

(No Model.)

2 Sheets—Sheet 1.

J. ZIMMER.
STRAIGHTENING MACHINE.

No. 604,282.

Patented May 17, 1898.

Fig. 1.

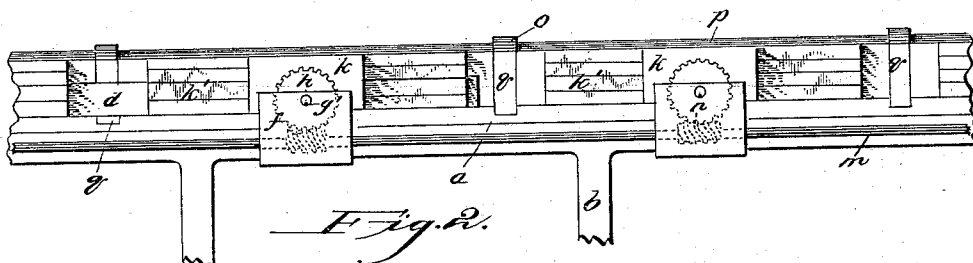


Fig. 2.

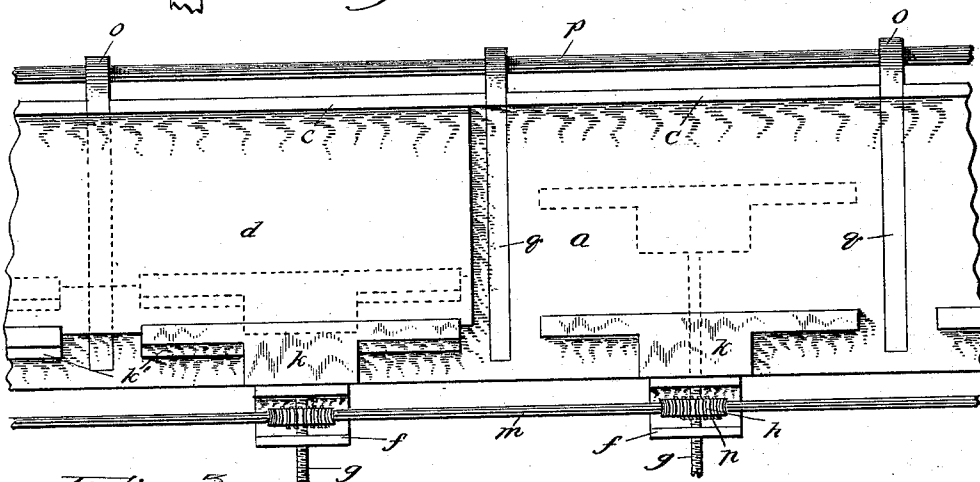


Fig. 3.

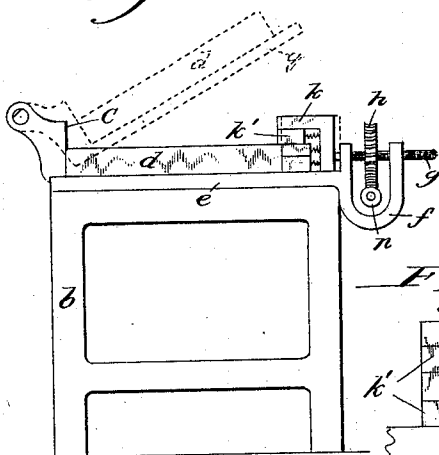


Fig. 4.

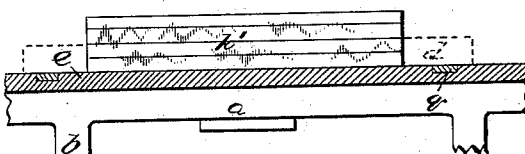
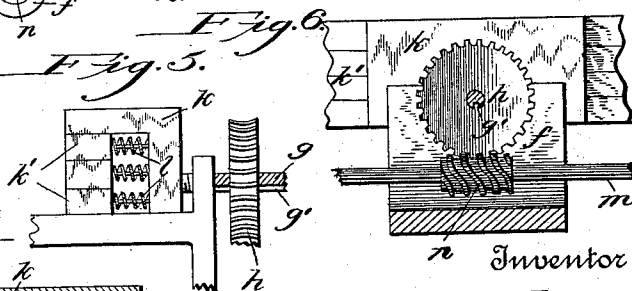


Fig. 5.



Witnesses

J. P. Applemann
W. M. Nelson

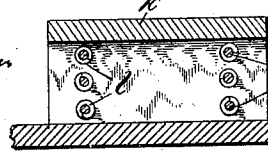


Fig. 7.

by Henry C. Evert. Attorney

Inventor
John Zimmer.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 8.

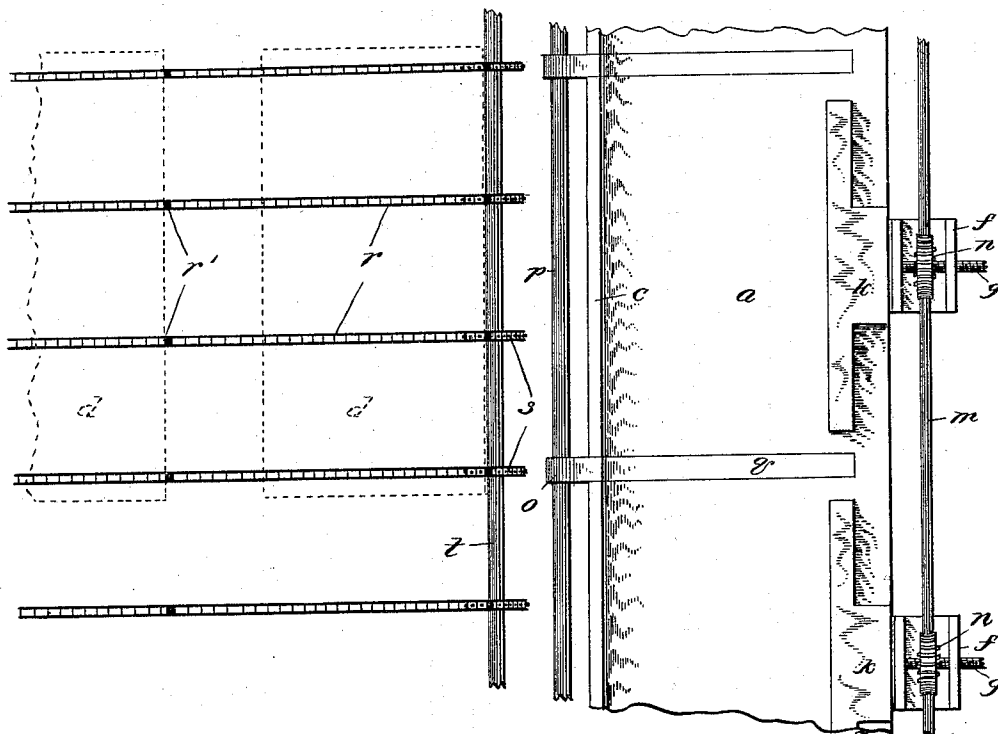
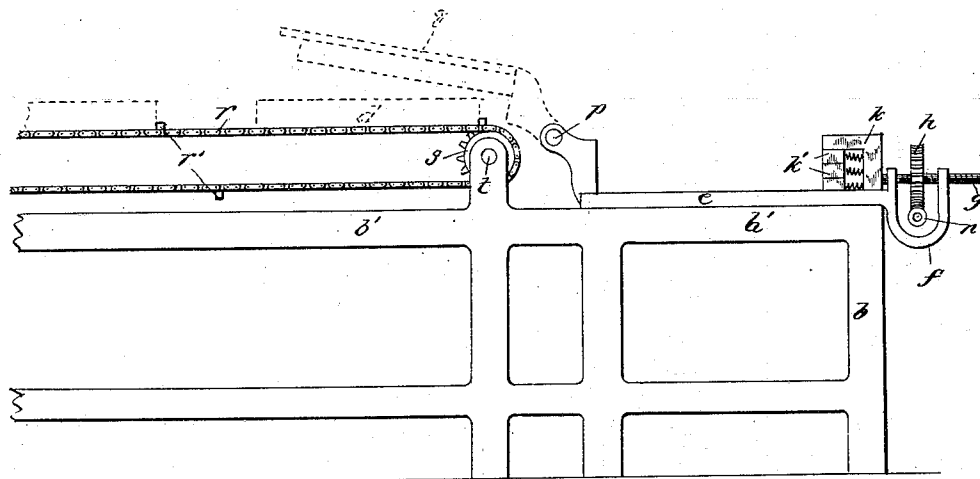


Fig. 9

Witnesses
J. P. Appleman.
A. M. Wilson

Inventor
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by Henry C. Evert Attorney

UNITED STATES PATENT OFFICE.

JOHN ZIMMER, OF PITTSBURG, PENNSYLVANIA.

STRAIGHTENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 604,282, dated May 17, 1898.

Application filed June 1, 1897. Serial No. 639,062. (No model.)

To all whom it may concern:

Be it known that I, JOHN ZIMMER, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Straightening-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in straightening-machines adapted to be employed for straightening plates and all manner of flat iron and the like, and has for its object to provide a
15 straightening-machine which will accommodate any thickness of plate, together with a novel means of bringing the straightening-head against the edge of the plate, as will be hereinafter more fully described.

20 The invention consists, briefly, in a table for receiving the plates, a straightening-head adapted to conform to the different thicknesses of plate, operating means for moving the said straightening-head in either direction
25 upon the table, and an automatic means for removing the plate from the table after the same has been straightened, together with a carrier adapted to receive the plate when the arms remove the same from the table and deposit the plate at any desired point; and to
30 this end the invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more specifically described, and particularly pointed out in the
35 claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar
40 parts throughout the several views, in which—

Figure 1 is a side elevation of the table and a portion of the supporting-standards. Fig. 2 is a top plan view of the machine, partly broken away. Fig. 3 is an end view showing the removing-arms with the plate thereon partly elevated, said plate and arm being in dotted lines. Fig. 4 is a sectional view of a portion of the table, showing a front view of one of the straightening-heads. Fig. 5 is an
45 end view of a portion of the table, showing the straightening-head. Fig. 6 is a sectional view of a portion of the machine, showing one

of the worms and worm-wheels for operating the head. Fig. 7 is a longitudinal sectional view of one of the straightening-heads and a
55 portion of the table. Fig. 8 is an end view of the machine, showing a portion of the carrier to receive the plates. Fig. 9 is a top plan view of a portion of the table and the carrier.

Referring now to the drawings by reference-letters, *a* indicates the table, which is supported by suitable standards or framework *b* and has arranged along one side thereof a heel
60 *c*, extending upwardly a short distance above the table and forming a straight-edge for the plate or flat iron *d*. Secured to the top of the table is the plate *e*, carrying on one side U-shaped hangers *f*, in which is journaled a screw
65 *g*, having a slot *g'* extending in alinement therewith, said screw carrying the worm-wheel *h* and its inner end engaging in the straightening-head *k*, the inner face of which
70 is formed of a series of bars *k'*, held normally flush with each other by means of coil-springs *l*, arranged on rods *l'* between the said bars
75 *k'* and the rear portion of the straightening-head *k*, said rods being rigidly secured in the rear portion of the straightening-head and adapted to enter the bars *k* as the same are
80 depressed.

An operating-shaft *m* is arranged along the front of the machine, extending through the U-shaped hangers *f* and provided underneath each of the worm-wheels *h* with a worm
85 *n*, which engages the said wheels to operate the same and move the head or straightening-block in or out, according to the direction in which the driving-shaft is moving. This operation is accomplished by means of a key being
90 inserted in the slot *g'*, which holds the screw *g* in the U-shaped hanger *f* to prevent the same from turning, but permitting the lateral movement of the said screw to operate the straightening block or head.

Arranged at the rear of the table, at the heel *c*, are brackets *o*, in which is journaled a shaft
95 *p*, which carries arms *q*, extending across the top of the table, which is recessed to permit the arms when upon the table to lie perfectly flush with the top of the same, as is shown in
100 Fig. 4 of the drawings. This shaft *o* may be operated by any suitable means, and as the plates are straightened the shaft is operated

to remove the plates from the table, as is shown in Fig. 8 of the drawings, where they are deposited on a series of sprocket-chains *r*, operating over sprocket-wheels *s*, mounted upon a common shaft *t*, which is supported by a suitable frame *b'*. Said chains may be provided with extending lugs *r'* to prevent the slipping of the plates, if so desired, and this carrier may be extended to any desired distance that it is necessary to carry the plates. When the plate has been placed upon the table, the one edge of the same will lie against the heel *c*, and the straightening or head block *k* is turned against the opposite edge of the plate by means of the shaft *m*, worms *n*, worm-wheel *h*, and the shaft *g*, as heretofore described, and by arranging the front of the block in a series of depressible bars the bar immediately above the plate and which is not depressed thereby will prevent the raising of the plate as the same is being straightened and serve to hold the same firmly upon the table. Upon the reversed motion being given to the shaft *m* the coil-springs *l* will return the bars *k'* that have been depressed to their normal position, so that the outer faces of all the bars will be perfectly flush, and the plate which has then been straightened is removed by operating the shaft *p*, which causes the arms *q* to lift the plate off of the table and deposit the same onto the carriers, as is shown in dotted lines in Fig. 8 of the drawings.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a straightening-machine, the combi-

nation of a table having U-shaped hangers depending therefrom, screws journaled in said hangers and connected to heads or straightening-blocks, an operating-shaft carrying worms to engage worm-wheels on said screws, a shaft journaled on the opposite side of said table and carrying arms operating on said table to remove the plates or flat iron when straightened, substantially as shown and described.

2. In a straightening-machine, a table, hangers depending from said table and having screws journaled therein, heads or straightening-blocks connected to said screws, said blocks having a series of spring-actuated bars mounted thereon, worm-wheels mounted on said screws, a shaft provided with worms engaging the worm-wheels to operate the heads or straightening-blocks, and means for removing the plates, substantially as shown and described.

3. In a straightening-machine, a suitable table, a frame for supporting same, hangers secured to said table, screws journaled in said hangers connected to the head-block carrying a series of spring-actuated bars, worm-wheels on said screws, an operating-shaft carrying worm-screws to engage said worm-wheels, lifting-arms to remove the plate from the table, and means for operating said lifting-arms, in combination with a carrier adapted to receive the plate from said lifting-arms, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN ZIMMER.

Witnesses:

W. H. TIMMERMANN,
GEO. B. PARKER.