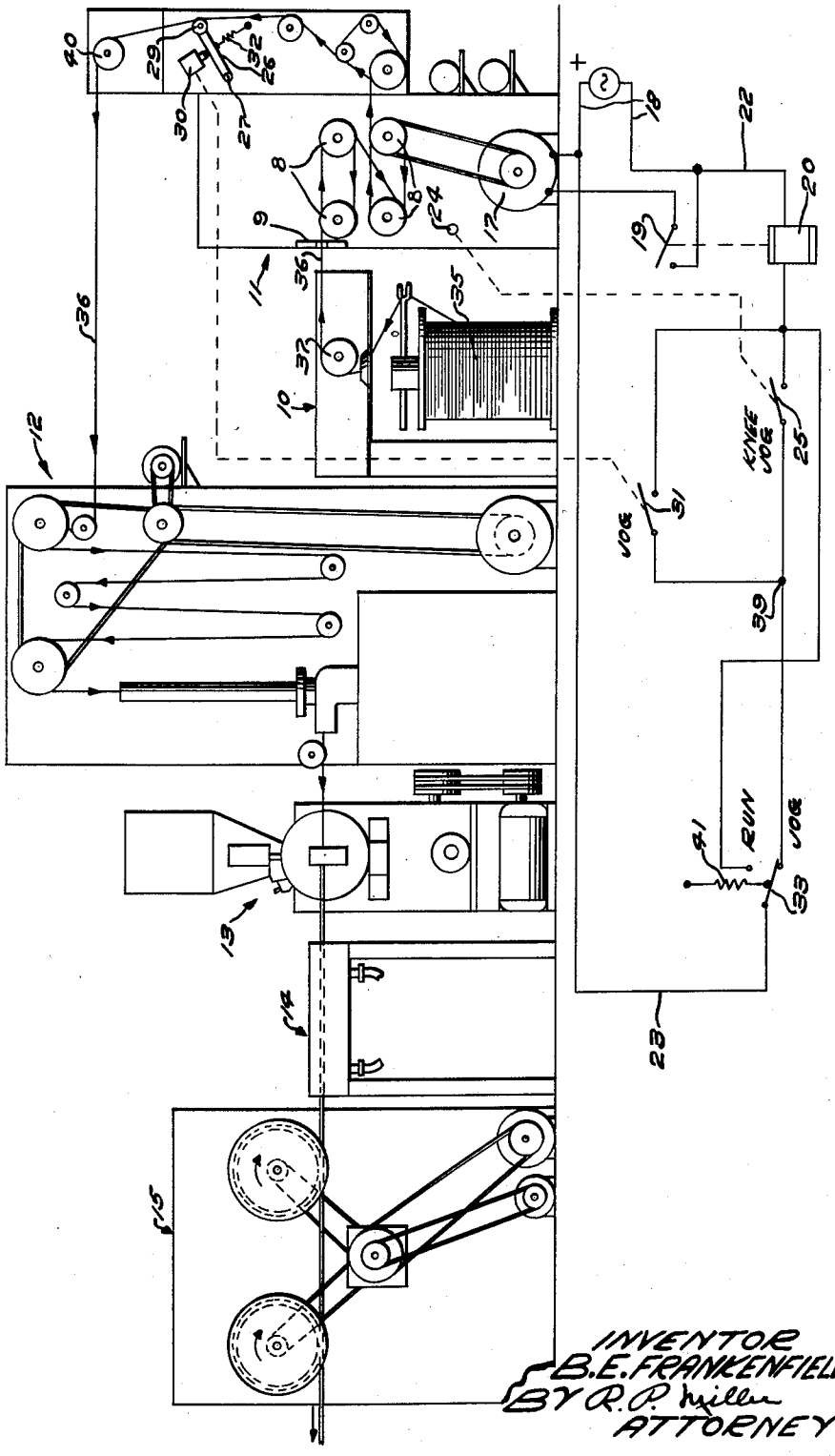
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JOGGING APPARATUS FOR WIRE WORKING MACHINES

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INVENTOR
B.E. FRANKENFIELD
BY R.P. Miller
ATTORNEY

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JOGGING APPARATUS FOR WIRE WORKING MACHINES

Bruce E. Frankenfield, Chicago, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

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1 Claim. (Cl. 205—16)

This invention relates to jogging apparatus and more particularly to an apparatus for facilitating intermittent operation of wire working machines.

When wire drawing machines are operated in tandem with annealing machines and plastic extruders, it is necessary to string the end of each new reel of wire through a plurality of drawing dies and around numerous sheaves which are spaced over a considerable distance. In the past, two operators have been required to perform this operation; one stringing the end of the wire around the various sheaves and the other jogging the wire drawing machine to provide incremental lengths of wire as they were required by the first operator. Manifestly, it would be desirable to provide some means by which the stringing operation could be accomplished by one operator.

It is therefore a primary object of this invention to provide an apparatus which will permit a single person to string wire through a tandem line of wire working machines.

It is another object of this invention to provide an apparatus which will permit an operator to jog a wire drawing machine without removing either of his hands from the wire being strung.

It is a further object of this invention to provide an apparatus which will jog a wire drawing machine in response to tension in the wire at the exit end of the machine.

With these and other objects in view, the present invention contemplates a wire drawing machine provided with a drive motor therefor and a switch operable by a movable wire guide in response to increased tension in the wire being strung for energizing the drive motor.

Other objects, advantages and novel features of the invention will become apparent upon consideration of the following detailed description in conjunction with the accompanying drawing wherein the single figure illustrates a wire drawing, annealing and insulating apparatus in which the present invention has particular utility.

Referring now to the drawing there can be seen an insulated wire manufacturing line formed of the following main components: a supply stand **10**, a wire drawing machine **11**, an annealing apparatus **12**, a plastic extruder **13**, a cooling trough **14**, an extruder capstan **15**, and a suitable take-up (not shown). The wire drawing machine **11** comprises a plurality of capstans **8** and a wire drawing die **9** is provided with a drive motor **17** which is adapted to be energized by power lines **18** through normally-open contacts **19** of a relay **20**. The relay **20** is connected across the power lines **18** by means of lines **22** and **23**.

A button **24** is provided on the wire drawing machine and is adapted to close contacts **25** when depressed to energize the relay **20**. An arm **26** is pivoted on the drawing machine at **27** and carries a wire guide or sheave

29 on the free extremity thereof. The arm **26** is adapted to actuate a switch **30** to close the contacts **31** and energize the relay **20** to operate the motor **17** to feed wire. A spring **32** is provided to normally hold the arm **26** away from the switch **30**. A selector switch **33** is provided in the line **23** to bypass the contacts **25** and **31** when it is desired to run the line continuously.

Operation

In order that a better understanding of the invention may be had, its mode of operation will now be described. A reel of wire **35** is first placed in the supply stand **10** and the free extremity of the wire **36** is passed around the sheave **37** and into the wire drawing die **9** of the wire drawing machine **11**. The selector switch **33** is then moved to the "jog" position to apply electrical potential to the junction **39**. The operator then begins stringing the wire **36** through the wire drawing machine **11**. Once the extremity of the wire has been wrapped about the first capstan in the drawing machine, the operator can feed additional lengths of wire as required by depressing the button **24** with his knee. This closes contacts **25** to energize relay **20** which applies electrical potential to the drive motor **17** through the contacts **19**. When sufficient wire has been fed, the operator can stop the feed of wire simply by releasing the button **24**. Provision of the knee actuated button **24** permits the operator to have both hands free for the stringing operation at all times. This process continues until the wire drawing machine has been completely strung.

The operator next passes the wire **36** over the sheave **29** and a sheave **40** and into the annealing apparatus **12**. The wire **36** is then passed over and under the various sheaves in the annealer **12** through the extruder **13** and the cooling trough **14**, around the extruder capstan **15**, and finally connected to the take-up. As the operator is stringing these sections of the line, additional lengths of wire are obtained simply by pulling on the end of the wire. The increased tension in the wire acts on the sheave **29** to rotate the arm **26** in a counterclockwise direction as viewed in the drawing. This movement of the arm **26** actuates the switch **30** to close the contacts **31** which energizes the relay **20** and starts the motor **17**. As long as tension is maintained in the wire, the drawing machine will continue to feed. Thus the operator can obtain as much or as little wire as it desired without the need of a second man to jog the drive of the wire drawing machine.

When the line has been completely strung, the selector switch **33** is permitted to move to the "run" position under the influence of a spring **41**. This bypasses the contacts **25** and **31** and permits continuous operation of the wire drawing machine independent of the jogging switches.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of this invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

An apparatus for intermittently operating a wire drawing machine comprising a power supply, a drive motor for said machine, a first manually operable switch for closing a first pair of contacts, a second switch having a pair of contacts in parallel with said first pair, a pivotally mounted arm, a wire guide sheave secured to said arm

and responsive to variations in the tension in the wire exiting from the machine for moving said arm to actuate said second switch thereby closing said second pair of contacts, and a relay operable upon actuation of said first or second switch and the closure of the associated pair of contacts for connecting the power supply to said drive motor.

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