No. 653,505. Patented July 10, 1900.

V. E. EDWARDS.

APPARATUS FOR HANDLING BAND IRON.

(Application filed July 19, 1897.)

(No Model.)

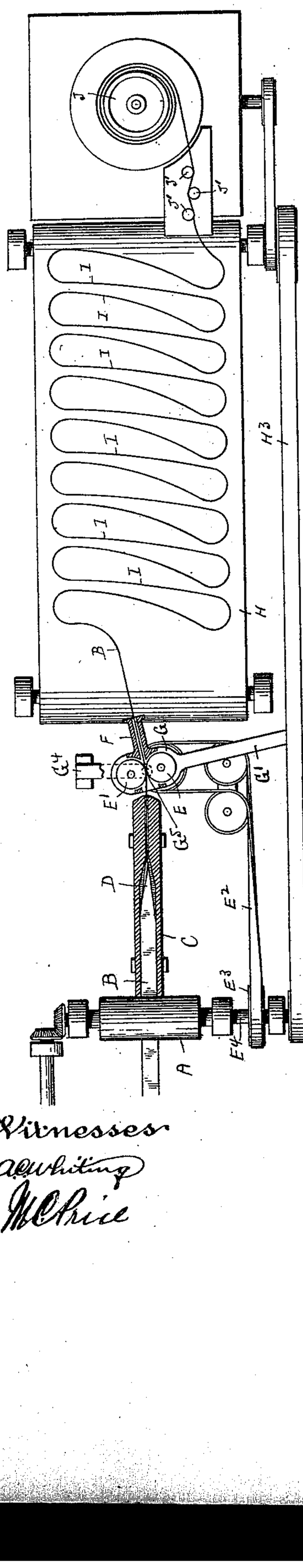

Fig. 1.

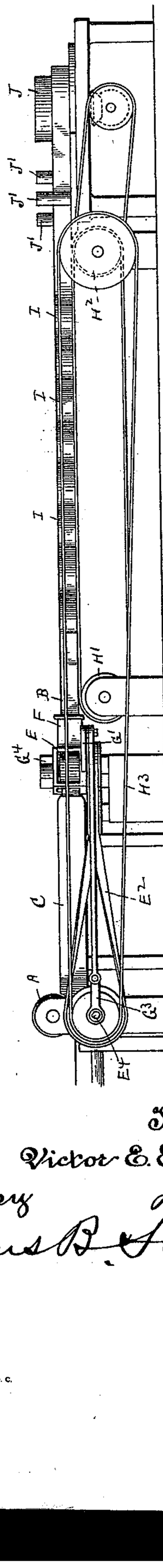

Fig. 2.

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UNITED STATES PATENT OFFICE.

VICTOR E. EDWARDS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE MORGAN CONSTRUCTION COMPANY, OF SAME PLACE.

APPARATUS FOR HANDLING BAND-IRON.

SPECIFICATION forming part of Letters Patent No. 653,505, dated July 10, 1900.

Application filed July 19, 1897. Serial No. 645,146. (No model.)

To all whom it may concern:

Be it known that I, VICTOR E. EDWARDS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in an Apparatus for Handling Band-Iron, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a plan view of an apparatus for handling band-iron embodying my invention, certain portions being shown in sectional view; and Fig. 2 is a side elevation of my improved apparatus.

Similar letters refer to similar parts in the different views.

Referring to the drawings, A denotes the upper roll of the last pair of rolls in a series of reducing-rolls, from which the strip of band-iron B is delivered with its edges lying in a horizontal plane to a twisting-guide C. The twisting-guide C consists of a trough provided with a passage-way for the strip B, said passage-way being adapted to receive it as it is delivered from the reducing-rolls and the latter part of the passage-way being adapted to deliver the strip with its edges lying in a vertical plane with the central portion of the passage-way properly shaped at D to give a quarter turn or twist to the strip as it passes through the guide C. From the guide C the strip is conducted between a pair of feed-rolls E E′.

The feed-roll E is driven by a belt E^2 from a pulley E^3 on the shaft E^4 of one of the reducing-rolls A, causing the tail end of the strip B to be drawn out of the twisting-guide. The rolls E E′ are preferably driven at the proper speed to cause the strip B to be fed at a speed corresponding to its speed of delivery from the reducing-rolls in order to prevent either the stretching or buckling of the strip. As the strip B leaves the feed-rolls E E′ it passes through a vibrating arm F, which is provided with a narrow passage-way adapted to maintain the strip of band-iron in a vertical plane.

The vibrating arm F is attached to a vibrating plate G, having an arm G′, with its outer end connected by a link G^2 with a crank G^3, carried upon the shaft E^4. The vibrating plate G is pivoted in a supporting-framework G^4 and has its axis of vibration passing through the point of contact G^5 of the two feed-rolls E E′. The vibrating arm F conducts the strip B from the feed-rolls E E′ over the edge of an apron H, which is carried upon rolls H′ H^2, having parallel axes and driven by a belt H^3 from the shaft E^4. The vibration of the plate G and arm F causes the strip of band-iron to be flipped as it passes upon the apron H or deposited in loops I, lying transversely across the apron, with the strip supported upon its edge. At the opposite end of the apron H is a rotating reel J, by which the strip of band-iron is drawn between the straightening-pins J′ and wound into a coil.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a vibrating plate, a pair of feed-rolls carried by said plate having their axis of vibration coincident with the line of contact between said rolls, and an arm projecting from the side of said plate by which a strip of band-iron, fed by said rolls, is deposited in loops, substantially as described.

2. In an apparatus for handling band-iron the combination with a pair of reducing-rolls arranged to reduce a strip of band-iron with its edges lying in a horizontal plane of a vibrating arm by which the strip of band-iron is deposited in a series of loops, said arm having a slit or passage for the strip of band-iron by which the strip is maintained with its edges lying in a vertical plane, substantially as described.

3. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls, of a twisting-guide, means for drawing the tail end of the strip out of said guide, a vibrating arm, and means for vibrating said arm by which the strip is deposited in loops lying transversely to its line of motion, substantially as described.

4. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls of a vibrating arm by which the strip of band-iron is deposited in loops upon a movable apron, a movable apron, and means for moving said apron, substantially as described.

5. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls,

of a twisting-guide, means for drawing the tail end of the strip from said guide, a vibrating arm provided with a passage-way for the strip, means for vibrating said arm whereby the strip is deposited in loops, a moving apron to receive said loops and convey them from said vibrating arm, substantially as described.

6. In an apparatus for handling band-iron, the combination with a pair of reducing-rolls, of a twisting-guide, means for withdrawing the tail end of the strip of band-iron from said guide, a vibrating arm, a movable apron and a reeling mechanism, substantially as described.

7. In an apparatus for handling band-iron, the combination of a pair of reducing-rolls, a twisting-guide, a pair of feed-rolls having vertical axes adapted to move the strip of band-iron at the same speed that it is delivered from said reducing-rolls, means for actuating said feed-rolls and a vibrating arm, substantially as described.

8. In an apparatus for handling band-iron, the combination of a reeling mechanism, an apron, means for actuating said apron, a vibrating arm by which a strip of band-iron is deposited in loops upon said apron, means for actuating said vibrating arm and means for feeding the strip of band-iron through said vibrating arm, substantially as described.

9. In an apparatus for handling band-iron the combination with a pair of reducing-rolls and a reeling mechanism of means for forming a series of loops between said rolls and said reeling mechanism and means for moving said loops toward said reeling mechanism, substantially as described.

10. In an apparatus for handling band-iron a pair of reducing-rolls by which the strip of band-iron is delivered with its edges lying in a horizontal plane, of a reeling mechanism, a moving apron, means for twisting the strip of band-iron to bring its edges into a vertical plane, a feeding mechanism, a vibrating arm by which the strip is deposited in loops and means for actuating said vibrating arm, substantially as described.

11. The combination of a vibrating plate, a pair of feed-rolls supported on said plate, means for rotating said feed-rolls, an arm projecting from the side of said plate having a narrow passage-way, said plate and arm being capable of a vibrating motion about an axis parallel with the axis of said feed-rolls and coincident with the line of contact between said rolls, substantially as described.

Dated this 10th day of July, 1897.

VICTOR E. EDWARDS.

Witnesses:
RUFUS B. FOWLER,
M. C. PRICE.