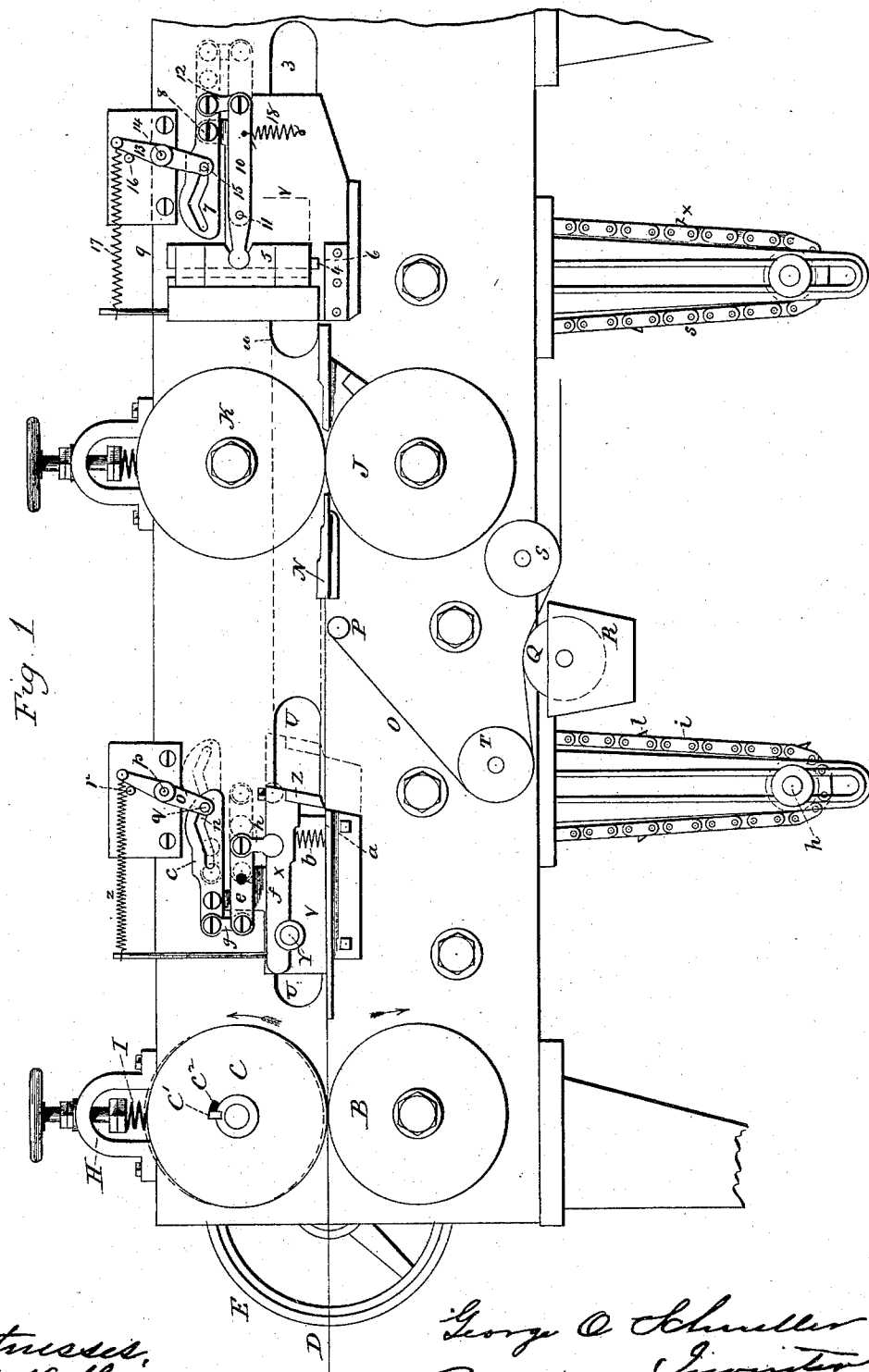


G. O. SCHNELLER.
MACHINE FOR COVERING DRESS STAYS.

No. 488,288.

Patented Dec. 20, 1892.



Witnesses,
J. H. Shumway
A. B. Cole

George O. Schneller
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Earl Seymour

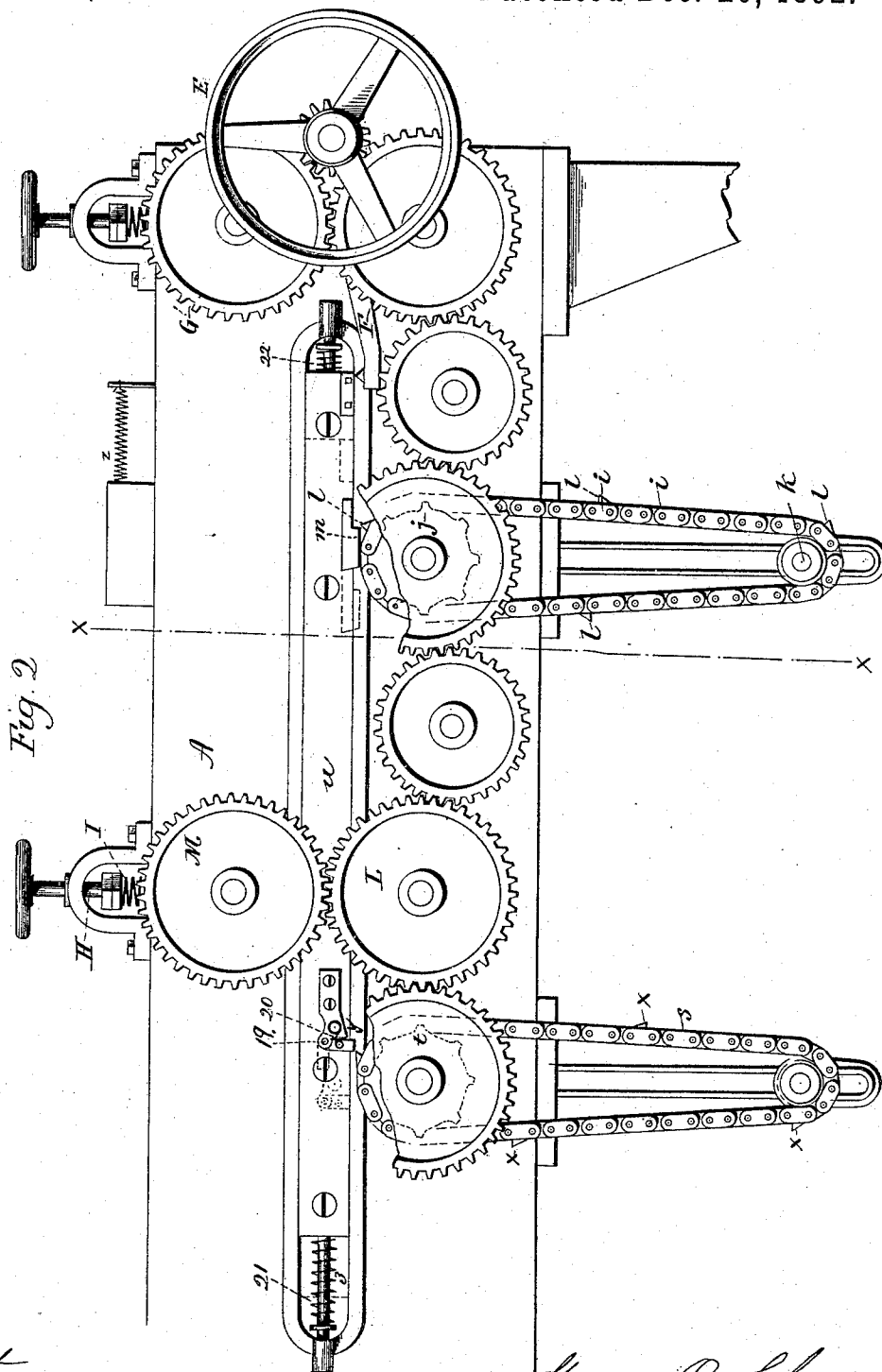
(No Model.)

4 Sheets—Sheet 2.

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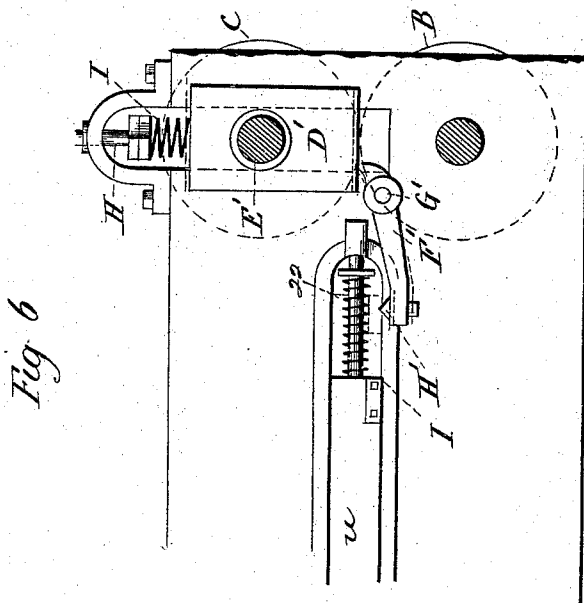


Fig 7

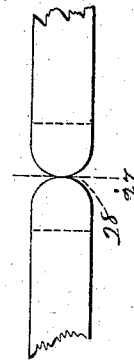
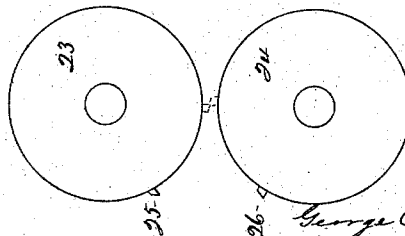


Fig 8



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UNITED STATES PATENT OFFICE.

GEORGE O. SCHNELLER, OF ANSONIA, CONNECTICUT.

MACHINE FOR COVERING DRESS-STAYS.

SPECIFICATION forming part of Letters Patent No. 488,288, dated December 20, 1892.

Application filed July 18, 1892. Serial No. 440,355. (No model.)

To all whom it may concern:

Be it known that I, GEORGE O. SCHNELLER, of Ansonia, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machines for Covering Dress-Stays; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters and figures of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front side view of the machine. Fig. 2, reverse side view enlarged, at the left hand broken away. Fig. 3, vertical section on line $x-x$ of Fig. 2. Fig. 4, side view of the first cutting mechanism enlarged and showing the cutter in position as having cut off the wire. Fig. 5, partial view of the cutting mechanism to illustrate the return operation of the cutter. Fig. 6, detached view of the first feed-roll end of the machine on the reverse side from Fig. 1 to illustrate the mechanism for separating the rolls. Fig. 7, illustrates the formation of the second cut. Fig. 8, modification.

This invention relates to an improvement in machines for covering wire with a ribbon or strip of fabric or similar material, which is folded around the wire and caused to adhere thereto by any suitable sizing. The covering of flat wire with a ribbon or strip of fabric, the strip being secured thereto by an adhesive material applied to the strip before or as it is being folded upon the wire, the wire itself being drawn through an apparatus in a continuous run, the folding of the strip upon the wire being produced as the wire is thus drawn through the apparatus is a well known operation for covering wire. Such covered wire is cut into lengths for various purposes. The cutting of the wire severs both the covering and the wire at the same point, so that the end of the wire is exposed, and some protection is necessary for the ends of the wire thus exposed, particularly where the pieces of covered wire are employed for dress or corset-stays, hence after the covered wires have been cut to the required length, a subsequent operation is necessary to complete the stay. In some cases the subsequent operation consists in applying a metal or other tip over the end

of the stay to cover the end of the wire, and so as to afford a protector between that end of the wire and the garment. In other cases the wire so covered is again covered with a braid or fabric, and so that the second covering may project beyond the ends of the wire, and by some manipulation form a protection for that end of the wire.

The object of the present invention is the construction of a machine which will cut the wire into the required lengths during the operation of covering, and before the cut end of the wire shall have been inclosed, and so feed the wire that after it is cut the cut piece will advance from the end of the body of the wire from which it is cut so as to leave space within the covering between it and the next piece cut, and so on, a succession of pieces being cut from a continuous run of wire, but so fed as to leave a space within the covering between the successive wires, the covering being closed between the ends of the successive wires, the two thicknesses of the covering pressed and caused to adhere together, and then the covering cut in the space between the ends of the wires, and so as to leave a projecting end of the covering stiffened by adhesive material to form a tip upon both ends of each piece of wire so cut, of sufficient stiffness to not only form a protection over the end of the wire, but also to facilitate the introduction of the stays into the pockets prepared to receive them in corsets, dresses, or wherever it is necessary to apply such stays, the stays thus produced being each complete in itself, and without the necessity of any subsequent operation thereon, and the invention consists in the combination of mechanism as hereinafter described and particularly recited in the claims.

A, represents the bed of the machine, which is in the form of a plate standing in a vertical plane, and supported upon legs, or otherwise.

B C, represent a pair of feed-rolls, arranged one above the other, and between which the wire D runs. Revolution is imparted to the feed-rolls in the direction indicated by arrows, so as to draw the wire into the machine, the wire coming from a reel, or other source of supply, in the usual manner. The rolls are driven by the application of

power thereto, through a pulley E, or otherwise, the two rolls caused to work together by means of gears F G, on the opposite ends of the arbors, the arbors of the rolls extending through the bed, and supported therein in the usual manner for supporting similar feed-rolls, their pressure being adjusted, also in the usual manner, by means of an adjusting screw H, and a spring I, below it. One of the rolls, preferably the upper, is arranged upon its arbor, so as to permit a slight circumferential play of the roll, and this is accomplished by arranging in the arbor a stationary key or spline C', and forming a key-seat C'' in the roll, of a greater width than the thickness of the spline, so that while the spline will engage one end of the seat C'' and impart revolution to the roll, it will permit the roll to advance faster than the arbor, as occasion may require, and as hereinafter described.

At a point distant from the feed-rolls B C, a second pair of feed-rolls J and K are arranged, they being connected by gears L and M on the opposite end of the roll arbors in like manner as the rolls B and C are geared together, and the two pairs of feed-rolls are connected together by a train of gearing, as seen in Fig. 2, so as to make the operation of the feed-rolls simultaneous. The diameter of the feed-rolls J and K is greater than the diameter of the two rolls B and C, so that the surface velocity of the rolls J and K, is greater than that of the rolls B and C, or which is the same thing, the rolls J and K, may be of the same or less diameter than the rolls B and C, they being geared accordingly, it only being essential that the surface velocity of the second pair of feed-rolls J K shall be greater than the surface velocity of the first pair of feed rolls B C.

Between the two pairs of feed-rolls and at a point near the second pair of rolls, a folder N, is arranged, through which the wire runs. O, represents the strip or ribbon of covering material, which is drawn from any convenient supply and passes to the folder over a roll P, so as to enter the folder, and being engaged with the wire will travel with the wire through the folder, the folder serving to fold the strip around the wire. This is a common and well known device, and does not require to be particularly described. Before the covering reaches the folder, the surface of the covering which is to lie next the wire is coated with an adhesive material. As here represented the coating is accomplished by means of a roller Q, arranged to revolve in a tank R, which contains adhesive material, the upper surface of the roller being above the tank, and at one side of the roller Q, a guide-roll S, is arranged beneath which the strip passes, thence over the roller Q, and thence under a roll T, on the opposite side of the adhesive rollers Q, thence the covering passes to the roll P and into the folder. As the strip passes over the roller Q, it receives

a coating of adhesive material upon that surface which is to come next the wire, and so that when the covering is folded around the wire, the adhesive material will firmly attach the covering to the wire, and secure the two edges of the covering together. This is a common and well known device for applying adhesive material to a strip of covering which is to be applied to the wire, and for which other known devices for the same purpose may be substituted. The feed-rolls J K draw the wire through the folder with the covering, the folder operating to fold the covering around the wire, and as usual in wire covering machines employing like or similar devices.

Between the folder and the first pair of feed-rolls a cutting device is introduced, which at a predetermined time and after the advancing wire shall have entered between the second pair of rolls J K, will cut the wire. The wire being drawn inward by the first pair of feed-rolls B C, at a velocity corresponding to the surface velocity of that first pair of rolls, the wire will advance to the second pair of feed-rolls J K, the surface velocity of which is greater than that of the first pair of feed-rolls, and this second pair of feed-rolls taking the wire, will naturally cause it to advance faster than the first pair of feed rolls, and that second pair of feed-rolls may thus advance the wire faster than the first pair of feed-rolls for a certain length of time, one of the first pair of feed rolls here represented, as C, is provided with the lengthened key-seat C', so as to permit that roll to be turned at a velocity faster than that which would be imparted to it by its arbor, that is, an over-motion is permitted that roll C, so that when the run of the wire is taken by the second pair of rolls J K, it will advance with the surface velocity of those rolls J K, the roll C, because of its elongated key-seat readily yielding for such increased velocity given to the wire over that which would be imparted by the first pair of feed-rolls B C. The cutting of the wire occurs during the over-motion permitted in the first pair of feed-rolls, and as soon as the wire is cut, the second pair of feed-rolls will lose their control over the body of the wire, that body of the wire then coming under the control solely of the first pair of feed-rolls, and so soon as the key has caught up with the roll those feed-rolls will again advance the body of the wire, but at a slower velocity than that which will now be given to the piece of wire cut off, and which is between the second feed-rolls J K. The piece of wire so cut and now under the control of the second pair of feed-rolls J, will advance more rapidly than the body of the wire, consequently before the end of the body of the wire from which the piece was so cut reaches the second pair of feed-rolls J K, a space will have been produced between the rear end of the cut piece and the advancing end of the body of the wire corresponding to the increased velocity which is given to the piece of wire so cut.

The cutting of the wire occurs so far to the rear of the folder that before the end of the body of the wire shall have reached the second pair of feed-rolls, the requisite space will have been formed between the first cut piece and the end of the body of the wire. The covering is drawn through the folder at the same velocity with the wire passing between the feed-rolls J K, and is folded around the wire so passing between those rolls, the folding of the wire continues through the space between the end of the piece of wire and the end of the body of the wire, so as to double the covering through the said space, and the drawing and cutting of the wire and the folding of the covering around the successive pieces of wire will continue, the covering being pressed upon the wire and through the spaces, the adhesive material causing the covering to adhere together through the spaces. The cutter operates to cut the pieces of wire from the body whenever the requisite length of wire shall have passed between the cutters, and this length will vary accordingly as the stays are required to be longer or shorter.

While the cutting of the wire may be made instantaneous, and so as not to interfere with the advance of the wire, it is desirable to produce the cut by means of cutters which during the cutting operation will advance with the wire, and then after the cut is completed return for the next cut, and this is desirable because a much greater rapidity of work can be produced than when the cutting is intermittent, and also more rapid than can be practically produced by substantially instantaneous cuts.

In the drawings a cutting device is shown, which is adapted to advance with the wire during the operation of cutting; this device is shown enlarged in Fig. 4. Through the bed A, of the machine is a longitudinal slot U, and on the wire feeding side of the bed A, a slide V, is arranged, having a rib W, (see Fig. 2) on its inner side, which extends through the slot U, in the bed A, so as to be guided in its longitudinal movement. On the slide V, a lever X, is hung, upon a pivot Y, and so as to swing in a vertical plane. At its forward or free end the lever X, carries a cutter Z, and below the cutter is a bed or guide a, over which the wire passes, the ends of this bed forms a companion cutter for the cutter Z, and between which two cutters the wire runs, and so that when the cutter is depressed from the position seen in Fig. 1, to that seen in Fig. 4, the cutter Z, will descend and produce the cut of the wire. A spring b, is arranged below the lever, the tendency of which is to raise the cutter, and which yields upon the depression of the cutter to produce the cut of the wire. The cutter is operated by a cam-lever c, hung upon a fulcrum d, so as to swing in a plane parallel with the plane of the cutter-lever X. A lever e, is hung upon a fulcrum f, between the two levers c and X, and so as to swing in substantially the same plane,

one arm of the lever c, is connected to one arm of the lever e, by a link g, and the other arm of the lever e, is connected to the lever X, by a link h, and so that an up and down movement imparted to the lever c, will impart a corresponding up and down movement to the cutter lever X, and as from the position seen in Fig. 1, to that seen in Fig. 4, and return. A longitudinal movement is imparted to the cutter-slide V, corresponding to the advance movement of the wire running between the two cutters, and as here represented this advance is produced by means of an endless drive-chain i, (see Fig. 2,) running over a sprocket-wheel j, which is in gear connection with the train which drives the feed-rolls, so that its travel may correspond to the travel of the second pair of feed-rolls J K, for the reason that the cutting is to be produced while the wire is advancing under the operation of the second pair of feed-rolls, hence the cutter must travel at the same velocity as the wire travels under the operation of the said second pair of feed-rolls. The drive chain extends downward and passes around a corresponding sprocket-wheel k below, the drive-chain is provided with lugs or shoulders l, which in the advance movement of the drive-chain are adapted to engage a corresponding lug or shoulder m, on the slide or rib W of the slide, as seen in Fig. 2. The lugs l are arranged distant from each other corresponding to the time required for the requisite length of feed of the wire to be produced between the cuts, and so that at a predetermined time one of the lugs on the drive-chain will strike the shoulder of the cutter slide, and cause that slide to advance accordingly, and as indicated in broken lines Fig. 2, and as also indicated in broken lines Figs. 1 and 4, and the length of time occupied in the advance movement of the slide, corresponds to the time required for the descent and return of the cutter.

To produce the descent of the cutter while the slide is advancing, the lever c is constructed with a cam-shaped groove n, and above the lever c, a lever o is hung upon a pivot p stationary on the bed of the machine. The lower arm of the lever o, carries a stud q, which works in the groove n of the lever c. The upper arm of the lever rests against a stationary stud or shoulder r when the cutter is in the rear position, as seen in Fig. 1, and in this position the stud q stands at the forward end of the groove in the lever; the groove from that point is upwardly inclined rearward, consequently as the cutter-slide advances, as from the position seen in Fig. 1, to the position seen in Fig. 4, the cam shape of the groove n operating upon the stud q, causes the forward end of the lever c, to be depressed to produce a downward movement of the cutter Z, as clearly seen in Fig. 4, but during the time of this descent the cutters have been advancing at the same rate of speed as the covered wire which is passing between the second pair of rolls, consequently no interruption or

opposition has been produced by the feed. After the cut has been made the cutter must return; the cut is produced during the first part of the forward movement of the slide.

5 After the cutter has descended to cut the wire, and as seen in Fig. 4, the slide still advances, but the groove *n* in the slide from this point is inclined downward, and so that as the slide advances the lever *c*, will be raised, as indicated in broken lines Fig. 4, and this raising

10 of the lever *c* will also raise the lever *X* and the cutter *Z*, as indicated in broken lines Fig. 4, so that before the cutter ceases its forward movement, it has risen to a point above the

15 wire, so that it may retreat without interference with the advance of the wire. After the cutter has been thus raised, the slide is returned to its first position, as seen in Fig. 1. As here represented the return of the cutter-

20 slide is produced by a second drive-chain *s* running over a sprocket-wheel *t*, which like the sprocket-wheel *j* is in gear connection with the feed-rolls. By the time the cutter-slide has been returned, the body of the wire has

25 advanced so that its end is about to engage with the second pair of feed-rolls, and it is now necessary to open the feed-rolls in order that the body of the wire may advance under the more rapid operation of the second pair

30 of feed-rolls, until the time for cutting occurs. To relieve the wire from the operation of the first pair of feed-rolls while the body of the wire is being so advanced by the second pair of feed-rolls, the return of the cutter-slide is

35 adapted to raise the upper feed-roll *C*, so as to separate the two rolls and permit the wire to pass freely between them. This may be accomplished as seen in Fig. 6. The box *D'* in which the arbor *E'* of the roll *C* is supported, is adapted to slide up and down. Be-

40 low the box *D'*, a lever *F'* is hung upon a fulcrum *G'*, the shorter arm adapted to bear upward against the under side of the box *D'*, the other arm extends forward and is provided with a toe *H'*, which stands in the path of the cutter slide as it returns, and so that

45 in the last part of the return movement of the slide, a corresponding lug or cam *I'*, on the cutter-slide will strike the toe of the lever *F'*, depress the toe arm of the lever, and correspondingly raise the box which supports the upper feed-roll, and also raise the feed-roll as indicated in broken lines Fig. 1, and so that

50 so long as the slide remains in its normal or rear position, the feed-rolls *B C* will be separated so as to permit the wire to run freely through them, but so soon as the cutter slide starts in its advance movement to produce the cutting, the two feed-rolls *B C*, come together

60 upon the wire, but the over motion permitted the roll *C*, will still permit the wire to run freely between them until the wire is cut, as before described, when the feed-rolls *B C* will come into operation and advance the wire slower than the rolls *J K*, advance the piece of wire so cut, and as before described. The slide *V*, is connected to a second slide *v*, by a

bar *u*, through a slot *w* in the bed, as shown, the purpose of this second slide will be hereinafter described. The drive-chain *s*, is provided with lugs or shoulders *x*, one of which is adapted at the proper time to engage a shoulder or projection *y* on the bar *u*, it being understood that the sprocket-wheel *t*, runs in the opposite direction to the sprocket-wheel *j*, consequently this engagement by the second drive-chain *s*, with the bar *u*, will impart a return movement to the cutter-slide, and bring it to its position for the next cut. As the cutter-slide returns from its extreme forward position indicated in broken lines Fig. 4, it will operate upon the lever *o*, through the stud *q*, and that lever *o* being then free to swing upon its fulcrum *p*, will turn under the retreating movement of the slide, its upper arm passing from the stud or shoulder *r*, as seen in Fig. 5, until the stud *q* reaches the highest point in the groove *n*, and this will occur when the slide has about reached its extreme rear position. The lever *o*, is provided with a spring *z*, the tendency of which is to yieldingly hold it against its stud or shoulder *r*, this spring yields upon the return of the cutter-slide, as indicated in Fig. 5, the spring *b*, being stronger than the spring *z*, holds the cutter in its up position, but so soon as the slide reaches its rear position, the stud *q* has passed over the rise of the groove, then under the reaction of its spring *z*, the lever will be drawn against its stud *r*, the stud *q* passing freely through the incline of the groove *n*, until the lever *o*, reaches its home position, as seen in Fig. 1, where it is ready to operate upon the next advance of the cutter slide. In practice it is found that a space of about one-fourth of an inch between successive wires is sufficient to produce the requisite tip for the stay. As before stated the two thicknesses of covering are pressed together, and so that their coated surfaces will firmly adhere, and so that when they are separated midway of the space, the projecting ends stiffened by adhesive material will form a serviceable tip for the ends of the stays, and so as to fully cover the metal, and form a projection to prevent contact between the ends of the wire and the pocket or garment into which the stays are introduced. To give the proper finish to the tips thus formed, as well as to facilitate their introduction into pockets, the ends should be pointed, as seen in Fig. 7, which shows a portion of a covered wire on an enlarged scale, including the space between the adjacent wires. To properly form these ends, as seen in Fig. 7, a portion of the covering is cut away upon each side, the cut extending across so as to separate the two and produce the pointed ends. To cut the covered wire midway between the ends of adjacent wires, a cutter is arranged to operate at the required point in advance of the wire, and so as to cut the covering at the desired point between the ends of successive wires, and while as stated in regard to the wire cutter this cut may be made instantaneous,

it is desirable that this cut shall be made by the cutters which advance at substantially the same rate of movement as that of the covered wire. The cutter to thus cut off the covered wires is arranged upon the slide *v*, which as before described is connected with the slide *V*, by means of the bar *u*, the connection being through a longitudinal slot *w* in the bed. To cut out a portion of the covering to produce the required shape of the end, as before described, the cutters are in the form of dies, the male die 4 is arranged in a vertical slide 5, upon the slide *v*, and the bed 6 below the die 4, is provided with a female die corresponding to the male die 4, and between which two dies the covered wire passes, and so that the male die operating as a punch, will, at the proper time be brought upon the space in the covering of the wire, and so as to punch therefrom a portion of the material to give the requisite shape and separate the covered wires from each other. The cutter slide 5 is operated by means of a lever 7, similar to the lever *c*, and is hung to the slide *v* upon a fulcrum 8, the lever 7, being constructed with a cam groove, like the cam-groove *n*, of the lever *c*, except that it is oppositely arranged, and the movement of the lever 7 is communicated to the slide 5 by an intermediate lever 10, hung upon a fulcrum 11 on the slide, and connected to the lever 7 by a link 12, and in combination with this lever 7 is a lever 13, hung upon a fulcrum 14, like the lever *o*, and carrying a stud 15 to work in the cam-groove of the lever 7, the same as described regarding the lever *o*, the lever 13 being provided with a stationary shoulder or stud 16, and a yielding spring 17, like the lever *o*, and the lever 10 is provided with a spring 18, to operate as does the spring *b* upon the lever *X*. The position of the second cutter with relation to the first is such that the operation of the second cutter will be produced at the time the space between the successive wires will have been brought to the said second cutter, it will be understood therefore that the cutter slides are to be adjusted with relation to each other according to the length of wire to be cut, or stay to be formed. Either or both lugs or shoulders by which the drive-chain engages the slide may be adapted to be thrown out of the path of the lugs on the respective chains, so that the cutters may stand inoperative, and such arrangement will be a convenience when introducing a new wire or a new covering strip. As illustrated at the left in Fig. 2, the lug *y*, by which the chain engages the slide is hinged to the bar or slide as at 19, and so that it will rest against the shoulder 20 when in the down position, that it may engage the lugs on the drive-chain, but if the lugs *y*, be turned upward, as seen in broken lines, then it will be out of the path of the lugs on the chain, and no engagement will occur, consequently when the slides have been advanced by the advancing drive-chain, and the cutters opened, they will remain in that position so

long as the lug *y*, is turned up out of the path of the engaging lugs on the drive-chains, and no cutting effect can be produced until the lug *y*, is returned. Spring-cushions 21 and 22 are arranged at opposite ends of the two grooves in which the cutter slides work, and so as to make the stop of the slides easy, and without cushioning or jar.

While the construction and arrangement of the cutting mechanism described is preferred, other cutting devices may be employed as before indicated. As an illustration of such a cutting device a pair of rotary cutters is represented in Fig. 8. This device consists of a pair of heads 23 and 24, carrying cutters respectively 25 and 26, and which at the proper time will come together upon the wire, as indicated in broken lines in same figure, and thus cut off the wire. In this arrangement the rotary movement of the cutters will correspond to the advancing movement of the wire, and the arrangement of the cutters will be such that when the requisite length of wire has been taken, the cutters will come together and cut off the required length, the invention is therefore not to be understood as limited to any particular construction of cutters except as hereinafter described.

While preferring to make the second or separating cut so as to produce substantially a pointed tip for the covered wire, the cut may be simply a square cut, as indicated by the line 27, Fig. 7, or it may be a diagonal cut, as indicated by the line 28 in the same figure.

The covering devices for the wire have been described as being adapted to fold the strip of material around the wire, but other equally well known devices may be employed for covering the wire, such for illustration as a braiding machine, arranged before the second pair of feed-rolls, and through which the wire will pass, the covering so braided having adhesive material applied to it, so as not only to secure the covering to the wire, but attach the two thicknesses at the ends to stiffen the projections, as required for the tips. Such a braiding machine and its arrangement with a pair of feed-rolls is too well known to require illustration, while therefore the folding device adapted to fold a strip of covering around the wire is preferred, the invention is not to be understood as limited to any particular mechanism for covering the wire.

The cut of the wire produced between the first and second pair of rolls may occur just as the wire is about to enter the second pair of rolls, in which case the over-motion of the feed-roll and the opening movement of the rolls on the return of the cutter-slide may be omitted, but yet the arrangement for interrupting the operation of the first pair of feed-rolls as described, is preferred.

I claim—

1. In a machine for covering wire, the combination of a pair of feed-rolls adapted to produce a continuous feed for the wire, a second pair of feed-rolls to which the wire passes

from the first pair of feed-rolls, the second pair of feed-rolls having a surface movement more rapid than that of the first pair of rolls, a covering mechanism substantially such as described between the two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, with mechanism substantially such as described between the said covering device and the said first pair of rolls to automatically cut the wire at a predetermined time, substantially as described, and whereby the pieces so cut from the wire will be advanced by the second pair of rolls more rapidly than the body of the wire is advanced by the first pair of rolls.

2. In a machine for covering wire, the combination of a pair of feed-rolls between which the wire to be covered passes, a second pair of feed-rolls to which the wire passes from the said first pair of feed-rolls, the surface movement of the said second feed-rolls being greater than that of the first pair of feed-rolls, a covering mechanism between the said two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, a cutting mechanism between the covering device and the said first pair of rolls, and through which cutting mechanism the wire passes, the said cutting mechanism being adapted to cut the wire at a predetermined time, and whereby the piece so cut is advanced by the second pair of feed-rolls at a greater velocity than the body of the wire is advanced by the first pair of feed-rolls, and whereby a space will be formed within the covering between successive pieces of wire, a second cutter beyond the said second pair of feed-rolls adapted to cut the covering between the adjacent ends of the covered pieces of wire, substantially as described.

3. In a machine for covering wire, a pair of feed-rolls between which the wire to be covered passes, a second pair of feed-rolls to which the wire passes from the first pair of feed-rolls, the surface movement of the second pair of feed-rolls being greater than that of the first pair of rolls, a covering mechanism substantially such as described between said two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, a cutting mechanism between the covering devices and said first pair of rolls, and through which cutting mechanism the wire passes, the said cutting mechanism being adapted to cut the wire at a predetermined time, with mechanism for imparting to said cutting mechanism a movement with and substantially the same velocity as that of the covered wire, substantially as described.

4. In a machine for covering wire, the combination of a pair of feed-rolls adapted to produce a continuous feed for the wire, a second pair of feed-rolls to which the wire passes from the first pair of feed-rolls, the second pair of feed-rolls having a surface movement more rapid than that of the first pair of rolls, a folding device between the said two pairs

of rolls, and leading between the said second pair of rolls, and through which the wire must pass, mechanism substantially such as described to coat the strip of covering with adhesive material and conduct said strip into said folding device, with mechanism substantially such as described between the said folding device and the first pair of feed-rolls to automatically cut the wire at a predetermined time, substantially as described, and whereby the piece so cut from the wire will be advanced by the second pair of rolls more rapidly than the body of the wire is advanced by the first pair of rolls.

5. In a machine for covering wire, a pair of continuously revolving feed-rolls between which the wire to be covered passes, a second pair of feed-rolls to which the wire passes from the said first pair of feed-rolls, the surface movement of said second pair of feed-rolls being greater than that of the first pair of feed-rolls, a folder arranged between the said two pairs of rolls, and leading between the said second pair of rolls, and through which folder the wire must pass, mechanism substantially such as described to coat and present to said folder a strip of material with which the wire is to be covered, a cutting mechanism between the folder and the first pair of feed-rolls through which cutting mechanism the wire passes, the said mechanism being adapted to cut the wire at a predetermined time, and mechanism adapted to impart to said cutting mechanism a movement with and at substantially the same velocity as that of the surface movement of the said second pair of rolls, substantially as described.

6. In a machine for covering wire, the combination of a pair of continuously revolving feed-rolls, one of said rolls arranged upon its arbor to permit a limited extent of over-motion, a second pair of feed-rolls through which the wire passes from the first pair of feed-rolls, the surface movement of the second pair of feed-rolls being greater than that of the first pair of feed-rolls, a covering mechanism through which the wire passes to said second pair of feed-rolls, a longitudinal slide arranged between the covering mechanism and said first pair of feed-rolls, the said slide having a longitudinal movement imparted to it corresponding to the surface movement of said second pair of rolls, the said slide carrying a cutting mechanism through which the wire passes, and adapted to cut the wire while the slide is moving with the wire, mechanism between the said slide and the said first pair of rolls, substantially as described and whereby in the return movement of said slide, the said first pair of rolls are separated.

7. In a machine for covering wire, in which a mechanism is provided for a continuous feed of the wire, the combination therewith of a longitudinal slide arranged to move in a path parallel with the advancing movement of the wire, mechanism substantially such as

described to impart to said slide an advancing movement corresponding to the advancing movement of the wire, a cutter stationary on said slide, a lever hung to said slide, and
 5 carrying a second cutter, between which two cutters the wire passes, a second lever hung to said slide and in connection with said cutter-lever, the said second lever constructed with a cam-shaped groove, and a lever hung
 10 upon a stationary axis and so as to swing in a plane parallel with the path of movement of the slide, the said stationary lever carrying a stud adapted to work in the said cam-shaped groove on the said second lever, the said stud-
 15 carrying lever held stationary in one direction, but free in the opposite direction, substantially as described, with mechanism to return said slide, and whereby under the advancing movement of said slide the cutters
 20 will close, and then open before the slide returns.

8. In a machine for covering wire, the combination of a pair of feed-rolls between which the wire passes, a second pair of feed-rolls
 25 through which the wire also passes, the surface movement of said second pair of feed-rolls being greater than that of said first pair of feed-rolls, a folder between said pairs of rolls, and through which the wire passes to
 30 said second pair of rolls, mechanism substantially such as described to coat and conduct to said folder a strip of material, a cutting mechanism between the folder and the first
 35 pair of rolls, adapted to cut the wire at a predetermined time, and so that the portion so cut from the body of the wire will advance under the revolution of the second pair of rolls more rapidly than that of the body of the wire, and thereby leave a space of the covering material between the end of the one piece

so cut and the end of the next piece, a second cutting mechanism arranged beyond the said second pair of rolls, and adapted to cut the covering between the ends of the covered pieces of wire, substantially as described. 45

9. In a machine for covering wire, a pair of feed-rolls between which the wire to be covered passes, a second pair of feed-rolls through which the wire also passes, the said second pair of feed-rolls having a surface velocity
 50 greater than that of the first pair of feed-rolls, a covering mechanism substantially such as described between the two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, a cutter between
 55 said covering mechanism and the said first pair of rolls, adapted to cut the wire at a predetermined time, the portion so cut being engaged by the second pair of rolls, and consequently advanced at a greater velocity than
 60 that of the body of the wire fed by the first pair of rolls, and whereby a space will be formed within the covering between succeeding pieces of wire, a cutter beyond the said second pair of feed-rolls arranged to separate
 65 the covered pieces at a point in the covering between the adjacent ends of the pieces of wire, mechanism substantially such as described for imparting to both said cutters a longitudinal movement during the cutting op-
 70 erations at substantially the same velocity as that of the covered wire, and substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 75

GEO. O. SCHNELLER.

Witnesses:

LILLIAN D. KELSEY,
 FRED. C. EARLE.