W. C. DOWNS.

Buckle.

No. 168,238. Patented Sept. 28, 1875.

Fig. 1.

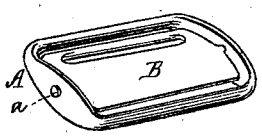

Fig. 2.

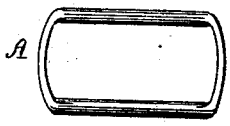

Fig. 3.

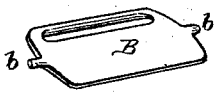

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM C. DOWNS, OF BRISTOL, RHODE ISLAND.

IMPROVEMENT IN BUCKLES.

Specification forming part of Letters Patent No. **168,238**, dated September 28, 1875; application filed September 16, 1875.

To all whom it may concern:

Be it known that I, WILLIAM C. DOWNS, of Bristol, in the county of Bristol and State of Rhode Island, have invented certain new and useful Improvements in Buckles; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a clear, true, and complete description thereof.

My improvements relate to buckles of the class which hold a strap by frictionally engaging therewith, in contradistinction to those which engage therewith by means of tongues which enter holes in the strap.

The object of my invention is economy in manufacture and the production of a stronger buckle than has heretofore, to my knowledge, been produced with a corresponding bulk or weight of metal; and my invention consists in a buckle the rectangular solid frame and tongue of which are composed of malleable cast-iron, and having a full pintle-eye in each end of the frame for receiving the axes or pintles of the tongue.

Heretofore buckle-frames of malleable cast-iron have been made, but, instead of having full pintle-eyes, such frames were cast with two projecting studs, the space between them constituting a pintle-eye, which, instead of being circular or full, was open on one side to laterally receive the pintles of the tongue, which was secured to the frame by the inward bending of the studs, thus closing them down and partially or wholly over the pintles.

In my improved buckle the tongue-pintles are entered longitudinally into the full eyes in the frame, and this is accomplished by casting the frame narrower than is required in the finished buckle, and with outwardly-curved ends. After annealing, in the usual manner of treating malleable cast-iron, the full eyes are cut or punched in the ends of the frame by means of punching-dies. The tongue is then inserted, with one pintle occupying one eye of the frame and the other pintle coincident with the other eye at the opposite end of the frame. The two outwardly-curved ends are then flattened, which not only secures the tongue in place, but widens the frame to its proper dimensions.

To more particularly describe my invention, I will refer to the drawings, in which Figure 1 represents in perspective one of my buckles. Fig. 2 represents a buckle-frame as it is delivered from the mold. Fig. 3 represents a buckle-tongue detached. Fig. 4 represents a curved buckle-tongue.

A denotes the frame, and B the tongue, of the buckle. The solid frame A is provided at each end with a full pintle-eye, as at *a*. As cast, the ends of the frame are outwardly curved, as shown in Fig. 2. The extent of the curves at both ends from a straight line equals substantially the length of one pintle, so that when one tongue-pintle, *b*, occupies one eye the opposite pintle will be opposite the other eye, and enter therein when the two curved ends of the frame are straightened.

It will be seen that by this straightening of the ends of the frame it is slightly increased in width, and this variation may readily be provided for in proportioning the molds. In buckle-frames of the size shown, the frame, when thus widened, is about one-sixteenth of an inch greater than the width of the original casting.

In some cases the sides of the frame will be slightly bowed during the setting operation, but this outline will in no material manner affect the operative value of the buckle.

The space between the operative edge of the tongue and the adjacent side of the frame with which it immediately co-operates will, of course, be varied to suit straps of different thicknesses. The edge of a tongue may, however, be readily clipped or ground off to adapt it for use in individual cases with a strap thicker than that for which it was originally intended.

Inasmuch as my cast-iron buckles can only be put together by means of changing the form of one of its members in the act of assembling, it will be seen that this change of form is not necessarily limited to the frame. For instance, the frame may be cast truly rectangular, and the tongue shortened in casting by a curve in its axial line, as shown in Fig. 4, so that the two pintles may be readily entered into the full eyes of the frame by flattening or straightening the tongue. I prefer, however, to employ the system first described, as in my practice it has been found more convenient and economical to cast the round-end frames than to cast the curved tongue, and also easier to

effect their connection with the normally-straight tongues.

The operative edge of the tongue may be square, beveled, or serrated, according to the material composing the straps with which they are to be employed.

With the surface which malleable iron usually possesses, it is practicable to secure a more permanent finish in japanning than is generally possible on wrought metal. For plating, the frames and tongues may be first well finished in a "rattling-box" with any of the well-known abrasive matters.

The cost of manufacturing my improved buckles is, so far as my experience extends, much less than that of other buckles suitable for same service.

The great strength of fine malleable cast-iron is well known, and, from the fact that my buckle is made of that material, has full pintle-eyes, and is put together by changing the form of the frame as originally cast, it is obvious that it possesses the maximum degree of strength consistent with the bulk of metal employed.

Having thus described my invention, I claim as new—

A buckle composed of malleable cast-iron, having a solid frame with a full pintle-eye at each end and a pintle-tongue, substantially as described.

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Witnesses:
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