of the law.

"Very respectfully,

Parkinson & Parkinson.

"Sept. 21, 1882."

We find from the evidence in the record and the circumstances that the action of the counsel for Mrs. Gorham and the complainant in withdrawing the application for reissue was with no intention of abandoning their alleged right to a wide construction of the claims of the original patent. We do not find in the file wrapper and contents any statements by complainant's grantor which, merely as evidence upon the construction of the original patent and its claims, would either limit or narrow them.

It is contended by counsel for the appellee that the abandonment of the application for reissue and the return of the patent after a rejection of the claims in the original patent create an estoppel against the patentee, which prevents him from thereafter relying on those claims or asserting a monopoly under them. It is contended that the same rule must apply as in the case where one on an original application accepts a patent after acquiescing in the rejection of a claim. In such a case the patentee cannot be heard to assert that his invention as patented has the scope it would have had if the rejected claim had been allowed. The basis of this rule is that one who seeks a patent from the government is making a contract with the government as to the extent and operation of a monopoly. If he asserts a claim which the patent office rejects, and he thereafter accepts a patent without the allowance of such a claim, the patent is issued on the condition of his acquiescence therein, and he cannot be heard ever afterwards to deny the rightfulness of the disallowance. The government parted with its patent on the faith of his acquiescence in the rejection of the claim, hence he cannot be permitted to revive it after having accepted the benefit of the patent without it. In *Sutter v. Robinson*, 119 U. S. 530, 7 Sup. Ct. 376, Mr. Justice Matthews used this language:

"A comparison of the patent, as granted, with the application, very conclusively establishes the limits within which the patentee's claims must be confined. He is not at liberty now to insist upon a construction of his patent which will include what he was expressly required to abandon and disavow as a condition of the grant. *Shepard v. Carrigan*, 116 U. S. 593, 6 Sup. Ct. 493, and cases there cited."

It is difficult to see how such a principle can apply in the case of an application for a reissue which is not carried to the point of surrender of the patent and the acceptance of a new patent. Nothing

is granted to the patentee which he did not have before, and there is, therefore, no privilege or benefit moving from the government to the patentee upon which an estoppel can be founded.

It is further insisted, however, that the application for the reissue is a resubmission of the validity of the original claims to the patent office as a tribunal for adjudication, and that when the claims are rejected by the properly constituted authority of that office, and that rejection is unappealed from, and therefore acquiesced in, though the patent be returned to the patentee, it is conclusively adjudged to be invalid to the extent of the claims rejected by the patent office. Section 4916 of the Revised Statutes is as follows:

"Whenever any patent is inoperative or invalid, by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the commissioner shall, on the surrender of such patent and the payment of the duty required by law, cause a new patent for the same invention, and in accordance with the corrected specification, to be issued to the patentee, or, in the case of his death or of an assignment of the whole or any undivided part of the original patent, then to his executors, administrators, or assigns, for the unexpired part of the term of the original patent. Such surrender shall take effect upon the issue of the amended patent. The commissioner may, in his discretion, cause several patents to be issued for distinct and separate parts of the thing patented, upon demand of the applicant, and upon payment of the required fee for a re-issue for each of such re-issued letters-patent. The specifications and claim in every such case shall be subject to revision and restriction in the same manner as original applications are. Every patent so re-issued, together with the corrected specifications shall have the same effect and operation in law, on the trial of all actions for causes thereafter arising, as if the same had been originally filed in such corrected form; but no new matter shall be introduced into the specifications, nor in a case of a machine-patent shall the model or drawings be amended, except each by the other; but when there is neither model nor drawing, amendments may be made upon proof satisfactory to the commissioner that such new matter or amendment was a part of the original invention and was omitted from the specification by inadvertence, accident, or mistake, as aforesaid."

By this section, the patent office is given the authority to revise and restrict, in the same manner as in the original applications, the specifications and claim for the reissue. But the same section provides that the surrender of the old patent shall not take effect except upon the issue of the amended patent; and the question is whether the rejection of a claim for the reissue, which the patentee does not acquiesce in, by pressing his application for the reissue to a new patent for the allowed claims, invalidates the old patent, of which he secures the return. In *Peck v. Collins*, 103 U. S. 660, the question was whether, under the patent laws in force in 1866, a patent had any validity, a reissue of which had been applied for to the patent office, and rejected. It was held, in accordance with the decision of *Moffitt v. Garr*, 1 Black, 273, that the application for the reissue involved a surrender of the old patent at the time of the application. At the close of the opinion Mr. Justice Bradley used this language:

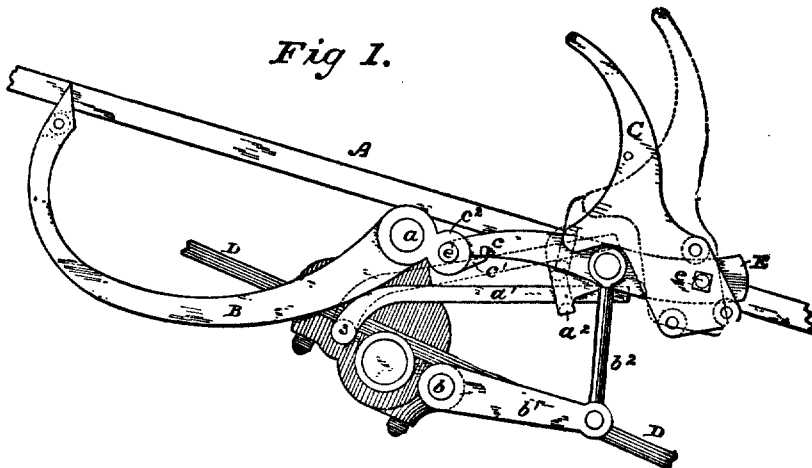
"Since the surrender of the patent in this case, the patent laws have undergone a general revision by the act of July 8, 1870 (chapter 230). In the fifty-third section of that act [being the section relating to the surrender and reissue of patents] a new clause was introduced, declaring that the surrender

'shall take effect upon the issue of the amended patent'; and this clause is retained in section 4916 of the Revised Statutes. What may be the effect of this provision in cases where a reissue is refused, it is not necessary now to decide. Possibly it may be to enable the applicant to have a return of his original patent if a reissue is refused on some formal or other ground which does not affect his original claim. But if his title to the invention is disputed and adjudged against him, it would still seem that the effect of such a decision should be as fatal to his original patent as to his right to a reissue."

It will be observed that this remark of Mr. Justice Bradley was not necessary to the decision of the case before the court. It was a *semble*, and is so referred to in the headnote of the case. The question has never since been considered and decided by the supreme court. The members of this court have difficulty in reaching a conclusion upon the question thus suggested. It is one of much importance to all persons engaged in the procuring of patents and the remedying of their defects by applications for a reissue. Upon its answer turns the validity or invalidity of an otherwise very valuable and meritorious patent in this case. We think it proper, therefore, to certify to the supreme court, for its instructions, the following question, based on the facts as above stated:

"If a patentee applies for a reissue of his patent, and includes among the claims under the new application the same claims as those which were included in the old patent, and the examiner of the patent office rejects some of such claims, and allows others, both old and new, does the patentee, by abandoning his application for a reissue, and by procuring a return of his original patent, hold his patent invalidated as to those claims which the examiner rejected?"

Finally we come to the question whether the defendants are liable to the plaintiff for an infringement of the Baker patent, which was reissued. This patent was for the improvement upon the mode of supporting the resistant finger or trigger in the Appleby twine-binding machine. The patent may be best understood by reference to the following figures, taken from the drawings:



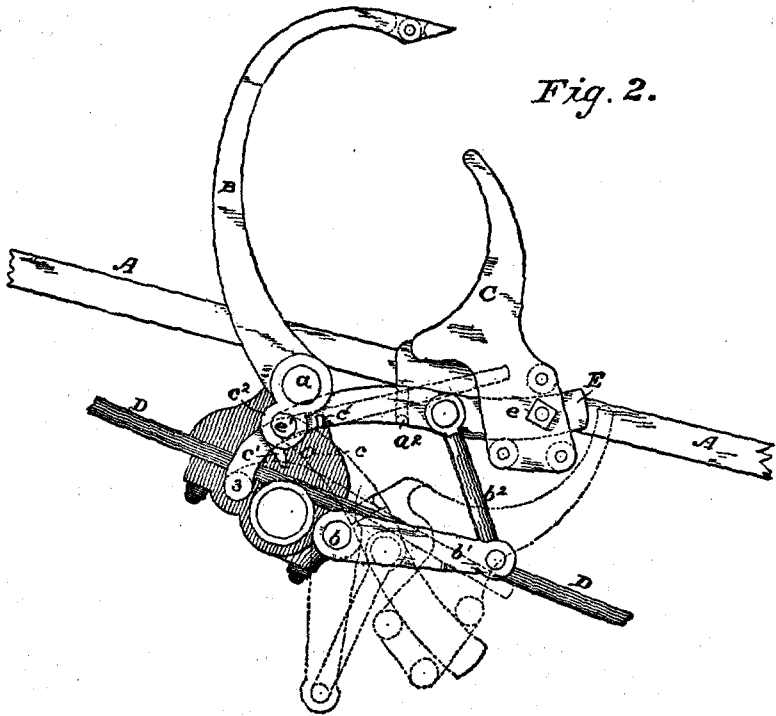


Fig. 2.

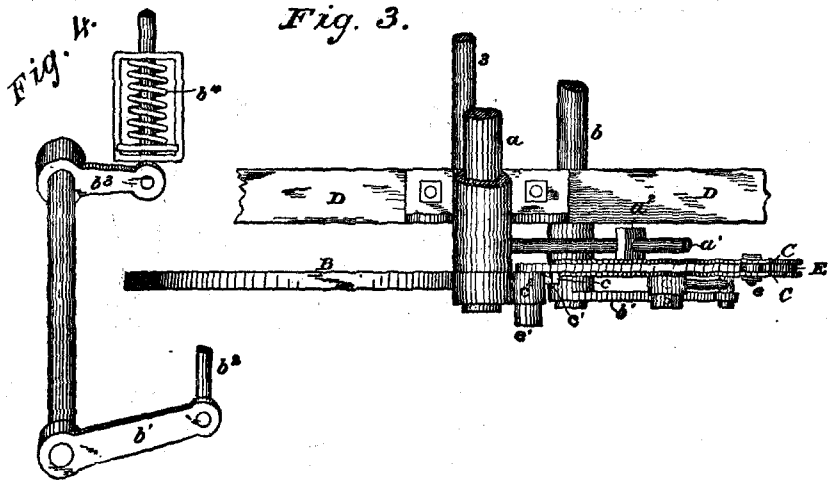
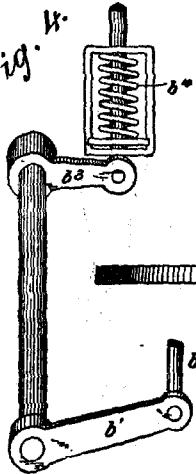


Fig. 3.

Fig. 4.



The drawings are thus explained in the specifications of the re-issue patent:

"E designates the bar or rod, to which the tripping fingers are pivoted by a pivot, e'. This bar is hinged to a heel extension of the binding arm by an eye, c², on said arm, and a pin, e', fixed on the bar and passing through the eye. The bar is supported in the position shown in Fig. 1 by a spring, b⁴, acting through shaft, b, and cranks, b', b³, and pitman rod, b², against the body of the arm. The machinery is tripped by the grain pressing the finger, C, back to the position shown in dotted lines, Fig. 1. In doing this, the finger rocks on pivot, e, and elevates the projecting lug, a², on the bottom of the finger, which raises the tripping lever, a', attached to shaft, 3. The binding arm is operated by a rock shaft, a, set in motion, as is the remainder of the intermediate binding mechanism, by the tripping of the clutch through these instrumentalities. All of the parts as thus illustrated and described are not materially different from those well known in the class of machines to which reference is made. In all machines of this class, the bar or rod, E, which carries the fingers which cause the tripping of the machine, is supported by a spring support, similar to that shown in Fig. 4; and it not infrequently happens, when the grain is damp or green, and from other causes, that the pressure of the grain against the bottom of the tripping fingers will cause the spring support to yield before the pressure at the top of the fingers is sufficient to cause their backward or rocking movement upon their pivot. The yielding of the spring in this manner allows that end of the bar, E, to which the fingers are pivoted, to be borne down and lowered in its position, so that the backward movement of the fingers, taking place after such lowering, will not elevate the trip lever, and hence the binding mechanism will not be started, nor, where the packers are to be stopped, will they be thrown out of action, and the machine will clog. To avoid this difficulty and remedy the defect, I lock the supporting bar positively against descent until the tripping movement of the fingers takes place, for this purpose making the hinge between the binding arm or its rock shaft and the finger support, E, such as to support this bar in the position shown in Fig. 1, irrespective of the spring support; that is, the hinge is made entirely rigid at this point, so that it will not allow the other end of the bar to drop and lower, whether it has or has not other support. This rigidity of the hinge at the point desired is best secured by means of a pin or lug, c, upon the bar, E, and a lip or projection, c', upon the eye, c, arranged to meet at the point desired and prevent any further turning of the hinge. This affords a reliable support to said bar, and insures the tripping of the mechanism under all circumstances. As soon as the fingers have operated the trip, the binding arm starts upon its upward movement, thus breaking the lock by carrying the lip, c', away from the pin, c, and the bar is free thereafter to be lowered at the proper moment to allow the discharge of the bound bundle. The return of the binding arm to its first position renews the lock at the moment the clutch is thrown out, and the parts will be again ready for a fresh binding operation."

What Baker did was to put a lug on the finger bar to operate against another lug on the needle bar at its heel in such a way that when the cam-rod spring had yielded sufficiently under pressure of the grain the finger bar would be rigid with the needle bar as it lay down at rest beneath the deck, and further spring action in the cam rod would be prevented. When, however, the needle was up and squeezing the gavel, the lug on its heel was drawn out of the way of that on the finger bar, so that, when the time came for the cam rod to allow the resisting finger and finger bar to fall away from in front of the bound gavel, the lugs on the finger bar and the needle bar no longer locked, and no longer interfered with this result. This was all that Baker claims to have invented. Everything else in the device shown in the above drawings and description was old. The

Baker patent was reissued, but it is conceded by complainant's experts that all the claims were substantially as limited in the original patent. The sole claim in the original patent, which was repeated in the reissue as the fifth claim, was as follows:

"In a grain binder, a support, E, for the compressing and tripping fingers, C, hinged to the binding arm, in combination with a pin, e, on support, E, and a lip, c', on the binding arm, all arranged to operate substantially as and for the purpose specified."

In the defendants' machine, a lug locks with the heel of the needle arm so as to secure substantially the same result. If the invention is not void for the want of novelty, there is no doubt that the defendant appropriated the Baker device. We are of opinion, however, that the patent is void for want of invention. It was quite old in this particular art, and in every other where two arms were pivoted together, to limit the angle of their separation by lugs or stops which should come in contact at the joint or hinge. In the Appleby machine, the needle arm and the finger bar were hinged. Until the spring was introduced in the cam rod, there was no necessity of measuring and limiting its yielding capacity by making the finger bar and the needle arm rigid. As soon as the cam rod, however, came to have a spring in it, a patent for the present device was applied for by Baker. In Appleby's patent for a twine binder, issued in 1869, the angle of separation between a compressor arm and a needle arm was limited by just such a device. The same device was also shown, in various forms, to limit the operation of a spring used to bring together the binding arm and the resistant arm in a twine binder invented by Locke in 1869. The claim made is that the use of the needle arm by Baker as the leg upon which to lock the finger arm was particularly ingenious because the locking and rigidity of the finger arm could not be permanent, but must end, for the purpose of permitting the discharging apparatus to work as soon as the gavel was bound and tied, and that the invention consisted, not in the mere use of lugs or stops at the hinge of two arms whose divergence was to be limited, but in the selection of the needle arm at rest as one of the legs whose divergence was to be limited, and whose function, as such, would cease as soon as it began to move, thus allowing the finger arm freedom of motion at a time when, in the organization of the machine, it became necessary to have such freedom. Had the locking device not been shown twice in the art previously as applied to the binder arm and the resisting arm in the same class of machines, it might be that it would have involved the inventive faculty to use the binder arm for such a purpose, but we think it was most natural, as soon as it became necessary to limit the operation of the cam-rod spring, for any one, in an examination of the prior art, to see that the device in the Locke and Appleby 1889 patent would serve the desired purpose. The hinging of the resistant arm on the heel of the needle arm, which was old, obviously suggested the use of the needle arm as the means of limiting the motion of the resistant arm. Nor do we think the fact that the locking of the binding arm and the resisting arm in this instance had an added function, namely, of ceasing to lock when the needle arm was elevated, should

change this conclusion. For these reasons, we do not think the claim of infringement on the Baker patent can be sustained.

The result of our discussion of this case leads to an affirmance of the decree of the court below in so far as it holds that the twenty-fifth and twenty-sixth claims of the Gorham patent are not infringed, and that the Baker patent is invalid for the want of novelty. We differ with the court below, however, in the view which it took of the third, tenth, and eleventh claims of the Gorham patent, and we think that, unless by the subsequent application of the reissue these claims were invalidated, the defendants' machine infringed them, and the complainants are entitled to recover damages therefor. We shall hold the case, therefore, until the question as to the effect of the application for a reissue has been submitted to the supreme court, and that court's instructions thereon are certified to us; and it is so ordered.

NEY v. NEY MANUF'G CO.

(Circuit Court of Appeals, Sixth Circuit. July 15, 1895.)

No. 257.

1. PATENTS—PRIOR ART—INFRINGEMENT—HAY-ELEVATOR TRACKS.

The Ney patent (No. 287,772) for an improvement in hay-elevator tracks, if sustainable at all, is limited by the prior state of the art to the exact forms shown, and is therefore not infringed by a track made in accordance with the subsequent patents to Jacob and Valentine Ney (Nos. 395,714 and 465,387).

2. SAME—PRESUMPTION FROM ISSUANCE OF SUBSEQUENT PATENT.

The issuance of a subsequent patent relating to the same subject-matter as a prior one raises a presumption of a patentable difference between them, though the applications were not pending at the same time in the patent office. *Boyd v. Tool Co.*, 15 Sup. Ct. 837, applied.

Appeal from the Circuit Court of the United States for the Eastern Division of the Northern District of Ohio.

This was an appeal from a decree in a suit in equity by the Ney Manufacturing Company to restrain Valentine Ney from infringing letters patent No. 287,772, issued on the 30th day of October, 1883, to the complainant, as the assignee of one Jacob Ney, for an improvement in hay-elevator tracks. By his answer the defendant attacked the validity of the patent, as being for a device which did not involve invention, and which had been anticipated by a number of patents. He averred that Jacob Ney was not the original inventor of the device, but that the same had been used long before he discovered it. He further averred that the machine alleged to be an infringement, which he was manufacturing, was constructed in accordance with two letters patent (Nos. 395,714 and 465,387) issued to Jacob Ney and the defendant, and that it did not infringe complainant's patent. Complainant's device consists of two parallel rails of angle iron, which are spliced so that the joints on one side of the track are opposite the solid portions of the opposite rails. The vertical flanges of the angle-iron rails are held at the desired distance apart, and parallel to each other, by spliced blocks and ferrules, and held together by suitable clamping bolts or rivets. The track is suspended and held in the proper position in the barn by means of hooks secured to the rafters or ridgepole of the building. The bases of these hooks are T-shaped, and embrace the downward projecting portions of the angle irons, the shank of the hook passing up between the angle irons. The traveling wheels of the carriage of the hay elevator run upon the horizontal flanges of the angle irons.

The claims alleged to be infringed were as follows: (1) "A track for hay elevators, composed of two parallel pieces, A, each constructed with horizontal and vertical flanges, with the vertical flanges united together, substantially as described." (3) "In a hay elevator, the combination of the parallel pieces, A, each having horizontal and vertical flanges, the suspending blocks, D, passing between the vertical flanges and having T-shaped ends, on which the parallel pieces are supported, and devices for spacing and holding the said pieces in proper parallel position, substantially as described." (4) "The combination in a hay elevator of two parallel pieces, A, each having horizontal and vertical flanges, with the suspending hooks, D, passing between the vertical flanges, and having T-shaped lower ends, upon which the parallel pieces are supported, substantially as described." The defendant's track is formed of two curved iron pieces, which are fastened together by clamps embracing their vertical portions, and leaving the upper curved portion free to form a tread or way for the trolley wheels. The clamp which secures these pieces together consists of a bar placed between them, with side pieces upon the outside of the vertical portion of the track iron, and a bolt passing through below the track irons to draw the three pieces together, and thus clamp the track iron. The upper part of the bar is formed into a loop to suspend the track. The two outer clamping pieces have shoulders on them for the edges of the track irons to bear against, and thus gauge their position; and the central bar also has a shoulder which the two outer pieces bear against, so as to take the strain off the bolt. There is one clamp shown, in which the upper or loop portion of the hanger bar is cut off, leaving it a mere filling block. Complainant averred in its bill, and introduced evidence tending to prove facts which it relied upon as estopping defendant from asserting the invalidity of its patent; but, as will be seen from the conclusion reached, the facts are not here material. The defendant introduced evidence to show that a wooden hay track, constructed in every respect with reference to spacing block hooks with T-shaped ends and broken splice, had been in use in two barns since 1878 and 1881.

Fred. W. Bond (Paul A. Staley, of counsel), for appellant.

Charles R. Miller (M. D. Leggett, of counsel), for appellee.

Before TAFT and LURTON, Circuit Judges, and SEVERENS, District Judge.

TAFT, Circuit Judge, after stating the facts as above, delivered the opinion of the court.

The state of the art with respect of hay elevators was such that, even if the complainant's patent can be sustained, it must be limited to the exact form shown. In the hay elevator of C. A. Miller patent, July 19, 1870, use is made of two parallel wooden tracks, having vertical flanges and horizontal flanges arranged in parallel lines, and secured to each other by spacing blocks at the end of the beams forming the track, and suspended by hooks to the joists of the barn. The traveling carriage is on trolley wheels, which run upon the horizontal flanges of the tracks, and the hay is suspended by a rope which hangs down from the trolley carriage between the two tracks. In the Gordon F. Prindle patent for hanging sliding doors, angle irons are used, arranged in parallel lines on top of the casings or frames of the doors or gates. The trolley wheels run upon the horizontal flanges of the angle irons, and are held into position by the vertical flanges thereof, and the door is suspended to the axle connecting the two wheels by hangers which pass down between the angle irons. In Corbin's patent for an improvement in railway tracks, angle irons are used with vertical and horizontal flanges held parallel to each other by tubes extending from the inside of one vertical flange

to the inside of the other, in which tubes are rods which pass through the flanges, and are bolted on the outside of each vertical flange, thus forming exactly the same device for firmly holding the vertical flanges parallel seen in the ferrules of the complainant's device. In Wendel's apparatus for hoisting and tiering cotton, the cotton is carried from one part of the building to another on a carriage with trolley wheels, which run upon the horizontal flanges of a trough-shaped track superimposed on a beam suspended by rods from the roof. It does not appear exactly how these rods are connected with the beam, but there is a suggestion in the drawings that there is a T-shaped ending embracing the lower part of the beam. In the Bowman patent for an improvement in railway tracks, issued in 1878, wooden tracks are maintained in parallel position by spacing blocks through which rivets run, bolted outside of the tracks; and this device shows a splicing of the pieces forming the track so that the joints of either line will come opposite the middle of the timbers of the opposite line. In Chamboard's patent for a hay elevator, issued in 1882, the track is made up of two long wooden beams, upon the horizontal top of which the trolleys of the elevator carriage run. The two beams are connected together by a middle beam somewhat lower down than the exterior beams, and not made so long, in order that there may be an open space between the tracks at certain points along the track. The track thus constructed and riveted together is suspended from the ridgepole of the barn by rods and clevises. The rods extend down through the middle beam, and there is shown in the drawing a T-shaped ending for at least one of the rods. Considering that angle irons had been used before to form tracks, that vertical and horizontal surfaces of wooden beams had been used for the same purpose, that their parallelism had been maintained by spacing blocks, that strength in the structure as a whole had been secured by splicing the pieces of one track at points opposite the solid portion of the pieces of the other, and that such tracks had been suspended from the ridgepole or rafters of the barn in which the hoisting was to be done by pieces passing up between the two tracks, we are of opinion that, if the patent sued on is to be sustained at all, the combination claims made therein must be limited to the exact forms shown, and that such claims are not infringed by tracks made of iron that are not angle irons, that are held together by clamps which do not involve the use of rivets passing through the vertical flanges, and that are not suspended from the roof or timbers by hooks which operate independently of the spacing blocks, and serve no function as such. The conclusion we reach is quite like that reached by the supreme court of the United States in the case of *Boyd v. Tool Co.* (decided May 20, 1895) 15 Sup. Ct. 837. In this case, as in that, both parties were manufacturing machines under a patent. Mr. Justice Shiras uses this language:

"Upon the assumption that, owing to the previous condition of the art, Boyd is to be restricted to the exact and specific devices claimed by him as novel, we do not deem it necessary to determine whether either Boyd or Strickler invented anything, because we think that the appellant has failed to show that the defendants have used the particular devices to which Boyd

can be considered entitled. Our discussion, therefore, will be confined to the question of infringement. As both applications were pending in the patent office at the same time, and as the respective letters were granted, it is obvious that it must have been the judgment of the officials that there was no occasion for an interference, and that there were features which distinguished one invention from the other. In *American Nicolson Pavement Co. v. City of Elizabeth*, 4 Fish. Pat. Cas. 189,¹ Mr. Justice Strong said: "The grant of the letters patent was virtually a decision of the patent office that there is a substantial difference between the inventions. It raises the presumption that, according to the claims of the latter patentees, this invention is not an infringement of the earlier patent." It would seem to be evident that as the purpose of the invention was the same, and as the principal parts of the respective machines described were substantially similar, it was also the judgment of the office that the distinguishing features were to be found in some of the smaller, and perhaps less important, devices described and claimed. *Burns v. Meyer*, 100 U. S. 671."

This language has full application to the case at bar, for, though the patents were not pending in the office at the same time, the presumption from the granting of the second patent, in view of the previous issue of the first, would not seem to be different.

We do not pass upon the question of the validity of the Ney patent, because, in the view just stated, it is unnecessary. The same conclusion renders it unnecessary for us to consider the estoppel which the court below held prevented the defendant from attacking the validity of the complainant's patent. The decree of the lower court, therefore, is reversed, with directions to dismiss the bill.

STANDARD CARTRIDGE CO. et al. v. PETERS CARTRIDGE CO.

(Circuit Court, S. D. Ohio, W. D. July 15, 1895.)

No. 4,509.

1. PATENTS—BILL TO ESTABLISH RIGHT TO PATENT—INTERFERENCE DECISIONS.
In proceedings on a bill filed under Rev. St. § 4915, by a defeated contestant in interference proceedings, to establish a right to a patent, he cannot attack the patent issued to the defendant, on the ground that the specifications thereof are insufficient. The only question which can be considered is whether complainant is entitled to a patent for the invention described in the bill and specified in his claim filed in the patent office.
2. SAME—BURDEN OF PROOF—CUMULATIVE AND IMPEACHING EVIDENCE.
In such a proceeding, the burden is upon the complainant to establish his contention beyond a reasonable doubt (*Morgan v. Daniels*, 14 Sup. Ct. 772, 153 U. S. 120); and the final decision of the patent office on the question of priority should not be set aside upon merely cumulative or impeaching evidence.

This was a bill filed under Rev. St. § 4915, by the Standard Cartridge Company and Charles S. Hisey against the Peters Cartridge Company to establish a right to a patent for an alleged invention relating to cartridge-loading machines.

Parkinson & Parkinson and E. M. Marble, for complainants.
Hall & Brown and Albert T. Brown, for defendant.

SAGE, District Judge. This suit is brought under section 4915 of the Revised Statutes of the United States to establish the right

¹ Fed. Cas. No. 312.