

v.40F, no.8-30                      FALLS RIVET CO. *ET AL.* V. WOLFE *ET AL.*  
*Circuit Court, W. D. Pennsylvania.*

November 12, 1889.

1. PATENTS FOR INVENTIONS—FRICTION CLUTCHES—INFRINGEMENT.

Letters patent No. 308,872, for an improvement in friction clutches, granted to William D. Brock on December 9, 1884, construed, and *held* not to be infringed by friction clutches manufactured under and in accordance with letters patent No. 312,122, granted to Harry W. Hill on February 10, 1885.

2. SAME—CONSTRUCTION OF CLAIM.

Brock's first claim, as originally filed, was for the combination, with a shaft, and a loose pulley adapted to run freely on said shaft, of a clutch rigidly secured to said shaft, having two inversely moving radial jaws, adapted to engage, one upon the periphery, and one against the interior, of the pulley flange, said jaws being connected, by suitable mechanism, with a laterally moving sleeve and shifting lever, whereby they may be simultaneously opened and closed as said lever is moved towards the right and left;" but, the examiner having ruled that the words "suitable mechanism" rendered the claim "vague and indefinite," Brock struck them out, and substituted therefore "lever J, link, I, and lever, f." *Held*, that the constituents thus introduced into the claim are material; that the claim should be construed strictly against the patentee, and in favor of the public and that a mechanical connection between the clutch jaws and the shifting lever is an essential part of the combination.

3. SAME.

Brock and Hill were contemporary independent improvers of an old mechanism, the subject of many prior patents, and perfected by progressive steps, and each is entitled only to his own specific form of device.

In Equity.

*Livingston Gifford*, for complainants.

*Watson & Thurston and George H. Christy*, for respondents.

Before McKennan and Acheson, JJ.

ACHESON, J. This suit is brought for the infringement of letters patent No. 308,872, for an improvement in friction clutches granted to William D. Brock on December 9, 1884, upon an application filed April 18, 1884. The plaintiffs are the Falls Rivet Company, assignee, under certain reservations, of the patent, and Brock, the patentee. The defendants

are selling agents of the Hill Clutch-Works, of which Harry W. Hill is the proprietor, and this alleged infringing clutches are manufactured at those works under letters patent No. 312,122, granted to said Hill on February 10, 1885, an application filed October 6, 1884. Both these patents relate to a well-known and extensively used class of devices, which are intended to produce frictional engagement, and thus to establish at pleasure a common state of motion between a pulley mounted on a rotatable shaft and another member of the mechanism also mounted thereon, one of the two being fast upon the shaft, and the other loose upon it. The proofs show that, for many years before Brock's application for a patent, friction clutches in a great diversity of forms were in common use, and that a very large number, probably more than 300, patents on such devices had been granted in the United States. Many of those patents are in evidence here. They disclose mechanisms greatly differing in details, consisting in levers, links, wedges, etc., to bring into operation the friction blocks or jaws through the longitudinal movements of a sliding sleeve on the shaft; and they also exhibit considerable variety in the form and mode of operation of the friction blocks or jaws, and in the arrangement of the frictional surfaces which are to be engaged. Some of the patents show flanges at right angles to the shaft, and clutch-jaws arranged to bear against the opposite sides of such a flange with a vise-like grip. In others the friction blocks or jaws are thrust radially outward against the inner surface of a cylindrical flange. Thus Brown's patent of 1864 shows such an inner radially moving jaw, seated by means of a dove-tailed tongue and groove on a fixed radial arm. Others of these patents show a jaw on the outside, and another on the inside, of the cylindrical pulley flange, and so actuated by suitable mechanism as to be brought, respectively, into engagement with the convex and concave sides of the flange, or to be released therefrom. The Margedant patent of 1875 shows a rocking plate, centrally pivoted to a bracket, and carrying two brake-jaws, arranged so as to bear, one on the inside and the other on the outside, of the rim of a driving pulley. After describing the mechanism, the patent states:

"It will be understood by this that whenever the brake-jaw, F", presses on the inside of the rim of the driving pulley, the brake-jaw, F', presses with the same force on the outside of the rim of the driving pulley. "

The Havens patent of 1879 shows a rocking lever, to which, on opposite sides of its pivot, two friction jaws are connected, and so adapted as to bear, one on the outer, and the other on the inner, face of a Cylindrical pulley flange; and the rocking lever is so mechanically connected with a sliding sleeve on the shaft that by the movements of the latter the two jaws are forced, respectively, inwardly and outwardly, to grip the interposed flange, or in opposite directions to release it. Here the jaws do not have" a vise-like action, for, when gripping the flange, their bearing faces are not directly opposite to each other unless it be at the edges of their inner ends. The Dawson patent, issued on May 27, 1884, upon an application filed. December 21, 1883, shows two inversely moving jaws,

having, respectively convex and concave bearing surfaces, engaging on directly opposite sides of the cylindrical flange with a vise-like grip. But here there is no rocker or other device connecting the two jaws, by means of which the force moving one jaw could be transmitted to the other jaw, and promote its movement in the opposite direction.

Such, in brief was the state of the art when William D. Brock devised his friction clutch. His patent shows two inversely and radially moving jaws, lettered, respectively, L and K, connected with each other by a rocking lever, J, one Of the jaws being adapted to bear upon the outer face of the cylindrical pulley flange, and the Other to bear upon its inner face, and together exerting a vise-like action. The shanks of the jaws are supported on opposite sides of a fixed arm, G, projecting radially from a hub or sleeve, H, which is fast to the shaft. The sliding shanks of the jaws are pivotally connected with the rocking lever, and they are held against the opposite sides of the fixed arm, G, by bolts, M, M; but the patent states that dove-tailed tongue and grooved ways may be Substituted. The movement of the jaws is effected by the vibration of the rocking lever, J, which is pivoted to the fixed arm, G, between the Oppositely arranged sliding shanks of the jaws. The rocking lever is provided with circular enlargements, O and P, which operate in slots in the shanks of the jaws, and, by bearing against the ends of these slots, throw the jaws towards each other or apart as the rocking lever oscillates on its pivot. The rocking lever is provided with a lateral extension, the extremity of which is connected by a link, I, and by what is called the "adjustable lever, F," to a collar or sleeve, E, adapted to slide longitudinally on the shaft, and which is moved back and forth by an attached shifting lever, S, of ordinary construction. I is a freely swinging link, pivoted at one end to the rocking lever, J, and at the other end to the so-called lever, F," which latter, when in action, is a rigid attachment to the sliding sleeve, moving with it as if it were an integral part. The "lever, F," is rigidly held and adjusted at any desired angle to the sleeve, E, by a "screw, b, and nuts, d, d." When it is desired to communicate motion from the revolving pulley to the Shaft, the shifting lever, S, is moved to the right, and thereby motion is communicated from the sleeve, E, though the "lever, F," and link, I, to the rocking lever, J, whereby its long arm is thrown upward and its short arm downward, thereby moving the jaw, K, outward, while the jaw, L, is drawn inward, and the pulley flange is thus firmly grasped between them. To stop the motion of the shaft, the shifting lever, S, is moved towards the left, "where by [says the specification] all the connecting mechanism between said lever, S, and said jaws is inversely moved, and said jaws are opened, as shown in Fig. 2, thus relieving the pulley from the grasp of said jaws."

The patent has three claims. The first claim is as follows:

"(1) The combination, with a shaft, and loose pulley adapted to run freely on said shaft, of a clutch rigidly secured to said shaft, having two inversely moving radial jaws, adapted

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to engage, one upon the periphery, and one against the interior, of the pulley flange, said jaws being connected by lever, J, link,

I, and lever, F, with a laterally moving sleeve and shifting lever, whereby they may be simultaneously opened and closed as said lever is moved towards the right and left, substantially as set forth.”

The other claims need not be quoted at length. Each includes specifically every element which enters into the clutch mechanism, and the second claim is further limited by calling for the bolts, M, M, and the circular enlargements, O and P, while the third claim calls for the screw, *b*, and adjusting nuts, *d*, *d*.

In the Hill friction clutch, as described in his patent, and as manufactured by him and sold by the defendants, are to be found two inversely moving radial jaws, adapted to engage, one on the periphery, and the other against the interior, of a cylindrical pulley flange, the two jaws being coupled by a rocking lever, pivoted to a fixed radial arm, and their engagement with the flange being with a vise-like grip. Hill's rocking lever, however, does not have circular enlargements and corresponding slots in which to operate, but has two pivot pins, which respectively engage with the shanks of the jaws nor has his rocking lever any lateral extension in the line of the shaft, but a long arm, directed inwardly towards the shaft. Neither is it connected by any mechanism with the sliding sleeve. His operating mechanism is this: A link connects the sliding sleeve with the adjacent arm of a bell-crank lever, which is interposed between the link and the inwardly directed long arm of the rocking lever. In the forward end of the bell-crank lever there is a set-screw, adapted to bear against the pendent arm of the rocking lever, so as to push it inwardly to close the jaws. But the bell-crank lever is not coupled with, nor does it bear any pulling relation to, the rocking lever; and therefore when the sliding sleeve is retracted it merely takes the set-screw out of the way of the rocking lever, and the opening of the jaws is accomplished by other means. To this end, Hill's clutch is provided with a coiled spring, arranged so as to force the clutch jaws open as soon as the shifting lever moves back the sliding sleeve. Hill's specification states that the, spring may be omitted, as the greater centrifugal force to which the outer jaw is subjected, and which tends to throw it away from the flange, is transmitted by means of the rocking lever to the inner jaw, so as to move it inwardly, and that the release of both jaws from engagement with the flange may thus be effected without other agency. But in practice the employment of the spring has been found to be indispensable, and the jaws: are open by its action, the centrifugal force co-operating to effect their release from the flange. In this connection it is worthy of remark that Brock's specification makes no reference whatever to centrifugal force, although it is now claimed by the plaintiffs that the centrifugal counterbalancing of the Dutch jaws is a most valuable and distinguishing characteristic of his invention

In disposing of the case, the first question to be considered is what, if any, patentable novelty exists in Brock's construction. That all the elements he employs were old is not to

be doubted. The plaintiffs assert that the gist of his invention is expressed substantially in the first six lines of his first claim, viz.:

“The combination, with a shaft, and a loose pulley adapted to run freely on said of a clutch rigidly secured to said shaft, having two inversely moving radial jaws, adapted to engage, one upon the periphery, and one against the interior, of the pulley flange.

The alleged new results are—*First*, a vise-like grip of the cylindrical pulley flange; and, *secondly*, a centrifugal counterbalancing of the jaws, promoting their easy release from the flange when the shifting lever is employed for that purpose. But it was old, as Brown’s patent shows, to seat an inner friction jaw against a fixed radial arm; and certainly Brock was not the first to employ an outer jaw in conjunction with an inner one for frictional engagement with the cylindrical pulley flange. Nor was the vise-like grip in itself novel. That feature is to be seen in Dawson’s patent. Neither was it new to couple an inner and an outer friction jaw by a rocking lever, so as to bring the two jaws simultaneously into engagement, one with the inside face, and the other with the outside face, of a cylindrical pulley flange. This arrangement of the jaws and mode of action are to be found in the Havens friction clutch. True, there the jaws do not press exactly against opposite sides of the same part of the flange, but otherwise there is a substantial agreement between the Havens clutch and the Brock clutch, as regards the matter under consideration. They both act upon the same principle and in each the friction jaws so move as to bear against the opposite faces of an interposed cylindrical flange. Furthermore, it is obvious from the very nature of the construction that in the Havens clutch the excessive centrifugal force of the outer jaw operates through the rocker upon the inner jaw in the same way as it does in the Brock clutch, thereby contributing to the release of the jaws from their engagement with the flange. The plaintiffs’ expert admits that to some extent this is the case. It seems to us, then, that the only new thing which Brock here did was to seat the stems or shanks of the two jaws—the outer one as well as the inner one—against radial arm, so that both jaws should move radially in the same line, and thus engage the cylindrical flange with a vise-like grasp. Certainly this was no great advance upon what others had already achieved. And just here it is well to note the facts connected with the origin of the rival friction clutches involved in this suit. Brock completed his clutch in the spring of 1884, and Hill completed his clutch in the month of August of the same year. The former resided in Wisconsin; the” latter in Alabama. They were contemporary independent improvers, each ignorant of what the other was doing. Yet each arranged the two frictions, jaws so that their shanks should slide on opposite sides of the same radial, arm, and the jaws press against the opposite faces of the cylindrical flange with a vise-like action. The coincidence deepens the impression produced by a contemplation of the prior state of the art, that this arrangement of the parts required nothing but the exercise of ordinary mechanical skill.

But if it be conceded that the subject-matter of Brock's improvement is what the plaintiffs allege, and that it really involved invention, still, in our judgment, he has imposed such limitations upon his claims that



the charge of infringement here made is not sustainable. Immediately following the above question from the first claim are the words:

“Said jaws being connected by lever, J, link, and lever, F, with a laterally moving sleeve and shifting lever, whereby they may be simultaneously opened and closed said lever is moved towards the right and left.”

Now, by every sound rule of construction, some positive effect must be given to this language. The constituents here named are as much part of the combination as the inversely moving radial jaws themselves; and when we look into the body of the specification we find that they are essential to the described operation. The only method therein set forth for opening the jaws is by means of the shifting lever, S, and the described mechanism connecting it with the rocking lever; and no other agency to accomplish that result, or to aid in accomplishing it, is hinted at. We think, then, that it is an unavoidable conclusion that a mechanical connection between the clutch-jaws and the shifting lever is a material part of the combination. *Snow v. Railway Co.*, 121 U. S. 617, 7 Sup. Ct. Rep. 1843; *McCormick v. Graham*, 129 U. S. 1, 9 Sup. Ct. Rep. 213. but Hill's clutch does not have such a Connection, and, as we have already seen, the opening of the jaws in his machine is not effected by the shifting lever, but by distinctly different means. And here it is not to be overlooked that in the first claim, as originally filed, the language employed was, “Said jaws being connected by suitable mechanism with a laterally moving sleeve,” etc. and that, the examiner having ruled that the words “suitable mechanism” rendered the claim “vague and indefinite,” Brock struck them out, substituting “lever, J, link, I, and lever, F.” Now, this action requires that the claim shall be construed strictly against the patentee, and in favor of the public. *Fay v. Cordesman*, 109 U. S. 408, 420, 3 Sup. Ct. Rep. 236; *Sargent v. Lock Co.*, 114 U. S. 63, 5 Sup. Ct. Rep. 1021.

Finally, it is very clear that Brock's invention is not one of a primary character.” He was a mere improver of an old device. This field of invention had been thoroughly worked over before Brock entered it. At the most he took but a single step forward. Treating him; then, as an inventor, the case, we think, fairly comes within the principle stated in *Railway Co. v. Sayles*, 97 U. S. 554; 656, 657; “but if the advance towards the thing desired is gradual, and proceeds step by step, so that no one can claim the complete whole, then each is entitled only to the specific form of device which he produces, and every other inventor is entitled to his own specific form, so long as it differs from those of his competitors, and does not include theirs.”

Let a decree be drawn dismissing the bill of complaint, with costs.