METHOD OF FORMING STEEL BACKS FOR BRAKE-SHOES.

To all whom it may concern:

Be it known that I, Harry Jones, a citizen of the United States, and a resident of SUFFERN, in the county of Rockland and State of New York, have made and invented certain new and useful Improvements in Methods of Forming Steel Backs for Brake-Shoes, of which the following is a specification.

My invention relates to an improved method of forming steel backs for brake shoes. As is well known to those versed in the art, these backs made of malleable wrought, or other tough ductile metal, usually known and referred to as "steel backs", are applied to the cast iron body of the shoe at or adjacent to the back thereof, and are provided with holes or openings for the purpose of allowing the cast metal to flow through the same and anchor it to the body of the steel back and the edges of the holes or openings. To render this anchorage more effective, it is desirable that the outer edges of the steel back and those surrounding the openings therein, be cut or formed on a bevel or incline, but while there is little or no difficulty in so shaping the outer edges of the steel back, more or less trouble has been experienced in beveling the edges of the openings.

By my improved method, hereinafter described, all difficulty in this operation is avoided, as I have found in practice that steel backs may be constructed or produced with beveled openings quickly and at a small cost.

My improved method contemplates, first, crimping or bending the plate transversely; secondly, punching openings therein while in the bent or crimped form, and finally, properly shaping it transversely.

To more clearly describe these operations, I have shown the steel back in its several stages of formation in the accompanying drawings, in which—

Figure 1 shows in perspective the plate from which the steel back is to be formed. Fig. 2 shows the plate bent or crimped. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2. Fig. 4 is a similar view taken on the line 4—4 of Fig. 2. Fig. 5 is a view of the plate after being crimped and punched. Fig. 6 is a longitudinal sectional view taken on the line 6—6 of Fig. 5. Fig. 7 is a sectional view taken on the line 7—7 of Fig. 5. Fig. 8 is a sectional view of the finished back, and Fig. 9 is a sectional view taken on the line 9—9 of Fig. 8.

In practice the strips or plates A from which the steel backs are to be formed, are made of the proper width and length. By means of suitable tools this plate A is crimped or bent as illustrated at B into concave-convex form, as illustrated in Figs. 2, 3 and 4, or at such place or places where it is desired to punch or otherwise form the openings therein. The crimped plate is then subjected to the action of suitable dies or punches, (not shown), for the purpose of forming the openings C, the sides or edges of the openings being vertical, as illustrated in section in Fig. 7. Finally, the plate is given its finished shape, that is, is curved longitudinally in its length, as illustrated in Fig. 8, and flattened transversely, as illustrated in Fig. 9. It will be readily understood that by thus forming the openings while the plate is in its bent or crimped form, said edges will take on the bevel or incline when the plate is straightened or flattened transversely, these operations enabling me to form the plates far more expeditiously and economically than is possible by forming the same with beveled openings while straight or flat in transverse section. As a matter of fact, I form these backs from a long strip of metal having the proper width, which being inserted into a machine (not shown), crimps and punches them at one operation, and the strip being advanced, the machine cuts them off to proper length. This crimped and punched plate is then subjected to a second machine, which curves it in its length and flattens it transversely, thereby completing it. As the machine itself forms no part of the present invention, it is unnecessary to illustrate or describe it. It will of course be understood that instead of crimping or bending the plate at those places where it is desired to form the openings, the entire plate may be crimped or bent and subsequently straightened, as above described, and furthermore, that while I have shown but two openings in the plate, any desired number may be formed therein. Again, if it be desired, the outer edges of the plate may be cut out as illustrated at D for the accommodation of a key-lug (not shown), these cuts being formed simultaneously with the formation of the openings C. Finally, it will be understood that the outer edges of the plate may be beveled at any stage of the form.
mation of the plate, this not being illustrated as it is not essential.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

The method hereinbefore described of forming backs for brake shoes with beveled openings, consisting in first crimping or bending the plate in cross section, secondly, punching the bent portion of the plate with an opening having vertical walls, and finally flattening the same transversely and curving the plate in its length.

Signed at Suffern, in the county of Rockland, and State of New York, this sixth day of June, A. D. 1908.

HARRY JONES.

Witnesses:
FRANK S. HARRIS,
M. B. WARD.