(No Model.)

H. McDOUGALL & R. POTTER.

IMPLEMENT FOR FORMING BEAM STRAPS.

No. 391,058. Patented Oct. 16, 1888.

Fig. 1

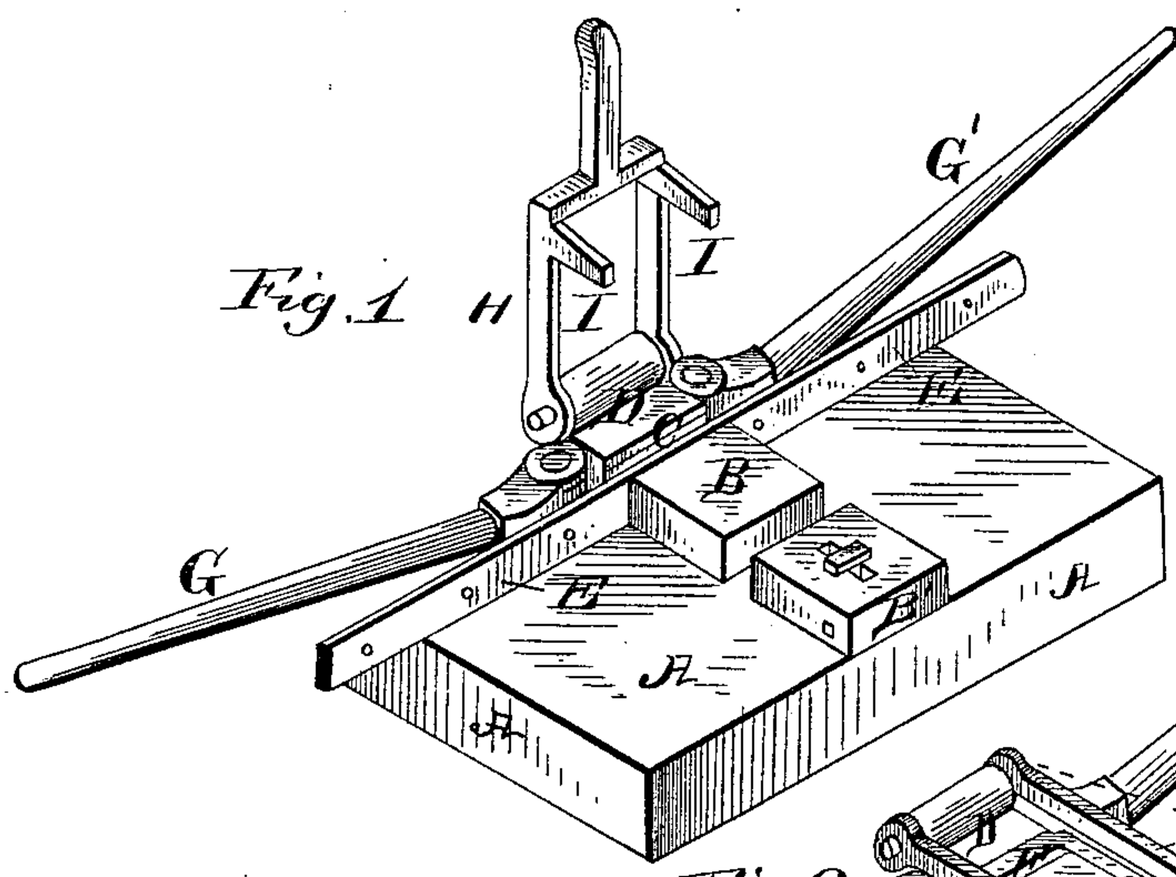


Fig. 2.

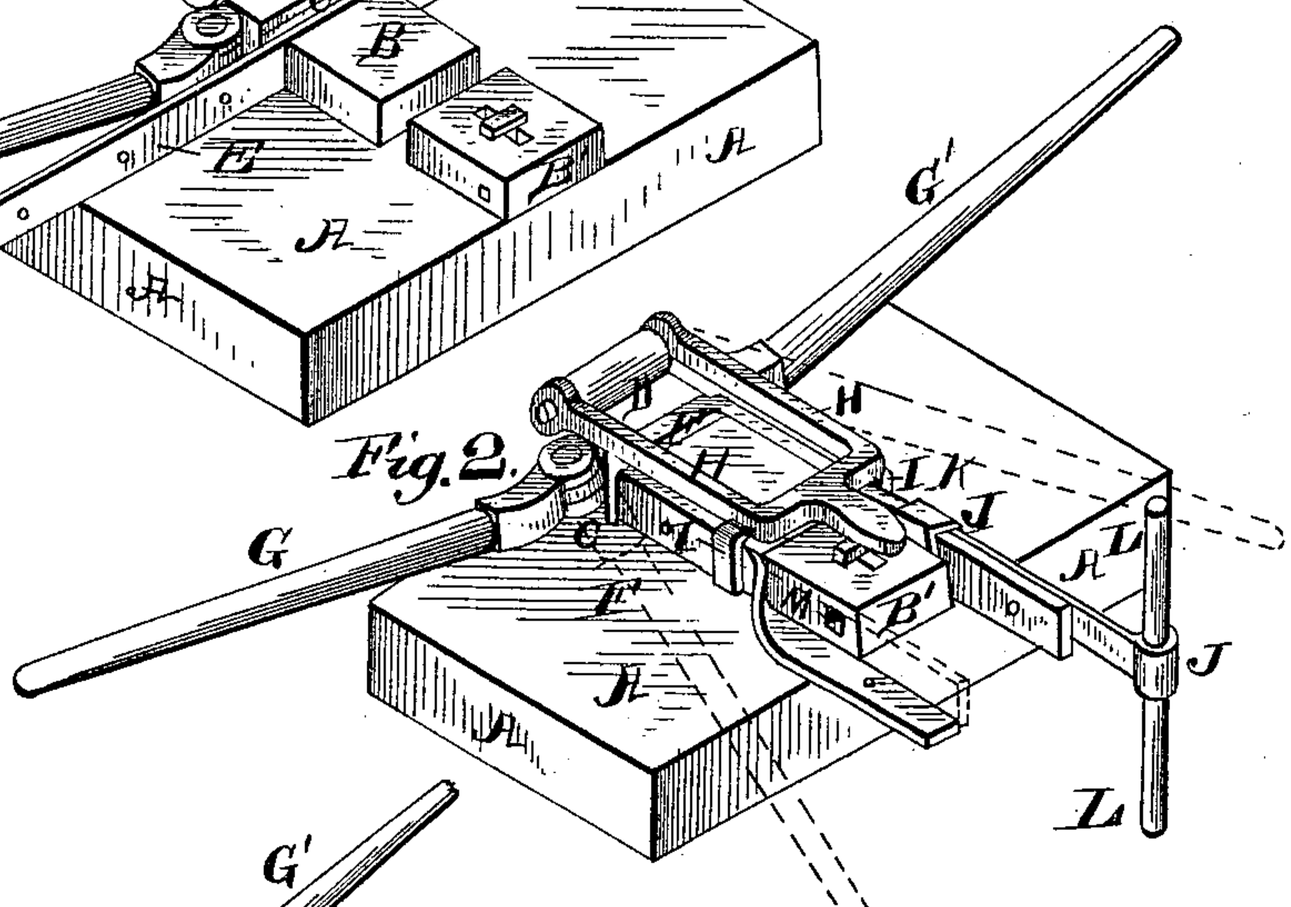


Fig. 3.

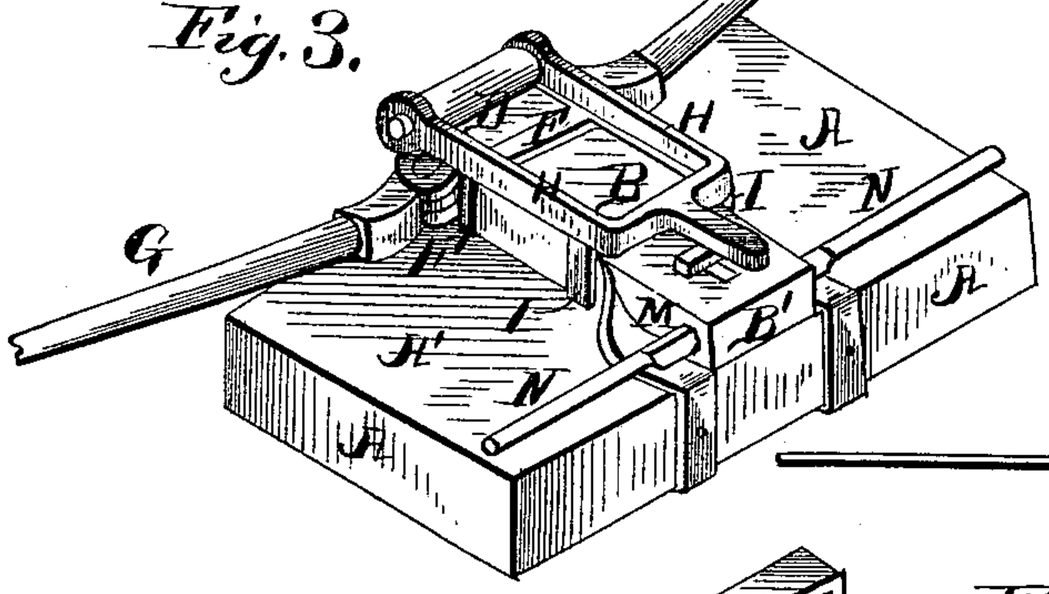


Fig. 4.

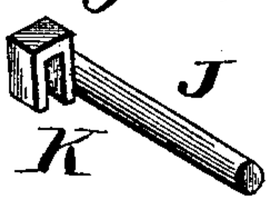


Fig. 5.

Fig. 8.

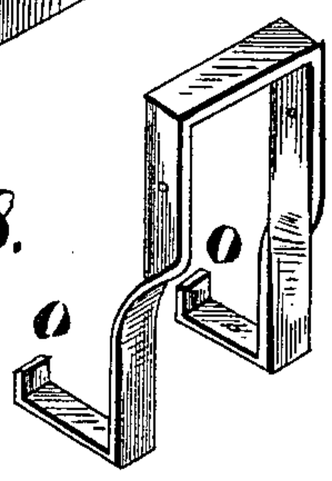


Fig. 6.

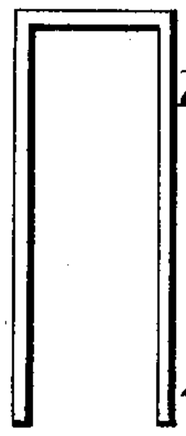
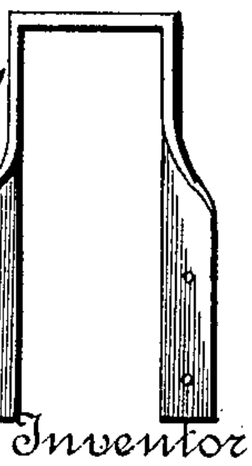


Fig. 7.



Witnesses.
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Inventor.
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By their Attorney
E. C. Duffy

UNITED STATES PATENT OFFICE.

HENRY McDOUGALL AND ROGER POTTER, OF NEW YORK, N. Y.

IMPLEMENT FOR FORMING BEAM-STRAPS.

SPECIFICATION forming part of Letters Patent No. 391,058, dated October 16, 1888.

Application filed October 3, 1887. Serial No. 251,380. (No model.)

To all whom it may concern:

Be it known that we, HENRY MCDOUGALL and ROGER POTTER, both citizens of the United States, and residents of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Forging Beam-Straps, of which the following is a specification.

The object of this invention is, with an improved method and implements, to form and forge the beam strap with a great deal less labor and expense and in less time than such straps have been made heretofore.

In the drawings hereto annexed, Figure 1 represents a perspective view of the forming-block and lever attachments for forging the beam-strap, shown in a position receiving the heated bar-blank of which the strap is constructed. Fig. 2 is a similar view of the same, but shown in a position after both legs of the strap are formed by the first bend and one of them has been twisted and the other ready to be twisted. Fig. 3 is a similar view, but showing the same in position after both legs of the strap are twisted and have obtained their second and final bend. Fig. 4 is a detached perspective view of the end of the twisting implement. Fig. 5 is an edge view of the bar of which the strap is made. Fig. 6 is a similar view of the strap after the first forming of the legs is made. Fig. 7 is a similar view of the strap shown after its legs have been twisted. Fig. 8 is a perspective view of the strap completed.

A represents the forming-table, which is cast and has a suitable flat top surface, A'. Upon the central portion are arranged in lateral direction the upward-projecting forming-blocks B and B'. They may be cast thereon; but, preferably, they are made separate and bolted or otherwise secured thereupon. They may be made separate, as shown, or both made in one block, or each or both made in sections and made expansible, to suit various sizes of straps to be made on the same blocks. At the rear of the block B is arranged, with a space, C, between, an upward projection, either cast thereon or solidly secured, a cross-piece, D, and in the space C, between said cross-piece D and the opposite side of the block B, is inserted centrally the heated bar-blank E, from which the strap is made, and also in said space, between the bar-blank E and the cross-piece D, is driven down a wedge, F, to hold the blank E solidly to the rear side of said block B. At the rear of the blank E and block B are pivoted two horizontal bending-levers, G G', one for each rear corner of said block B. Said levers may be pivoted to the table A or hinged to the cross-piece D, whichever is properly pivoted relative to the respective rear corner of the block B to bend the heated bar with it around the corner to the side of the blocks B and B', and thereby form the legs of the strap to the shape as shown in Fig. 6. On the rear end of the cross-piece is also pivoted or hinged a vertically-swinging forked holding latch or lever, H, which has two projecting noses or prongs, I I. They are arranged so that when the lever H is dropped said prongs pass down over the outside of the formed legs of the strap at the proper distance from the base or bend of the legs to the portion of the twist of the leg, so as to hold the part of each leg so as not to be twisted against the sides of the blocks B and B' during the twisting operation.

For the purpose of twisting said legs is employed a hand-twist lever, J, which has on its end a flat hook or slotted portion, K, to grip the bar by its flat side, with a double handle, L, on its end toward the attendant. The bar is readily twisted one quarter turn outward from the block B' by hand, as clearly shown in Fig. 2, and to the shape shown also in Fig. 7. The block B' has near its forward end a square hole, M. On each side, over the twisted leg of the strap in each of said holes M M, is inserted a hand-bar, N, by means of which the twisted leg is held down to the table A. The ends of the legs are hereafter bent over the forward corner of the table by the hand-hammer to the shape as shown in Fig. 3. The strap is now finished. The wedge F is loosened and withdrawn, by which means the strap is readily lifted from the table.

Straps requiring a nose, O, on the end of each leg, as shown in Fig. 8, have said nose turned on after the aforesaid finish of the strap.

The bar-blanks from which the straps are constructed are first cut off to the required length and the spike-holes are made in them. A number of them are heated together in a suitable furnace to an incandescent state. After the blank is inserted centrally against the rear

side of the block B the wedge F is driven behind it. Both levers G G′ are now together swung forward by the attendant, as shown in dotted line in Fig. 2, causing the bending and forming of the legs of the strap, as shown in Fig. 6. Said levers are turned back, and the lever H is now dropped, with its prongs I, to pass over the sides of the legs to hold them during twisting. The hand-twist lever J is now applied and each end is readily twisted, and the lever J is thereupon withdrawn, and by a few blows by the hammer the twisted end of the leg is flattened down to the surface A′, and thereafter the hand-bars N N are inserted over the twisted part of the legs into the holes M to hold the legs to the table, and the now projecting ends, having passed the forward edge of the table, are bent over from horizontal to vertical and flattened over the front surface of the table, as shown in Fig. 3. The bars N are withdrawn thereafter, and the lever H is raised, as shown in Fig. 1. The wedge F is now withdrawn, and the strap is removed from the forming-table in a finished state. By the above-described method the straps are each forged within the time of about one minute, and are delivered while incandescent to cool slowly and preserve their toughness.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In an apparatus for forming beam straps, the combination, with a forming-table provided with forming-blocks, of bending-levers pivoted at one end to said table to swing horizontally and form the legs of the strap, and a vertically-swinging holding latch or lever to hold said legs in position during the twisting and remainder of the operation of forming a beam-strap, substantially as described.

2. In an apparatus for forming beam-straps, the combination, with a forming-table provided with upwardly-projecting forming-blocks and with an opening to receive a blank, of bending-levers pivoted to said forming-table to swing horizontally and to form the legs of the strap, and a holding lever or latch pivoted to the forming-table to swing vertically and adapted to hold said legs during the operation of twisting, &c., substantially as described.

3. The herein-described hand-lever for twisting the legs of beam-straps, consisting of a body portion provided at one end with a double handle and at the opposite end with a laterally-extending flat hook or slotted portion adapted to hold and twist the leg of the beam-strap, substantially as described.

4. In an apparatus for forming beam straps, the combination, with a forming-table provided with one or more forming-blocks, of means for bending a blank to form the legs of a strap, and a holding latch or lever provided with prongs to hold said legs, substantially as described.

In testimony that we claim the foregoing as our invention, we have signed our names, in presence of two witnesses, this 6th day of October, 1886.

HENRY McDOUGALL.
ROGER POTTER.

Witnesses:
ROBT. AULD,
F. E. RUE.