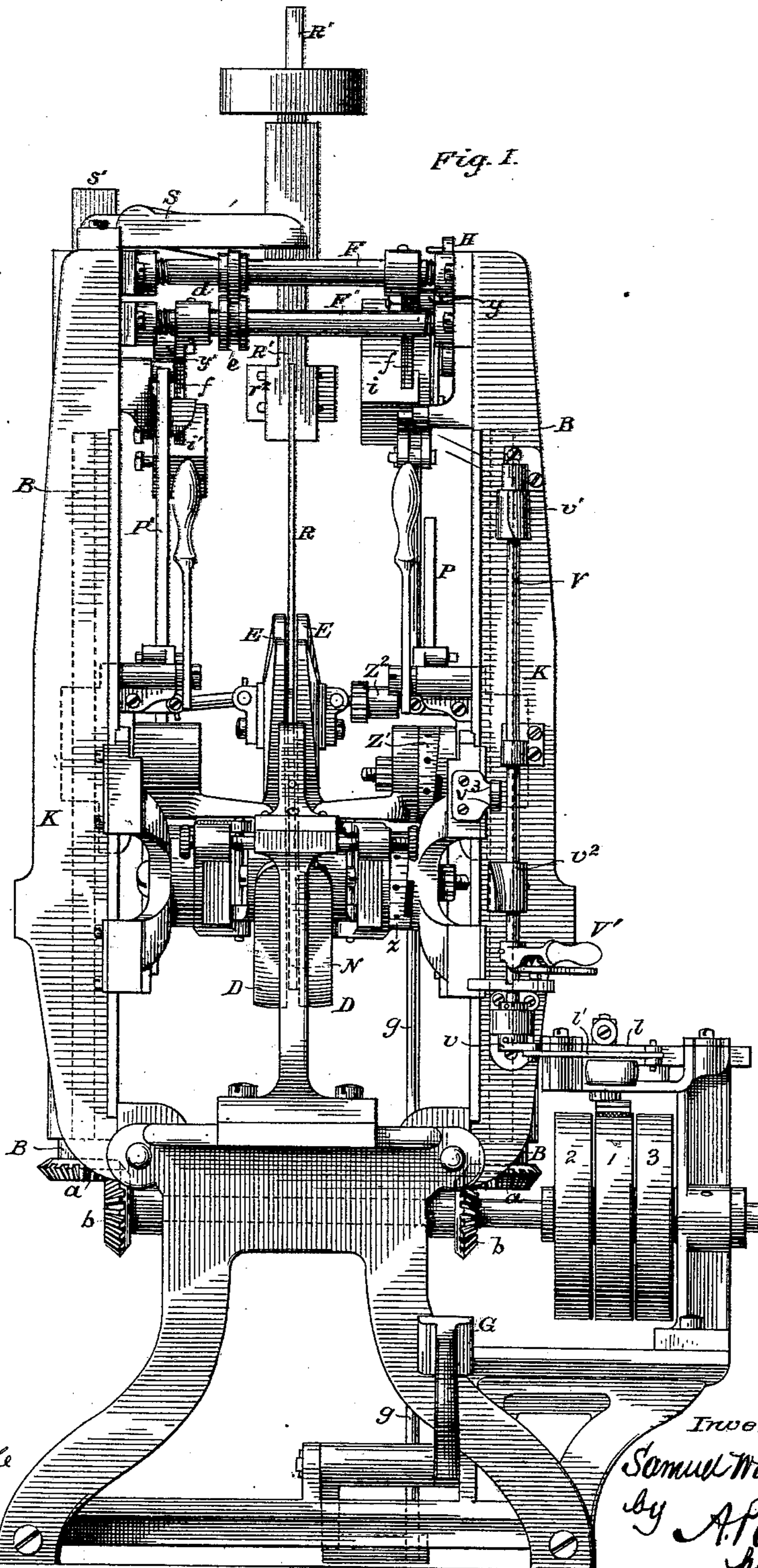


S. W. JAMISON.
Boot and Shoe Crimping-Machine.

No. 218,177.

Patented Aug. 5, 1879.



Attest:
Clarence Poole
Esq. A. Dick

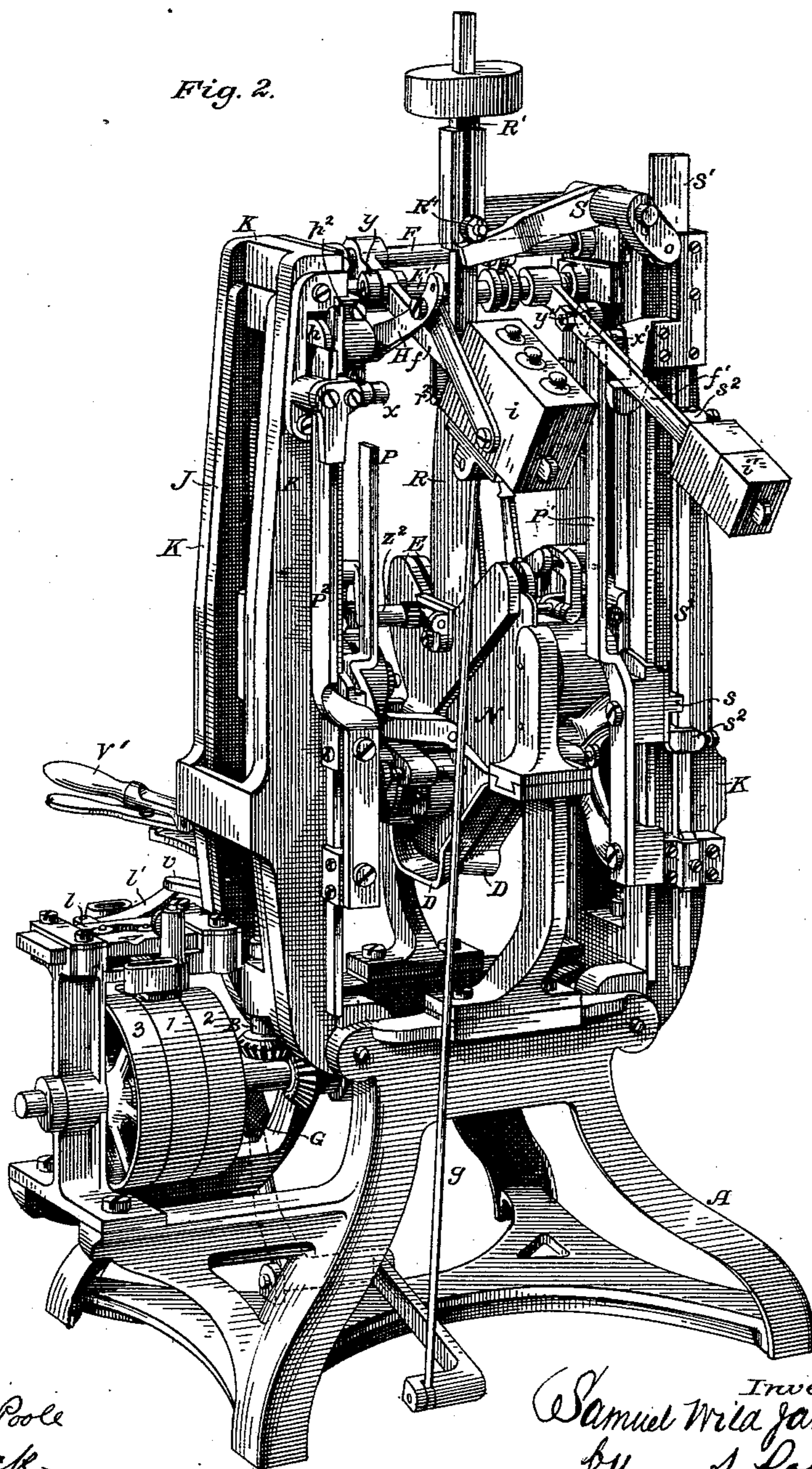
Inventor:
Samuel W. Jamison
by A. Pollok
his attorney

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Fig. 2.



Attest:
C. Clarence Poole
Es. A. Dick

Inventor:
Samuel W. Jamison
by A. Pollok
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Fig. 3.

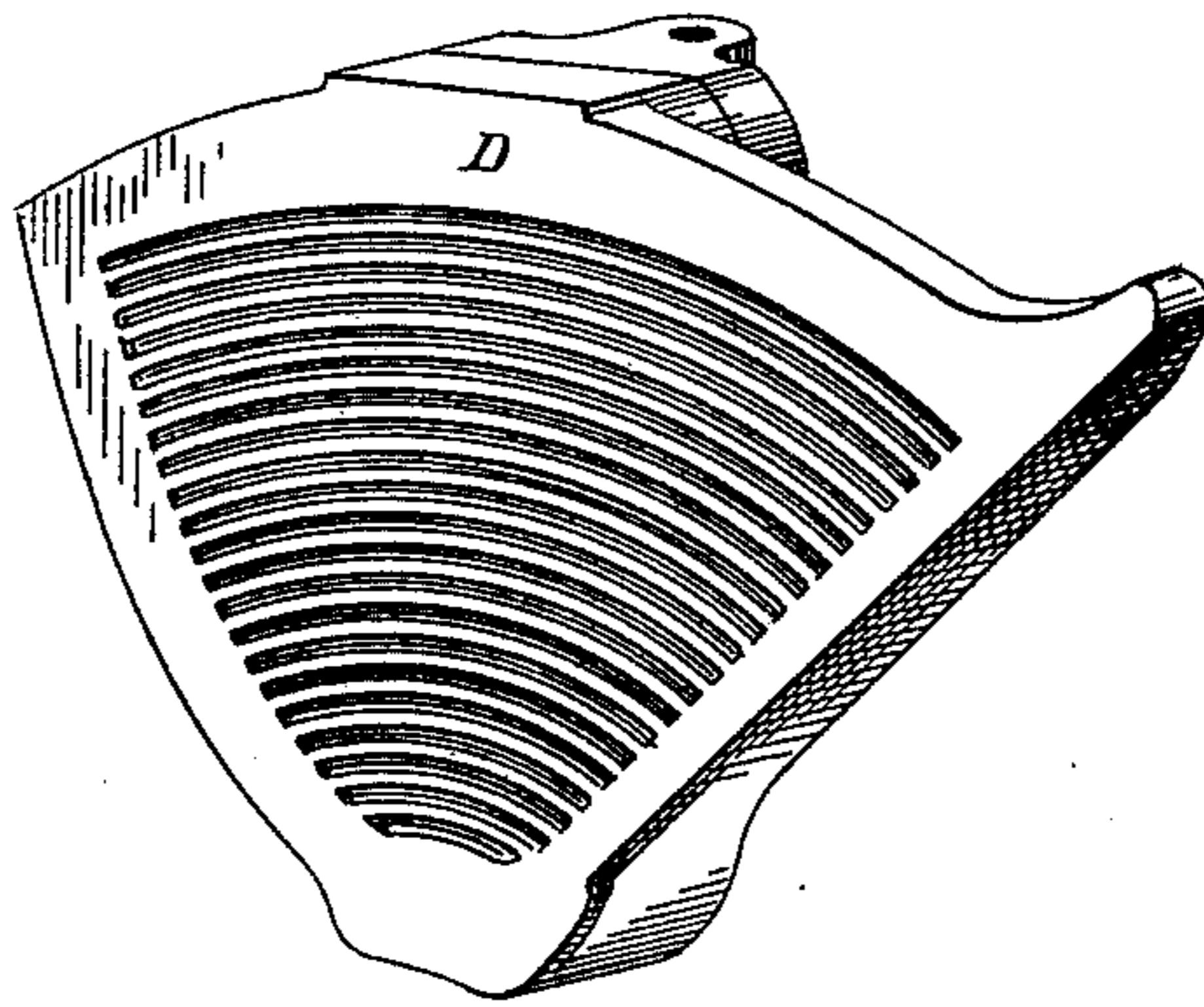
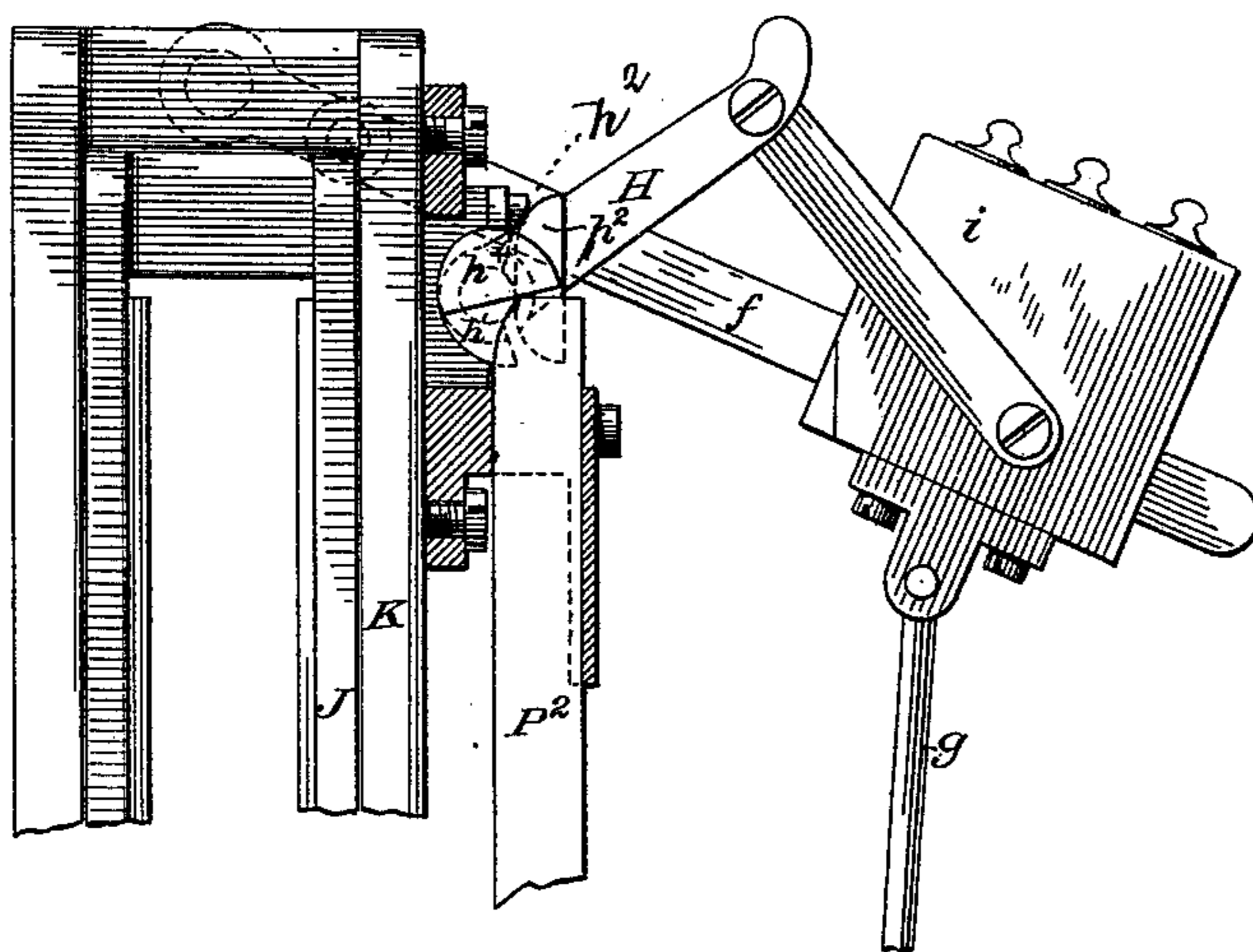


Fig. 4.



Attest:

C. Clarence Poole

C. T. Dick

Inventor:

Samuel W. Jamison
by A. Pollok
his attorney

UNITED STATES PATENT OFFICE.

SAMUEL W. JAMISON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO S. W. JAMISON BOOT AND SHOE CRIMPING MACHINE COMPANY.

IMPROVEMENT IN BOOT AND SHOE CRIMPING MACHINES.

Specification forming part of Letters Patent No. **218,177**, dated August 5, 1879; application filed July 8, 1879.

To all whom it may concern:

Be it known that I, SAMUEL WILD JAMISON, of Boston, county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Boot and Shoe Crimping Machinery, which improvement is fully set forth in the following specification.

The invention relates principally to machines of the kind described in former Letters Patent granted to me, particular reference being had, however, to Nos. 176,181, April 18, 1876, and 198,622, December 25, 1877.

In its general structure the present improved machine resembles that set forth in the above-mentioned patent of 1876.

Two pairs of jaws for crimping and smoothing are carried by trucks, which move in independent adjustable ways in frames which are hinged to the pedestal below and connected at the top by cross-shafts with right and left handed screws resting in corresponding internally screw-threaded boxes.

One of each pair of jaws is provided with devices for setting it nearer to or farther from the other, and the tree is connected with and supported in dovetailed slides, so that it adjusts itself.

The jaws are raised and lowered by means of screw-threaded shafts which pass through screw-threaded boxes or bosses, on the trucks which carry the jaws, which shafts are rotated by means of a cross-shaft and bevel-gears.

A belt-shifter is connected with fast and loose pulleys on the cross-shaft, and it is operated automatically and by hand.

For causing the crimping-jaws to approach each other, an automatically-shifted weight carried by a lever is employed, and a wrinkle-preventer with automatic operating means is used, as set forth in the above-mentioned patent of 1877.

This invention consists in a peculiar shape of the crimping-jaws; also, in the combination, with other elements of the machine, of a tree slightly wedge-shaped or thickened at the bottom; also, in special means for operating belt-shifter, for causing the crimping-jaws to approach or recede from each other, and for operating the wrinkle-preventer; and also in certain combinations and arrangements of parts, as hereinafter more fully set forth.

The following description will enable those skilled in the art to which it appertains to make and use my invention, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front elevation of the improved machine; Fig. 2, a perspective rear view of the same; Fig. 3, a detached view of one of the crimping-jaws, and Fig. 4 a detail view.

The same letters refer to like parts on all the figures wherever they occur.

A is a supporting-pedestal, to which the frames K J are hinged. On ways in these frames the trucks carrying the jaws D and E slide, being moved up and down by means of the upright screw-shafts B, one on each side of the machine, rotated by means of bevel-gears *a b* on a horizontal driving-shaft, which turns in bearings in the pedestal. The trucks carrying the jaws D move on ways in the frame K, and the trucks carrying the jaws E on the frame J.

A bracket on the side of the pedestal supports the end of the driving-shaft bearing the fast pulley I and the loose pulleys 2 and 3, and also the belt-shifter *l*. A brake is connected with the shifter, so that it is applied when in shifting the belts. Neither of the two belts which are used is on the tight pulley.

The frames K J are connected at the top by cross-shafts F F', respectively, both shafts being provided at the ends with right and left handed screws, which enter into correspondingly internally screw-threaded boxes in the frames.

The shafts rotate independently; but lateral movement is prevented by means of a peripheral spline, *d*, and groove *e*. From the shafts F F' project lever-arms *f f'*, on which are weights *i i'*. The weight *i'* is adapted to be adjustably secured at any desired distance from the shaft F'.

The weight *i* is provided with a number of smaller weights, which fit in recesses therein, and which may be removed or replaced by heavier ones if it be desired to vary the heaviness of the weight *i*. This weight *i* slides freely upon the arm *f*, its movement being effected by means of the lever-arm H. The shaft on which this arm turns is provided at its opposite end with projections *h h¹ h²*, by

means of which the arm is vibrated. The weight i is also connected by a jointed rod, g , with a treadle, G , hinged to the pedestal.

N is the tree or crimping-form, supported in dovetail slides working in grooves in the supporting-standards. The sides of the tree are not parallel with each other, but inclined outward toward the bottom, so that the tree is slightly wedge-shaped.

The crimping-jaws D are formed convex or rounded at the top, as shown in Fig. 3, so that the highest point is at the center. The jaws turn on vertical hinges, and are both provided with set-screws for giving them the proper angular adjustment, and one of them has also devices z for giving it a lateral adjustment.

The smoothing-jaws E turn on horizontal hinges, and are moved into and out of position by means of toggles. One of these jaws is provided with devices Z^1 for adjusting it laterally, the toggles also having means, Z^2 , for lengthening and shortening one of its links.

The tree N , being free to move sidewise, will adjust itself to the jaws, and this adjustment is aided by the inclination of the sides. The tree being thicker at the bottom than at the top, there is a greater pressure upon the leather as the jaws descend, and this, aided by the approach of the jaws, by the movement of the frames K J , gives a greatly-increased hold upon the leather.

The crimping-jaws, owing to the rounded top, exert the most influence upon the heel or corner portions of the leather on the tree. Moreover they act to draw the leather from the edges toward the center or heel portion on account of the upward inclination of the edges.

The curvature or convexity of the upper part of the jaws is not simply over a part of their width, but extends entirely or practically from edge to edge. The crimping-jaws are provided with suitable corrugations on their face.

To the trucks which carry the jaws are attached upright bars P P^1 P^2 for operating the lever-arms f f' H . The bar P is arranged, when moved upward, to strike a roller or projection, y , on the arm f , and in like manner the bar P^1 is arranged with reference to the roller or projection y' on the arm f' . Rollers x x' are attached to the frame K at the back of the path of the rods P P^1 .

The bar P^2 is slightly beveled on one edge at the top, and to it at the side is attached a double-beveled projection, p^2 . It is arranged to strike when moved upward with its upper end the projection h on the shaft to which the lever-arm H is attached, the projection p^2 engaging with the projection h^1 .

R is the wrinkle-preventer, attached to the rod R^1 , which slides in grooves in a bracket attached to one of the frames K . On the lower end of the rod R^1 is a cross-piece, r^2 , and at its upper end it is provided with a weight which tends to press it downward, and at the back is a pin roller or projection, R^4 . Under this projection extends an arm of the bent le-

ver S , pivoted to the frame K . At the back of this frame a rod, S' , slides in suitable bearings, and at its upper end it is enlarged, as shown at s^1 , the under side of the enlargement being beveled. An arm of the bent lever S projects downward at the side of the rod. A projection, s , on the side of one of the trucks moves this rod by contact with stops s^2 , made adjustable thereon.

On the front of the frame K , on that side to which the belt-shipper l is placed, is arranged an upright shaft, V , turning in bearings and connected with the belt-shipper by means of a crank, v , and connecting-rod V' . On the shaft V are attached two cams, v^1 v^2 , the cam-surfaces being turned in opposite directions. A pin and roller or projection, v^3 , on one of the sliding trucks is arranged to operate in connection with these cams. The shaft V is also provided with a handle, V' , so that it may be turned thereby.

The operation of the machine will be readily understood in connection with the foregoing description.

The pulley 1 being put in motion in the direction to lift the trucks carrying the crimping and smoothing jaws, the latter moves upward, and the upright bar P^2 , with its projection p^2 , engages with the projections h h^1 and operates the arm H , so as to slide the weight i on the arm f upward toward the shaft F . The projection p^2 first strikes the projection h^1 , partially turning the arm H , and then the end of the bar itself strikes the projection h and further turns the said arm, bringing the projection h^2 into position to be struck by the projection p^2 on the descent of the rod. The bar P^1 , before the end of the last movement, strikes the projection on the end of the arm f' and raises the latter with its weight i' , thereby turning the shaft F' , spreading the frames J and separating the smoothing-jaws E . The bar P , as the trucks rise farther, strikes the projection on the bar f , lifts it and the weight i , turns the shaft F , and spreads the frames K and separates somewhat the crimping-jaws. As the trucks near the end of their upward movement the wrinkle-preventer is lifted by contact of the upper edge of the jaws E with the cross-bar r^2 . The projection s raises the rod S' by means of the stop thereon, and the bent lever S turns the weight of its horizontal arm, so that it is no longer in a position to sustain the wrinkle-preventer; and, finally, the projection v^3 turns the shaft b through the cam v^1 and moves the belt-shifter l a sufficient distance to force the belt from the fixed pulley 1 to one of the loose pulleys at the side, thereby stopping the machine. The operator then places the leather on the tree or form, and shifts the belt from the other loose pulley onto the fixed pulley 1 by the handle v^1 . The trucks with the jaws descend and pass over the leather on the tree, crimping it. As they descend the upright bar P releases the arm f , and the latter, turning by reason of the weight i , turns the shaft F , draws the frames K together, and

causes the crimping-jaws to approach each other. As the trucks farther fall the arm f' is released, and the weight i' draws together the frames J and jaws E through the shaft F'. During this operation the projection p^2 strikes the projection h^2 , Fig. 4, turns the arm H, and forces the weight i outward on the arm f , so that the crimping-jaws are forced together with increased pressure.

As before stated, the form of the tree, being thicker at the bottom, aids greatly in increasing the gripe of the jaws, and from the shape of the crimping-jaws the latter act longest on the heel or corner portion of the leather and stretch the material from the edges toward the center. When the jaws have passed over the leather the projection s strikes the stop on the rod S', and the latter is drawn downward. The beveled portion of the enlargement s^1 acts to turn the bent lever S and raise the wrinkle-preventer R, which, on the descent of the jaws, had been left resting upon the leather on the tree. Finally, the projection v^3 comes into contact with the cam b^2 , turns the shaft V, and stops the machine.

By opening the smoothing-jaws E by the toggles the operator can readily remove the crimped leather from the tree.

If at any time during the operation it is desirable to relieve the pressure on the jaws D, this may be readily accomplished by means of the treadle G, connected with the weight i .

Having thus fully described my said invention and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for crimping leather, the crimping-jaws shaped substantially as shown and described, rounded outward or convex on the edge which last passes over the tree of the crimping-machine, so that their action shall be continued longest upon the heel or corner portion of the leather, and the material from the edges will be drawn toward the center, as set forth.

2. The combination, with a tree wedge-shaped or with inclined sides, of the crimping-jaws, a screw-threaded shaft and weighted lever, and the mechanism, substantially as described, whereby, as the crimping-jaws pass over the tree, the said weighted lever is gradually and automatically released and caused to act with increasing pressure to press the said jaws together by means of the aforesaid screw-threaded shaft, as set forth.

3. The combination of a wedge-shaped tree supported by slides moving in standards with the crimping-jaws and devices for laterally adjusting one of said jaws, substantially as described.

4. The combination, with a wedge-shaped tree, of a pair of crimping and a pair of smoothing jaws, substantially as described.

5. The combination, with a pair of hinged frames and crimping-jaws carried by trucks moving in ways thereon, of devices, as specified, for applying pressure to draw the frames

together, and means, substantially as described, for automatically increasing the pressure applied to said frames as the crimping-jaws descend, as set forth.

6. The combination, with a pair of hinged frames connected at the top by a cross-shaft, with right and left handed screws at the end turning in correspondingly internally screw-threaded boxes, and a pair of crimping-jaws carried by trucks moving in ways on said frames, of a lever-arm attached to said cross-shaft, a weight movable thereon, and mechanism for automatically sliding said weight back and forth on said lever-arm, substantially as described.

7. The combination, with a pair of crimping-jaws, of pressure mechanism for automatically causing said jaws to approach each other during the crimping operation and a treadle or similar device under the control of the operator connected with said pressure mechanism, substantially as described, so that, if desired, the pressure on the jaws may be relieved and reapplied at any state of the operation.

8. The combination, with a pair of hinged frames, and trucks carrying jaws and sliding in ways on said frames, of a cross-shaft with screw-threaded ends connecting the frames at the top, a lever-arm attached to said shaft, and a weight movable on said lever-arm and connected by a jointed rod with a treadle or similar device under the control of the operator, substantially as described.

9. The combination, in a crimping-machine, with the wrinkle-preventer, of the mechanism, substantially as described, for positively and automatically lifting the same at the end of the crimping operation, as set forth.

10. The combination, with the wrinkle-preventer and weight, tree, and trucks carrying crimping-jaws, of a bent lever and a sliding rod having at its upper end an enlargement beveled on the under side, arranged to operate in connection with each other and with the wrinkle-preventer, the said rod being provided with stops arranged to be struck by a projection on one of the trucks, substantially as described.

11. The combination, with a shaft bearing fast and loose pulleys, a belt-shifter, a vertical shaft connected therewith, and two cams facing in opposite directions fixed on said shaft, of the trucks carrying crimping-jaws, and arranged to be moved up and down by the revolution of the aforesaid pulley-shaft, and a projection on one of said trucks, the said projection and aforesaid cams being relatively arranged, as shown and described, so that at each upward and downward movement of the trucks the said projection will engage with one or the other of said cams, and thereby operate the belt-shifter, as set forth.

12. The combination, with a shaft carrying fast and loose pulleys and trucks connected therewith and arranged to be raised and lowered by the revolution of said shaft, of a belt-

shifter, a vertical shaft connected therewith, two cams facing in opposite directions, and a handle fixed on said shaft, and a projection carried by one of the aforesaid trucks, substantially as described.

13. The combination of two pairs of hinged frames connected at the top by separate shafts, two pairs of trucks carrying crimping and smoothing jaws and sliding in ways on said frames, a tree supported in standards, a bracket attached to one of the said frames, a wrinkle-preventer attached to a rod sliding in said bracket, mechanism for automatically drawing together the aforesaid frame and for

increasing, as the jaws descend, the pressure upon one pair of frames, and mechanism for automatically and positively raising said wrinkle-preventer at the end of the crimping operation, all substantially as shown and described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

S. W. JAMISON.

Witnesses:

VINTON COOMBS,
PHILIP MAURO.