

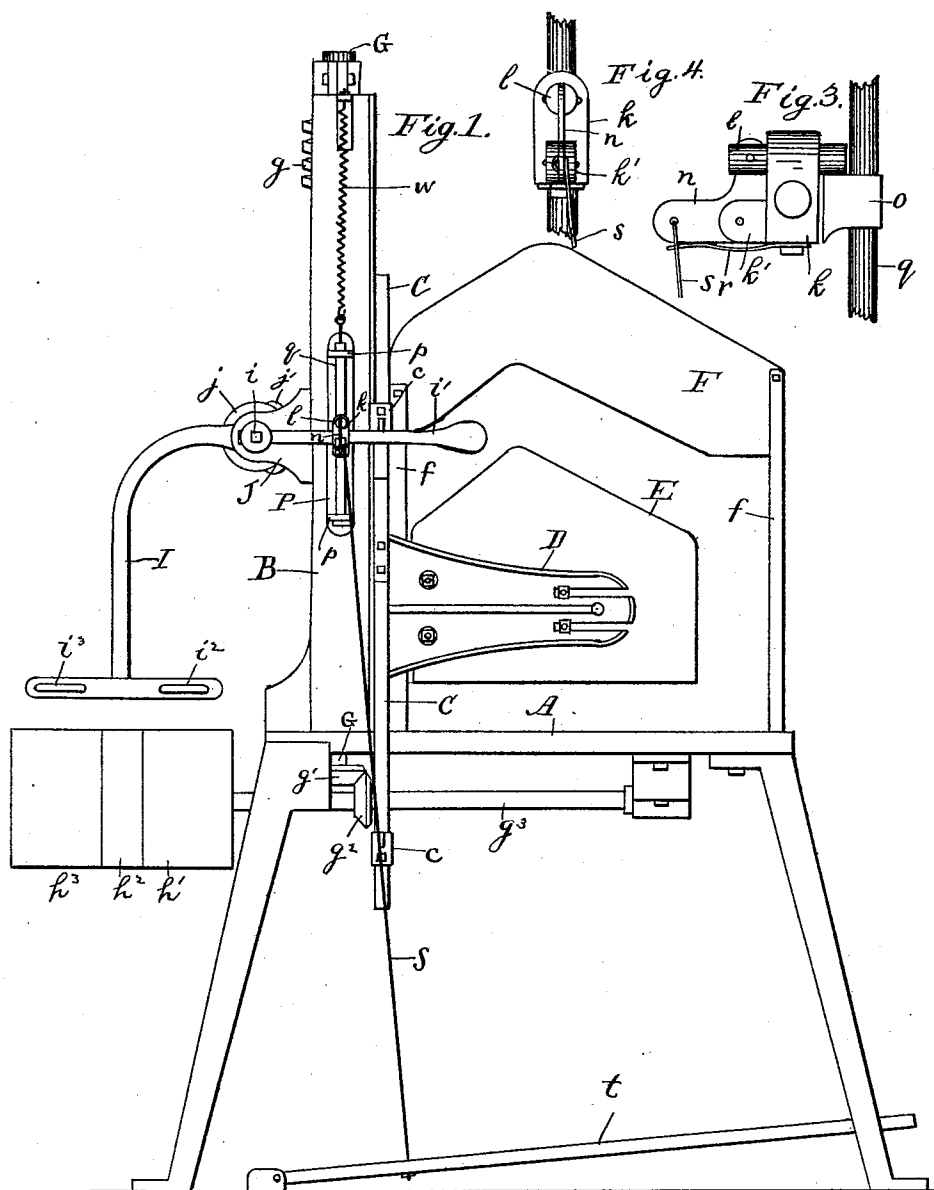
(No Model.)

2 Sheets—Sheet 1.

W. H. THOMAS & G. F. REYNOLDS.
CRIMPING MACHINE.

No. 484,510.

Patented Oct. 18, 1892.



Witnesses:

O. H. Stearns & Co.
Chickadee

Inventors:

William H. Thomas
George F. Reynolds
by S. M. Bates their atty.

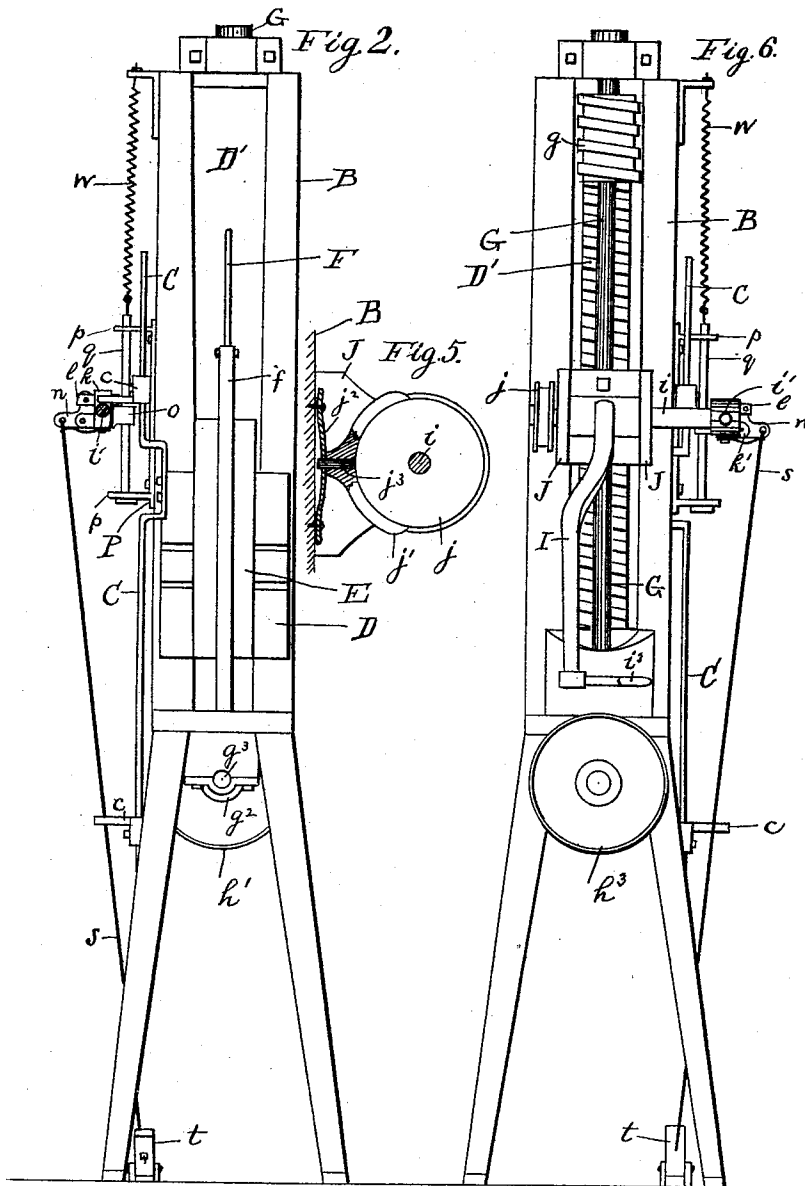
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Witnesses:

S. H. D. Spencer
Wm. H. Thomas

Inventors:

William H. Thomas
George F. Reynolds
by S. M. Bates
Thos atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. THOMAS AND GEORGE F. REYNOLDS, OF LEWISTON, MAINE,
ASSIGNORS TO WILLIAM W. SANBORN, OF SAME PLACE.

CRIMPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 484,510, dated October 18, 1892.

Application filed December 29, 1890. Serial No. 376,143. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. THOMAS and GEORGE F. REYNOLDS, citizens of the United States, residing at Lewiston, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Stop-Motions for Crimping-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to a stop-motion particularly adapted for crimping-machines of that class having reciprocating jaws or a reciprocating former, and which may be readily applied to other machines having a reciprocating member. In many cases it is desirable to have a stop-motion on a crimping-machine which shall stop the machine automatically at the end of each revolution to give time for the crimped vamp to be removed and the new one put on. In stop-motions of this character it is usual to provide mechanism which will simply ship the belt or belts onto the loose pulley at or just before it is desired to have the machine stop. We have found that in a machine of the character of a crimping-machine, which is speeded high and has heavy parts, the momentum is so great that the machine cannot be relied upon to stop at the exact point desired. We overcome this difficulty by providing mechanism by which the shipping-lever is pulled to its stopping or middle position immediately after the moving part has turned to reverse its motion and before it has acquired any considerable momentum. This mechanism consists of stops connected with the reciprocating portion of the machine for forcing the shipping-lever in opposite directions to reverse the motion, a spring for pulling the shipping-lever to its middle position from its lower position, a latch connection between said spring and the shipping-lever, which holds the two parts in engagement when the shipping-lever is depressed and allows the spring to draw it back to its middle position, and a lever for disengaging the said latch connection and at the

same time depress the shipping-lever, whereby the shipping-lever being depressed to its reversing position by the upper stop reverses the machine and is at once drawn to its stopping position by the spring, stopping the machine before it has acquired any considerable velocity. The machine thus stops automatically at each revolution and is started by pulling down the shipping-lever and releasing it from the spring.

Our invention consists of the various combinations of parts set forth in the claims.

In the accompanying drawings we have illustrated a crimping-machine fitted with a stop-motion constructed according to our invention. This machine is of that class wherein the jaws reciprocate and the former is stationary; but it may be applied equally well to machines having a reciprocating former.

In the drawings, Figure 1 is a side view of the entire machine. Fig. 2 is a front or an end view of the upper portion. Fig. 3 is a side view of the latch connection between the spring and the shipping-lever. Fig. 4 is an end view of the same, and Fig. 5 is a side view of the tension device. Fig. 6 is a rear elevation.

A is the bed of our crimping-machine, and B is the upright at one end.

D', Fig. 2, is a slide which reciprocates vertically in suitable guides in the upright B. To the lower end of the slide D' is secured a support or bracket D, to which are attached the jaws E.

F is the former, and *ff* the standards which support it. The slide D' is reciprocated by a worm *g*, which engages a rack (not here shown) on the back of the slide D'. The worm *g* is fixed on a vertical shaft G, on the lower end of which is a miter-gear *g'*, engaging a miter-gear *g*² on a shaft *g*³.

*h*² is the fixed driving-pulley, on each side of which is a loose pulley *h'* and *h*³.

The shipping-lever I is secured to a shaft *i*, which is mounted in suitable bearings on the front of the upright B. This shipping-lever is turned downward and terminates near the pulleys *h'* *h*² *h*³, where it is provided with a cross-arm having eyes *i*² *i*³ in its ends for the crossed

and straight belts, respectively. The machine is reversed by throwing the straight and crossed belts alternately onto the tight pulley. The shipping-lever i' is fixed to the shaft i and extends horizontally in front of the machine when in its normal position.

The parts of the machine described constitute no part of our invention, and are simply shown to illustrate the invention.

To the shaft i , on which the shipper is journaled, we attach a friction-pulley j , Fig. 5. A brake-shoe j' is provided, which is adapted to fit the periphery of the pulley, and an elliptical spring j^2 is secured to the upright B in such a manner that it forces the brake-shoe into contact with the pulley. A stud is screwed into the shoe, and this stud is provided with a shoulder which presses against the spring, the end being reduced to enter an opening in the spring. A tension is thus provided which holds the shipper in any position in which it is put. We provide stops c , which push the shipping-lever up and down and reverse it at each revolution of the machine. These stops are adjustably secured to a rod C, which is fastened to the support D or to any part of the reciprocating mechanism. A spring w is also provided for pulling the shipping-lever up to its middle position after it has been depressed by the upper stop c and the motion reversed. This spring w we prefer to make extensible, although it may equally well be compressible. It is suspended from the top of the upright B and connected with the shipping-lever with a latch connection in such a manner that when the lever is pushed downward it will stretch the spring, which will draw the lever back when the stop begins to ascend. To do this we secure to the lower end of the spring a rod q , which is held in guides pp , so as to be capable of a limited longitudinal motion. On this rod q is a stop o , with which a catch l is adapted to engage when the latter is depressed. The catch l is mounted in a block h , which is fastened to the shipping-lever. The catch slides in an opening in the block and is moved in and out by an elbow-lever n , which is pivoted to the block h and to the catch l . A spring r is provided to keep the catch normally in engagement with the stop o , and a rod s is attached to the back end of the lever n for depressing it and withdrawing the catch l . A lever t (here shown as a foot-lever or treadle) operates the rod s and serves to disengage the catch and at the same time pull down the shipping-lever.

The operation of our stop-motion is as follows: The shipping-lever being at its middle point and the machine at rest, it is started by pressing down on the lever t , which withdraws the catch l , as shown, and depresses the shipping-lever, freeing it from the spring, so that it remains down. The belt is thus thrown onto the tight pulley and the jaws ascend, the shipper remaining stationary, held

by the tension device. The inner end of the bolt l does not drop below the face of the stop o , so that when the lower stop c hits the shipping-lever it knocks it upward and reverses the machine and the catch l snaps into place above the stop. The jaws now descend and the upper stop c strikes the shipping-lever, forcing it downward and reversing the machine. When it forces the shipping-lever downward, it also forces the stop o downward and extends the spring. When the motion of the jaws is reversed and the upper stop c moves upward to release the lever, the spring w pulls the lever upward until it reaches its middle or stopping position, when the belts are shifted onto the loose pulleys and the machine is stopped. This operation taking place just after the jaws have turned to move upward and before they have acquired much speed or momentum, the machine stops quickly and at the same point each time. It can now be started as in the first instance and the operation repeated as fast as a vamp is crimped.

If it is desired to run the machine continuously and without a stop at the end of each revolution, the block h may be moved along the lever i' , so that the catch l will not strike the stop o .

It is evident that various modifications can be introduced without departing from the spirit of our invention, and we do not wish to limit ourselves to the exact device herein shown and particularly described.

We claim—

1. In a machine having reciprocating jaws or members, the combination, with the jaws or reciprocating parts, of stops connected therewith for throwing the shipping-lever in opposite directions, a spring for forcing the shipping-lever to its middle or stopping position, a latch connecting said spring and said lever, arranged to lock when said lever is depressed, and mechanism for releasing said latch from said lever, substantially as described.

2. In a machine having reciprocating jaws or members, the combination, with said jaws or reciprocating parts, of stops connecting with such reciprocating parts for throwing the shipping-lever in opposite directions, a vertical rod adapted to move in guides, a stop on said rod, and a catch on the shipping-lever, adapted to engage said stop and to depress said rod when said shipping-lever moves downward, substantially as shown.

3. The combination of a shipping-lever having thereon a catch, a stop with which said catch is adapted to engage, a spring connected with said stop, and a lever for releasing said catch and at the same time depressing said lever, substantially as described.

4. In a machine having reciprocating jaws or members, the combination, with said jaws or reciprocating parts, of stops connected with such reciprocating parts for throwing

the lever in opposite directions, a spring for forcing the shipping-lever to its middle or stopping position, and a latch connected with said spring and said lever, arranged to lock
5 when said lever is depressed, whereby the latter may be drawn back by said spring, substantially as described

In testimony whereof we affix our signatures in presence of two witnesses.

WM. H. THOMAS.
GEO. F. REYNOLDS.

Witnesses:

C. M. LUNT,
FRED KELLEY.