No. 673,588. Patented May 7, 1901.

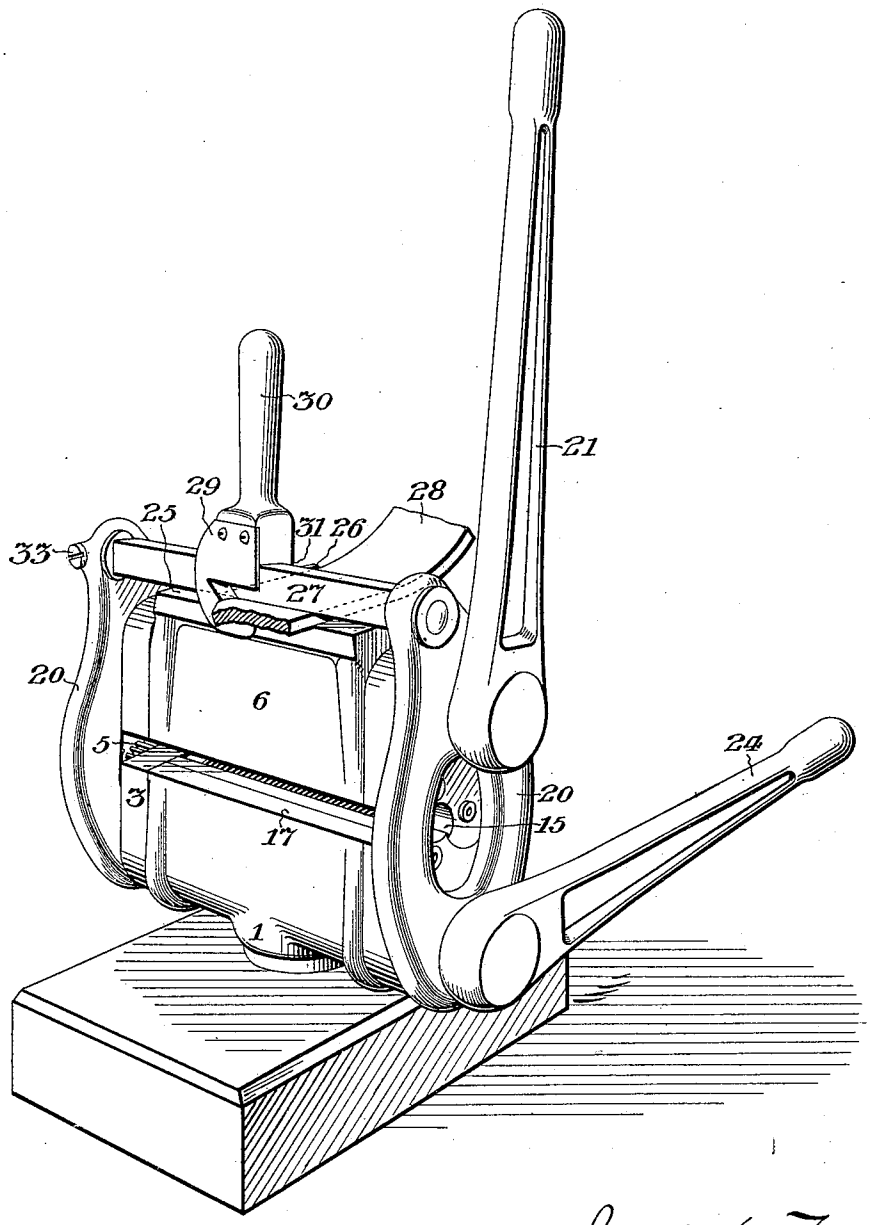
J. H. TEMPLIN.

WIRE COIL MACHINE.

(Application filed Nov. 19, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.



Joseph H. Templin

WITNESSES:

Arthur E. Paige

Albert Fritz

INVENTOR:

by his attorney

W. C. Goodridge

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

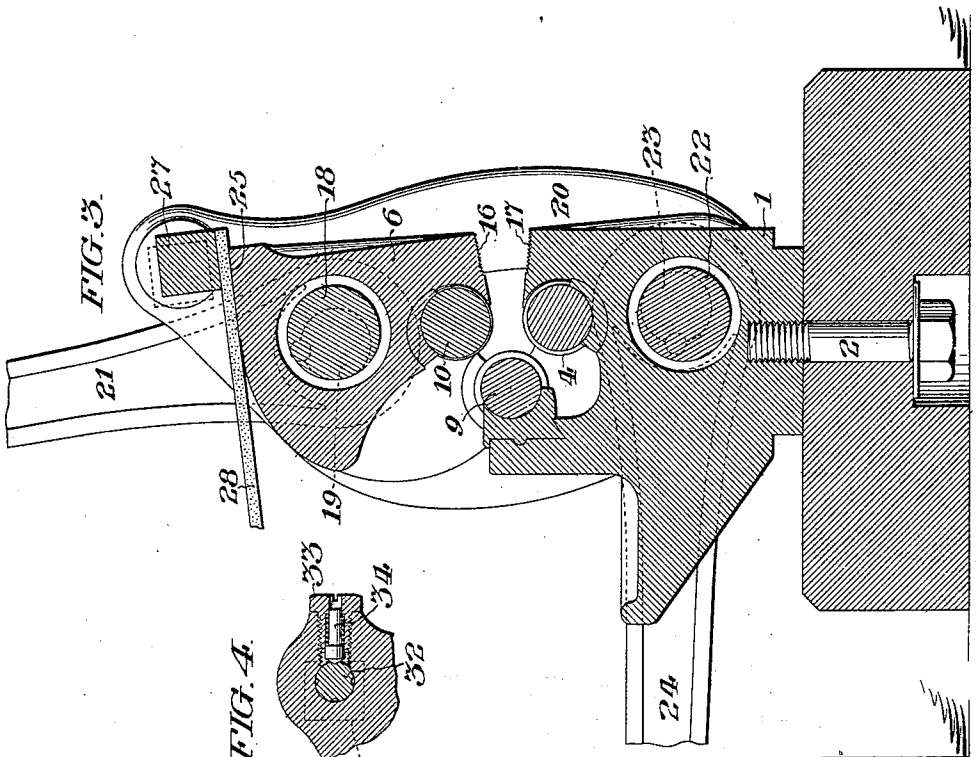
No. 673,588. Patented May 7, 1901.

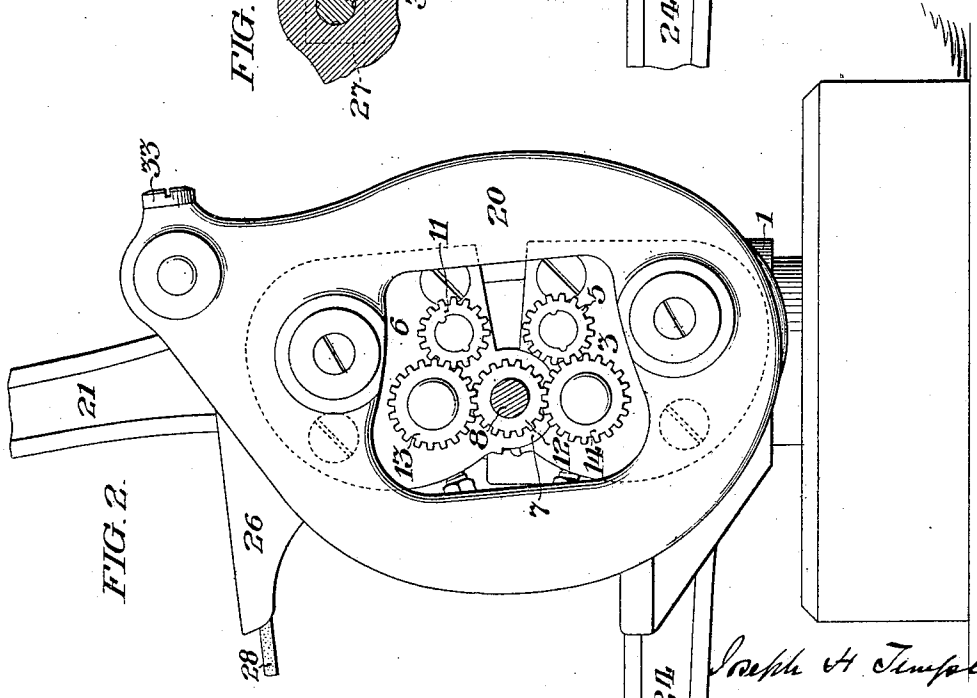
J. H. TEMPLIN.

WIRE COIL MACHINE.

(Application filed Nov. 19, 1900.)

(No Model.) 2 Sheets—Sheet 2.





WITNESSES:

William E. Paige

Albert Fritz

Joseph H. Templin

INVENTOR:

by his attorney

W. C. Strandish.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH H. TEMPLIN, OF READING, PENNSYLVANIA, ASSIGNOR TO THE DIAMOND DRILL AND MACHINE COMPANY, OF BIRDSBORO, PENNSYLVANIA.

WIRE-COIL MACHINE.

SPECIFICATION forming part of Letters Patent No. 673,588, dated May 7, 1901.

Application filed November 19, 1900. Serial No. 36,985. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. TEMPLIN, a citizen of the United States, residing at the city of Reading, in the county of Berks, in the State of Pennsylvania, have invented certain new and useful Improvements in Wire-Coil Machines, of which the following is a specification.

My invention relates to a class of machines organized and employed for the purpose of inserting wire coils in the ends of belts to form belt lacings or fastening means, the respective ends of a belt thus equipped with wire coils, when brought into proximity so that the respective coils are intermeshed, being retained in engagement by the insertion of a stay pin through the intermeshed coils.

In the application of the wire coils to the belt ends, it is frequently necessary as a preliminary operation to remove the lips of such ends either because of their irregular contour or by reason of the presence in close proximity thereto of perforations previously formed in connection with the application of fastenings of a character other than that heretofore referred to, and it is the object of my invention to so organize a wire coil machine, that it shall, with the minimum number of additional parts, embody means whereby the belt ends may be quickly and conveniently secured in position for preliminary trimming and whereby accuracy of the trimming operation on a line perpendicular to the axial line of the belt is insured.

In the accompanying drawings I show, and herein I describe, a good form of a convenient embodiment of my invention, the particular subject-matter claimed as novel being hereinafter definitely specified.

In the accompanying drawings,

Figure 1 is a view in perspective of a machine organized to embody my improvements and illustrating a section of belt held in place therein and illustrating also a cutter in the act of trimming the belt end.

Figure 2 is a view in end elevation of the machine shown in Figure 1. In this view the belt and cutter are not shown.

Figure 3 is a central, sectional, elevation of the machine shown in Figure 1, sight being taken toward what I term the right hand end of the machine.

Figure 4 is a sectional elevational detail of the eccentric bearing of the clamping bar, illustrating particularly the latch bolt employed in connection therewith.

Similar numerals of reference indicate corresponding parts.

In the accompanying drawings,

1 is the lower roll carrying jaw or block, the same forming, so to speak, the base of the machine, and suitably secured, conveniently through the application of a holding screw 2, to a supporting block or pedestal of any desired character.

Within the end walls 3 of said lower roll carrying jaw is journaled the lower coil roll 4, equipped as to its left hand end with a driven gear 5.

6 is what I term the upper roll carrying jaw, said jaw having at each end a depending lug 7, which depending lugs exist at the sides of, or overlap, so to speak, corresponding upwardly projecting lugs on the lower roll carrying jaw, the respective pairs of lugs having suitable openings in registry in which are entered the axles 8 of the intermediate coil roll 9, said axles 8 serving not only as the axles upon which said intermediate coil roll 9 revolves, but also as the pintles engaged in the openings of said lugs and forming with said lugs a hinge connection between the upper roll carrying jaw and the lower roll carrying jaw.

10 is the upper coil roll, suitably journaled in the upper roll carrying jaw in such relation to the lower coil roll and the intermediate coil roll that the respective centers of the three coil rolls occupy positions corresponding to the points of a triangle.

The left hand end of said upper coil roll 10 is provided with a driven gear 11, and the left hand end of the intermediate coil roll is provided with a driving gear designated 12.

The driving gear 12 is in mesh with the gear 11 through an intermediate idler gear 13, and in mesh with the gear 5 through the intermediate idler gear 14, as shown in Figure 2.

Through the opening 15 in the right hand end of the machine the wire is introduced

within the space intermediate of the three coil rolls, in position to be acted upon in the form of a coil by said coil rolls, and engaged with the end of a belt, the belt end being introduced for such purpose from the front of the machine and through the space between the jaw face 16 on the upper roll carrying jaw and the jaw face 17 on the lower roll carrying jaw, said upper roll carrying jaw being, after the introduction of the belt, depressed so that the jaw surfaces 16 and 17 clamp the belt tightly in position, and the coil rolls take firm hold of the coil which they rotate to work it into engagement with the introduced belt end.

Upon the depression of the upper roll carrying jaw as described, the coil rolls are caused to rotate through power applied, through the agency of a crank, not shown, on the end of the axle 8 of the intermediate coil roll, said power, as will be understood, occasioning the contemporaneous rotation of all three coil rolls in a common direction, and said rotation being uniform and constant, as the gears 5, 11, 12, 13, 14, remain engaged in all positions of the upper roll carrying jaw with respect to the lower roll carrying jaw.

The hinge connection of the upper roll carrying jaw and the lower roll carrying jaw enables the movement of said upper roll carrying jaw toward and from the lower roll carrying jaw, the arc of movement of the first mentioned jaw being, of course, concentric with respect to the axis of the axles 8.

In the formation of the belt fastenings it is desirable to compress the coils, after their insertion, to render them flush with the faces of the belts and to set straight their convolutions, and this is accomplished, in the machine illustrated, by elevating the upper roll carrying jaw, then slightly withdrawing the belt end, so that the coil is withdrawn from the space central of the coil rolls, to the space between the jaw surfaces 16, 17, and thereupon again depressing the upper roll carrying jaw, with the result that the wire compressed between said jaw surfaces is as to its coils straightened and flattened.

The means by which I occasion the movement of the upper roll carrying jaw are as follows:

18 is is an eccentric shaft mounted in a suitable opening extending through the upper roll carrying jaw, and having at its respective ends eccentric axles 19 (as shown in dotted lines in Figure 3) which are respectively entered in bearings formed in the upper ends of a pair of carrying links or yokes 20, one of such eccentric axles being extended beyond its link and provided with a suitable operating handle or lever 21.

22 is an eccentric shaft mounted in a suitable opening extending through the lower roll carrying jaw, and provided at its respective extremities with the eccentric axles 23, (as shown in dotted lines in Figure 3) which are journaled in suitable bearings formed respectively in the lower ends of the respective carrying links 20, one of said axles being provided, beyond its carrying link, with an operating crank or handle 24.

Manifestly the throw of the handle 24, occasioning the rotation of the eccentric shaft 22 on the eccentric axles 23, occasioning the movement in an upward or downward direction of the carrying links 20 connected to said axles and the rocking movement of the upper roll carrying jaw on the axles 8, and this will, of course tend to move the jaw surface 16 and the coil roll 10 toward or away from the jaw surface 17 and coil roll 4.

Supplementary to the adjustment thus accomplished, the throw of the handle or crank 21 will, of course, occasion the rotation of the eccentric shaft 18 and the consequent further movement of the upper roll carrying jaw toward or from the lower roll carrying jaw on the axis of movement which is, as explained, the axis of the intermediate roll coil.

My improved means for clamping the end of a belt and providing a guide for a preliminary end trimming operation, comprise a clamping mechanism consisting of two members, one of which is a special and relatively fixed bar, and as the other of which is utilized a roll carrying jaw necessarily provided in the formation of the machine and necessarily movable for the purpose of the operation of the machine, said roll carrying jaw thus serving not only as a necessary element of the machine proper but as the movable member of my clamping contrivance.

In carrying my invention into practice, I provide the upper surface of the upper roll carrying jaw with a horizontal clamping face 25, upon which the end portion of the belt may rest, and preferably also provide a projection 26, shown in Figure 2, near one end of said upper roll carrying jaw, and in proximity to said face 25, the side face of which projection serving as a lateral guide that is to say, a guide for the edge of the belt, and insures the accurate presentation of the belt to the clamping mechanism and cutter.

27 is what I term the clamping and guiding bar, which constitutes, so to speak, the relatively fixed member of the preliminary clamping mechanism of which the upper roll carrying jaw is the movable member, said bar being secured at its respective ends to the respective upper ends of the carrying links 20.

Said bar is, as shown, of quadrangular section, its flat lower face and the face 25 of the upper roll carrying jaw operating to clamp very firmly between them, as shown particularly in Figure 3, the belt 28, said belt being in the operation of the machine introduced into the space between the upper roll carrying jaw and said bar, and the handle 21 being thereupon rotated to elevate said roll carrying jaw to clamp the belt against the said bar, the arrangement being such that when in clamped position the bar overhangs, so to speak, the front face of the jaw, as shown in Figure 3.

When the belt has been secured between the upper roll carrying jaw and the clamping and guiding bar 27, with so much of its irregular end projecting as it is desired to cut away, a knife is passed along the front edge of the bar to remove the projecting portion along the line of said bar, there being a clear space below said bar which affords room for the play of the knife, said bar in its operation serving as a guide to insure an accurate line of cut.

I prefer to employ a cutter of the character shown particularly in Figure 1, in which a blade, designated 29, is mounted upon a handle 30 having a base which rests upon the upper flat surface of the bar, and a finger, 31, which makes contact with the rear face of the bar, the blade itself making contact with the front face of the bar, the arrangement being such that in the passage of the cutter along the bar the said cutter is so accurately maintained in position by the blade and the finger 31 that even when the operation is carelessly performed the resulting cut is true.

The knife blade is preferably arranged with its acting edge at one side of a V-shaped recess formed in its front face, with the result that in the advance of the cutter the inclined knife edge effects what may be termed a drawing cut.

I prefer to provide the bar 27 which is, as stated, preferably of rectangular section, with eccentric axles 32, (see Figure 4) so that by rotating said bar upon said axles the range of adjustment of the clamping mechanism may be increased.

The bar 27 may, when desired, be rotated manually to bring any one of its respective faces lowermost according to the thickness of the belt to be clamped.

To temporarily secure the bar in its respective positions of rotative adjustment I prefer to provide its axle at the left hand end of the machine with four bolt recesses, as shown in Figure 4, and to mount in the upper portion of the left hand carrying link 20 a bolt adapted to engage in the respective recesses.

A threaded opening extends through the body of the link 20 and into the axle bearing.

33 is a threaded plug entered in said opening, and embodying an axial opening in which is mounted a headed bolt 34, the nose of which is adapted to enter the bolt recesses as they are successively brought in front of it in the rotation of the bar.

The bolt is pressed constantly forward by a spiral spring which bears respectively against its head and a shoulder formed in the axial opening of the plug in which the bolt is mounted.

The engagement of the bolt in a bolt recess secures the bar with a yielding force sufficient to retain it in its adjusted position under ordinary circumstances, but the bolt is raised from a recess in which it may be engaged when force is manually applied to said bar to adjust it to a new rotative position.

As will be understood, whenever the bar comes to rest with one of its faces in opposition to the face 25 of the roll carrying jaw the bolt will enter a corresponding bolt recess and temporarily secure the bar in such position.

As will be understood, by the provision of a bar to serve as one member of a clamping mechanism, and by the utilization of a moving member of a wire coil machine as the other member of said clamping mechanism, a very simple, convenient, and effective clamping mechanism may be provided to secure a belt in position, and guide a knife in a preliminary trimming operation.

Having thus described my invention, I claim—

1. In a wire coil machine, in combination with the movable roll carrying jaw, a relatively fixed bar exterior to the jaws of the machine, and means for occasioning the movement of said movable jaw toward said bar, said jaw and bar together forming a clamping mechanism, substantially as set forth.

2. In a wire coil machine, in combination, a movable roll carrying jaw, a relatively fixed bar exterior to the jaws of the machine, and having a straight edge, and means for occasioning the movement of said movable jaw toward said bar, said jaw and bar together forming a clamping mechanism, substantially as set forth.

3. In a wire coil machine, in combination, a movable roll carrying jaw, a relatively fixed bar, means for occasioning the movement of said jaw toward said bar, said jaw and bar together forming a clamping mechanism, and a lateral guide supported upon one of said last mentioned members, substantially as set forth.

4. In a wire coil machine, in combination, a lower jaw, a coil roll mounted in said jaw, an upper jaw, a coil roll mounted in said upper jaw, means for occasioning the movement of said upper jaw toward and from said lower jaw, and a relatively fixed bar located in proximity to said upper jaw, and forming with it a belt clamping mechanism, substantially as set forth.

5. In a wire coil machine, the combination to form a clamping mechanism for a preliminary cutting operation, of a movable roll carrying jaw and a relatively fixed polygonal bar mounted on eccentric axles and toward and from which said jaw has movement, substantially as set forth.

6. In a wire coil machine, the combination to form a clamping mechanism for a preliminary cutting operation, of a movable roll carrying jaw, and a relatively fixed polygonal bar mounted on eccentric axles and toward and from which said jaw has movement, and

means for securing said bar in different positions of rotative adjustment, substantially as set forth.

7. In a wire coil machine, in combination, a lower jaw, a coil roll mounted in said lower jaw, an upper jaw, a coil roll mounted in said upper jaw, means for occasioning the movement of the upper jaw toward and from the lower jaw, a relatively fixed clamping and guiding bar supported in the machine in the vicinity of said upper jaw and toward and from which said upper jaw has movement, said bar in part overhanging said upper jaw when said upper jaw is in position to clamp a belt between itself and the bar, substantially as set forth.

8. In a wire coil machine, the combination to form a clamping mechanism for a preliminary cutting operation, of a movable roll carrying jaw, a relatively fixed clamping and guiding bar having flat sides, and eccentric bearings, bolt recesses formed in one of said bearings and a spring controlled bolt adapted to engage successively in said recesses, substantially as set forth.

9. In a wire coil machine, in combination, a pair of yokes, a clamping and guiding bar mounted on and carried by said yokes, a movable roll carrying jaw, a shaft on which said movable jaw is mounted, eccentric axles formed on said shaft, and entered in suitable bearings in said yoke, and means for occasioning the rotation of said shaft to carry said jaw toward and from the clamping and guiding bar, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 14th day of November, A. D. 1900.

JOSEPH H. TEMPLIN.

In presence of—

JOSEPH L. GEHRIS,

H. C. STONER.