(No Model.) 2 Sheets—Sheet 1.

L. MILLER.

MACHINE FOR STRAIGHTENING METALLIC STRAPS OR BANDS.

No. 260,701. Patented July 4, 1882.

Fig. 2.

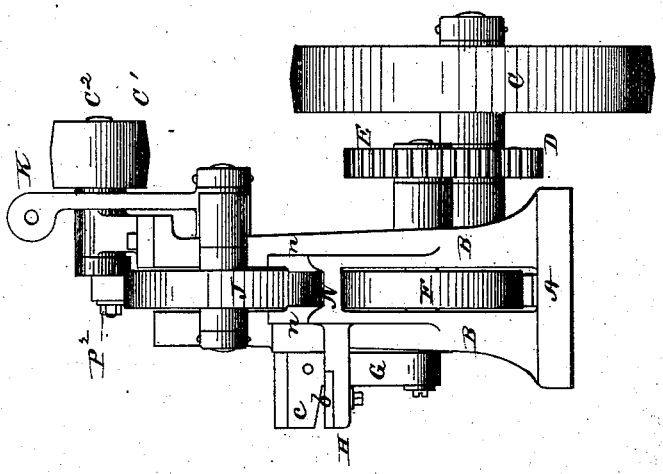
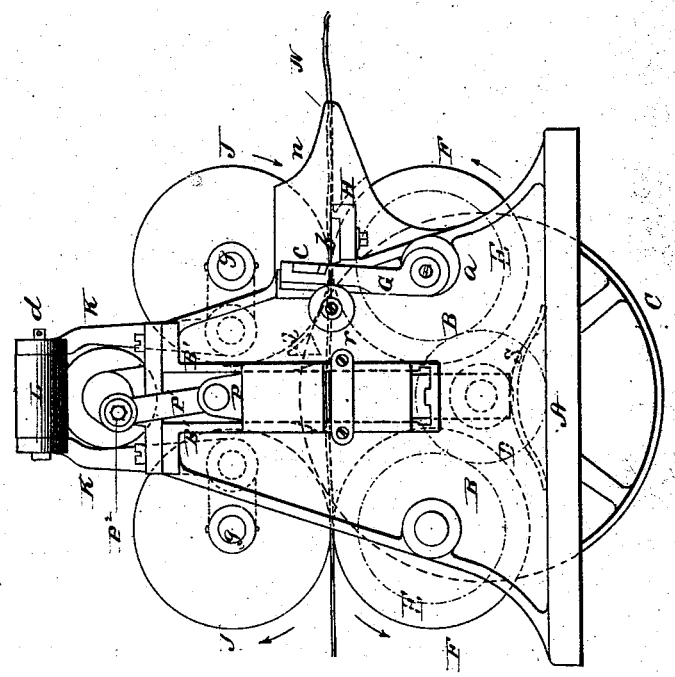


Fig. 1.



Witnesses.
Edwin L. Yewell.
J. J. McCarthy.

Inventor.
Lewis Miller,
By C. M. Alexander,
Attorney.

(No Model.) 2 Sheets—Sheet 2.

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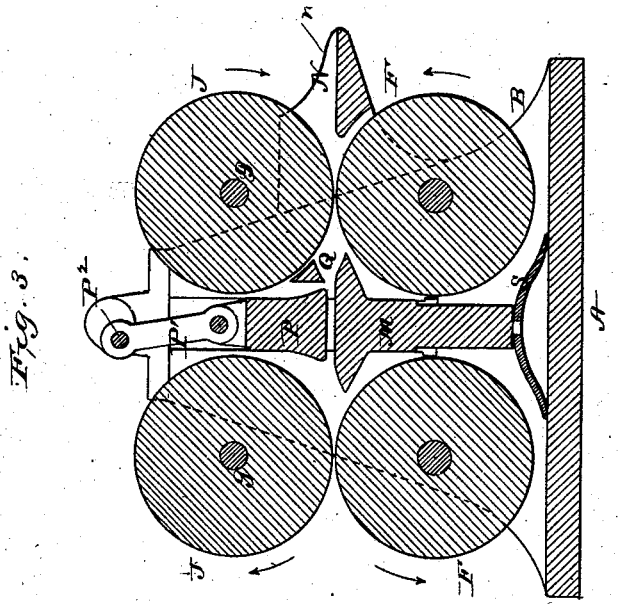

Fig. 3.

Witnesses,
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UNITED STATES PATENT OFFICE.

LEWIS MILLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE VERREE IRON COMPANY, OF SAME PLACE.

MACHINE FOR STRAIGHTENING METALLIC STRAPS OR BANDS.

SPECIFICATION forming part of Letters Patent No. 260,701, dated July 4, 1882.

Application filed March 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEWIS MILLER, of Philadelphia, in the county of Philadelphia, and in the State of Pennsylvania, have invented certain new and useful Improvements in Machines for Straightening Bale-Bands; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to improvements in machinery which is designed for straightening band-scraps preparatory to uniting these straps to form bale-bands; and the nature of my invention consists in the combination of feed-rolls, a guide-table, a yielding anvil, and a vertically-reciprocating hammer, whereby the short pieces of band-iron passed through the machine will be made perfectly flat and straight, as will be hereinafter explained.

The invention also consists in the combination and novel arrangement of shears with the band-straightening devices for the purpose of clipping off the ends of the band-scraps which will not enter the straightening devices properly, as will be hereinafter explained.

In the annexed drawings, Figure 1 is an elevation of one side of the improved machine. Fig. 2 is an elevation of the front end of the machine. Fig. 3 is a vertical section of the feed-rollers, the yielding anvil, its spring-bed, and the guide-table.

Similar letters of reference indicate corresponding parts in the three figures.

A designates the bed or foundation of the frame, and B B are vertical cheeks which afford bearings for the several parts composing the machine.

C designates a belt-wheel, which receives rotation from a convenient prime motor, and which is applied on a shaft on which is keyed a spur-wheel, D. This wheel D engages with two spur-wheels, E, of the same diameter, which are keyed on the horizontal transverse shafts of two rolls, F F, which shafts are in the same horizontal plane. These rolls F F receive rotation in the same direction indicated by the arrows in Fig. 3, and in the same plane with the highest points of these two rolls is a flat-top guide-table, N, which is rigid with the vertical cheeks of the frame of the machine.

Above the rolls F F are twin rolls J J, the short shafts *g g* of which have their bearings in the shortest arms of angular levers K K, which have their fulcra on the right-hand cheek, B, of the main frame. The upper ends of these levers K K have an india-rubber or other block, L, confined between them by means of a bolt, *d*. This block L will allow each roller to yield and accommodate itself to the inequalities of the pieces of bands passed between the rollers J F.

Instead of a single block L, I prefer to use two rubber blocks or other springs on the bolt *d*, and to employ nuts on this bolt by means of which the rubber blocks or other springs can be compressed and the rollers J held down upon the work under more or less elastic pressure, as may be required.

M designates an anvil, which is vertically movable between guides B′ B′ of the cheeks B B, and which is supported on a semi-elliptic or other suitable spring, S. The horizontal top of the anvil is in a plane corresponding to the top of the table N and highest points of the rolls F F when this anvil rests freely on the spring S, as shown in Fig. 3.

In order that the straps shall be truly guided upon the anvil, an angular director, Q, is arranged over the downwardly-beveled end of the table. The two inclined planes will guide a bent strap upon the anvil.

P designates a vertically-movable hammer, which is arranged over the anvil M and guided between the ways B′ B′, so that at each downstroke it will strike squarely upon the anvil or upon a band-scrap lying thereon, and with the aid of the feed and guide rollers straighten and flatten the pieces of band-scraps. The hammer P receives motion from a shaft, C^2, by means of an eccentric wrist-pin, P^2, and a pitman-rod, P′. The shaft C^2 bears a belt-wheel, C′, and receives very rapid motion, which causes the hammer to strike rapidly on the work as it is moved over the anvil.

The horizontal table N, over which the work is passed, is provided with cheeks *n* on its sides, which serve as lateral guides for the pieces of bands as they are fed into the machine, and

on one side of this table is a knife-bed, H, on which is rigidly but adjustably secured a fixed knife, *b*, which, in combination with a knife, *c*, and a vertically-movable head, G, serves as shears for cutting off the ends of the band-scraps when such operation is necessary. The knife-head G bears against an anti-friction roller, *r*, and its lower end is applied on a wrist-pin which is eccentrically fixed into a crank-wheel keyed on the shaft of the front roll, F. (Shown in Figs. 1 and 2.)

The operation of the machine may be briefly described as follows: The scraps of band-iron which it is desired to splice to form bale-bands are adjusted on the table N and moved forward between the bite of the first pair of rollers F J, which carry it forward over the table or anvil M to the second pair of rolls F J. During the passage of the pieces over the anvil they are repeatedly struck by the hammer and straightened, the anvil at each stroke of the hammer yielding slightly to facilitate the straightening and flattening process.

Many pieces of the scraps have buttons and other devices on their ends, and sometimes the ends are turned short over, so that it would not be proper to pass them through the machine. This objection is quickly removed by inserting the ends of such pieces between the shear-blades and clipping off the irregular portions.

While I have described my machine as especially useful for straightening and flattening band-scraps, I contemplate its use for straightening all kinds of metal bands, bars, and plate-iron.

Having described my invention, I claim—

1. The combination of the rolls F J, the guide-table N, the vertically-movable anvil, the spring beneath this anvil, and the hammer P, substantially as and for the purposes described.

2. The combination of the two pairs of rolls F J, the levers K K, affording bearings for the upper pair of rolls, the spring between the upper ends of the levers K, the yielding anvil supported by a spring, the vertically-movable hammer, and the angular director Q, substantially as described.

3. The combination, with the straightening devices described, of the knife-bed H, its knife *b*, the vertically-movable knife-head G, its knife *c*, and the anti-friction roller *r*, applied to one of the cheeks of the main frame, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 14th day of February, 1882.

LEWIS MILLER.

Witnesses:

H. AUBREY TOULMIN,

C. D. DAVIS.