(No Model.) 2 Sheets—Sheet 1.

S. W. JAMISON.

BOOT OR SHOE CRIMPING MACHINE.

No. 303,018. Patented Aug. 5, 1884.

FIG. 1.

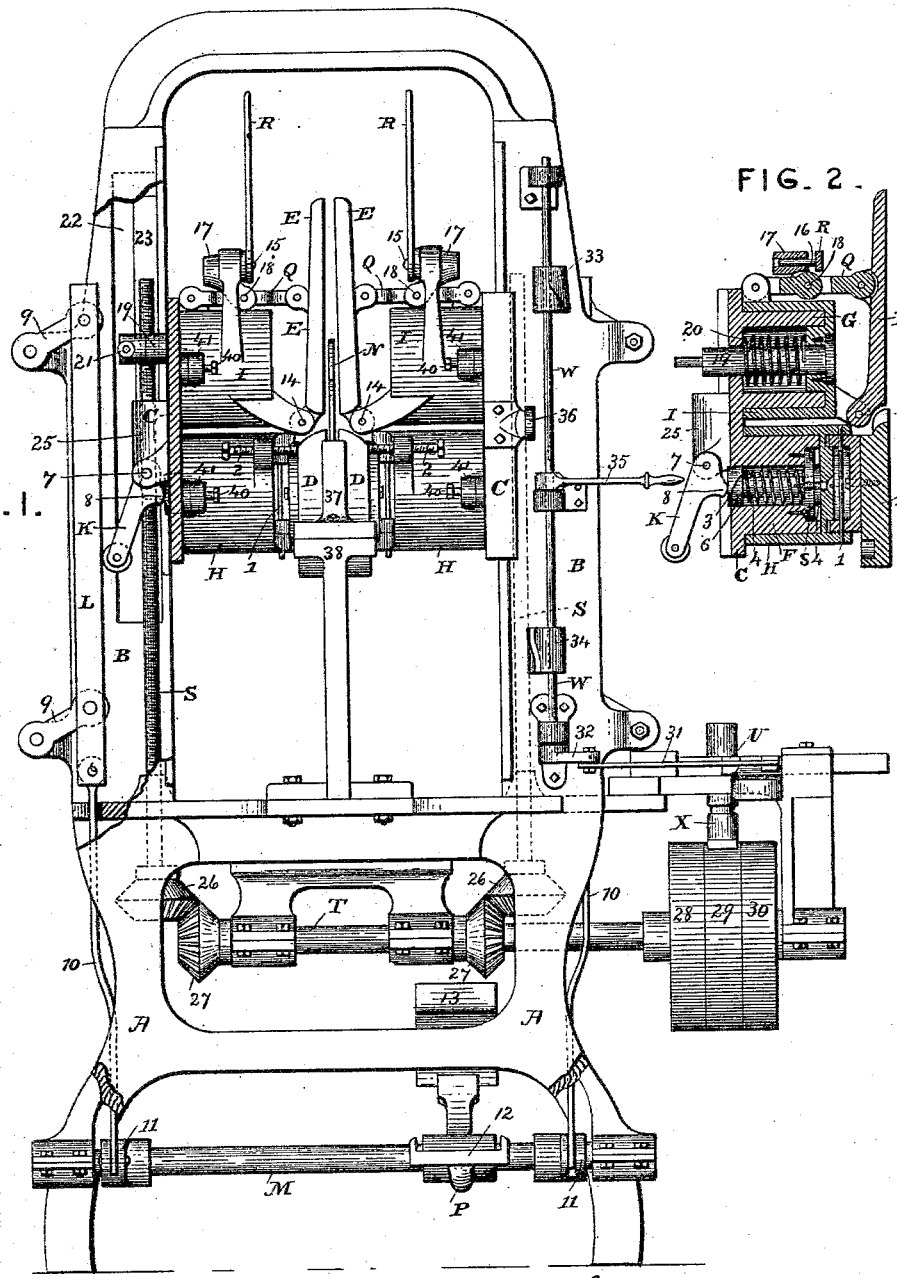

FIG. 2.

ATTEST.

Geo. T. Smallwood.

J. Henry Kaiser.

INVENTOR.

Samuel W. Jamison

By A. Pollok

his atty.

(No Model.) 2 Sheets—Sheet 2.

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FIG. 3.

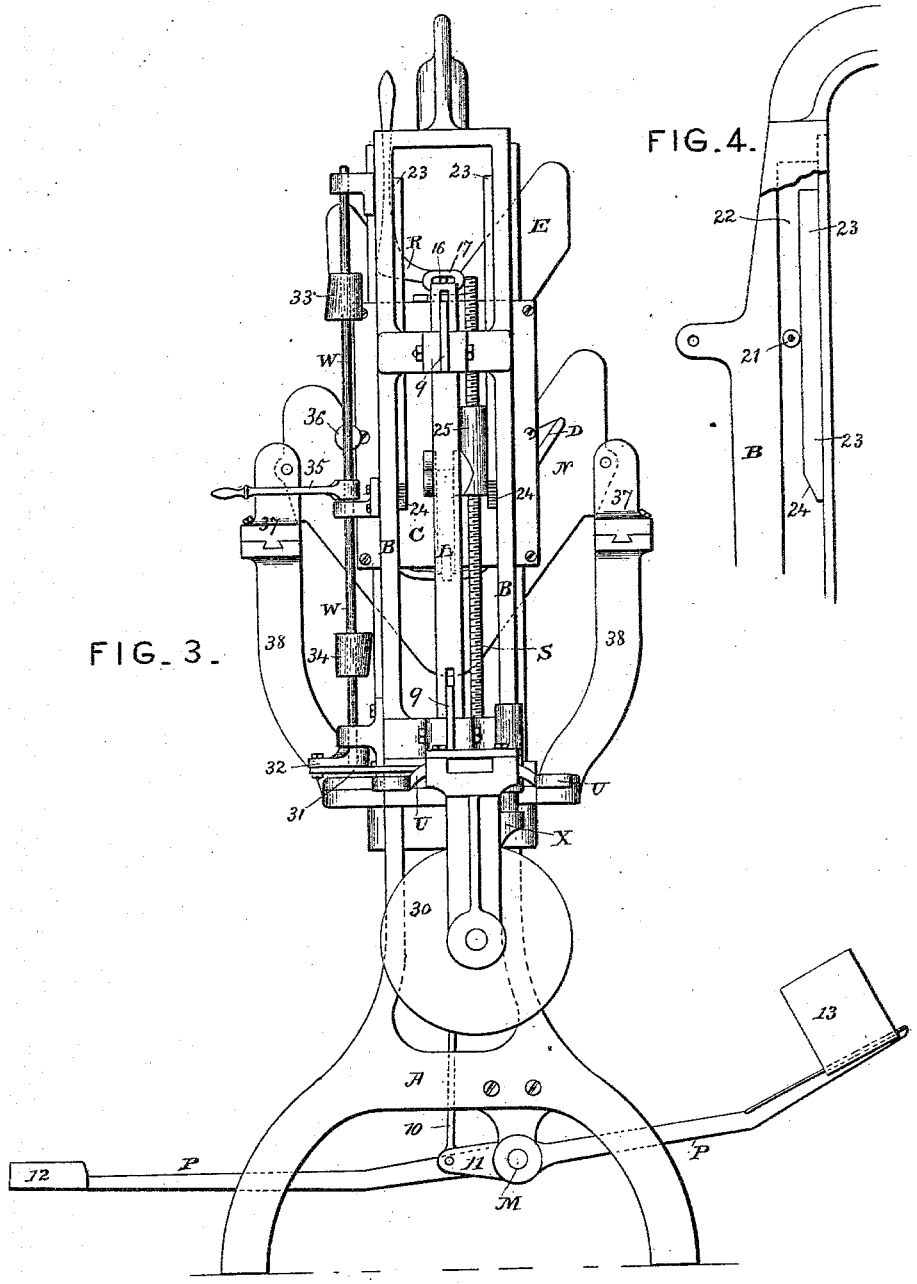

FIG. 4.

ATTEST.

Geo. T. Smallwood.

J. Henry Kaiser.

INVENTOR.

Samuel W. Jamison

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UNITED STATES PATENT OFFICE.

SAMUEL W. JAMISON, OF BOSTON, MASS., ASSIGNOR TO THE S. W. JAMISON BOOT AND SHOE CRIMPING MACHINE COMPANY, OF NEW YORK, N. Y.

BOOT OR SHOE CRIMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 303,018, dated August 5, 1884.

Application filed May 8, 1884. (No model.)

To all whom it may concern:

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

This invention relates to mechanism for crimping and smoothing skins or leather by power. I have heretofore devised machines for this purpose, for which Letters Patent have been granted at different times. (See Patent No. 218,177, dated August 5, 1879, and those referred to in the specification making part thereof.) Machines embodying the patented improvements, while practical and useful, have nevertheless been found to have certain defects. These the present invention is designed to remove. In order properly to perform the crimping operation, neither tearing the material nor stretching it so little that it resumes its former shape, the pressure against the crimping-jaws must be adapted to the thickness and texture of the skin in process of crimping. It is found that skins even of the same kind and grade vary from one another to such an extent that it is necessary or very desirable to change the pressure almost constantly. Sometimes it may be with every successive skin. In my former machines, wherein the pressure is applied by a weighted lever-arm, which tends to turn a screw-shaft, the weight on said lever-arm is connected with a treadle. By depressing the treadle the operator can lift the weight and relieve the pressure on the crimping-jaws.

It has been attempted to regulate the pressure on the jaws by pressing more or less upon the treadle; but it is difficult or impossible to balance more or less of a weight, so as to effect a satisfactory regulation. This is partly because there is no movement of the treadle under the foot, unless the weight is lifted bodily, and also because the operator is required to apply more pressure on the treadle in order to diminish the pressure on the crimping-jaws. This mode of applying pressure on the jaws is also objectionable, because the weight is always set to a certain maximum, which can only be changed by increasing or diminishing the weight on the lever. In the present invention a series of levers are provided, through which the operator applies more or less pressure on the crimping-jaws by increasing or diminishing the pressure upon a treadle or other device of a similar nature. A spring or equivalent means retract the jaws, holding them open when the pressure is not applied. In this invention, also, a great simplification is effected, and the construction and arrangement of parts is such there is less liability of breakages occurring.

The following is considered the best mode of applying the principle of the invention, reference being had to the accompanying drawings, which form part of this specification.

Figure 1 is a front elevation of a machine constructed in accordance with the invention, parts of said machine being broken away to show devices behind; Fig. 2, a partial view in vertical section; Fig. 3, a side elevation, and Fig. 4 a detail view.

The machine-frame consists of a pedestal, A, and upright side frames, B, the latter being connected together at the top. The trucks E, which carry the crimping-jaws D, and smoothing-jaws E, slide on ways attached to or making part of the side frames. On each truck are two cylinders or turrets, F G, respectively, and fitting over each cylinder or turret is a sliding cap, H I. The caps are prevented from turning on their respective turrets by pins or bolts 40, which pass through the lugs 41 on the caps, and are fastened in the body of the truck. The lugs 41 may slide on the pins or bolts 40. Each cap or slide H carries a crimping-jaw, D. This jaw is pivoted on the face of the cap by a pin, 1, and its position is adjusted by the set-screws 2, of which there are two to each jaw—one on each side of the pivot. The cap on slide H is fastened (by a screw, as shown) to a plunger, 4, which is free to slide in the turret F. A spiral compression-spring, 3, confined between the plate 5 (fastened by screws to the turret F) and the enlargement 6, at the outer end of the

plunger 3, tends to move the crimping-jaw outward or away from the tree or crimping form N. The crimping-jaws are pressed inward by the operator during the descent of the trucks, in order to act upon the leather on the form or tree N. A lever, K, pivoted at 7 to lugs on the back of each truck C, bears at 8 against the outer end of the plunger 4. The bar L, connected with the side frame, B, at top and bottom by means of the short links 9, is arranged outside each lever K, so that when depressed said bar is by the turning of the links 9 forced inward, and, bearing against the friction-roll at the end of lever K, presses said lever in also. The bars L are each joined by a connecting-rod, 10, to a short arm, 11, of the rock-shaft M, which latter is journaled in bearings in the pedestal A. A pedal-lever, P, is keyed at the middle to the rock-shaft M. By bearing on the pedal 12 at the front end of the lever the operator can depress both bars L, and force in the crimping-jaws D, simultaneously and to an equal extent. The rear arm carries an adjustable weight, 13, the object of which is to turn the rock-shaft whenever the operator lifts his foot from the pedal. The smoothing-jaws E are each pivoted at 14 to and between brackets on one of the caps I. Toggle-levers Q, jointed to lugs on the cap I, and jaw E, move the latter into and out of position for acting upon the leather on the tree or form. Each toggle is operated by a bell-crank lever, R, pivoted at 15 to a bracket on the cap I, and provided at the end of its horizontal arm with a pin, 16, which fits in a slot in the link 17, connected with the central pivot-pin, 18, of the toggle. The caps or slides I are each fastened by screws or otherwise to a thick rod, 19, which passes through a hole in the truck. A very strong spiral compression-spring, 20, surrounds the rod 19, and is confined between the face of the cap and the truck. These springs tend to force the caps I and smoothing-jaws E inward, so as to bear against the leather or skin on the tree or form N. At the outer end of the rod 19 is a cross-bar, 21, which projects into grooves 22 in the side frames. At the ends of the cross-bar are rollers, which travel over the track 23 at the inner side of the grooves. This track is cut away at the bottom, forming an incline, 24. When the cross-bar 21 reaches the said incline, said bar is released gradually, and the spring then presses the smoothing-jaw against the leather on the tree. The trucks C are raised and lowered by the screw-shafts S, which are journaled in bearings of the side frame, and are tapped through lugs 25 on the trucks. The shafts S are turned by bevel-gears 26, which are engaged by the gears 27 on the cross-shaft T. The screw-shafts S are so threaded and the gearing so arranged that the trucks move up and down together at equal speed. The shaft T is driven by a belt on the pulleys 28, 29, and 30. The intermediate pulley, 29, is fixed on the said shaft. The outer ones, 28 and 30, are loose. When the machine is at rest, a crossed belt runs on one loose pulley, a straight belt on the other. The belt-shifter U is connected by a link, 31, with the arm 32 of a rock-shaft, W. On this rock-shaft are fixed, at top and bottom, respectively, the cams 33 and 34. A handle, 35, is also fixed to said rock-shaft. The truck on that side of the machine carries a projection, 36, provided with an anti-friction roller. This projection is so arranged that when the truck rises or falls it strikes the incline of one or the other of the cams, turning the rock-shaft half way and moving the belt, which was previously on the middle pulley, onto a loose one, and thus stopping the machine. A brake, X, is applied when the belt leaves the fixed pulley in order to stop the machine more quickly. The tree or crimping-form N is fastened to slides 37, which are free to move in ways of the standards 38, which are bolted to the pedestal A.

The operation of the machine is as follows: The trucks being at the top of the machine the operator places the leather or skin on the tree, and starts the machine by turning the handle 35 to the right. The screw-shafts S draw down the trucks. When the crimping-jaws are in position to act upon the leather or skin, the operator by his foot on the treadle applies pressure to the crimping-jaws and varies the pressure as his judgment dictates. The arrangement through which the power is transmitted multiplies enormously the pressure on the treadle. As the truck continues to descend the cross-bars 21 escape from the tracks 23, and the springs then force the smoothing-jaws inward so that they act upon the leather immediately after the crimping-jaws. When the trucks approach the end of their descent the projection 36 acts upon the cam 34, and turns the rock-shaft W to the left, shifting the belt onto the loose pulley and stopping the machine. In order to start the truck upward, the operator turns the handle 35 still farther to the left, so as to bring the other belt upon the middle pulley. Before he does this, however, he releases the pressure upon the crimping-jaws, whereupon the springs 3 open them, and he also turns back the smoothing-jaws and removes the crimped skin. When the truck is at the top of its movement, the projection 36 acts upon the cam 33, turns the rock-shaft W to the right and stops the machine.

It is evident that modifications may be made in details without departing from the spirit of the invention, and parts of the invention may be used separately. Thus, instead of springs, weights could be used, but the springs admit of a more compact and less expensive construction in the machine.

The turrets need not be cylindrical, but may be of other suitable form.

Having now fully described my said invention, and the manner of carrying the same into effect, what I claim is—

1, In a machine for crimping leather, the combination, with the trucks movable in ways of the machine-frame, of the crimping-jaws

carried by said trucks, and a system of levers connected with a treadle, as set forth, for closing said jaws upon the leather when the treadle is depressed and magnifying the pressure transmitted from said treadle, substantially as described.

2. The combination, with the sliding trucks and the crimping-jaws carried thereby, of the levers connected with a treadle, as set forth, for closing said jaws, and the springs for separating said jaws on release of the treadle, substantially as described.

3. The combination, with the truck and the turret thereon, of the sliding cap, the crimping-jaw, the plunger, and spring, all carried by said truck, substantially as described.

4. The combination, with the trucks and crimping-jaws carried thereby, of the levers fulcrumed one on each truck, the bars for acting on said levers to press in the crimping-jaws, the links connecting the said bars with the machine-frame, the treadle, and the connections between the said treadle and the aforesaid bars, substantially as described.

5. The combination, with a truck and turret thereon, of the sliding cap, crimping-jaw, plunger, spring, lever carried by the truck, operating-bar connected by links to the machine-frame, and the treadle-connections, substantially as described.

6. In a leather-crimping machine, the combination, with the machine-frame and the sliding trucks movable in ways of the machine-frame, of the smoothing-jaws, the slides or sliding caps carrying the said jaws, and the springs for forcing said slides and jaws inward, substantially as described.

7. The combination, with the trucks, the smoothing-jaws, and the springs and slides or sliding caps connected with said jaws, of the tracks on the machine-frame, and devices, such as the rod and cross-bar, for holding back the smoothing-jaws except when they are in position to act upon the leather, substantially as described.

8. The combination, with the trucks, the power mechanism for raising and lowering the same, the crimping and smoothing jaws placed on said trucks, and the tree or crimping form, of the treadle and connected levers, as set forth, for pressing in the crimping-jaws, and the springs and slides or sliding caps connected with the smoothing-jaws, substantially as described.

9. The combination, with the machine-frame and the tree or crimping form carried by slides on said frame, of the trucks, the crimping-jaws, the treadle, and the connections for conveying the pressure from the treadle to the crimping-jaws and for magnifying the pressure conveyed, substantially as described.

10. The combination, with the trucks, the jaws carried thereby, and the power mechanism for raising and lowering the same, of the treadle and connections for conveying pressure from said treadle to the crimping-jaws and for magnifying the pressure conveyed, and the stop mechanism for arresting the trucks at the ends of its movements, substantially as described.

11. The combination of the machine-frame, the tree or crimping form carried by slides, the trucks, the smoothing-jaws carried by said trucks, and the springs and slides or sliding caps connected with said smoothing-jaws, the cross-bar arranged at the back of the trucks and connected with the smoothing-jaws, and the tracks on the machine-frame for holding them away from the leather until the proper point in their descent is reached, substantially as described.

12. The described crimping-machine, comprising, in combination, the machine-frame, the form, the trucks, the power mechanism, the jaws on said trucks, the treadle and lever mechanism, as set forth, for pressing in the crimping-jaws, the springs and slides or sliding caps connected with the smoothing-jaws, and the stop mechanism, substantially as set forth.

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

S. W. JAMISON.

Witnesses:
A. POLLOK,
PHILIP MAURO.