(No Model.) 2 Sheets—Sheet 1.

W. E. CUMMINGS.

MACHINE FOR ASSORTING HEEL BLANKS.

No. 461,924. Patented Oct. 27, 1891.

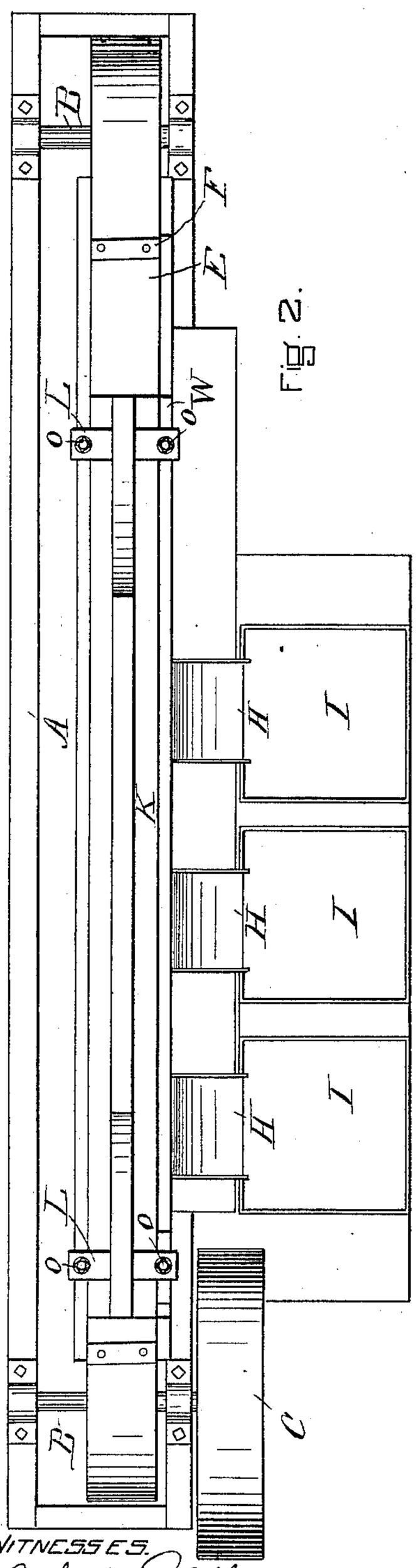

Fig. 2.

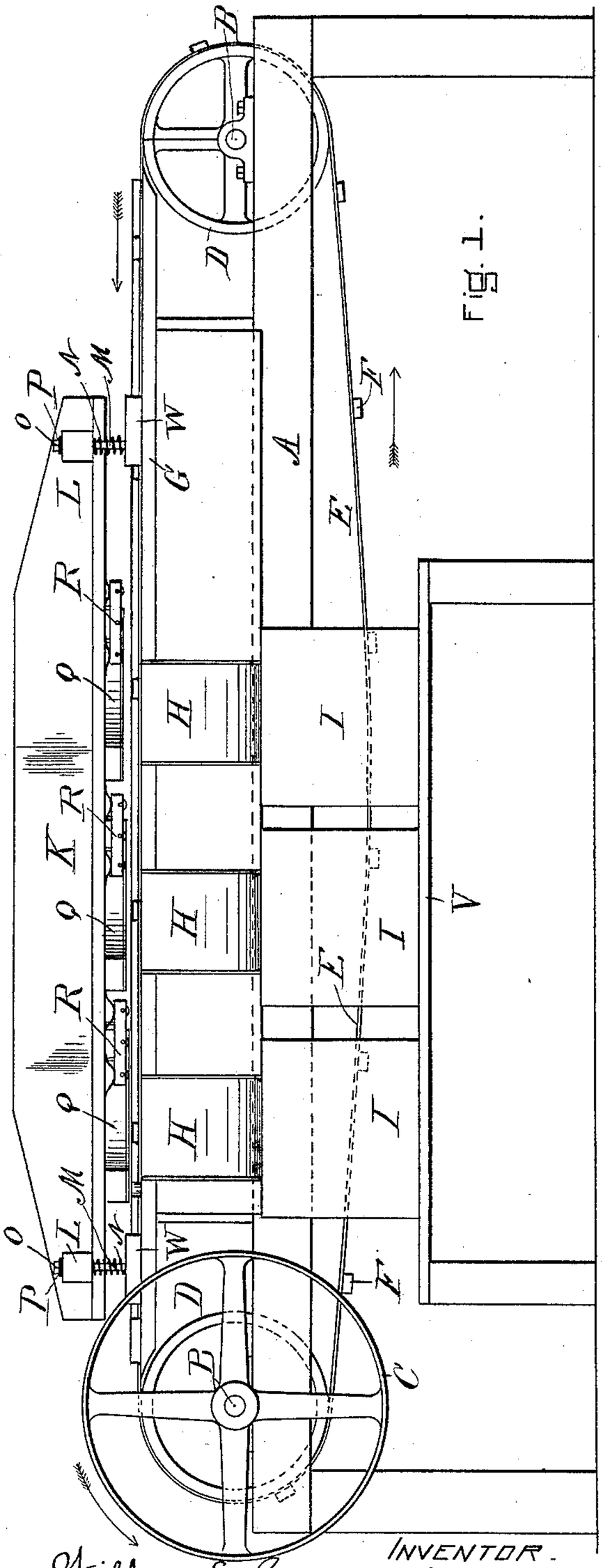

Fig. 1.

WITNESSES.
Robert Wallace,
A. H. Morrison

INVENTOR.
Wilbur E. Cummings
By Macleod, Calver & Randall
His Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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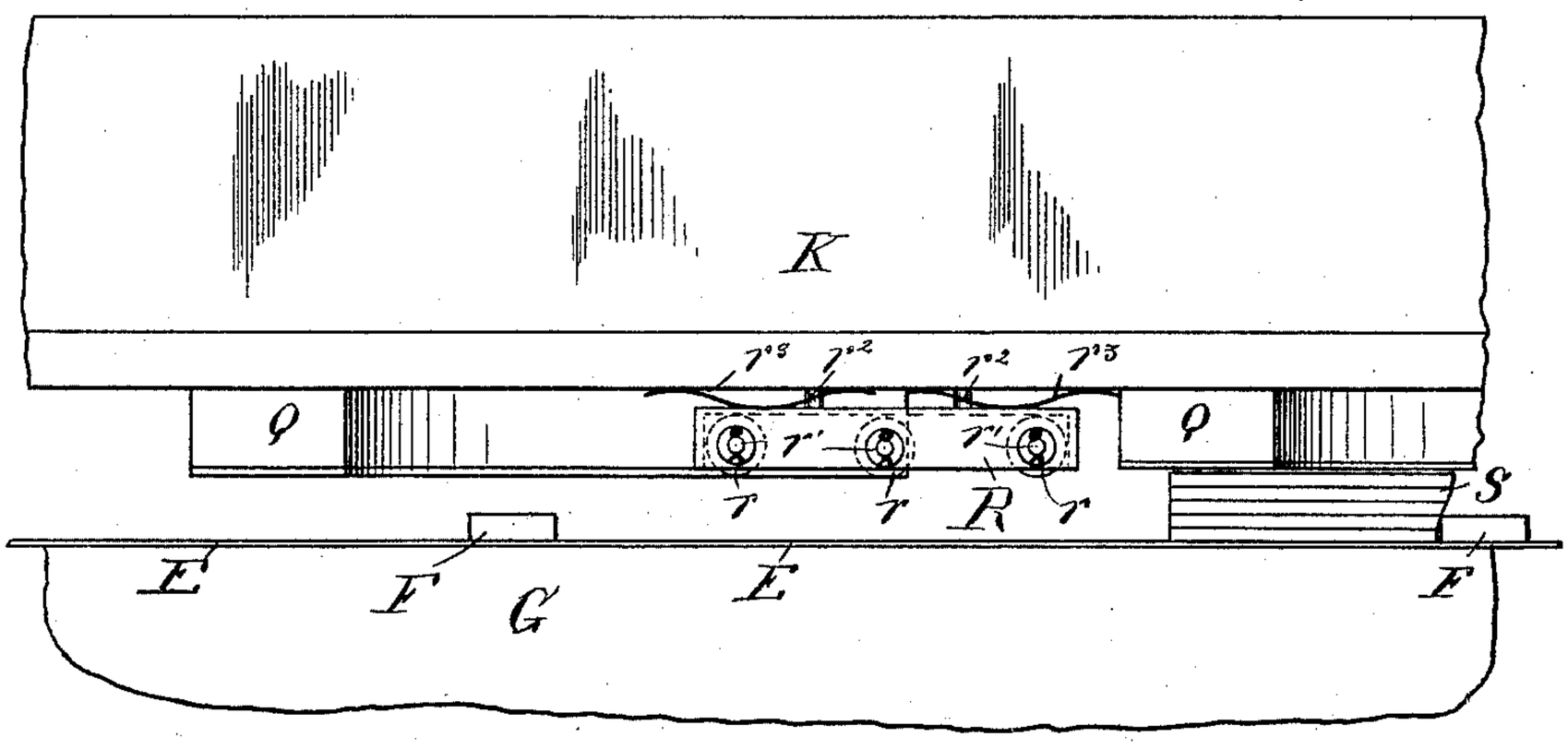


Fig. 3.

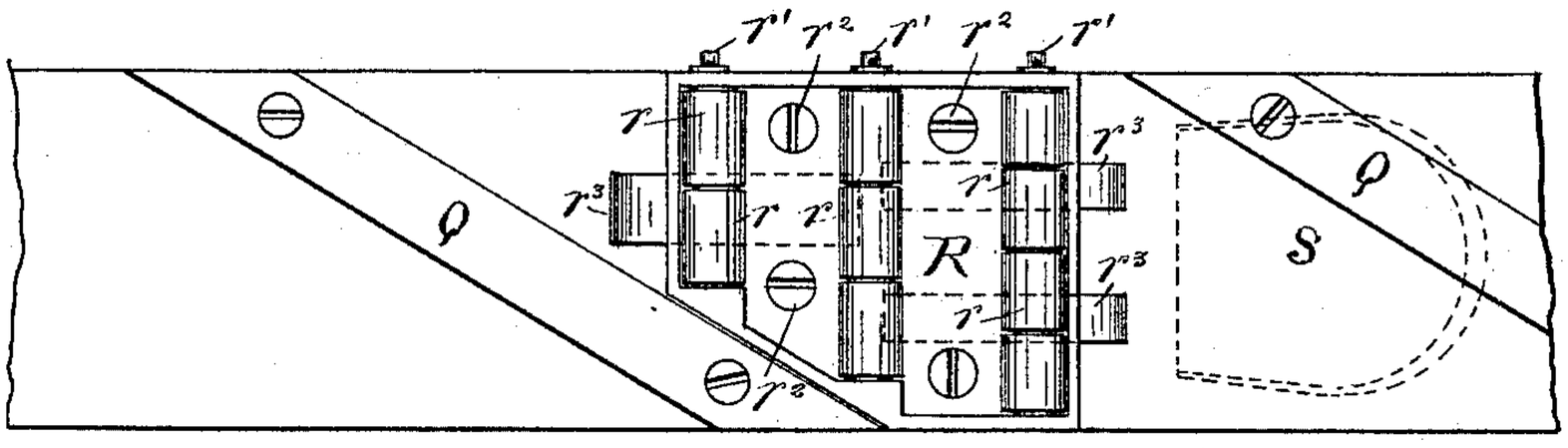
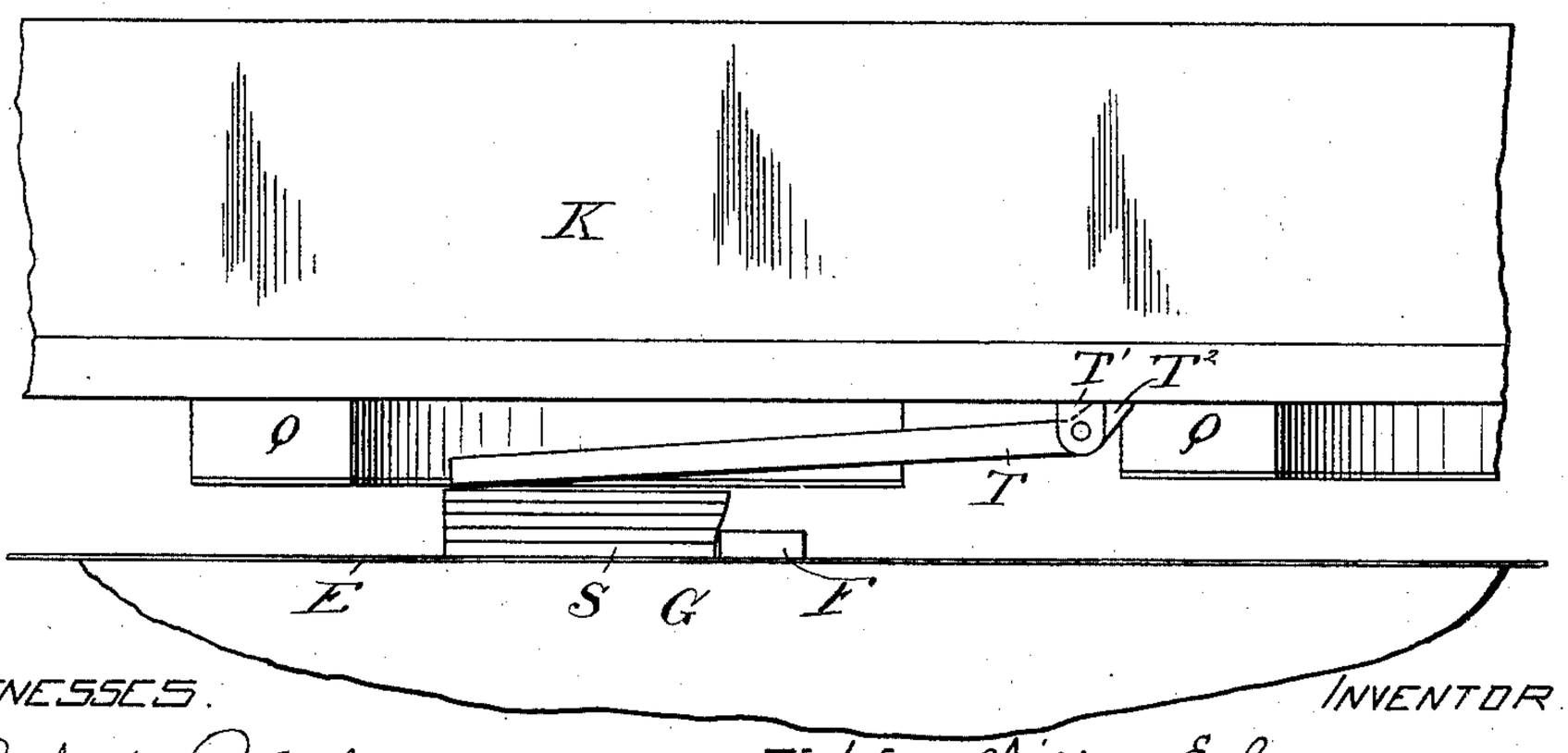


Fig. 4.



WITNESSES.

Robert Wallace,
A. H. Morrison

INVENTOR.

Fig. 5. Wilbur E. Cummings
By Macleod, Calver & Randall
His Attorneys.

UNITED STATES PATENT OFFICE.

WILBUR E. CUMMINGS, OF WOBURN, MASSACHUSETTS.

MACHINE FOR ASSORTING HEEL-BLANKS.

SPECIFICATION forming part of Letters Patent No. 461,924, dated October 27, 1891.

Application filed July 6, 1891. Serial No. 398,527. (No model.)

To all whom it may concern:

Be it known that I, WILBUR E. CUMMINGS, a citizen of the United States, residing at Woburn, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Assorting Heel-Blanks, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to provide a machine by means of which heel-blanks of different heights or thicknesses may be conveniently and rapidly assorted into separate lots, each lot comprising those heel-blanks which are of approximately the same thickness or height.

I have represented in the accompanying drawings a machine containing the best embodiment of my invention which has so far been devised by me.

In the said drawings, Figure 1 is a view in side elevation of the said machine. Fig. 2 is a plan view thereof. Fig. 3 is a view on an enlarged scale, illustrating in side elevation some of the parts of the machine. Fig. 4 is a view of a portion of the "straight-edge" and certain parts carried thereby, shown in Fig. 3, representing the same in inverted position. Fig. 5 is a view in side elevation corresponding with Fig. 3, but showing a modification.

A is the frame of the machine, upon the opposite ends of which the shafts B B are journaled in suitable bearings. One of these shafts is provided with a driving-pulley C, and upon each shaft is mounted a wheel or pulley D. Around the two wheels or pulleys D passes an endless band or belt E, which carries transversely-extending strips or floats F. Between the two wheels or pulleys D is a long narrow table G, serving to support the upper portion of the belt E in its travel between the said wheels or pulleys. Chutes H lead at intervals from one side of the said table to receptacles I, which are shown mounted for convenience on a support or table V. Above the table G and the portion of the belt E extending over the said table is a straight-edge K, the lower portion of which is of the same or approximately the same width as the belt E. The straight-edge K has arms L, through holes in which pass the bolts M, these bolts entering either the table G or pieces W, secured to the same. Between the pieces W and the under sides of the arms L are placed spiral springs N, which surround the bolts M and serve to support the straight-edge. Above the arms L the bolts M receive washers P, of rubber or other elastic material, and nuts O. On the under side of straight-edge K are applied deflecting-gages Q, the gages shown in the drawings consisting simply of obliquely-directed strips formed on or attached to the under side of straight-edge K. These deflecting-gages depend to different distances below the straight-edge and gradually approach more closely to belt E. Thus the second of said gages extends lower than the first thereof, the third lower than the second thereof, and so on. On the leading side of each deflecting-gage is placed a yielding shoe or presser. In Figs. 1, 3, and 4 this shoe or presser is shown as formed of a block or frame R, carrying a series of anti-friction rollers r, the latter being mounted on pins r', supported in the said block or frame. The block or frame is held to the under side of the straight-edge with screws r^2, the heads of which prevent the block or frame from dropping off while the block or frame slides freely up and down on the stems of the said screws between the heads of the screws and the under side of the straight-edge. Springs r^3, interposed between the straight-edge and the block or frame R, serve to depress the latter until it bears against the heads of the screws. In Fig. 5 the shoe or presser is shown as composed of a plate T, which is pivoted at one end to lugs T′ on the under side of the straight-edge. A tail-piece T^2, formed on the plate T, contacts with the straight-edge and prevents the plate from descending too far.

In using the machine a continuous movement will be communicated to carrier-belt E, and heel-blanks S will be placed upon the upper portion of the said belt E at the right-hand end of the machine in Fig. 1. The blanks will be carried forward by the floats or

strips F on the said belt toward the series of shoes or pressers and deflecting-gages. The first of the gages will catch or engage all heel-blanks which are of such height or thickness as to extend above the lower edge of the said gage, and in consequence of the oblique position in which the gages are placed the heel-blanks thus caught or engaged will be deflected laterally into the adjacent chute H, down which they will slide and from which they will fall into the corresponding receptacle I. As hereinbefore stated, the second of the deflecting-gages extends somewhat lower than the first thereof. Consequently this second deflecting-gage will engage with certain of the heel-blanks which passed the first deflecting-gage. In like manner a portion of the blanks which have passed the preceding gages will be engaged and deflected by each of the remaining deflecting-gages in turn. I have shown in the drawings a series of three deflecting-gages, but in practice any desired number may be used. It is found in practice that occasionally some of the lifts or layers of the heel-blanks separate or curl away from the others, and unless provision be made to compensate for this the blanks will not always be accurately assorted, because the separated lifts will rise so high as to engage with the wrong deflecting-gage. I therefore provide the shoes or pressers R or T, which are made yielding vertically in order to enable them to adapt their position to the thickness of each blank that passes beneath shem. As a blank passes under one of the shoes or pressers its layers are compacted together, and the edges thereof are held down in place by the rollers *r* (shown in Figs. 1, 3, and 4) or by the under side of the plate T, (shown in Fig. 5) until after the blank has passed under the adjacent deflecting-gage. This prevents a blank from being deflected off the belt E before it has reached the gage by which it should be deflected into one of the receptacles I. The elastic washers P on the bolts M permit the straight-edge to yield to a slight extent upwardly. By properly turning the nuts O upon the said bolts the vertical position of the straight-edge and of the series of deflecting-gages and other parts carried thereby may be adjusted.

The endless belt E, herein shown and described as a carrier by which the blanks are moved forward to the deflecting-gages, may be replaced by any equivalent continuously-moving carrier—such, for instance, as a disk or table rotating in a horizontal plane. In the case of the employment of this disk or table the parts co-operating therewith will be disposed in preferably a circular or partly circular series around the axis of the disk or table. The floats or strips F upon the belt E constitute a convenient means of insuring the movement of the blanks placed upon the belt forward into engagement with the deflecting-gages Q. They may in practice be replaced by any equivalent device, or they may be omitted altogether, and the belt may be formed with a frictional or adhesive surface suitable for carrying forward heel-blanks. When assorting heel-blanks in which there is no separation of the lifts or layers thereof, the yielding shoes or pressers may be omitted.

It is obvious that the machine herein shown and described is adapted for use in connection with other articles than heel-blanks.

I claim as my invention—

1. The combination, with a movable carrier for moving forward blanks placed thereon, of a series of fixed depending deflecting-gages, each arranged obliquely to the line of movement of the carrier, the said gages having the edges thereof at varying distances from the surface of the carrier to sort out the blanks according to thickness as they are moved along and discharge them laterally off the carrier, substantially as described.

2. The combination, with a carrier for moving forward blanks placed thereon, of deflecting-gages arranged in a series in which the individual gages have the edges thereof at varying distances from the surface of the carrier to sort out the blanks according to thickness as they are moved along and discharge them laterally off the gages, and yielding shoes or pressers whereby the lifts or layers of the blanks are pressed together before the blanks meet the gages, substantially as described.

3. The combination, with a carrier-belt, of a series of fixed depending deflecting-gages adjacent to the said carrier-belt and arranged obliquely to the line of movement of the carrier-belt, the said gages having the edges thereof at varying distances from the surface of the carrier-belt to sort out the blanks according to thickness as they are moved along and discharge them laterally off the carrier-belt, substantially as described.

4. The combination, with a carrier-belt, of a series of fixed depending deflecting-gages adjacent to said carrier-belt, each arranged obliquely to the line of movement of the carrier-belt, the said gages having the edges thereof at varying distances from the surface of the carrier to sort out the blanks according to thickness as they are moved along and discharge them laterally off the carrier-belt, and yielding shoes or pressers whereby the lifts or layers of the blanks are pressed together before the blanks meet the gages, substantially as described.

5. The combination, with a carrier-belt, of deflecting-gages adjacent to said carrier-belt, arranged in a series in which the individual gages have the edges thereof at varying distances from the surface of the carrier-belt to sort out the blanks according to thickness as they are moved along and discharge them laterally off the carrier-belt, and yielding shoes or pressers whereby the lifts or layers of the blanks are pressed together before the

blanks meet the gages, a straight-edge, on which the gages and shoes or pressers are mounted, bolts by which the straight-edge is guided, springs supporting the straight-edge, nuts on the said bolts above the straight-edge, and elastic washers between the nuts and the straight-edge, substantially as described.

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

WILBUR E. CUMMINGS.

Witnesses:
CHAS. F. RANDALL,
ROBERT WALLACE.