April 23, 1946. W. E. SOMERVILLE 2,398,865

WIRE STRANDING MACHINE

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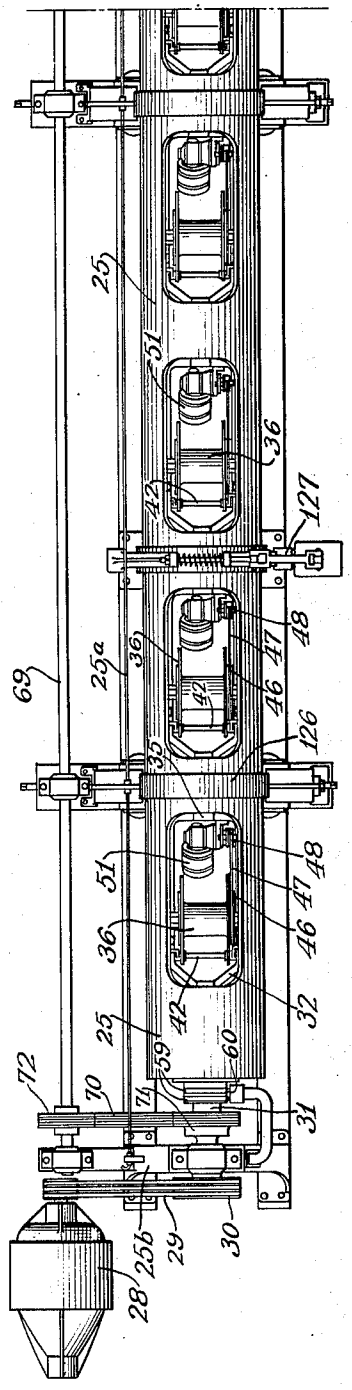


FIG. 1.

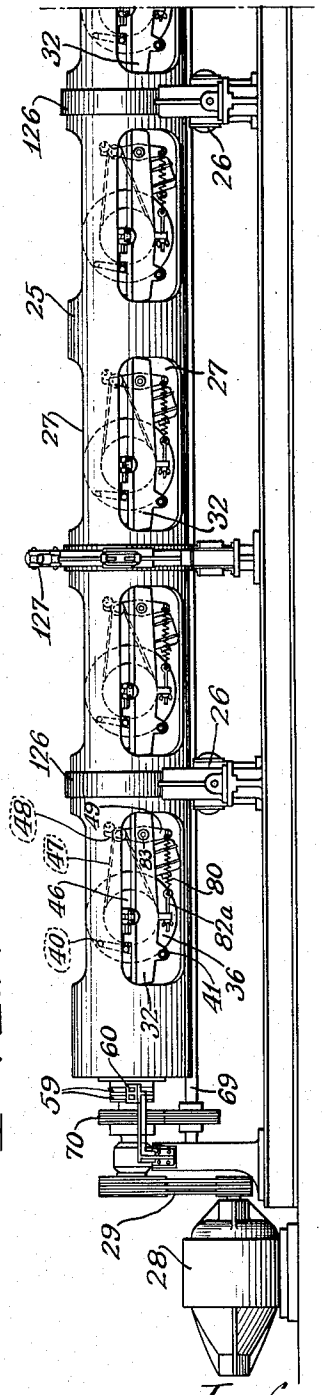


FIG. 2.

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WIRE STRANDING MACHINE

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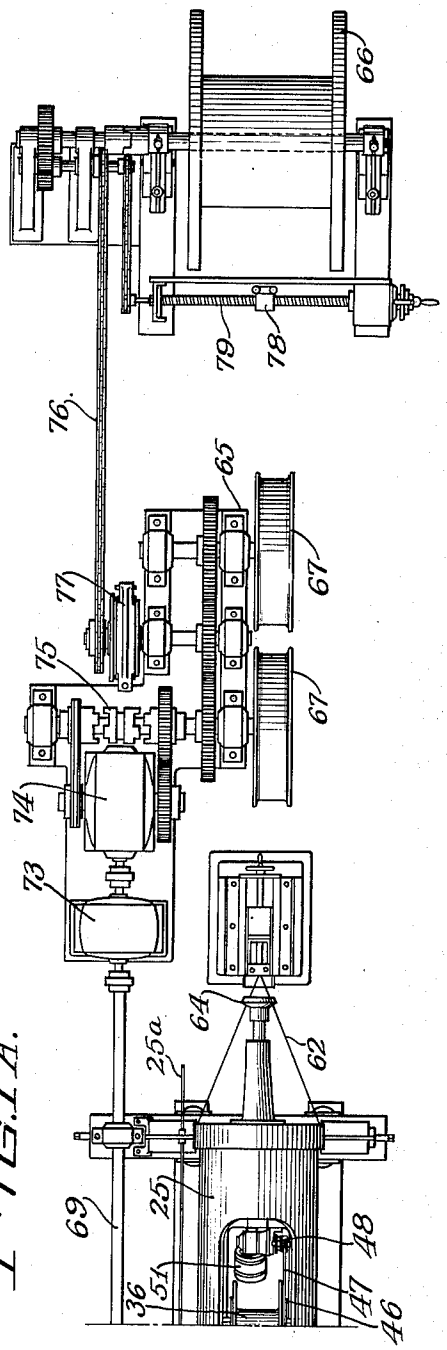


FIG. 1A.

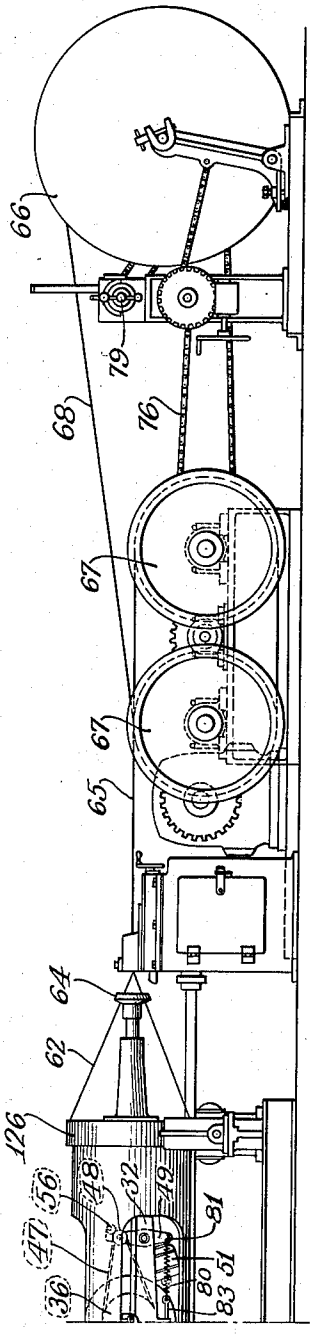


FIG. 2A.

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WIRE STRANDING MACHINE

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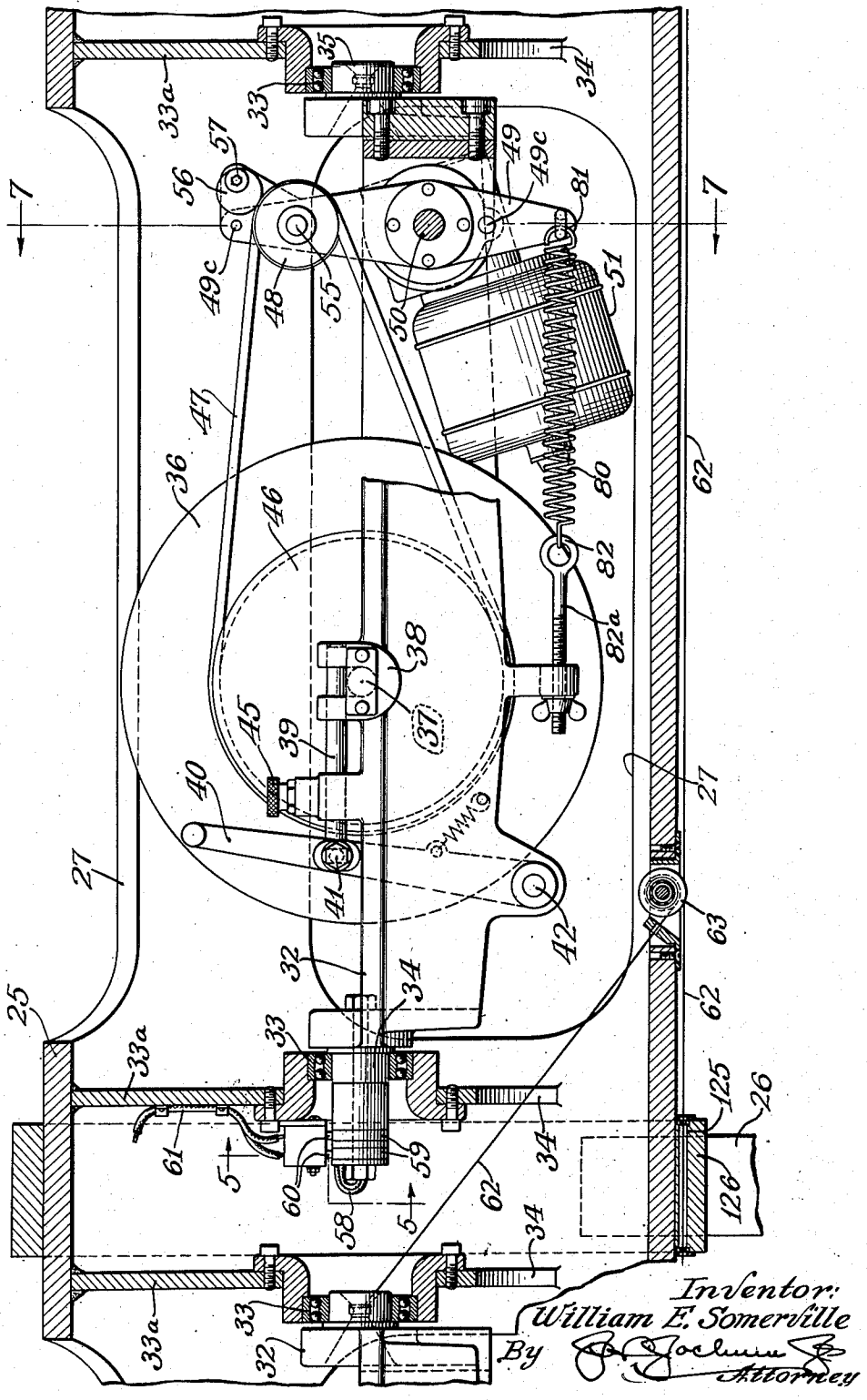


Fig. 3.

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WIRE STRANDING MACHINE

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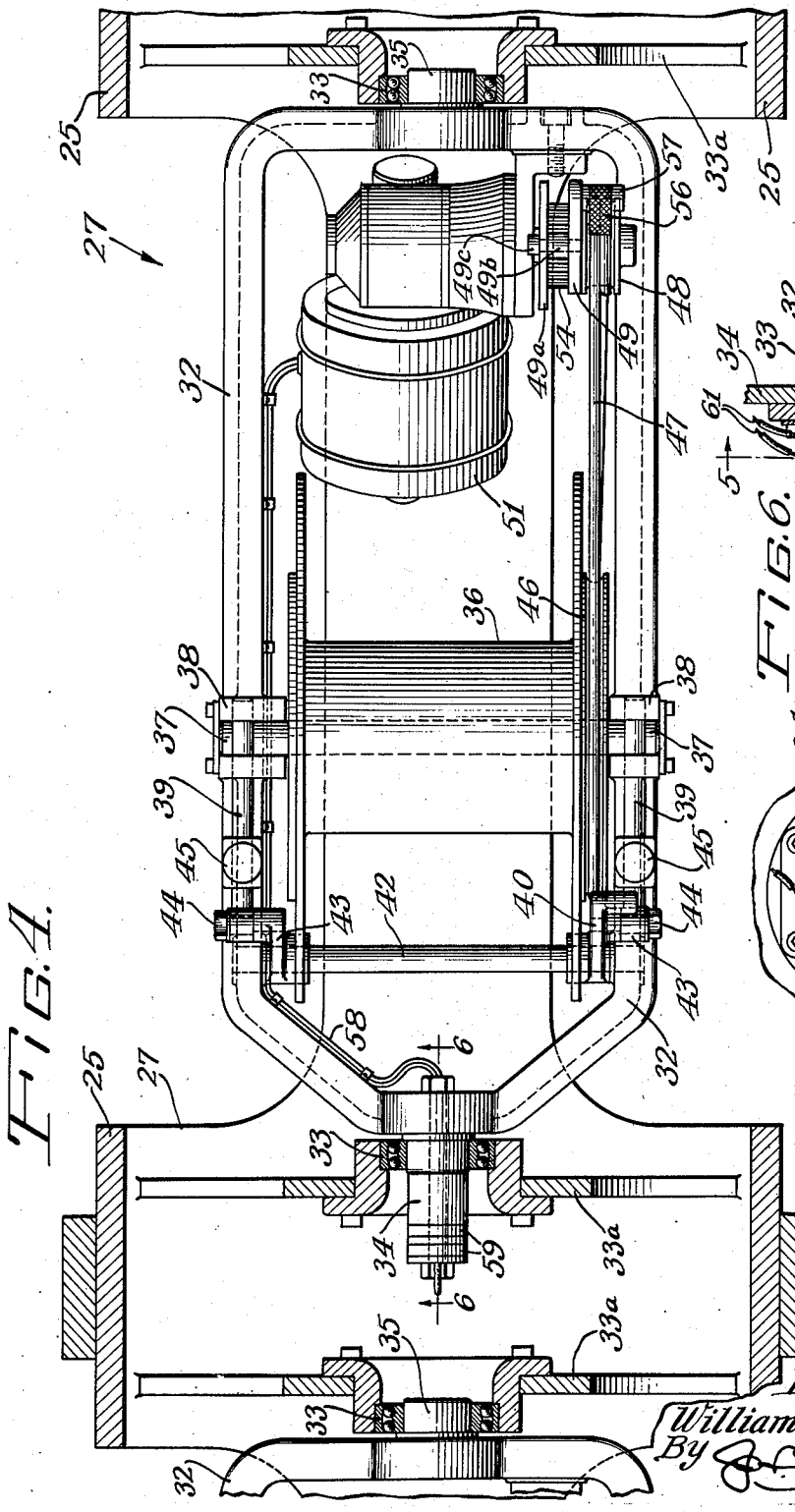


FIG. 4.

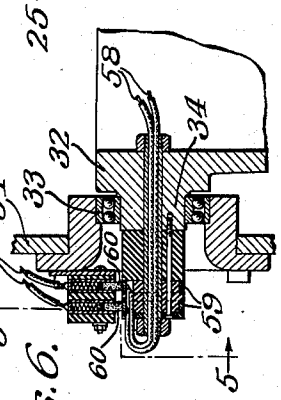


FIG. 6.

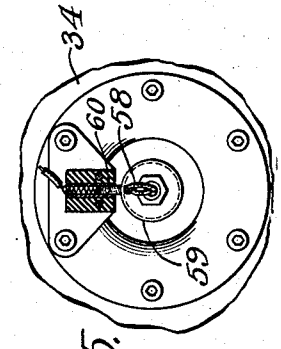


FIG. 5.

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WIRE STRANDING MACHINE

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FIG. 7.

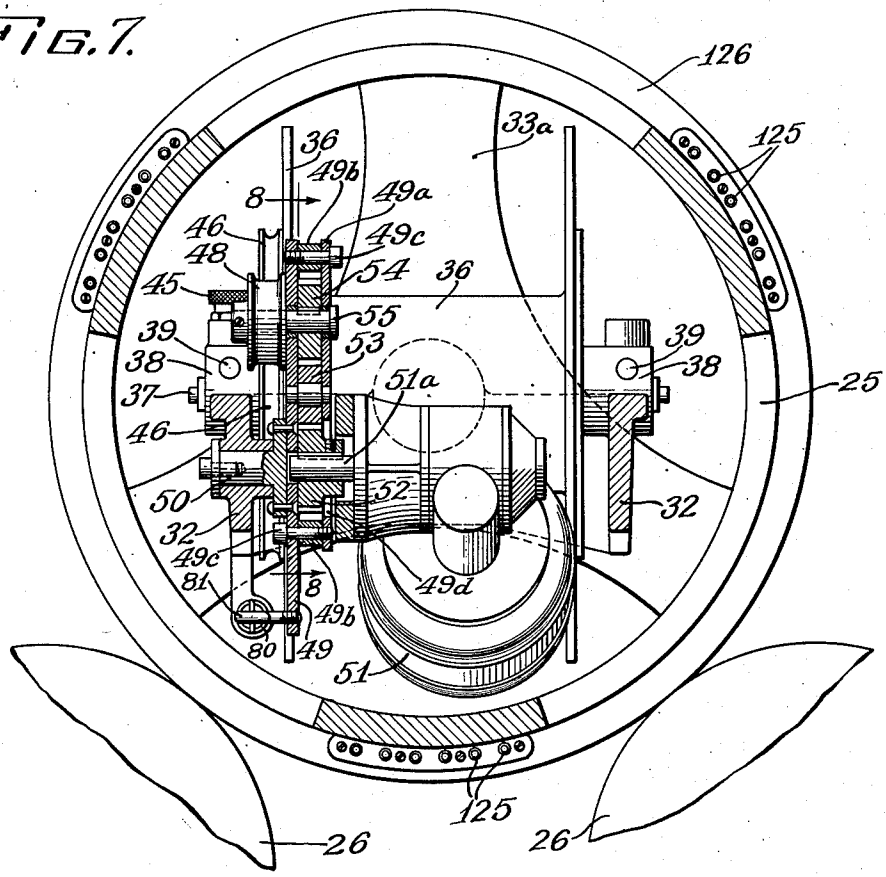


FIG. 8.

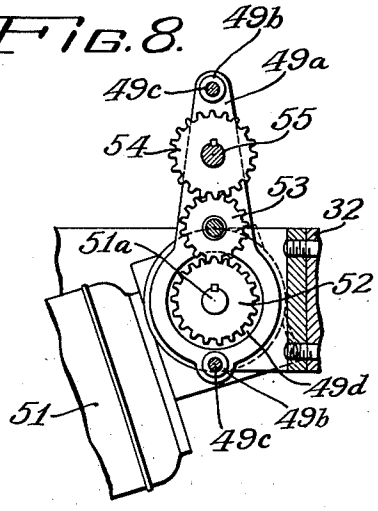
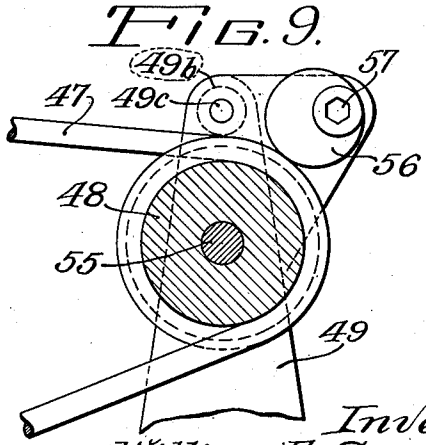


FIG. 9.



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WIRE STRANDING MACHINE

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FIG. 10.

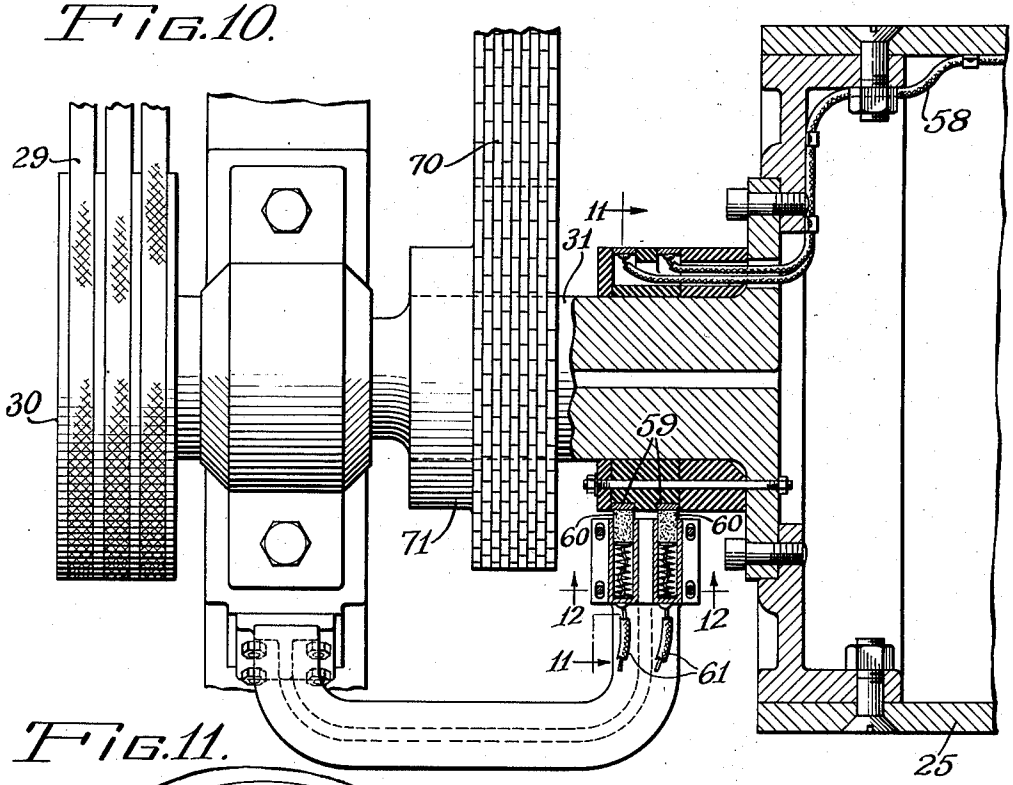


FIG. 11.

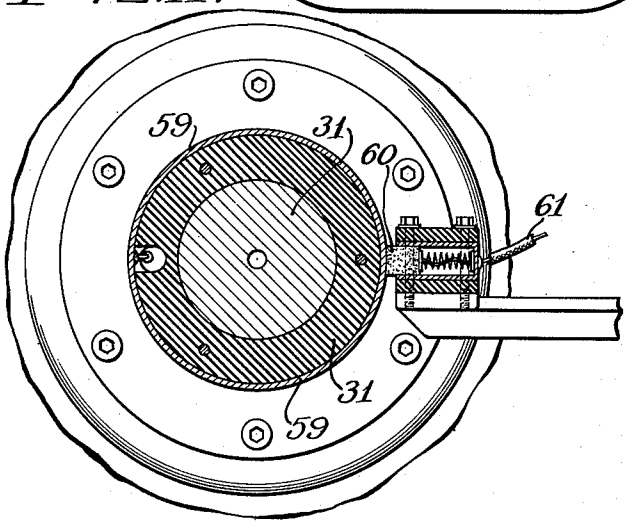
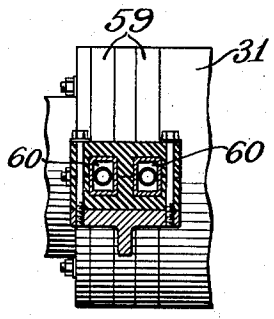


FIG. 12.



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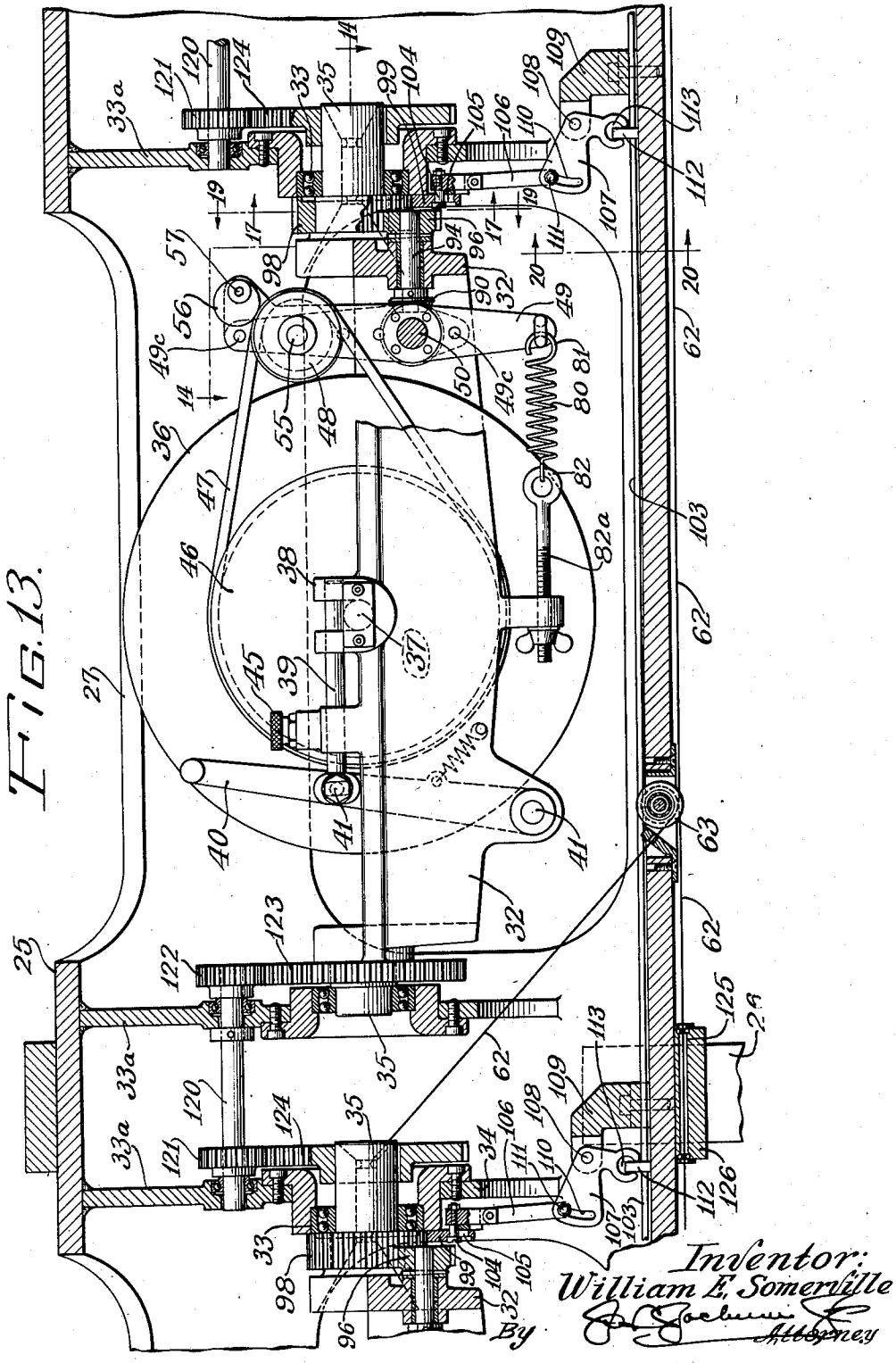


FIG. 13.

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WIRE STRANDING MACHINE

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Fig. 14.

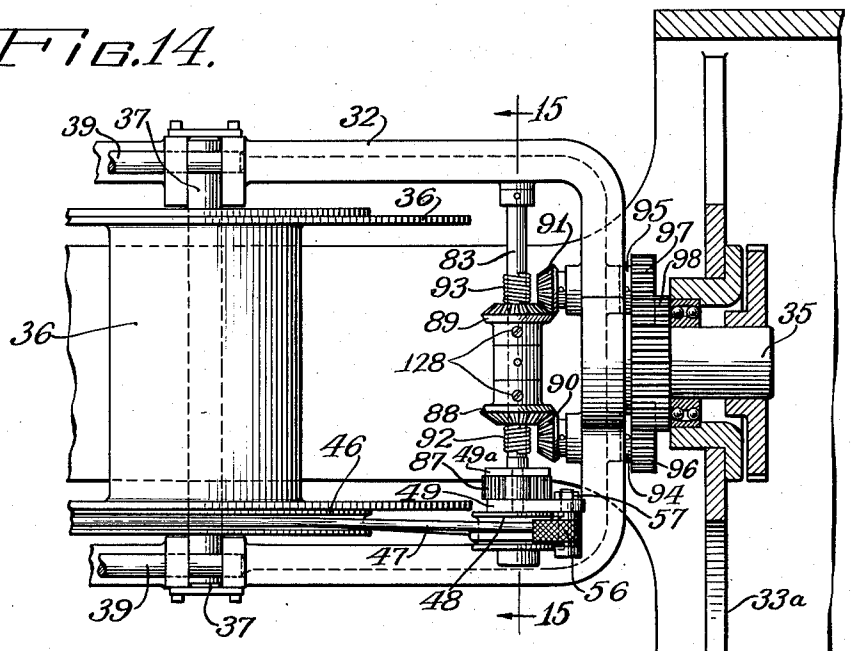


Fig. 15.

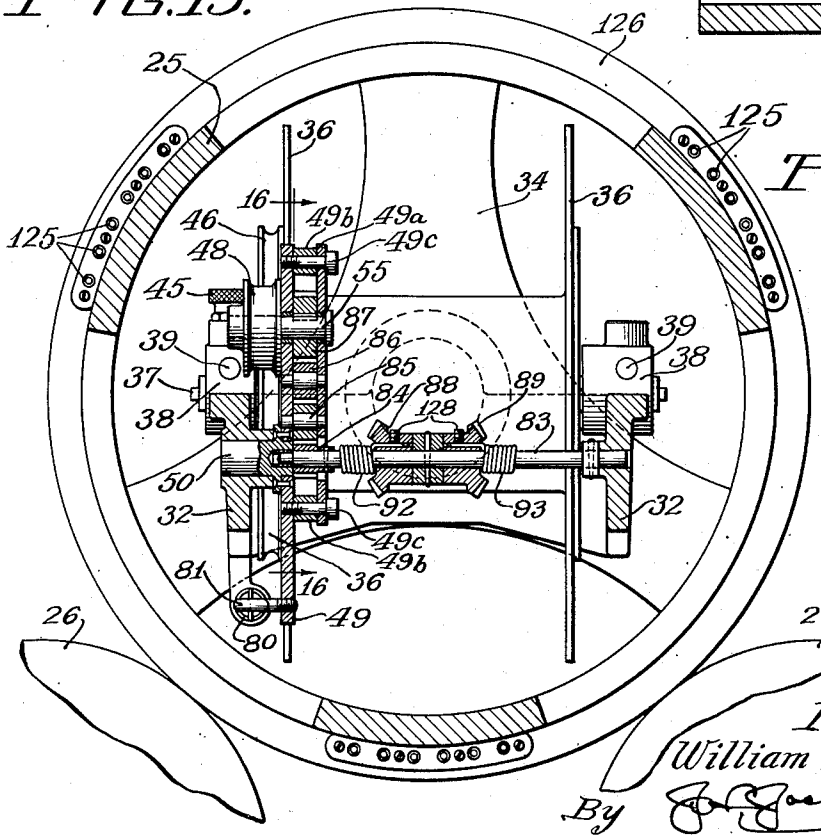
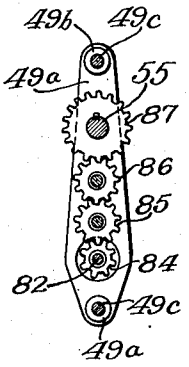


Fig. 16.



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WIRE STRANDING MACHINE

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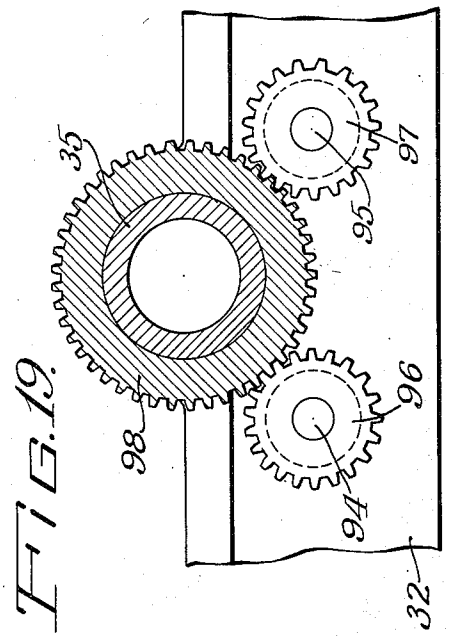


FIG. 19.

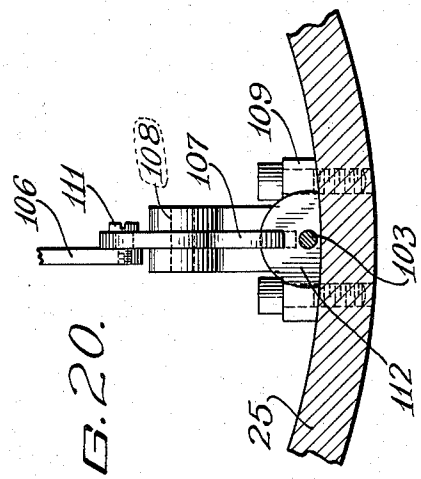


FIG. 20.

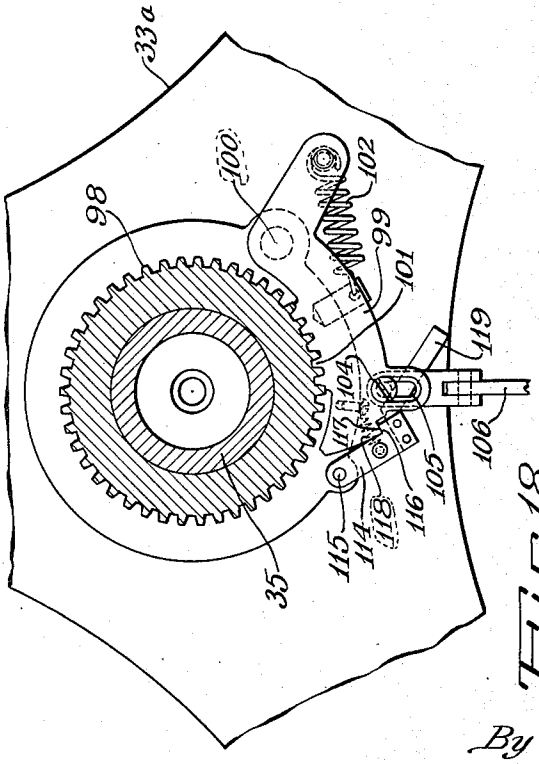


FIG. 17.

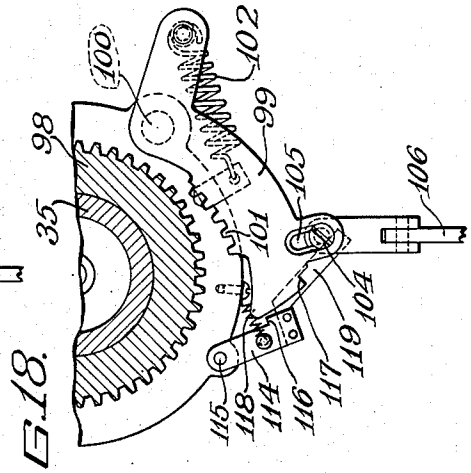


FIG. 18.

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Patented Apr. 23, 1946 2,398,865

UNITED STATES PATENT OFFICE

2,398,865

WIRE STRANDING MACHINE

William E. Somerville, Coal City, Ill.

Application February 26, 1945, Serial No. 579,713

12 Claims. (Cl. 57—59)

This invention relates, in general, to imrovements in wire stranding machines for stranding wire or the like into a rope or cable. Heretofore, in machines of this character, if a break should occur in the wire while the machine is in operation, considerable difficulty and inconvenience has been experienced, in that the machine must be stopped and the broken strand wound back upon the bobbin by hand, which is a difficult and sometimes tedious, as well as an expensive job.

It is one of the objects of the present invention to overcome these difficulties and objections, and to provide improved means for winding the particular broken wire back upon its individual bobbin or reel, thereby rendering it possible to repair or splice the broken ends.

A further object is to provide an improved machine of this character, in which the wires are fed from the various bobbins to the die, on the outside of the machine, thereby not only resulting in speed in the threading and operation of the machine, but also rendering it possible to provide a machine in which the rotatable tubular body will be of a minimum diameter.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts, hereinafter more fully described and claimed, and shown in the accompanying drawings illustrating this invention, in which

Figs. 1 and 1*a* are top plan views of a machine of this character, constructed in accordance with the principles of this invention.

Figs. 2 and 2*a* are, respectively, side elevations of Figs. 1 and 1*a*.

Fig. 3 is a view, partly in section, partly in elevation, and with parts omitted, and on an enlarged scale, of a portion of the tubular body member and one of the reel supporting cradles.

Fig. 4 is a top plan view of Fig. 3, partly in section, partly broken away, and with parts omitted.

Fig. 5 is a detail sectional view taken on lines 5—5, Figs. 3 and 6.

Fig. 6 is a detail sectional view taken on line 6—6, Fig. 4.

Fig. 7 is a detail sectional view taken on line 7—7, Fig. 3.

Fig. 8 is a detail sectional view taken on line 8—8, Fig. 7.

Fig. 9 is an enlarged detail view, partly in elevation, partly in section, of the clutch or tension creating means for one of the reels.

Fig. 10 is a view, partly in elevation, partly in section, and partly broken away, of a portion of the driving mechanism for the reel.

Fig. 11 is a detail sectional view taken on line 11—11, Fig. 10.

Fig. 12 is a detail sectional view taken on line 12—12, Fig. 10.

Fig. 13 is a view, similar to Fig. 3, partly in elevation, partly in section, and partly broken away, of another form of power machanism for driving one of the reels.

Fig. 14 is a detail sectional view taken on line 14—14, Fig. 13, with parts omitted.

Fig. 15 is a sectional view taken on line 15—15, Fig. 14.

Fig. 16 is a detail sectional view taken on line 16—16, Fig. 15.

Fig. 17 is a sectional view taken on line 17—17, Fig. 13.

Fig. 18 is a view, similar to Fig. 17, with parts broken away, and showing some of the parts in another position.

Fig. 19 is a sectional view taken on line 19—19, Fig. 13.

Fig. 20 is a detail sectional view taken on line 20—20, Fig. 13, with parts omitted.

The machine consists, essentially, of a horizontally supported rotatable tubular member 25, which may be supported in any suitable manner, preferably by means of rollers 26 arranged at suitable positions throughout the length of the machine. The body portion is preferably provided with open spaces 27 therethrough, through the medium of which access may be had to the bobbin mechanism.

The body portion is rotatable in any suitable manner, common in machines of this character, such as by means of a motor 28 and a driving connection 29 from the motor to a pulley 30 on a trunnion 31 secured to one end of a cradle 32. The cradle may be supported in any suitable manner, such as by means of ball bearings 33, the latter in turn being supported by means of a suitable web or spider within the body portion 25. Any suitable number of cradles may be provided, according to the length of the machine desired, and the number of wires it is desired to form into the strand. As the construction and operation of each of the cradles is the same, a description of one will apply to all of them.

In the form of the invention shown particularly in Figs. 3, 4 and 7, the cradle 32 is provided with trunnions 34—35 at the ends thereof, which trunnions are journaled in the bearings 33.

Mounted upon the cradle is a reel 36, the supporting shaft 37 of the reel being mounted in

open bearings 38 on the cradle, and held in position, preferably, by means of a bar or rod 39 passing through guides in the bearings 38, which rods may be operated by means of a handle or lever 40 pivotally supported, as at 42, upon the cradle. The handle 40 is preferably connected to a shaft 42 (see particularly Fig. 4), which in turn may be provided with crank arms 43, the latter in turn being connected, as at 44, with the respective bars 39, so that by operating the handle 40, the bars 39 may be withdrawn to permit the removal of the reel, or positioned to hold the reel against displacement. If desired, and in order to prevent accidental displacement of the rods 39, suitable fastening devices 45 may be provided.

Connected to the reel 36 is a pulley 46, over which an endless belt 47 passes. This belt also passes over a pulley 48, preferably by being wound one or more times therearound, as shown more clearly in Fig. 4. The pulley 48 is mounted upon a shaft 55 which is journaled in plates or members 49 and 49*a* (see particularly Figs. 7 and 15), and these plates are held spaced from each other by spacers 49*b* and fastening members 49*c*, the member 49 having secured to it a stub shaft 50, which in turn is supported by the cradle 32.

Disposed between the members 49 and 49*a*, is a train of gears 52, 53, 54, suitably mounted, and the gear 54 is connected to the shaft 55 upon which the pulley 48 is mounted. The gear 52 is mounted upon and secured to the shaft 51*a* of a worm gear connection (not shown), between the motor 51 and the said gear 52. The member 49*a* is provided with an opening 49*d* (see also Fig. 8), into which the shaft 51*a* and the gear 52 may be inserted, so that the motor 51 and the worm gear mechanism may be inserted, as a unit, in assembling the parts, the opening 49*d* being of a diameter somewhat greater than the diameter of the gear 52, and the axis of the shaft 51*a* is in alinement with the axis of the stub shaft 50. Thus it will be seen that the gears 52, 53 and 54 will be supported by the cradle frame 32. This construction renders it possible to readily assemble and disassemble these parts.

When the motor 51, which is supported by the cradle 32, is operated, the pulley 46 will be operated, so as to drive the belt 47, and thereby rotate the pulley 46 and the reel 36, to wind the wire back upon the reel, under predetermined conditions.

A cam or eccentric device 56 is also mounted upon the member 49, and freely swings about its pivot 57. This element 56 is so disposed that it will contact with the portions of the belt 47 that pass around the pulley 48. That is, when the belt 47 is traveling in one direction, through the medium of the actuation thereof by the motor 51, the eccentric device 56 will be moved in a direction to release the belt, that is, to allow the belt to travel freely, and thereby rotate the reel 36 to re-wind a wire thereupon. When, however, a wire is properly being fed to the die, that is, when it is being paid out from the reel, and the wire is not broken, the element 56 will operate to wedge or grip the belt between it and the pulley 48, to create a tension, and will hold the belt against movement. During this time, and as the wire is being paid out from the reel, and as the belt is held from movement, a tension will be created and the reel 36 and pulley 46 will slip with respect to the belt, thereby preventing the wire from being paid out too rapidly. If desired, the periphery of the cam or element 56 may be knurled to insure a gripping contact.

The motor 51 may be of any desired type suitable for the purpose, but preferably comprises an electric motor which receives a source of supply of current through suitable conductor wires 58 which are connected with commutator members 59 in Figures 5 and 6, and 59*a* in Figure 10, and with which elements brushes 60 in Figures 5 and 6, and 60*a* in Figure 10, respectively, co-operate. To these brushes, in turn, are respectively connected conductor members 61 in Figure 6, and 61*a* in Figure 10, which lead to the end of the machine, at which point suitable control devices (not shown) may be arranged, whereby the motor may be rendered active or inactive, in the ordinary manner.

The wire 62 (see particularly Fig. 3) from each of the reels passes through suitable guides 63 to the outside of the machine or body portion 25, and are led to a suitable die 64 (see particularly Fig. 1*a*) which is operated in any desired or suitable manner well known in this art. From the die, the wires pass to a suitable haul-off mechanism 65, and from there, in a finished condition, to the take-up reel 66. This haul-off device preferably comprises two pulleys 67, around which the strand 68 is wound before it passes to the reel 66.

The haul-off device may be operated in any suitable manner, such as from the motor 28, through the medium of a shaft 69 that may be driven by means of a belt 70 which passes over a pulley 71 on a trunnion on the frame of the machine, and over a pulley 72 on the shaft. The shaft extends along the outside of the body portion, and may be connected with a variable speed transmission device 73, of any suitable construction. A speed reduction device 74 may also be connected with the shaft.

A clutch mechanism 75 may also be provided, which may be of any desired construction, for controlling the direction of rotation of the haul-off device, according to the direction of lay of the wire in the strand. The reel 66 may also be operated in any suitable manner, preferably through the medium of a belt 76 driven from the haul-off mechanism, and controlled by a suitable clutch 77, in any suitable manner. The strand passing from the haul-off device, may pass through a guide member 78 which travels on a threaded shaft 79 operated in any suitable manner so as to distribute the strand as it is wound upon the reel 66, in a manner well known in this art.

It will thus be seen that when the machine is operating under normal conditions, that is, when the wire is being fed to the die, it will travel along the outside of the body portion, and the body portion will rotate about the cradles, the latter being swingingly mounted within the body portion, and when the motor 51 is idle, the tension creating means on the reels will be active, thereby preventing the wire from beir g paid out too rapidly. When, however, one or more of the wires break, the machine will be stopped and the respective motors 51 will be operated to rotate the reel 36 in a direction to wind the broken portion of the wire back upon the reel, thereby rendering it possible to splice or unite the broken ends of the wire. This may be done expeditiously and with very little effort. When a wire is broken and the broken portions are being re-wound on their respective reels, the strand which has been formed will be drawn back with the broken wires,

and the wires that have been laid in the strand will be separated by the die, so that the individual wires will be wound upon their respective reels.

In order to maintain the belt 47 taut, any suitable mechanism may be provided, such as a spring 80 (see particularly Fig. 3) which is connected at one end, as at 81, to the member 49, and at its other end, as at 82, to an adjusting device 82a, preferably in the form of a screw, which in turn is adjustably connected to the cradle 32.

In the form of the invention shown in Figs. 13 to 20, the power mechanism for rotating the reels 36 embodies a shaft 83 which is mounted upon the cradle 32 to rotate in one direction with respect thereto, while the body portion or frame 25 may be rotated in either direction, according to the direction of the lay of the wire in the strand. In this form of the invention, the member 49 is pivotally mounted upon the stub shaft 50.

Mounted also upon the shaft 83, is a gear 84 (see particularly Figs. 15 and 16) which in turn is connected, through the medium of a train of gears 85, 86 and 87 between the members 49 and 49a, with the shaft 55, upon which latter shaft the pulley 48 is mounted, so that by rotating the shaft 83, the pulley 48 will be operated to rotate the reel 36 through the medium of the reel driving mechanism already described.

Also mounted upon the shaft 83, are gears 88 and 89, with which the gears 90 and 91 (see particularly Fig. 14) respectively mesh. These gears 88 and 89 are mounted for free rotation about the shaft 83, but are adapted to be connected to the shaft for rotation therewith, respectively, by means of springs 92—93 coiled about the shaft and secured to the respective gears. The gears 90 and 91 are respectively mounted on shafts 94—95 journaled in the cradle 32. Gears 96—97 are respectively secured to the shafts of the gears 90 and 91, and these gears 96—97 mesh with a gear 98 that is loosely mounted upon the trunnion 35 of the cradle 32.

With this construction, and when the gear 98 is allowed to remain loose upon the trunnion 35a, rotation of the body portion 25 of the machine will not effect or cause the rotation of the reel 36, as there will be no active driving connection between the body 25 of the machine and the gears 88—89. At this time the cradle will be stationary and the body 25 will be rotating thereabout. The gear 98 being mounted on the cradle, will not rotate. When, however, the clutch 99 is rendered active to lock the gear 98, and as the body 25 is then rotated, motion will be imparted to the reel 36 with respect to the cradle 32, through the medium of the gears 98, 97, 91 and 89, or 98, 96, 90 and 88, together with the respective coil springs 93 or 92, according to the direction of rotation of the body 25, and this will insure the rotation of the reel 36 in the proper direction, at all times.

Any suitable means may be provided for locking the gear 98 for rotation with the frame 25. A suitable and efficient means embodies a brake or locking member 99 (see particularly Figs. 17 to 20). This locking member 99 is pivotally supported, as at 100, and rotates with the body portion 25 and the spider member 33a. The member 99 is provided with teeth 101, adapted to be moved into and out of mesh with the teeth of the gear 98. A spring 102 is provided, and tends normally to move the member 99 into an active position, or into the position shown in Fig. 17.

This member 99, one of which is provided for each of the cradles 32, is adapted to be actuated or controlled in any suitable manner, preferably by means of a bar or rod 103 (see particularly Figs. 13 and 20) which is preferably arranged on the inside of the body 25, and leads to a point adjacent the front of the machine, to be actuated by any suitable means. Connected to the member 99, preferably by means of a pin and slot connection 104—105, is a link member 106, and this link member in turn is preferably connected to a rocking member 107 pivotally mounted, as at 108, upon a suitable support 109 carried by the body portion 25. The member 107 is provided with a slot 110, and the link 106 is connected to the member 107 by means of a pin 111 which moves in the slot 110.

Carried by the rod 103, is a laterally projecting portion 112 that enters a bifurcated portion 113 of the rocker member 107, so that when the bar or rod 103 is moved in one direction or the other, the member 107 will be rocked about its pivot. This in turn, when the end of the slot 110 strikes the pin 111, will shift the locking member 99 about its pivot in one direction, so as to release the gear 98, and in the opposite direction so as to move the member 99 to cause the teeth 101 thereof to mesh with the teeth of the gear 98. Thus it will be seen that the operation of the loosely mounted gear 98 will be controlled, and locked and unlocked with respect to the cradle, according to the direction of the operation of the rod 103.

In order to maintain the member 99 in a locked position, or with the teeth 101 thereof locked in mesh with the teeth of the gear 98, a catch device 114 may be provided, which is pivotally mounted, as at 115, upon the body portion, and is provided with a shoulder 116 adapted to be moved into and out of engagement with a shoulder 117 on the member 99. A spring 118 may be provided, which tends normally to move the catch 114 in a direction to be engaged by the shoulder 117. The catch 114 is provided with an arm 119 that projects into the path of movement of the pin or member 104, that operates in the slot 105 in the member 99, so that when the parts are in the position as shown in Fig. 17, and the shoulder 117 of the member 99 is in a position to be engaged by the shoulder 116 of the catch 114, the pin 104 will be at the end of the slot 105, as shown in Fig. 17. This will lock the gear 98 for rotation about its supporting trunnion 35 of the cradle 32, with the result that, according to the direction of rotation of the body portion 25, one of the gears 88—89 will become active through its spring clutch 92—93, according to the direction of the lay of the wire of the strand, or rotation of the body 25, and the direction of rotation of the body will be controlled by the direction of the lay.

If, when a strand breaks, it is desired to rewind the strands back upon the reel, the bar or rod 103 is operated by the operator at one end of the machine. This will rock the member 107 about its pivot 108, assuming the parts to be in the position shown in Fig. 17, and the pin 104 moving downwardly in the slot 105, will contact the arm 119 of the catch 114, and move the latter about its pivot 115, against the stress of the spring 118, so that the shoulder 116 will move out of contact with the shoulder 117 of the member 99. A further movement of the bar or rod 103 in the same direction, will cause the pin 104, when it reaches the bottom of the slot 105, to swing the member 99 about the pivot 100, against the stress

of the spring 102, and into the position shown in Fig. 18, to release or unlock the gear 88 so that it will rotate freely about the trunnion 35 of the cradle 32.

In order to prevent the projection 112 on the rod 103 from passing out of the bifurcation 113 of the member 107, the member 112 may be of a substantially disc-like formation, as shown more clearly in Figs. 13 and 20.

With this form of power mechanism, and in order to maintain the proximate cradles from rotating or swinging with respect to each other, and to lock the cradles together, any suitable mechanism may be provided. A suitable and efficient means, however, embodies a shaft 120 which may be journaled in the webs 33a, which are in proximity to the respective cradles, and secured to this shaft for rotation therewith, are gears 121 and 122. The gear 122 meshes with a gear 123 carried by one of the cradles 32, and secured thereto against rotation with respect thereto, while the gear 121 meshes with a similar gear 124 secured to the adjacent trunnion 35a of the proximate cradle 32. Thus it will be seen that this shaft, with the gears 121, 122, 123 and 124, will maintain the cradles against relative rotating or swinging movement. With this construction, and inasmuch as the adjacent ends of proximate cradles are similarly connected, by maintaining any one of the cradles against swinging or rotary motion, all of the cradles will be thus held against movement.

The wire 62 passing to the outside of the body portion 25, will be passed through suitable guides 125 (see particularly Fig. 7), and these guides may be arranged in suitable supporting members 126, encompassing and spaced lengthwise of the body portion 25. The rotation of the body portion may be stopped by brake mechanism 127, of any desired or well-known construction suitable for the purpose.

The coil springs 92—93 that form the clutches, to secure the gears 88 and 89 to the shaft 83 (see particularly Fig. 15), loosely encompass the shaft 83, one end of the spring being anchored to the respective gears by means of a fastening device 128, while the other end of the spring is free from the shaft, the springs being individually rendered active or inactive, according to the direction of rotation of the respective gears 88 and 89.

If desired, and in order to provide automatic means for stopping the machine and for rendering the brake mechanism active, there may be provided a conductor wire 25a (see particularly Fig. 1), which is arranged on the outside of the rotatable body portion 25, in proximity to the strand wires 62, so that when one of the wires 62 breaks, centrifugal force will throw the broken end of the wire coming from the reel 32, outwardly and into contact with the conductor 25a, which will render the control means (diagrammatically illustrated at 25b) active to stop the machine and apply the brakes.

While the preferred forms of the invention have been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:

1. A stranding machine of the character described, embodying a rotatable frame, means for rotating the frame, a cradle swingingly mounted upon the frame, a bobbin supported by the cradle, means whereby a wire may be fed from said bobbin to a die, power means also supported by said cradle for rotating the bobbin with respect to the cradle, to re-wind a wire upon the bobbin in the event the wire becomes broken during the operation of the machine, means acting normally to create a tension upon said bobbin, means for controlling the said power means, the said tension means being rendered inactive when the said power means is rendered active, the said tension means embodying a belt for driving said bobbin, means for driving the belt, and a pivotally mounted element engaging said belt when the reel is moving in one direction to maintain the belt against traveling movement, to create the tension, the said element yielding to relieve the tension when the belt is being driven.

2. A stranding machine of the character described, embodying a rotatable frame, means for rotating the frame, a cradle swingingly mounted upon the frame and with respect to which cradle the frame rotates, a bobbin rotatably mounted upon the cradle, power means for rotating the bobbin, said power means embodying a motor, tension creating means for the bobbin between the motor and bobbin, means operating automatically to render said tension means active when the bobbin is rotating in one direction, and to render the tension means inactive when the bobbin is rotated in the opposite direction, means for controlling at will the said power means, said power means embodying a motor, and said tension means embodying a belt, a pulley over which the belt passes, a gear connection between the pulley and said power means, and a pivotally mounted element co-operating with said pulley to bind the belt therebetween when the reel is moving in one direction, and to yield when the belt is being driven.

3. A stranding machine of the character described, embodying a rotatable frame, means for rotating the frame, a cradle swingingly mounted upon the frame and with respect to which cradle the frame rotates, a bobbin rotatably mounted upon the cradle, power means for rotating the bobbin, said power means embodying a motor, tension creating means for the bobbin between the motor and bobbin, means operating automatically to render said tension means active when the bobbin is rotating in one direction, and to render the tension means inactive when the bobbin is rotated in the opposite direction, means for controlling at will the said power means, said power and said tension means embodying a driving belt, a pulley over which the belt passes, a pivotally mounted element co-operating with the pulley and engaging the belt, said element automatically becoming active when the reel moves in one direction, and inactive when the belt is being driven, and means for maintaining said belt taut.

4. A stranding machine of the character described, embodying a rotatable frame, means for rotating the frame, a cradle swingingly mounted upon the frame and with respect to which cradle the frame is rotatable, a bobbin rotatably mounted upon the cradle, power means for rotating the bobbin to rewind a wire thereupon in the event the wire becomes broken during the operation of the machine, said power means embodying a driving connection between said frame and the bobbin, and means for controlling at will the said connection.

5. A stranding machine of the character described, embodying a rotatable frame, means for

rotating the frame, a cradle swingingly mounted upon the frame and with respect to which cradle the frame is rotatable, a bobbin rotatably mounted upon the cradle, power means for rotating the bobbin to rewind a wire thereupon in the event the wire becomes broken during the operation of the machine, said power means embodying a driving connection between said frame and the bobbin, means for controlling at will the said connection, and means for creating a tension upon the said bobbin, the said tension means embodying means automatically rendered active when the bobbin is rotated in one direction, and automatically rendered inactive when the bobbin is rotated in the opposite direction.

6. A stranding machine embodying a rotatable frame, means for rotating the frame, a cradle swingingly supported upon the frame, a bobbin rotatably mounted upon the cradle, means whereby a wire may be fed from the bobbin to a die, power means for rotating the bobbin with respect to the cradle, to re-wind a wire thereupon in the event the wire becomes broken during the operation of the machine, and means whereby the direction of rotation of the bobbin with respect to the cradle will be constant, while the direction of rotation of the frame may be varied according to the lay of the wire in the strand, the last recited means embodying automatic and oppositely operating clutch devices.

7. A stranding machine embodying a rotatable frame, means for rotating the frame, a cradle swingingly mounted upon the frame, a bobbin rotatably mounted upon the cradle, power means for rotating the bobbin with respect to the cradle, to re-wind a broken wire thereupon, said power means embodying a driving connection between said frame and bobbin, said connection embodying a gear, loosely mounted with respect to the bobbin, means for rendering said connection active and inactive at will, the last said means embodying a toothed member rotatable with said frame, and means for shifting said toothed member at will, into and out of engagement with the teeth of said loosely mounted gear.

8. A stranding machine embodying a rotatable body portion, means for rotating the body, a cradle journaled upon said body, a bobbin rotatably mounted upon the cradle, power means for rotating said bobbin with respect to the cradle to rewind a broken wire thereupon, said power means embodying an operative gear connection between said body portion and the said bobbin, one of the said gears being loosely mounted, whereby the said power means will be inactive with respect to the bobbin, and means controllable at will, for locking said loosely mounted gear with respect to the bobbin, whereby said bobbin may be rotated by said power means, upon said cradle.

9. A stranding machine embodying a reel, means for drawing a strand from said reel, means for rewinding the strand upon said reel, said means embodying a pulley, a belt therefor, and a freely swinging element co-operating with said pulley for gripping the belt therebetween when the belt moves in one direction and for releasing said belt when the belt moves in another direction.

10. A stranding machine embodying a reel, means for drawing a strand from said reel, means for rewinding the strand upon said reel, said means embodying a bodily movable pulley, a belt therefor, a freely shiftable element bodily movable with and with respect to the pulley and co-operating therewith, for gripping the belt therebetween when the belt moves in one direction and for releasing said belt when the belt moves in another direction.

11. A stranding machine embodying a reel, means for drawing a strand from said reel, means for rewinding the strand upon said reel, said means embodying a pulley, a belt therefor, and a pivotally mounted eccentric member co-operating with said pulley for gripping the belt therebetween when the belt moves in one direction and for releasing said belt when the belt moves in another direction.

12. A stranding machine embodying a reel, means for drawing a strand from said reel, means for rewinding the strand upon said reel, said means embodying a pulley, a belt therefor, a freely swinging element co-operating with said pulley for gripping the belt therebetween when the belt moves in one direction and for releasing said belt when the belt moves in another direction, said element being fixed with relation to said pulley and being bodily movable therewith.

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