

S. H. GILMAN.

MACHINE FOR DOUBLING-OVER THE ENDS OF METAL-BANDS.

No. 173,117.

Patented Feb. 8, 1876.

Fig. 1.

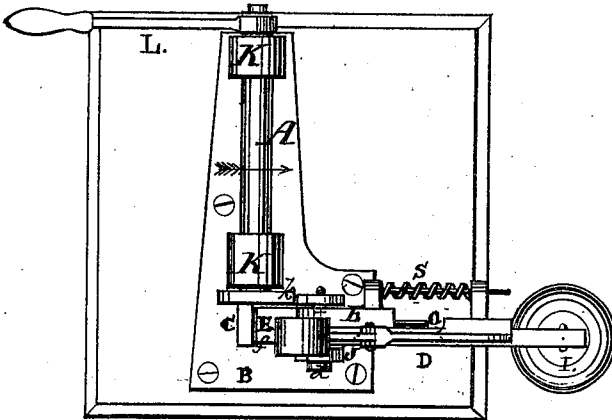


Fig. 4.

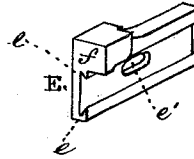


Fig. 5.

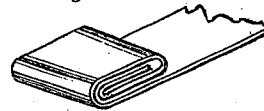


Fig. 2.

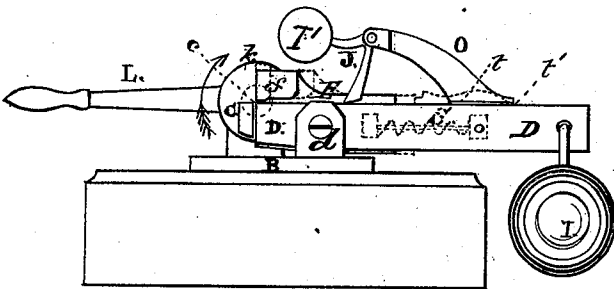
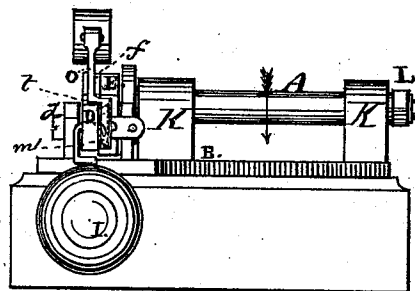


Fig. 3.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MACHINES FOR DOUBLING OVER THE ENDS OF METAL BANDS.

Specification forming part of Letters Patent No. **173,117**, dated February 8, 1876; application filed
November 27, 1875.

To all whom it may concern:

Be it known that I, SAMUEL H. GILMAN, of the city of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Machine for Doubling Over the Ends of Iron or other Metal Bands; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 represents a plan view, Fig. 2 a side elevation, and Fig. 3 a rear elevation, of my machine. Fig. 4 is a detail view, showing a part of my invention; and Fig. 5, a view of a strap or band of metal, showing the end as it appears when turned down by my improved machine.

The object of my invention is to double or turn over the ends of metal bands, such as are used for baling purposes, in order to enlarge their ends when such bands are to be used with a bale-tie, the same as or similar to that which was patented by me February 2, 1875.

To accomplish this object I construct a machine described as follows: In the drawings, A is a shaft, supported horizontally above a bed, B, by the standards K, and provided upon one end with a lever and handle, L. One end of the shaft A is extended beyond the standard K, with a considerably increased diameter, so as to present a circular head, *h*, to the outer face of which is attached a folder, C. This folder is simply an eccentric prolongation of the shaft A beyond the circular head, and is made by cutting away portions of the head in such a manner as to form a projection having three rectangular sides, and a fourth side, which is rounded in the arc of a circle. This folder C is so arranged with reference to the shaft A, of which it is a part, as to bring the upper inner angle in line with the longitudinal axis of the shaft A, as shown at *c* in Fig. 2, and in front of a perpendicular line drawn through the axis of the shaft A, when the machine is in proper position to receive the band the end of which is to be turned or doubled over. The upper edge of the folder C is thus brought to a horizontal

position, exactly on a plane with the central horizontal diameter of the shaft A. D is a lever-bar, whose upper surface is exactly on a plane with the upper edge of the folder C, and whose head abuts against the inner face thereof, as shown in black lines in Fig. 2.

This lever-bar D is provided upon its inner face with a guide or dovetail tongue, *m*, fitted to receive the sliding stop E, (shown in Fig. 4,) and is pivoted between its head and longitudinal center to a fulcrum-stud, *d*.

I find that about three inches from the front end of the lever-bar is the most satisfactory place at which to fix its fulcrum.

In front of the stud *d* the under side of the lever D is slightly rounded upward, so as to allow of a limited vertical movement, and at its rear end a weight, I, is attached to steady the lever, and also facilitate bending over the ends of bands, by adding to the pressure of the head of the lever against the folder C when the machine is being operated. E is a sliding stop, provided with the dovetail groove *e*, designed to travel upon the guide or tongue *m*, upon the inner side of the lever D. This sliding stop is provided with a slot, *e'*, near its center, the length of which is regulated by the amount of longitudinal movement it is desired the slide shall have, and through which slot the pivot-bolt *d* of the lever D passes loosely. The front end of the slide E is extended upwardly and outwardly, forming a shoulder or projection, *f*, above the lever D, as clearly shown in Figs. 2 and 4, and between it and the bar D is a space, in which the band to be bent moves forward during the operation of the machine, and which space is of just such capacity as will snugly receive the metal strip or band between the shoulder *f* and said bar. The thickness of the shoulder *f* and the lever D at their forward ends is the same, and both across their face are nearly equal to the length of the folder C.

The front end of this shoulder or projection on the slide E presents a flat face, the cross-diameter of which equals the length of the folder C, and the vertical diameter of which corresponds with the diameter of the narrowest of the two unequal sides of the folder C, and when the machine is at rest this face oc-

occupies a position directly above, and is upon a vertical plane with the face of the head of the lever D.

The angle formed by the parts C D and *f*, where they come together, is thus brought nearly, if not exactly, on a line with the axis of the shaft A.

A spring, S, is provided for moving the slide E back into place, when the pressure of the folder C against its forward end is withdrawn.

O is a bent stud or arm, having a shoulder, *t*, upon its lower end, and is attached to the lever D in such manner that the shoulder will overhang the upper face of the same, and so form an open groove, *t'*, in which to receive, retain in position, and guide the forward movement of the band.

On the upper end of this bent stud or arm is pivoted the elbow-shaped pawl J, the upper projecting end of which is weighted, in order to hold the foot of the pawl down upon the band placed underneath it during the process of turning over the end thereof, and thus prevent it slipping back during the operation of the machine.

The manner in which my machine is operated is as follows: When the various parts occupy their normal position, as shown in Fig. 2, a band is placed underneath the shoulder *t*, and pawl *j*, and shoulder *f*, so that the end to be turned over will extend about half-way across the upper edge of the folder C. The lever L is now turned in the direction indicated by the arrow, and the folder presses the end of the band upward against the face of the shoulder *f* of stop E, forming a right angle. As the movement progresses, the stop E yields to the continued pressure of the folder C, which turns upon its upper inner angle as a center, and the band is forced over and downward until its end is completely flattened down upon itself, the pawl J preventing the band from slipping with the backward motion of the slide, and the weight I' adding sufficient pressure to accomplish this object.

When the lever L is brought back to its original position, the spring S immediately returns the slide E into place, which slide, at the same time, pushes the band forward upon

the folder C, ready for a repetition of the movement already described, by means of which several folds may be formed upon the same end of a band, as shown in Fig. 5.

It will thus be seen that the slide E, by pushing against the lap formed on the band, automatically feeds the cotton-band forward for a repetition of the bending of the end of the band, while the weighted pawl J prevents the backward slipping of the band in the act of being bent.

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

1. The combination of the folder C, attached to shaft A, and lever-bar D, and stop E, between which bar and stop the band to be doubled passes, whereby the folder C, lever-bar D, and stop E, respectively, present one corner or angle thereof in a line with the longitudinal axis of the shaft A, preliminary to the act of bending the band, substantially as described.

2. I claim the sliding stop E, arranged in relation to the shaft A, so that the angle formed by its bottom and front surface shall be in line with the longitudinal axis of the shaft A, substantially as described.

3. I claim the sliding stop E, in combination with the lever-bar D and folder C, whereby the metal band, in the act of being bent, is held firmly upon the lever-bar D, substantially as described.

4. I claim the combination of the lever-bar D, spring S, and stop E, whereby the metal band, after having its end once folded down, is thrust forward by the movement of the stop E to a suitable position over the folder C to be refolded, substantially as described.

5. In a machine for bending the ends of cotton-bands, I claim a slide-stop, E, which automatically feeds the band forward after the first fold is made, substantially as described.

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Witnesses:

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