No. 673,694. Patented May 7, 1901.

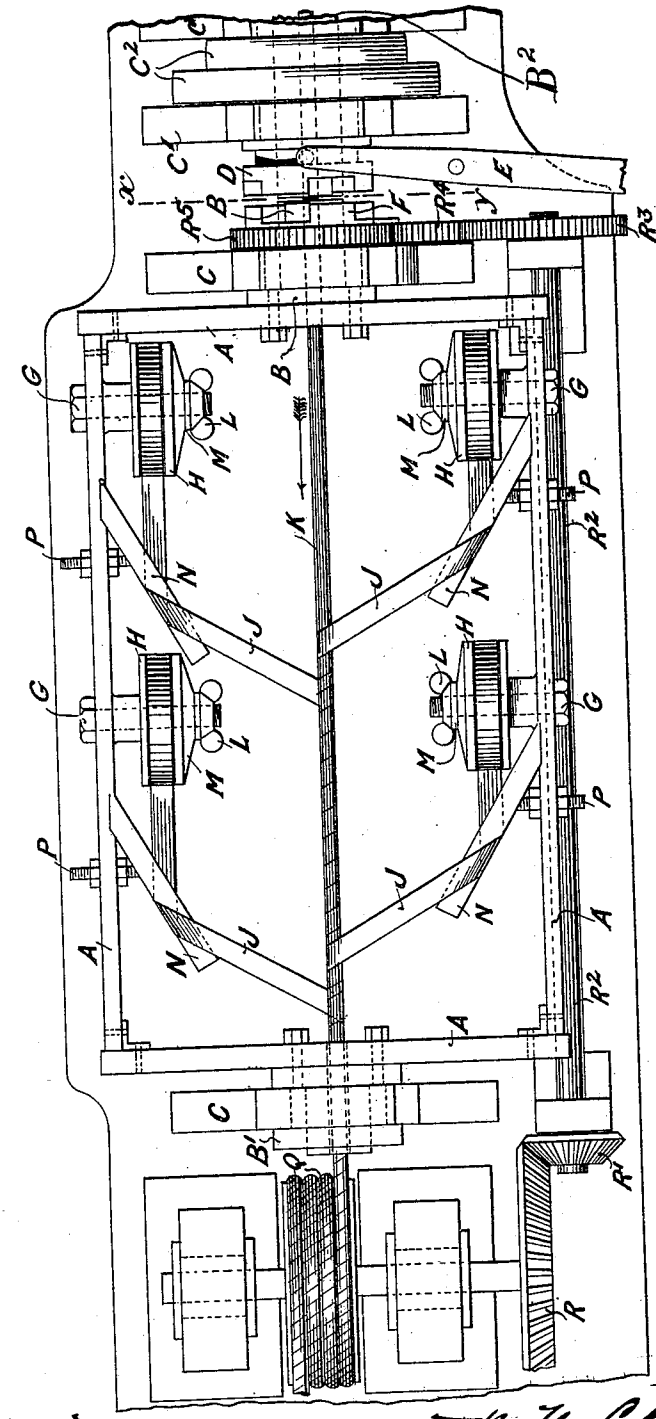
W. W. COLLEY.

MACHINERY FOR COVERING ELECTRICAL OR OTHER WIRES FOR INSULATING PURPOSES.

(Application filed June 4, 1900.) 2 Sheets—Sheet 1.

(No Model.)

FIG. 1.




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

No. 673,694. Patented May 7, 1901.

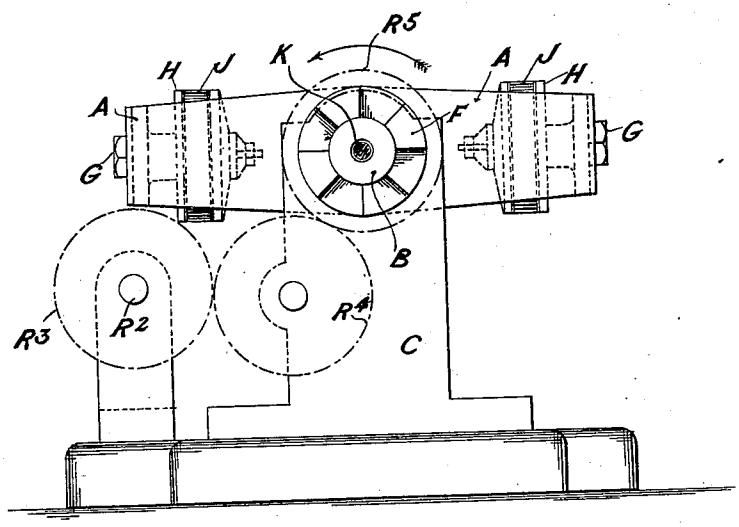
W. W. COLLEY.

MACHINERY FOR COVERING ELECTRICAL OR OTHER WIRES FOR INSULATING PURPOSES.

(Application filed June 4, 1900.) 2 Sheets—Sheet 2.

(No Model.)

FIG: 2.




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

# UNITED STATES PATENT OFFICE.

WALTER WILLIAM COLLEY, OF LONDON, ENGLAND.

## MACHINERY FOR COVERING ELECTRICAL OR OTHER WIRES FOR INSULATING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 673,694, dated May 7, 1901.

Application filed June 4, 1900. Serial No. 19,091. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER WILLIAM COLLEY, a subject of the Queen of Great Britain, residing at London, in the county of Middlesex, England, have invented certain new and useful Improvements in Machinery for Covering Electrical or other Wires for Insulating Purposes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention refers to winding strips of paper or other material spirally around wire or other electric conductors for insulating purposes. In all machines for this purpose the material has been wound upon the wire in single layers, so that if several layers are required a number of separate rolls of single strips are separately revolved and their respective ends wound around the wire. This causes the machinery to be expensive, complicated, and the process slow.

By this invention the rolls of paper or material to be spirally wound around the wire are cut and reeled in several layers upon the same reel, so that several layers can be wound around the wire together from one and the same roll. This not only reduces the number of rolls working in a machine, but enables the machine to be driven at a much greater speed, the paper being more easily wound on the wire, and the breaking of the strips reduced to a minimum, owing to the number of layers being able to withstand the great strain that is necessary to put upon the material in order that the same may be wound upon the wire in a most perfect manner, this being a most important feature to insure a perfect insulation.

Another great advantage in covering the wire from a roll of several layers is that different kinds of material can be used. For example, where a high voltage is required the layer that is first wound around the wire may be asbestos paper and the other layers of any other material. This in itself is a most important part of the invention, as to supply asbestos from a single layer would be most difficult, owing to the asbestos being so frail and likely to break by the least strain being put upon it, whereas if fed with or between other layers the difficulty would be entirely overcome.

To enable my invention to be properly understood, I will proceed to fully describe the same with the aid of the accompanying drawings.

Figure 1 is a plan of the apparatus, and Fig. 2 an end view taken on the line X Y.

A suitable frame A is carried by short tubular shafts B B′, passing through bearings C, so that the frame may be revolved. A third portion of tubular shaft $B^2$, carried in bearings C′, is fitted with driving-pulleys $C^2$ to enable the machine to be operated. Connected to the pulleys is one half of a clutch arrangement D, operated by a lever E to engage the other half F of clutch keyed on the shaft B to set the machine in motion.

Carried within the frame A, on short spindles G, are spools H, upon which the material J to be wound upon the wire K is reeled. These spools have a necessary degree of brakage imparted to them by the thumb-screws L and an intermediate elastic washer M to give the required tension to the material as it is wound around the wire.

N represents adjustable guides to direct the spiral of the winding. One end of these guides is hinged in the frame A, and the angle at which it is desired to set the winding is regulated by securing the guides by the screws and nuts P.

The wire K is drawn through the machine from a suitable supply, having the necessary tension imparted to it by the drum Q, operated by the gearing shown at R R′ $R^2$ $R^3$ $R^4$ $R^5$, the latter being secured to the shaft B.

In the accompanying drawings I have shown four spools within the frame A; but more or less may be employed; but, assuming four to be used and each spool wound with four layers of material, this will enable sixteen layers of material to be spirally wound on a wire at the same time.

Having now described the nature of my invention, what I desire to secure is—

1. In a machine for covering wire, the combination with a revolving frame, of means for simultaneously revolving said frame and passing the wire longitudinally therethrough, a plurality of spools carrying covering material, stud-shafts in said frame upon which

said spools are mounted, means for varying the resistance to the rotation of said spools upon said shafts, adjustable guides, one located in front of each of said spools and independent of said spools, the covering passing off said spools in a direction parallel to that in which the wire passes through the machine and having its direction changed once by said guides before it reaches the wire, substantially as described.

2. In a machine for covering wire, the combination with a revolving frame, of means for simultaneously revolving said frame and passing the wire longitudinally therethrough, a plurality of spools carrying covering material, stud-shafts in said frame upon which said spools are mounted, the said spools being arranged one behind the other on each side of the wire in such a manner that the covering from the front spool will form the top layer upon the wire and that from the rear spools the bottom layer, means carried upon each stud for adjusting the resistance to the rotation of the spool upon that stud, guide-arms carried by said frame, one located in front of each spool, means for adjusting the angular position of said guide-arms, the covering passing from said spools first in a direction parallel to that in which the wire travels through the machine and then having its direction changed once by said guide-arms before it reaches the wire, and a drum upon which the wire is wound after being covered, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER WILLIAM COLLEY.

Witnesses:

FREDERIC PRINCE,

CHARLES S. MOLE.