

GREENE *ET AL.* V. WOODHOUSE *ET AL.*

*Circuit Court, S. D. New York.*

December 12, 1889.

PATENTS FOR INTRUSIONS—INFRINGEMENT—BELT-FASTENERS.

Claim 2 of letters patent No. 282,258, issued July 3, 1883, to Henry Bloke, is for "a belt stud having cross-heads and a bar or shank flattened approximately at right angles to said heads and bent near its end, so that said heads lie flat upon the belt." This device was meant to be an improvement over the G. W. Blake stud, covered by letters patent No. 31,856, which was simply punched out of sheet metal, and the actual improvement consisted (1) in a stronger shank, the strength being imparted by swaging, or by flattening and compressing in some way; and (2) in a shank curved at the ends. *Held that* the claim was not infringed by a stud which was made by punching alone, and which has received no other flattening than such as is naturally produced by the punching process.

In Equity.

*Benj. F. Lee* and *W. H. L. Lee*, for complainants.

*Antonio Knauth* and *Arthur von Briesen*, for defendants.

SHIPMAN, J. This is a bill in equity, based upon the alleged infringement of the second claim of letters patent No. 282,258, dated July 3, 1883, to Henry Blake, for a belt-fastener, for fastening together the meeting ends of leather belting. The state of the art at the date of the invention was as follows: The belt-fastener commonly in use was patented to G. W. Blake, by letters patent No. 31,859, and consisted of a straight bar, terminating at each end in a cross-piece at right angles to the shank. When the meeting ends of the belt were brought together, back to back, the fastener was inserted through a slit in each belt, and the cross-pieces were turned at right angles to the slits. The belt was then flattened out and the fastener was necessarily bent into a V shape. One of the defects of this fastener was that the heads of the cross-pieces caught and injured the hands of the workmen, when they had occasion to shift the belt. The D. M. Weston patent, No. 76,861, endeavored to remedy this defect by rounding off or beveling the head, which was also swaged so as to harden it; the straight shank being left malleable. The Henry Blake fastener was designed to obviate the disadvantage of the G. W. Blake stud, and is thus described in the specification of the patent:

"The Weakness of the old stud is found to be in the shank or bar, which is liable to be strained in the bending incident to applying the stud to a belt. In the Improved stud, this weakness is removed by swaging the bar or shank. This may be done on two or on all four sides of the bar or shank; and the result is to toughen or harden the metal, and to flatten the bar or shank, preferably, in a plane at right angles to the heads. This shape is preferred because it brings the thickness of the bar or shank in the direction of the bend given to it in applying the stud to a belt; and, moreover, the flattening of the shank occasions a less displacement of the leather of the belt, thereby avoiding weakening

thereof at the joint. Heretofore, the studs being bent after their application to the belt, and the heads being in the same plane with the bar or shank, the said heads project their full length above the surface of the belt, often occasioning their breakage, or checking the running of the pulleys, should they strike any fixed object, and sometimes injuring the workmen when, as is not uncommon, the belt is shifted by hand. In the improved stud the shank or

bar is slightly curved downward in the course of manufacture, when the bending can be done with much less liability to straining the metal than when it is performed after being placed in the belt; and the heads of the stud are bent downward, so that their under surface will lie flat upon the belt, instead of projecting above it, and a smooth and even joint be made. The studs, comprising a bar, *a*, and heads, *b*, having been formed by stamping or cutting from a sheet of metal, or otherwise, the bar or shank is hardened or stiffened by swaging; giving to said bar or shank the final shape shown in Fig. 1, or that shown in Fig. 2. As has been said, the former shape is deemed preferable, because not only does the bar possess the additional strength imparted by swaging, but, with the same weight of metal, the thickness of the stud is brought in the direction necessary to resist the strain of bending. In addition to this, by reason of the narrowness of the shank or bar, there is less strain upon the leather of the belt. Instead of, as heretofore, having the heads in the same line with the bar or shank, the latter is curved downward in the middle, and also bent slightly at the ends, (see Fig. 3,) so as to bring the under surface of the heads about in line with the top of the bar. The object is to make a smoother joint, by causing the heads to lie flat upon the belt as shown in Fig. 4. The previous bending of the stud to approximately the shape it will have when in use is very advantageous, because it can be done gradually, and with equal pressure upon all parts by means of die, and with much less liability of straining the metal. The article, when completed, possesses greater strength and durability than the old studs, and makes a joint with little or no unevenness, and no projecting edges.”

The claims are as follows:

“(1) A belt stud having T heads and a bar or shank flattened approximately at right angles to said heads; said bar or shank being compressed by swaging, substantially as described. (2) A belt stud having cross-heads and a bar or shank flattened approximately at right angles to said heads, and bent near its end, so that said heads lie flat upon the belt, substantially as described.”

In Henry Blake’s original application for a patent, he asked for the following claims:

“(1) A belt stud of the character described, having the bar or shank swaged, substantially as described. (2) A belt stud of the character described, having a flat shank or bar swaged so as to flatten it in a plane at right angles to the heads of the stud, substantially as described. (3) A belt stud having the bar swaged, and the ends bent so that the heads of the stud will lie flat upon the belt, substantially as described.”

The descriptive part of the specification contained in his application differed from that portion as allowed, principally, in saying that the results of the swaging was to “flatten the bar or shank either in the same plane with the heads or in a plane at right angles thereto,” while in the patent it is said that the shank is flattened, “preferably, in a plane at right angles to the heads.” The primary examiner rejected the claims because he said that “the

only novelty in the case consists in a fastener with the body or shank in a vertical plane, and the T heads in a horizontal plane, or, in other words, having the heads and body at right angles with each other." Thereupon, and as the result of an oral interview between the examiner and the applicant's counsel, the application was amended by inserting the two claims which now appear in the patent in place of the claims which were originally applied for. The G, W, Blake

fastener was punched out of a sheet of brass, without additional swaging. The Henry Blake fasteners were punched, and then swaged between two opposing surfaces. The defendants' fasteners are made by punching alone, the brass being forced by the blow of the punch through the central curved aperture of the die, the aperture being of the same shape as the curved or bent fastener. The defendants' and the complainants' fasteners have substantially the same bent or curved shape in the shank, and the same bend towards the ends.

The only question in the case is whether the defendants' fasteners are flattened at right angles to the heads, in the sense in which that expression is used in the patent. I shall assume that, if there is any flattening in the defendants' shanks, it may fairly be considered to be at right angles to the heads, because, whatever flattening exists was produced by the metals being driven through a curved die, and the flattening is at the sides as well as at the top and bottom; and I do not now deem it necessary to inquire whether the flattening must be only in a vertical plane. It is contended by the learned expert for the complaint that the shanks of the defendants' fasteners have a "fish-bellied" shape at the center of the shank; that they are stronger; and that careful measurements show that they are thicker at the center than at the ends. Such measurements do show that the shanks are somewhat thicker at the center than at the angles at each end, where the cross-heads join the shank; and, although I have been in some doubt whether the thickening at the center was produced by a flattening process, or whether the thinness of the ends was produced by the operation of bending, I coincide with the belief or explanation of the expert that the thickness at the center was caused by flattening, because the natural effect of driving the metal through the die is to compress it. This conclusion is not, however, decisive of the case, because, in my opinion, the patent intended to describe the fastener which was flattened, not simply as an incident to the punching, which would be, so far as the flattening was concerned, the G. W. Blake stud, but was flattened by some positive means in addition to that which was used in the punching process. The G. W. Blake fastener was simply driven by a punch through the die, and had all the compression and flattening on either side which could be derived from that operation; and, undoubtedly, the tendency of the punch is to flatten and squeeze all sides of the metal as it is forced through the die. The actual improvement in the Henry Blake stud consisted—*First*, in a stronger shank, the strength being imparted by swaging, or by flattening and compressing it in some way; and, *second*, in a shank curved at the ends, so that the heads would lie flat upon the belt. To obtain the improved strength the fasteners, after having been punched out, were swaged. The weakness was obviated by an additional swaging operation. It cannot be successfully claimed that the defendants' studs, which are made by punching alone, and which can have received no other flattening than such as is naturally produced by the

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punching process, are the flattened fasteners of the Henry Blake patent, which declared it self to be an improvement upon its predecessor mainly because additional strength was

imparted to the shank by toughening and hardening it after it had been punched out. The second claim of the patent permits this additional strength to be imparted by flattening, rather than by swaging; but it cannot be that the proper interpretation of the patent includes a punched stud, not otherwise flattened, which has been curved by the use of a curved die. The bill is dismissed.