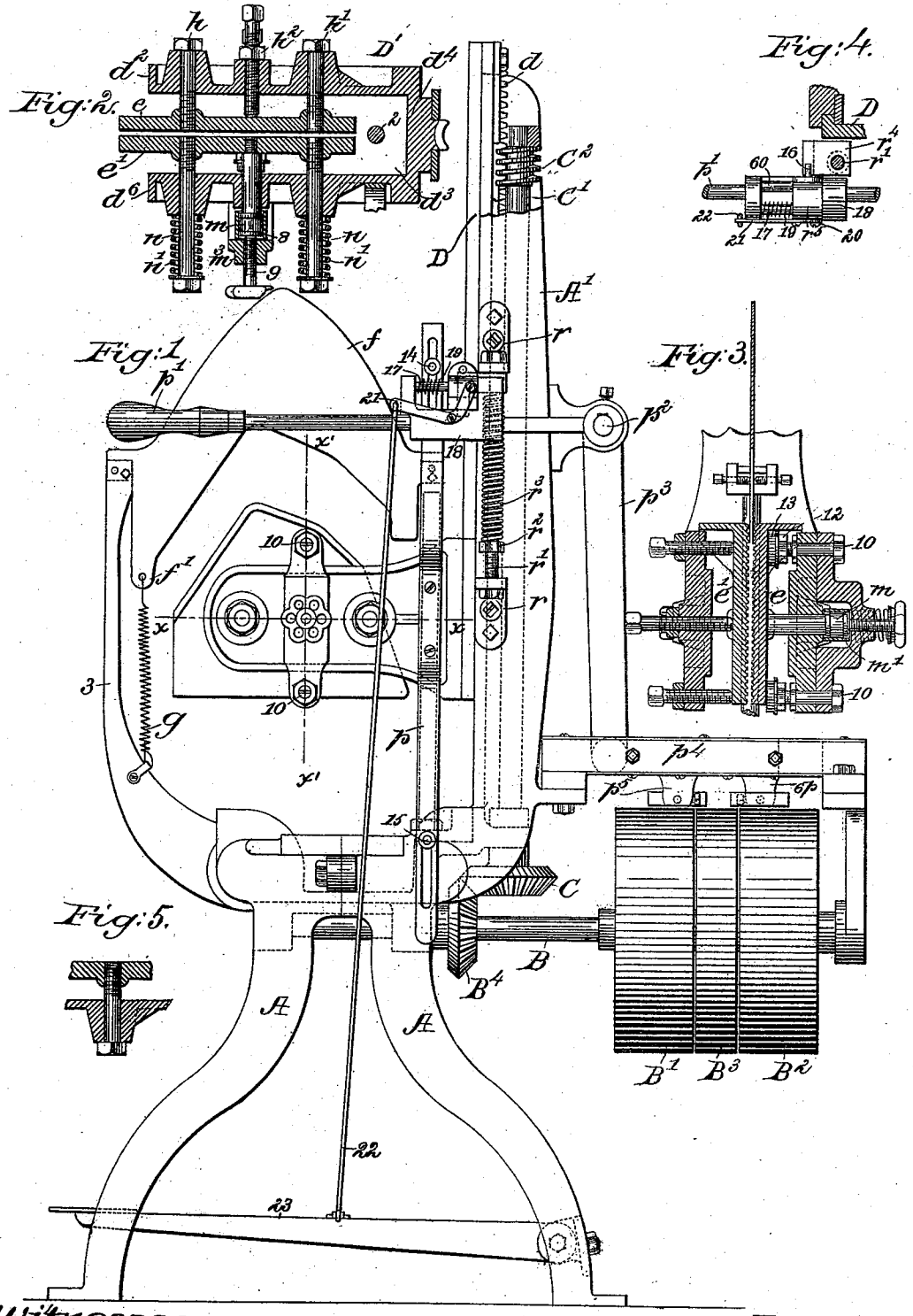
(No Model.)

W. E. FROST.

CRIMPING MACHINE.

No. 501,044. Patented July 4, 1893.



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UNITED STATES PATENT OFFICE.

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CRIMPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 501,044, dated July 4, 1893.

Application filed March 2, 1891. Serial No. 383,422. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. FROST, of Lewiston, county of Androscoggin, State of Maine, have invented an Improvement in Crimping-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to improve and simplify the construction of crimping machines.

In accordance with my invention, the form plate about which the leather or other material is shaped by the jaws, is composed of a thin metallic steel plate supported at each end, the carrier carrying the jaws which cooperate with the form plate being so shaped that it in its reciprocations may pass the supports for the ends of the form plate. In the present instance of my invention, the carrier is made substantially U-shaped, or is forked in such manner as to receive a vertical post by which to support the inner end of the form plate inside the inner ends of the jaws. The outer end of the form plate is supported by a post erected outside the outer ends of the jaws.

My invention consists essentially in a crimping machine containing the following instrumentalities, viz:—two posts, a form plate mounted loosely thereon at its opposite ends, and a jaw-carrier, and jaws, combined with a steadying device consisting of a depending ear and a spring attached thereto and to one of said posts, to keep the form plate in proper vertical position with relation to the jaws, substantially as will be described.

Other features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 in side elevation represents a crimping machine embodying my invention; Fig. 2, a partial section in the dotted line *x*; Fig. 3, a partial vertical section in the dotted line *x'*; Fig. 4, a sectional detail showing part of the handle *p'* and devices carried by it; Fig. 5, a detail to be referred to.

The frame work consists essentially of a base A and an upright or column A', the shape of which is best shown in Fig. 4. The base A has suitable bearings for the main shaft B, which is surrounded with two loose pulleys B', B^2 and an intermediate fast pulley B^3, with which pulleys will co-operate a crossed and an open belt, not shown but all as usual. The shaft B has a bevel gear B^4, which engages a bevel gear C fast on the lower end of a vertical shaft C' having a worm C^2, the shaft C having suitable bearings in the upright or column A'. This column is so shaped, see Fig. 4, as to constitute a guide for a slide-bar D having at its rear side a worm-toothed rack *d*, which is engaged by the worm, the latter in its rotation in one or the other direction raising or lowering the said slide-bar with the attached jaw-carrier D'.

The jaw-carrier, best shown in Fig. 2, is forked, or substantially of U-shape, to leave two parallel arms d^2, d^6, between which are supported usual jaws *e*, *e'*, a considerable space, as d^3, being however left between the inner, or as herein shown, the right hand side of the jaws and the head d^4 of the carrier for the reception of a post 2 on the upper end of which is mounted loosely the inner end of the form plate *f* of usual shape, it receiving a suitable bolt or pin to prevent it rising vertically from the post. The base A has also erected upon it a second post 3, on the upper end of which is mounted loosely the outer end of the form plate, a bolt or screw preventing it from being lifted vertically from the post 3. These posts are at a distance apart greater than the length of the jaws, so that the jaws in their reciprocations may move between them and at the same time pass the form plate between its ends.

The form plate supported at both ends, as described, loosely, might tip out of place more than desired, and to avoid this I have attached to a depending ear *f'* of the plate a steadying device *g*, herein represented as a spiral spring, the strength of which may be more or less, as required. The jaws *e*, *e'* are corrugated in usual manner at their inner faces. The jaw *e* is fixed or held rigidly to the arm d^2 of the carrier by two screws *h*, *h'*, a screw h^2 being used to back up the jaw and aid in adjustment. The jaw *e'* however

is mounted on the arm d^6 so as to yield somewhat and to be adaptable to different thicknesses of leather, and also to variations in thickness in the piece of leather being crimped.

The jaw e' has screwed into it near its center a stud 7, which is extended loosely through a boss or bearing in the arm d^6, see Figs. 2 and 3, the outer end of the said stud abutting against a spring m, preferably of india-rubber, inclosed in a sleeve m', said sleeve also inclosing, preferably loosely, a member 8, which is acted upon by an adjusting screw 9 screwed into a bridge m^3 secured, as represented, at its opposite ends by bolts 10, 10 to ears extended respectively from the upper and lower edges of the arm d^6, as best shown in Fig. 3, the inner ends of the said bolts receiving first upon them suitable nuts by which to retain the bridge and the jaws firmly in contact, and thereafter each bolt has screwed upon it a pressure-regulating device shown as a nut 12, which contacts with a spring 13, preferably made of india-rubber and which abuts against the outer side of the jaw. By turning these nuts 12 the extent to which the jaws may tip about a horizontal pivot may be regulated.

The jaw e' near its outer end has attached to it two screws n, n, herein represented as extended through the arm d^6 and surrounded outside the said arm by a suitable spring, as n', but if desired the said springs may be omitted and instead the said screws may be threaded to their outer ends and be provided with a thumb nut, as n^4, see Fig. 5, where the said modified form of screw is shown separately.

The arm d^6 has attached to it a shipper controller p, shown as a metal bar having two pins 14, 15, made adjustable in slots of the said bar, so that the said jaws may become effective sooner or later in the reciprocations of the jaw-carrier to actuate the belt shipper to be described.

The hand lever p' is attached to a rock-shaft p^2 having a second arm p^3 loosely connected to the sliding shipper-bar p^4 having forks p^5, p^6 to receive the usual belts.

The upright A′ has two stands r, r which support the upper and lower ends of a rod r' screw threaded near its lower end to receive a nut r^2, on which is seated a spiral spring r^3, the adjustment of the nut regulating the effective strength of the spring. The rod r' above the spring is surrounded by an L-shaped block or rest r^4, which at times sustains a pin 16 extended laterally from a rib of a sleeve r^5 mounted on two rods 17 and 60 held in ears of a casting or yoke 18 mounted on the handle p'. The sleeve r^5 is acted upon by a spring 19 surrounding the rod 17, and the sleeve has a pin 20, which is engaged by a lever 21 connected by a link 22 to a treadle or lever 23.

In Figs. 1 and 4 the pin 16 is shown as on the rest r^4, and the jaw carrier is supposed to be down and the machine at rest with the usual belt on the two loose pulleys B′, B².

To start the machine, an upper to be crimped having been properly presented between the jaws and form plates, the operator will put his foot on the treadle 23, and turn the lever 21 far enough to remove the pin 16 from above the L-shaped block r^4 and thereafter the continued pressure on the treadle will cause the lever p' to be depressed so as to move the shipper p^4 to the right viewing Fig. 1, and put the belt carried by the loop p^5, let it be supposed to be an open belt, on the fast pulley B³. This will rotate the shaft B in the direction to lift the jaw carrier and cause the jaws to pass the leather over and about the form plate f. The jaw carrier having been elevated as high as desired, the projection 15 on the bar p strikes the under side of the yoke 18, butting it with such force as to lift it and the lever p' far enough to move the belt shipper over to the left far enough to cause the loop p^6 to transfer the crossed belt held by it upon the fast pulley B³ thus reversing the rotation of the shaft B to lower the jaw carrier. During that time the yoke 18 is lifted sufficiently with relation to the L-shaped block r^4, which block cannot rise, to put the pin 16 again upon the said block r^4 when the bar p again descends with the jaw carrier. During the descent of the jaw carrier, the pin 14 strikes the rod 60 fixed to the yoke 18 and gradually depresses the lever p' against the resistance of the spring r^4 gradually moving the belt shipper until the crossed belt referred to then on the fast pulley is slipped upon the loose pulley B². This movement however, is so gradual that the open belt in loop p^5 is not put full upon the fast pulley B so as to engage and rotate the same, and the spring r^3 compressed by the momentum of the machine thereafter recoils and rises and in so doing puts the lever p' in the central position Fig. 1 thus placing the belt shipper in position to put both belts on the loose pulley. In this position shown in Fig. 1, the machine may be again started by the operator with his foot on the treadle.

I claim—

1. In a crimping machine the following instrumentalities, viz:—two posts; a form-plate mounted loosely thereon at its opposite ends; a steadying device for said form-plate, the same consisting of a depending ear and a spring; a jaw-carrier; a rigid jaw e adjustably mounted in said jaw-carrier; a yielding jaw e' also mounted in said jaw-carrier, combined with a shipper lever, a block, as 18, mounted thereon, a lever pivoted on said block, a slide r^5 connected to said lever, a screw rod r', its spring r^3, a nut r^2 to adjust the spring, and a block r^4, to operate as and for the purpose set forth.

2. In a crimping machine, two posts, a form plate mounted loosely thereon at its opposite

ends, and a jaw-carrier, and jaws, combined with a steadying device consisting of a depending ear f' and a spring having one end attached thereto, and its other end held fixedly, to keep the form plate in proper vertical position with relation to the jaws, substantially as described.

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

WALTER E. FROST.

Witnesses:
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A. S. WIEGAND.