under whom appellant claims. Before that time, however, he had made and sold one of his machines to defendant. This was burned in May, 1893. The one now in use by them was built after that date. Be this as it may, defendants were not parties to the concession, the motive and consideration for which are not disclosed, nor are they or the court estopped from considering the two inventions on their merits. The most that can be said of Frost's action is that it must be considered with the other evidence in the cause.

We see no error in the conclusion, reached by the circuit court, that the appellees do not infringe the patent of the appellants. The decree of the circuit court is affirmed.

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## BIRMINGHAM CEMENT MANUFACTURING CO. et al. v. GATES IRON WORKS.

(Circuit Court of Appeals, Fifth Circuit. April 28, 1896.)

No. 407.

1. PATENTS—INVENTION—STONE BREAKERS.
The following patents for improvement in stone-breaking machines are void, for want of invention, as to the claims specified, namely, the Rusk patent, No. 110,397, claim 1; the Raymond patent, No. 237,320, claim 1; the Gates patent, No. 272,233, claims 1, 2, and 3. Iron Works v. Fraser, 14 Sup. Ct. 883, 153 U. S. 332, followed and applied.

2. SAME—INFRINGEMENT.
The Brown patent, No. 201,646, *held* not infringed as to claims 1, 2, and 3.

3. SAME—COMBINATION OF OLD PARTS.
The Gates patent, No. 243,545, is void, because of anticipation and prior use, as to claims 3 and 4, which are for combinations of various well-known parts of a stonebreaker, with a loose collar around the shaft and below the diaphragm, to protect the machine from dust and small particles. Iron Works v. Fraser, 14 Sup. Ct. 883, 153 U. S. 332, followed.

4. SAME—ANTICIPATION—PRIOR USE.
The Gates patent, No. 250,656, for improvement in stone-breaking machines, consisting in combinations of a shaft, a bearing for the shaft, a hard-metal plate in the lower end of the shaft, an adjustable sliding step block, and an oil step box, is void, especially as to claims 2, 3, and 4, because of anticipation and prior use. Iron Works v. Fraser, 14 Sup. Ct. 883, 153 U. S. 332, followed.

5. SAME—COMBINATIONS.
The Gates patent, No. 259,681, for a "journal bearing for stone and ore crushers," is void, as to claim 1, as being for a combination of old parts without attaining any decidedly new and useful results.

6. SAME—NOVELTY.
The Gates patent, No. 265,957, for an improvement in stone breakers, consisting in an inclined diaphragm chute, separate from the case of the machine, and having a removable lining to secure durability, is void for want of patentable novelty.

7. SAME—PATENTABLE IMPROVEMENTS—MECHANICAL SKILL.
One who employs mere mechanical skill in the improvement of details is not entitled to patents therefor, although, by the application of such skill, together with diligence, pertinacity, and money, he makes a success of a machine which before was a failure.

Appeal from the Circuit Court of the United States for the Northern District of Alabama.

This was a suit in equity by the Gates Iron Works against the Birmingham Cement Manufacturing Company and others for alleged infringement of 10 patents relating to improvements in stone breakers. There was a decree in the circuit court for complainant upon 8 of these patents, and defendants appeal.

L. L. Bond, for appellants.
Louis L. Coburn, for appellee.

Before PARDEE and McCORMICK, Circuit Judges, and BOARMAN, District Judge.

PARDEE, Circuit Judge. This is a suit commenced in the circuit court August 11, 1887, for the infringement of several letters patent of the United States on certain improvements in stone-breaking machines, and is brought by the Gates Iron Works to recover the gains and profits realized by using the alleged infringing machine, as well as damages sustained by the complainant. The bill declared on 10 several patents, to wit: No. 110,397, December 20, 1870, to J. H. Rusk; No. 201,646, March 26, 1878, to C. M. Brown; No. 237,320, February 1, 1881, to G. & A. Raymond; No. 243,545, June 28, 1881, to P. W. Gates; No. 250,656, December 13, 1881, to P. W. Gates; No. 259,681, June 20, 1882, to P. W. Gates; No. 265,957, October 17, 1882, to P. W. Gates; No. 272,233, February 13, 1883, to P. W. Gates; No. 246,608, September 6, 1881, to P. W. Gates; No. 305,172, September 6, 1881, to P. W. Gates. The title of the Gates Iron Works to the above-mentioned patents is not disputed, nor is it disputed in this court that, if the said patents are valid, the appellants' machine substantially infringes some, if not all, of the above-mentioned patents. The cause was heard in the circuit court, and a decree was rendered October 4, 1889, sustaining the first eight above-mentioned patents, as valid, and holding that the appellants infringed some one or all of the several claims contained in each patent. No reasons were given by the trial judge for his several findings in the case, and we are therefore compelled to examine the record without any assistance from the trial judge, save what is to be found in his ultimate findings of law and fact, the correctness of which is the matter in dispute. By appropriate assignments of error, the appellants question each finding as to each patent, and the claim thereunder, and also the general finding in the whole case.

When the suit was decided by the circuit court a suit was pending in the Seventh circuit against the makers of appellants' machine, in which suit was involved five of the patents included in the present controversy, with others not herein involved. In that suit the bill was dismissed in the circuit court for want of equity. See 42 Fed. 49. An appeal was taken to the United States supreme court, which court affirmed the decision of the circuit court. Iron Works v. Fraser, 153 U. S. 332, 14 Sup. Ct. 883. The opinion in the case deals with five of the patents involved herein, and, so far as it is applicable to the present controversy, is controlling.

In the case at bar the first and second of the errors assigned relate to the Rusk patent, No. 110,397, which was for an improvement

in grinding mills, in regard to which the court below found that the appellants infringed the first claim, which is as follows:

"The combination, substantially as described, of soft-metal pins or plugs, c, with a driving gear of a grinding mill."

The third and fourth assignments of error question the court's finding in regard to the Raymond patent, No. 237,320, for grinding wheels, holding the said patent valid, and that the appellants infringed the first claim of said patent, to wit:

"The combination of the shafts, the safety pin, and the reducing devices provided with the exposed hub to co-operate with the pin, such parts being constructed substantially as described, to permit the instantaneous removal and replacement of the pin."

The fifth and sixth assignments of error are that the court erred in holding the third claim of the patent No. 272,233, to P. W. Gates, to be, in its relation to the prior art, a valid claim, and that the court erred in finding that the devices of the defendants' machine infringed the third claim of said patent.

The third claim of said patent is as follows:

"The combination of the leverage break pin, G, hub, E, hub, F, fastening screw, g, main shaft, B, driving pulley, C, bevel gear wheel, H, I, and crusher shaft, K, substantially as and for the purposes described."

It is to be noticed that these claims are for combinations wherein a safety pin cuts the important figure, and that the safety pins mentioned in the Rusk patent are made of soft metal, in the Raymond patent of wood, and in the Gates patent is a so-called "long-leverage break pin of any suitable material." In regard to this last, the patentee says:

"I do not claim a safety break pin applied to the fly wheel of machinery, as this would not instantly stop the machine, neither do I claim a short break pin applied to the driving pulley of grinding and other machines; that is, a break pin with its entire body or length supported and requiring a sheering action to cut it in two. Neither do I claim, broadly, a break pin which is accessible without moving the wheels. Neither do I claim the loose collar specifically as my invention, but what I claim as my invention is * * * the combination of the leverage break pin, G," etc.

In Iron Works v. Fraser, supra, the court discusses the question of the application of safety pins to prevent the breaking or overstraining of machinery, and holds in regard thereto that "the use of safety pins for saving machinery from the strain of a sudden jar does not involve patentable invention." If this be the case, it is difficult to see how any one of the combinations in the three patents above referred to, in each of which the safety pin is the main figure, and is combined with old devices, can be valid, even if it be conceded that the appellants' machine contains the features of all. In this view of the case, it is not necessary to consider the seventh assignment of error, which is that the court erred in finding or holding that the single break pin device of the defendant's machine infringed three separate patents, to wit, Nos. 110,397, 237,320, and 272,233.

The eighth, ninth, and tenth assignments of error complain of the court's finding as to the first, third, and fourth claims under the Brown patent, No. 201,646. With regard to these assignments, it is substantially admitted that the decision of the supreme court in the case of Iron Works v. Fraser, supra, disposes of claims 3 and 4 under

said patent adversely to the appellee's claims as to infringement in this case, and the only contention made in regard to this patent at this time is that the first claim of said patent is valid, and that the appellants infringe in respect thereof. The appellants contend that the first claim of said patent, which is for "the combination of the gyrating spindle, B, B, and conical breaking head, C, C, with the exterior breaking surface, L, L, the sliding socket bearing, e, e, the eccentric bearing at the bottom of the spindle, B, $B^1$, and the adjusting screws, s, as substantially described," is not in the case, because there is no evidence with regard to the same in the appellee's main case, and none at all in the record, except the evidence of Melville E. Dayton, called in rebuttal; and, besides, that the appellants' machine, as shown by themselves and also by the appellee, does not have in it the spindle, B, $B^1$, unless the taper spindle is the full equivalent of the Brown spindle, which is of the ball and socket form, nor does it have a sliding bearing at the bottom end of the spindle or the adjusting screw. We agree with the appellants in both contentions.

The eleventh and twelfth assignments of error are to the effect that the court erred in sustaining the validity of the Gates patent, No. 243,545, and in holding that the appellants' machine infringed the third and fourth claims of said patent. The third and fourth claims are for combinations of various well-known parts of a stone or rock breaker, with a loose collar around the shaft and below the diaphragm, so as to protect the operating machinery from dust and small particles. In regard to this patent, which was involved in the case of Iron Works v. Fraser, supra, the supreme court held that the machine, as a whole, is a reproduction of the main features contained in the Brown and Rutter machines, although exhibiting some changes and improvements in details; and, further, that the claim in this patent of a novel application of a loose collar around the eccentrically gyrating shaft to prevent dirt getting into the bearing was anticipated in the Brown machine, as changed in 1878, by a circular washer or collar upon the top of the sleeve that surrounded the breaking head, which fitted around the shaft, the object being to keep the dust from the machinery below; and, further, that several of the features claimed in Gates' patent, including the loose, adjustable collar, were illustrated in the reformed Brown machines actually in public use more than two years before Gates applied for his patents. With regard to this two-years prior use of the important features contained in the third and fourth claims of the patent under consideration, it is admitted that the same proofs are before this court that were before the supreme court, and the main contention is that in regard to the matter the supreme court came to an incorrect conclusion as to the fact of full two years' prior use. An examination of the opinion of Iron Works v. Fraser, supra, shows that the conflicting evidence was fully considered by the supreme court, and we do not deem it necessary or profitable to re-examine the matter.

The thirteenth, fourteenth, and fifteenth assignments of error attack the finding of the court below in sustaining the validity of

Gates' patent No. 250,656, and in holding the second, third, and fourth claims of said patent were not anticipated by the prior art, and in holding that the defendants' machine infringed the second, third, and fourth claims of said patent. In Iron Works v. Fraser, supra, the supreme court, in considering this same patent, held as follows:

"The alleged invention in Gates' patent, No. 4, is for a combination of old features, to wit, a shaft, a bearing for the shaft, a hard-metal plate in the lower end of the shaft, an adjustable, sliding step block, and an oil step box. All the elements of this combination were shown to be present in the Brown machine, as made and sold more than two years before Gates applied for this patent, except the hard-metal plate at the end of the shaft. But the use of hard or steel wearing plates was shown to be old, and several letters patent, viz. C. M. Savoye, an English patent, 1831; T. Varney, No. 63,675, issued April 9, 1867; Palen & Avery, No. 111,239, issued January 24, 1871,—and several others, were put in evidence by the defendants, and exhibited the feature of a hard-metal wearing plate at the end of the working shaft."

Counsel for the appellee concedes that this language of the supreme court is sufficiently comprehensive to cover the points at issue, so far as this Gates patent is concerned; contending, however, that the supreme court overlooked the main features of this patent.

The sixteenth and seventeenth assignments of error relate to the finding of the court as to the validity of the Gates patent, No. 259,681, entitled, "Journal bearing for stone and ore crushers," and are to the effect that the court erred in finding that the patent disclosed a patentable subject-matter in respect to the first claim thereof, and in holding that the said first claim was not anticipated in and by the prior art. The record shows that the first claim of the patent, and the only one in controversy, is "for a gyrating crusher shaft, having the tapering journal, C, in combination with a journal bearing, whereby only a portion of said tapering journal stands parallel and in contact with the vertical surface of said bearing during the gyration of the shaft, substantially as described." The "whereby" part of the said claim, added for the purpose of specifically defining the claim and showing the operation of the journal in connection with the bearing, does not add anything to the claim, which must be taken and considered as for "a gyrating crusher shaft, having the tapering journal, C, in combination with a journal bearing." The file record of this patent shows that Gates, the patentee, originally made a claim "for a gyrating shaft with a tapering journal, C, substantially as and for the purpose described," and that this was rejected on an old patent to Walters, No. 24,268, May 31, 1859. After this rejection the application was amended several times, and resulted in erasure of all the original claims, and the insertion of a claim as above recited. In his original specification, Gates says: "The invention which I have made is a revolving, gyrating crusher shaft, C, having a journal, c, of taper form at its upper end; that is, shaped from its base, $c^1$, to its top, $c^2$, to correspond to a truncated cone, as shown." This claim of invention, which was for a certain shaft, was subsequently amended so as to be for a combination, and to read as follows: "The invention which I have made is the combination with a journal bearing, of suitable form, of a gyrating

crusher shaft," etc. From this it appears that not only was the original claim for the shaft itself abandoned, but the description of the invention was changed to that of a combination of a shaft to a suitable bearing box. The specification, as finally perfected, substantially shows that the patentee admits the machine to be an old one, for he says, "In the accompanying drawings, my invention is shown applied to a stone breaker in common use, * * *" and, after describing the several parts, continuing, says that they "are of ordinary construction, and operate in the usual manner, and require no further description. Any other form of combination and arrangement of these well-known parts may be adapted in connection with my invention, so long as the same produce a revolving, gyratory motion of the conical crusher head." In relation to these statements, counsel for the appellants well says:

"From the statements just quoted, it will also be apparent that anything brought from the same or other arts into these old machines is simply a matter of transference from one machine to another, and brings them within the doctrine of analogous use. Every shaft to which movement is to be imparted must necessarily have a bearing box. So that the combination of a shaft with its supporting or holding bearing box is old, and is to be found in every machine ever built which had a shaft in its structure. The combination claimed resolves itself down, therefore, simply to the words 'tapering journal combined with a suitable bearing box.' All bearing boxes are adapted to their shafts, so that, the form of either being given, that of the other necessarily follows: A shaft and its bearing or journal box are always inseparable companions, so that a claim for combining them is absurd on its face."

The claim under consideration being, as finally amended in the patent office, "for a combination," it would seem clear that we may hold that the devices entering into such combination are old, and common property. In The Corn-Planter Patent, 23 Wall. 181, 224, it is said:

"Where a patentee, after describing a machine, claims as his invention a certain combination of elements, or a certain device, or part of the machine, this is an implied declaration—as conclusive, so far as that patent is concerned, as if it were expressed—that the specific combination or thing claimed is the only part which the patentee regards as new. True, he or some other person may have a distinct patent for the portions not covered by this, but that will speak for itself. So far as the patent in question is concerned, the remaining parts are old, or common, and public." See Miller v. Brass Co., 104 U. S. 352.

An examination of the record as to the prior art shows, beyond implied admission, that all of the component parts of the combination claimed in the patent are old, and a reference to the Klinkerman patent of 1864, the Pearce patent of 1866, the Varney patent of 1867, and the Wheeler patent of 1868, all found in the record, is all that is necessary to determine the fact. Our examination of the record in this case does not convince us that by the combination claimed in the patent any decidedly new and useful results are attained. It is probable, however, that a gyrating crusher shaft, having a tapering journal in combination with a suitable journal bearing, as compared with a gyrating crusher shaft having a ball and socket bearing, will save expense, and, to some extent, give better results; but it still appears to be a change only in form, the substitution of equivalents doing the same thing in the same way by substantially the same means. According to Smith v. Nichols, 21 Wall.

119, such improvement is not such invention as will sustain a patent.

The eighteenth, nineteenth, and twentieth assignments of error complain that the court below found that the Gates patent, No. 265,957, was not void upon its face, that it disclosed a patentable subject-matter, that the second claim of said patent was not anticipated in and by the prior art, and that the defendants' machine infringed the second claim of said patent. In his application, which is for a patent on a new and useful improvement on stone breakers and crushers, Mr. Gates says:

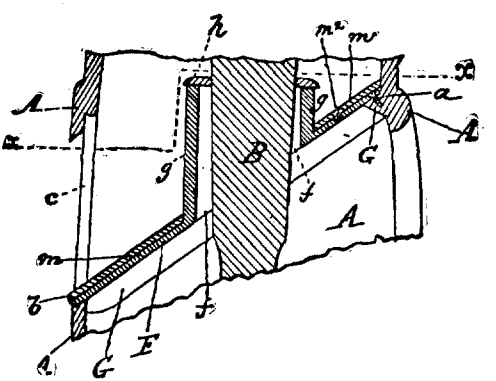
"My invention relates—First, to an improved, removable, inclined diaphragm chute, applied transversely in the outer framing or case of the crusher at a point between the crusher head and its concave, and the gearing and step box of the gyrating shaft carrying the crusher head; second, to a means whereby the diaphragm chute may be constructed partly of common cast iron, and partly of hard, white or chilled iron, or steel, and thus a durable wearing surface be secured at moderate cost; this part of my improvement being applicable to the diaphragm chute, whether it is made separate from the outer framing or case, or is cast integral with said framing or case of the machine. In the P. W. Gates patented stone breakers or crushers, as heretofore constructed, it has been found inconvenient, in some instances, to grind off the bearing upon which the loose dust-excluding collar rests, on account of the inclined diaphragm chute being formed by casting it integral with the cylindrical case or framing of the machine; and it has also been found that the diaphragm chute wears away on its upper side to such an extent as to render renewal thereof necessary, or, what is more expensive, to substitute a new casting, with chute in it, for the one with wornout diaphragm. To overcome these difficulties is the object of my invention, and I effect the same by the means shown in the accompanying drawings."

Further on in the specifications we find this statement:

"To render the diaphragm chute durable, and its entire removal unnecessary, except when breakage occurs, I, in some cases, construct the diaphragm proper, F, with a removable hard or chilled metal or steel upper surface portion, m, which corresponds in form with the diaphragm chute proper, except that a flange, g, on this portion, m, may be omitted around the passage through which the shaft, B, passes."

To explain these quotations, Fig. 1 accompanying the application is here given:

Fig. 1.



The second claim of the patent is as follows:

"The inclined diaphragm chute, formed of a base portion, F, and a removable wearing portion, m, substantially as and for the purpose described."

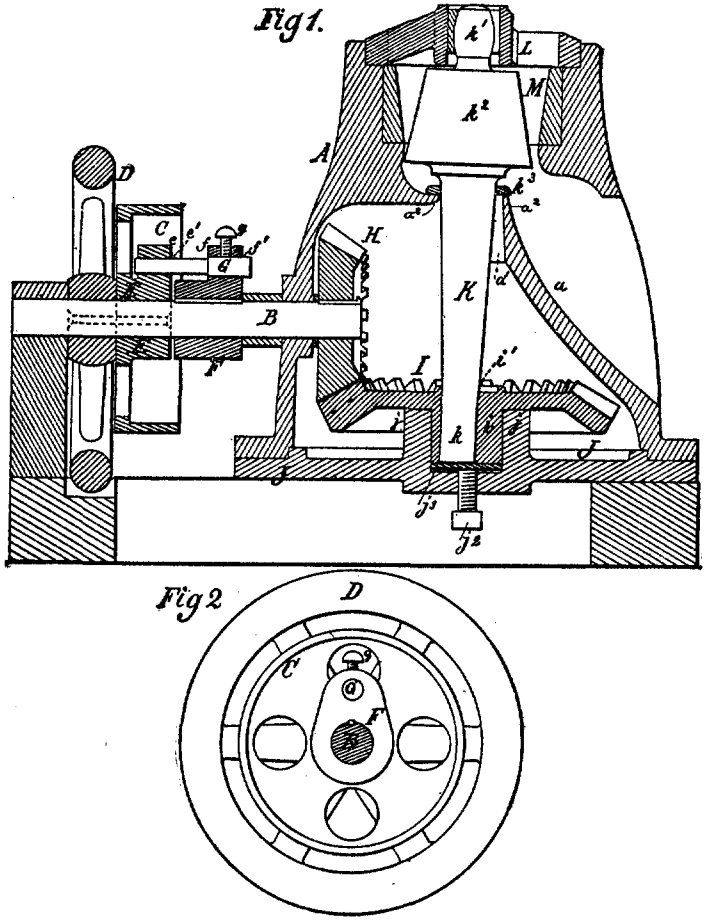
Counsel for the appellants contends with great force that the patent is not only void for uncertainty, but also because, according to the specifications, the claimed invention of a removable wearing portion or lining, which gives what life the patent may have, may or may not be applied, according to the judgment of either maker or user. We do not find it necessary to consider these phases of the case, because we find the patent void for want of novelty. As we understand the specifications and claims, the patent is intended to cover the casting of the inclined diaphragm chute separate from the case of the machine, and to give the inclined diaphragm chute a removable covering or lining to secure durability in that part of the machine. It certainly cannot be novel, so far as a machine made of iron is concerned, to cast it in two parts, and coverings or linings to preserve the wearing of machines are as old as any application of skill for the protection of machinery; and certainly the alleged inventor cannot take anything for a supposed discovery for casting the wearing portion of a machine out of hard or chilled iron, as against a previous composition for the same parts of soft iron.

In dealing with the fifth and sixth assignments of error, we considered the Gates patent, No. 272,233, in relation to the third claim thereof, for a combination of a leverage break pin with other parts of a stone-breaking machine; and we now have to consider the twenty-first and twenty-second assignments of error, which complain of the finding of the circuit court in respect to the validity and infringement of the first and second claims of said patent No. 272,233. An inspection of the file wrapper and contents of this patent will be instructive to the amateur inventor, for it will show that the applicant for this patent started in the patent office with a description of a coupling pin in connection with a shaft and driving wheel of a stone crusher, and a short description of a dust collar,—the invention of which he disclaimed,—and claiming only the combination of a coupling pin with the shaft and a wheel loose upon said shaft. He eventually obtained, after many amendments and references,—several at the suggestion of the patent officials,—a full-fledged patent for combinations, in various ways, of nearly all the well-known parts of a stone-crushing machine. The first and second claims of this patent, as perfected, are:

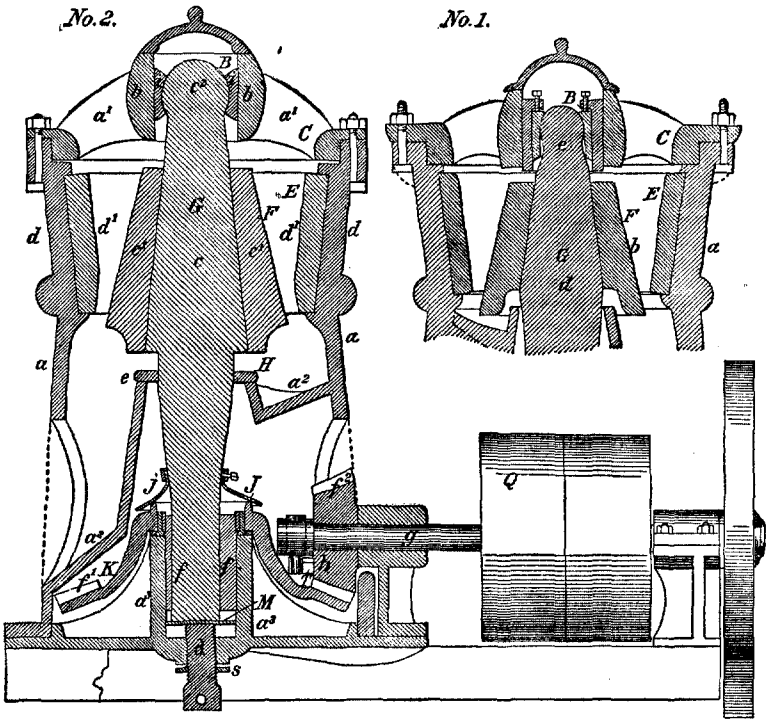
"(1) The combination with the concave, M, the crusher head, $k^2$, the crusher shaft, K, and suitable mechanism for operating the crusher shaft, of the outer frame or shell, A, having an inclined discharging and shielding chute, a, forming a bearing below the crusher head, and the loose, dust-excluding collar, $k^3$, substantially as described.

"(2) The combination of the outer frame, provided with a base plate having an oil step box, with the bevel wheel, I, having an eccentric bearing suspended within the step box, said bevel wheel being on top of the step box, the step block, adjusting screw, the gyrating shaft passed through the eccentric bearing and resting on the step block, the crusher head, concave, and inclined diaphragm and shielding chute, substantially as and for the purpose described."

The following is the diagram accompanying the patent:




In Iron Works v. Fraser, supra, the supreme court considers the integrity of the Brown and Scoville unpatented machines, hereinbefore referred to, and finds them to be older than the inventions set forth in any of the Gates patents. The testimony concerning these machines is the same here as it was before the supreme court. The claims above quoted, under the present patent, appear to be substantially shown and described in the earlier Gates patent, No. 243,545. We are of opinion that everything valuable found in the two above-quoted claims under patent 272,233 are found either in the Brown and Scoville machines, or in the specifications of Gates' patent, No. 243,545.




The foregoing attached cut is a reproduction of the machine shown in the Brown drawing No. 2, and of the upper end of the machine shown in the Brown drawing No. 1. The black letters [capitals in the above cut] are mainly from the Gates patent, No. 243,545; the red letters [small letters in above cut] on No. 2 are copied from the Gates patent, No. 272,233, and on No. 1 they are copied from the Gates patent, No. 259,681. All the parts and construction in these drawings unquestionably relate to the prior art.

In Miller v. Manufacturing Co., 151 U. S. 186, 14 Sup. Ct. 310, where it is held that no patent can issue for an invention actually covered by a former patent, especially to the same patentee, although the terms of the claims may differ, Mr. Justice Jackson, after reviewing the authorities, says:

"The result of the foregoing and other authorities is that no patent can issue for an invention actually covered by a former patent, especially to the same patentee, although the terms of the claims may differ; that the second patent, although containing a broader claim, more generical in its character than the specific claims contained in the prior patent, is also void; but that where the second patent covers matter described in the prior patent, essentially distinct and separate from the invention covered thereby and claims made thereunder, its validity may be sustained. In the last class of cases it must distinctly appear that the invention covered by the later patent was a separate invention, distinctly different and independent from that covered by the first patent; in other words, it must be something substantially different from that comprehended in the first patent. It must consist in something more than a mere distinction

of the breadth or scope of the claims of each patent. If the case comes within the first or second of the above classes, the second patent is absolutely void."

Under this decision the contention of the appellee that the patent No. 272,233 is an older patent than No. 243,545, because it has a prior file date, is untenable; but, even if this was not ordinarily the case, an examination of the file wrapper and contents shows that although the original application for the patent was filed on February 17, 1879, it was not until October, 1882, that the applicant attempted to make claims and specifications covering the parts now covered by the first and second claims of the patent, and it was only then that the applicant gave specifications describing a base plate and step box which are the particular parts in regard to which appellee's counsel undertakes to differentiate the first claim of the patent from the Brown machine. Counsel for appellee contends that claim 1 of the patent under consideration is virtually for the loose, dust-excluding collar. He says "that the Brown patent, No. 201,646, has no cap or loose collar around the crushing cone on the uprising tube of the diaphragm which surrounds the gyrating shaft." In view of the fact that in the first application for the patent under consideration the applicant disclaimed the invention of this loose, dust-excluding collar, the contention of counsel does not appear to merit serious consideration.

This disposes of all the specific assignments of error. The others need not be considered.

Counsel for appellee concludes his very ingenious and elaborate brief as follows:

"The stone-breaking machine known as the 'Gates Stone Breaker' was the first stone breaker of this gyratory type that was ever made, and worked as a successful, valuable machine. The first patent showing a machine of this type was the Pearce patent, a copy of which is on page 238, vol. 2, printed record. This patent the Gates Iron Works purchased, and still owns. In this machine the crushing arbor or shaft gyrated at the top, instead of at the bottom; the driving wheel that drove it was located at the top; the lower end of the shaft was supported in a step in a crossbar held up by rods. The next patent in the art showing a machine of this character of construction was the Rutter patent, shown on page 266, vol. 2, printed record. The crushing shaft in that patent was suspended from the top by a ball, E, while the lower end of the shaft passed into an eccentric box in the gear wheel, the gear wheel being below the bottom plate of the machine. The crusher shaft was rigidly fixed in the gear wheel, and the machine simply ground and rubbed the stone, instead of crushing it. * * * The next patent in the order of the development was the Brown patent involved in this suit. That was really the first stone-breaker machine of this type in which the arbor of the crushing cone was gyrated at its lower end, and would break the stone by impingement, without rubbing or grinding the stone. The machine was in the shape of the Brown patent when Mr. P. W. Gates, who had had a lifelong experience in the manufacture of other kinds of stone crushers, as well as general machinery, took hold of this machine. It was not in practical shape at that time. Brown had put into the machine the important feature of a diaphragm, and certain bearing boxes and adjusting screws. All the witnesses agree that these machines were not a success. Gates improved this machine, overcoming one objection after another, investing upwards of $40,000 in making his improvements before he succeeded in getting a thoroughly practical machine. His various improvements resulted in making this machine one of the most valuable machines made in the country. They have gone into use throughout the world, wherever there is stone to be broken or quartz to be crushed. It is certain that, had it not been for Mr. Gates' persistency, this machine would never have become a success. What he did to the machine in making the improvements is delineated in his patents above discussed. Whatever merit the machine possesses as a practical

operating machine was added to it by Gates, excepting the diaphragm feature in the Brown patent. Some of the Gates improvements may be on the border line between the skill of a mechanic and the ingenuity of an inventor; but, when considered in connection with his complete line of improvements, from the time that he took hold of the machine until it was a great success, there are certainly displayed marked and important changes in the machine, which could have been produced only by a superior quality of inventive ingenuity."

Our examination of the record leads us to substantially agree with all of this, except the last sentence, in its entirety. The gyrating crushing shaft and the inclined diaphragm chute were inventions in the construction of a successful stone-crushing machine. All the other improvements, in our judgment, were within the domain of skill. As Gates was not the pioneer inventor of either the gyrating crusher shaft or the inclined diaphragm chute, he can take nothing by his claimed invention of details, although, through his pertinacity, diligence, money, and skill, the stone-breaking machine has been made a success. In Atlantic Works v. Brady, 107 U. S. 199, 2 Sup. Ct. 231, it is said:

"The process of development in manufactures creates a constant demand for new appliances, which the skill of ordinary head workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the next, and each is usually taken by spontaneous trials and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention somewhat above ordinary mechanical or engineering skill is distinctly shown, is unjust in principle, and injurious in its consequences. The design of the patent laws is to reward those who make some such substantial discovery or invention which adds to our knowledge, and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It was never the object of those laws to grant a monopoly of every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privilege tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers, who make it their business to watch the advancing wave of improvement, and gather its foam, in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens, and unknown liabilities to lawsuits, and vexatious accountings for profits made in good faith."

The decree appealed from is reversed, and the cause remanded, with instructions to dismiss the bill.

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## THOMSON-HOUSTON ELECTRIC CO. v. JOHNSON CO. et al.

(Circuit Court, W. D. Pennsylvania. January 14, 1897.)

PATENTS—PRELIMINARY INJUNCTION—TRAVELING CONTACTS FOR ELECTRIC RAILWAYS.

The Van Depoele patent, No. 495,443, for improvements in traveling contacts for electric railways, sustained, and preliminary injunction granted, on the strength of prior adjudications.

This was a suit in equity by the Thomson-Houston Electric Company against the Johnson Company and others for alleged infringement of a patent for traveling contacts for electric railways. The cause was heard on a motion for a preliminary injunction.