(No Model.) 4 Sheets—Sheet 1.

C. A. SEELEY.

MACHINE FOR PUTTING TIPS ON ENDS OF COVERED WIRES OR STEELS.

No. 589,580. Patented Sept. 7, 1897.

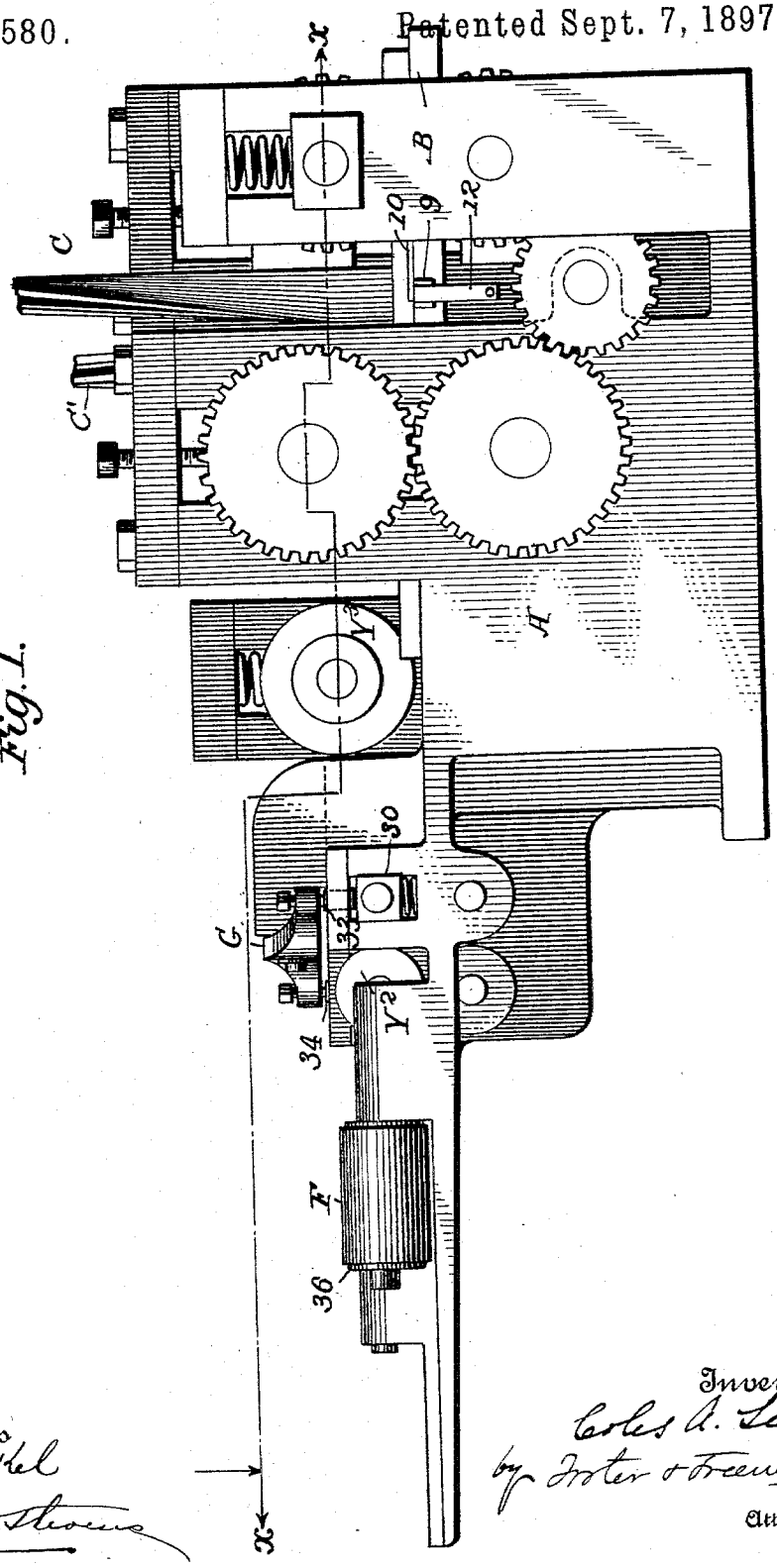


Fig. 1.

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(No Model.) 4 Sheets—Sheet 2.

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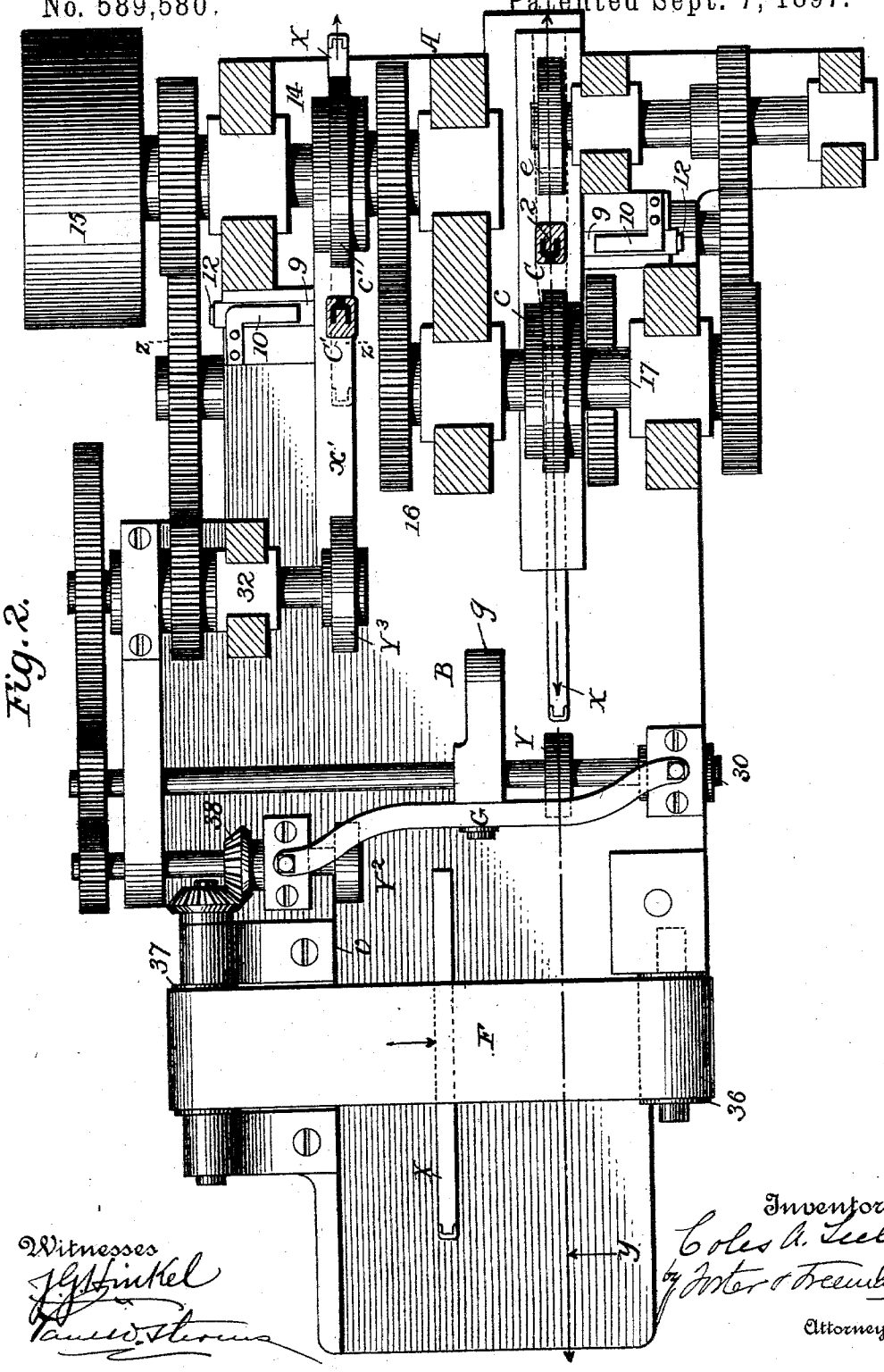


Fig. 2.

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(No Model.) 4 Sheets—Sheet 3.

C. A. SEELEY.

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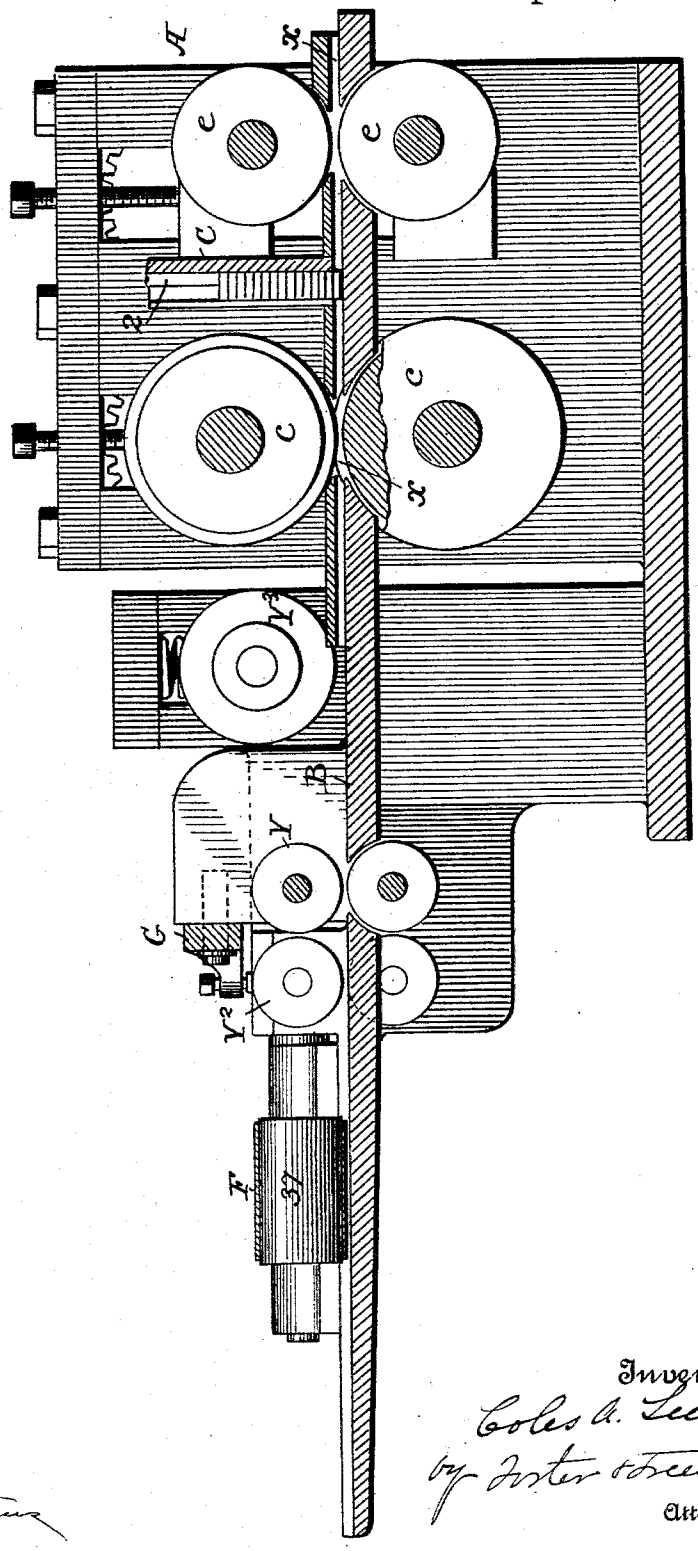


Fig. 3.

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(No Model.) 4 Sheets—Sheet 4.

C. A. SEELEY.

MACHINE FOR PUTTING TIPS ON ENDS OF COVERED WIRES OR STEELS.

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Fig. 4.

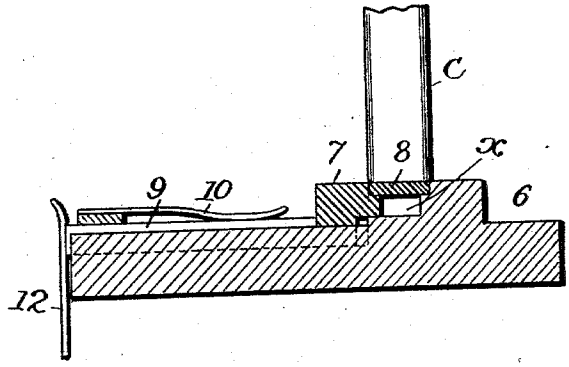
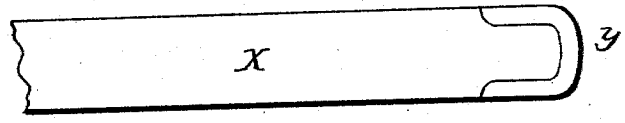


Fig. 5.



Fig. 6.



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UNITED STATES PATENT OFFICE.

COLES A. SEELEY, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE WARNER BROTHERS COMPANY, OF SAME PLACE.

MACHINE FOR PUTTING TIPS ON ENDS OF COVERED WIRES OR STEELS.

SPECIFICATION forming part of Letters Patent No. 589,580, dated September 7, 1897.

Application filed May 8, 1897. Serial No. 635,731. (No model.)

To all whom it may concern:.

Be it known that I, COLES A. SEELEY, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Putting Tips on the Ends of Covered Wires or Steels, of which the following is a specification.

This invention relates to certain new and useful improvements in machines for applying and compressing tips automatically upon the ends of blades; and it consists in the construction, combination, and arrangement of the parts hereinafter more particularly described.

In the accompanying drawings, forming a part of this specification and in which like letters of reference indicate corresponding parts, Figure 1 is a side elevation of the invention. Fig. 2 is a horizontal sectional view on the line $x\ x$ of Fig. 1. Fig. 3 is a longitudinal sectional view on the line $y\ y$ of Fig. 2. Fig. 4 is a transverse sectional view on the line $z\ z$ of Fig. 2. Fig. 5 is a detail perspective view of one of the tips, and Fig. 6 is a similar view of one end of a blade with a tip applied thereto.

It is the object of the invention to apply tips, such as shown in Fig. 5, to the ends of steel blades X and to compress the same upon the blades, which are generally incased in paper or other fabric, so that the compressed tips are firmly secured upon the blades preferably with their faces flush with the surfaces of the blades.

Before describing the improved machine in detail its general operation will be set forth.

There is a channel x, Fig. 4, into which each blade X passes longitudinally, and above one part of this channel is a chute C, with a a central rib 2, and down which pass the tips y into the channel x, the parts being so arranged that the tips will lie in a pile in the chute C, the lowest tip being in the channel x, so that as a blade X passes along the channel (being fed by wheels $e\ e$ or otherwise) its end will enter the lowest tip and carry the latter along the channel, which gradually contracts, to a clamping device—as, for instance, two presser-wheels $c\ c$, one wheel, preferably the lower wheel, having a grooved periphery to receive a flange upon the other, and by these wheels the tip is compressed both laterally and vertically onto the blade. When the blade is covered with fabric, which need not always be the case, the tip will be pressed into the fabric preferably to such an extent that the surfaces of the blade and tip will be flush. The tipped blade passes to and is then fed forward by means of a pair of wheels or other feed device Y and passes from the latter beneath a transversely-traveling endless belt F, supported in close proximity to the upper flat surface of the base B, and this belt engages the blade and carries it transversely across the base to a shoulder or stop v and beneath an intermittently-acting feed-wheel or other feed device Y^2, which has been elevated to permit the blade to be moved beneath it. The wheel Y^2 is then depressed upon the blade and feeds it to another feed device Y^3, as a pair of feed-wheels similar to the feed-wheels e, but moving in an opposite direction, and by which the blade is carried through a channel x' and beneath another chute C' and beneath another pair of compression-wheels c', so that a tip will be applied to and compressed upon the opposite end of the blade.

The details of the apparatus shown in the drawings will now be described, but it will be obvious that these details may be varied to a great extent while securing the different operations before described.

The frame A of the apparatus supports the table or base B, having a stationary rib 6 at its upper face and opposite an adjustable bar 7, having an overhanging flange 8 and forming with the rib 6 the channel x. The bar 7 is made adjustable, inasmuch as the blades X vary slightly in width, and to permit the bar to yield under the pressure of any of the wider ribs it is provided with a guide-arm 9, fitting a groove in the table B and against which bears a spring 10, tending to hold it down, a spring 12, bearing against the end of the bar, tending to thrust inward.

In the flange 8 is an opening arranged directly below the chute C.

The bar 7, as shown, extends only over that part of the channel between the wheels *c* and *e*, the other portions of the channel having permanent covers or being uncovered, if desired.

The shafts of the different sets of rollers turn in suitable bearings in the frame, and preferably these bearings are in blocks sliding in grooves in the frame and held in position by springs, as shown, so as to permit the rollers to yield to a slight extent. As shown, the pair of pressure-rollers C′ is carried by the driving-shaft 14, having the belt-pulley 15, and the shaft 17 of the pressure-rollers *c* is driven from the shaft 14 through the medium of gears 16, and suitable gears transmit motion from the shafts 14 17 to the shafts of the other pairs of rollers *e* Y^3 and the intermittently-acting wheels Y Y^2.

The upper wheels of the pairs Y Y^2 are mounted in blocks 30, sliding in grooves in the frame, each with a projection 33, bearing on a rock-lever G, and springs are likewise arranged in said grooves, which springs tend to elevate the upper blocks in the grooves and carry the upper feed-wheels away alternately from the lower wheels, this separation of the wheels being sufficient to permit a blade to be carried first between the wheels Y and then between the wheels Y^2. The lever G is pivotally mounted upon a standard *g* and extends transversely across the frame.

It will be understood that the alternate elevation and depression of the upper feed-wheels Y Y^2 is extremely slight and the projections of the blocks and their intermediate tilting lever are in such close relation that when a blade is fed by the wheels *c* between the wheels Y the upper one of said wheels and its block will be elevated in the groove, and by reason of the engagement of the projection 33 making contact with that of the lever the end of the lever will likewise be slightly elevated, causing a corresponding depression of its opposite end, which, acting upon the projection 33 of the wheels Y^2, will also lower the upper of the feed-wheels Y^2. Previous to the lowering of this wheel, however, a blade has been transferred across the table by the belt and moved upon the lower feed-wheel beneath the upper wheel, and consequently when the upper wheel is lowered upon the blade it will feed the blade to the feed-wheels Y^3 and toward the chute C′, during which movement of the blade its opposite end is tipped and it is discharged from the machine.

The transferring-belt F extends transversely across the table B and passes around rolls 36 37, located upon opposite sides of the frame, the lower limb of the belt being in sufficiently close proximity to the upper flat face of the table to engage a blade which has been fed beneath it and released by the feed-wheels Y. The belt then transfers this blade across the table and moves it between the wheels Y^2, which have been separated sufficiently to permit its lateral insertion, and the blade is held in this position by the stop *c* until the upper one of the feed-wheels is depressed, when it is fed toward the second chute C′, as above described.

The transferring-belt F may be driven in any suitable manner, but, as shown, the shaft of the roll 37 is provided with a bevel-gear 38, which meshes with a corresponding gear on the shaft of the feed-wheel Y^2.

It will be obvious that other suitable transfer devices may be substituted for the belt F for transferring the blades successively from the line of one channel to the line of the other channel.

The channel through which the blade passes after receiving the tip gradually contracts laterally, as before stated, so as to impart a side pressure to the tip and hold it on firmly as it goes to the rolls.

Without limiting myself to the precise construction and arrangement of parts shown and described, what I claim is—

1. In a tipping-machine, the combination with means for feeding blades in one direction, of devices for applying and securing a tip to one end of each blade, means for feeding the blades in the opposite direction and a transverse friction feed device for transferring the blades into position to be engaged by said latter means, and devices for applying and securing tips to the untipped ends of the blades, substantially as described.

2. In a tipping-machine, the combination with means for feeding blades in one direction, of devices for applying and securing a tip to one end of each blade, means for feeding the blades in the opposite direction, and a traveling belt for transferring the blades into position to be engaged by said latter means, and devices for applying and securing tips to the untipped ends of the blades, substantially as described.

3. In a tipping-machine, the combination with means for applying and securing a tip to one end of each blade, of devices for independently transferring the blades laterally, means for feeding each blade to the transfer devices, means for feeding each blade in the opposite direction, said means being operated alternately with said other feeding means, and mechanism for applying and securing a tip to the untipped end of the blade, substantially as described.

4. In a tipping-machine, the combination with mechanism for applying and securing a tip to one end of a blade, of mechanism for applying a tip to the opposite end of the blade, devices for transferring the blade from one tipping mechanism to the other, feed-wheels for feeding the blade from the first tipping mechanism to the transferring devices, means for separating and for moving the said wheels together, feed-wheels for feeding the blade from the transferring devices to the second

tipping mechanism, and means for separating and for moving the wheels together, substantially as described.

5. The combination of the compressing-rolls, the chute for supplying the tips, and a channel *x* contracting laterally between the chute and the rolls, substantially as described.

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

COLES A. SEELEY.

Witnesses:
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M. M. WHEATON.