

(No Model.)

C. KLOTZBACH.
MACHINE FOR COVERING CONDUCTORS.

No. 463,810.

Patented Nov. 24, 1891.

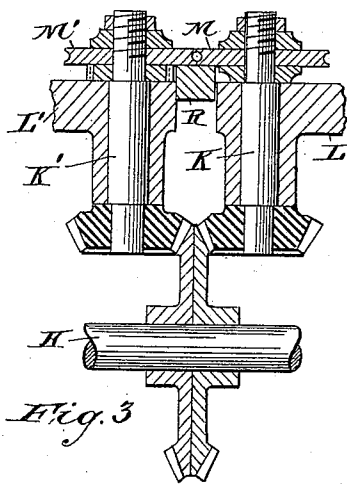
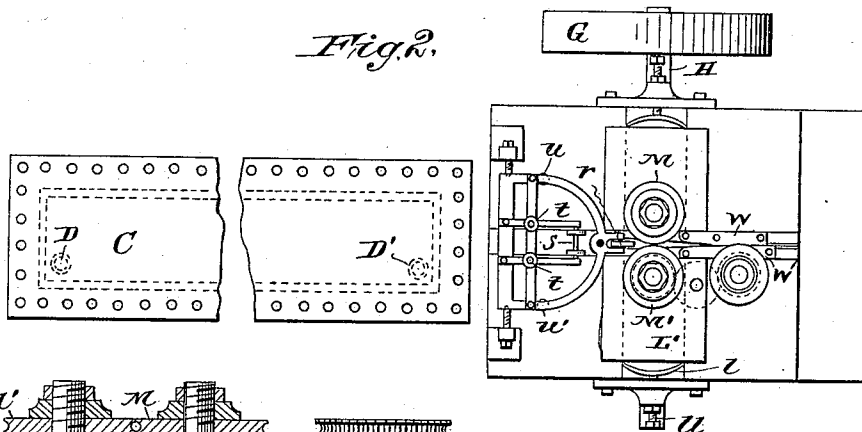
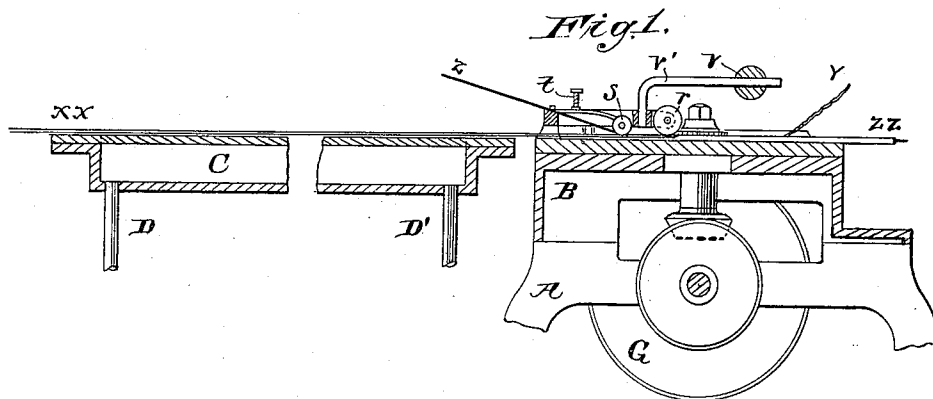
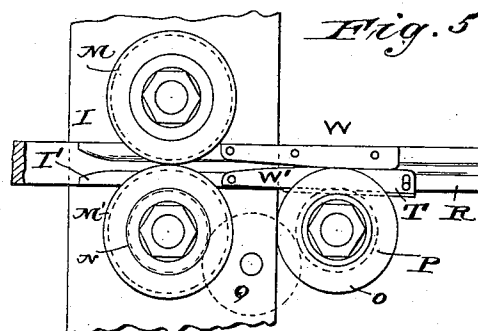


Fig. 4.



Attest:
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UNITED STATES PATENT OFFICE.

CHRISTOPHE KLOTZBACH, OF PASSAIC, NEW JERSEY.

MACHINE FOR COVERING CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 463,810, dated November 24, 1891.

Application filed August 1, 1891. Serial No. 401,364. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHE KLOTZBACH, a citizen of the United States, residing at Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Machines for Covering Conductors; 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 relates to machines for covering electric conductors with insulating material, the object of the invention being to cover the conductor uniformly with a protective layer of insulating material in a more convenient and efficient manner than has heretofore been done. In an application filed by me contemporaneously herewith, Serial No. 401,363, filed August 1, 1891, I have described a machine of this character in which the insulating material was conveyed to the covering-machine over a metallic apron driven by the same mechanism which operated the covering apparatus.

In my present invention the feed-apron is dispensed with and the covering material is carried directly across the metallic table heated by steam or any suitable agency.

The improvements described in this application are especially useful when an insulating material is applied to the conductor with a tin coating, as is usually done with the final coating to facilitate vulcanization. In such instances the tin is provided as a backing to the web or strip of insulating compound, and both are fed to the covering apparatus.

My present invention embodies improvements in the covering wheels or rolls, so as to enable them to give a positive feed to the conductor being covered and to surround it with an insulating-envelope completely round in cross-section, neither of which incidents can be perfectly accomplished by machines heretofore used for this purpose.

In the accompanying drawings, which illustrate this invention, Figure 1 is a central longitudinal vertical section of a machine embodying my improvements, parts thereof being omitted as unnecessary to a clear exposition of the mode of operation, and the heating-table across which the web of insulating

compound is carried being broken in order to bring the illustration within the field of the drawings. Fig. 2 is a plan of my machine as illustrated in Fig. 1. Fig. 3 is a sectional view of a detail, illustrating the gearing by which the covering wheels or rolls are operated. Fig. 4 is a side elevation of one of the covering-rolls, and Fig. 5 is a detail illustrating the covering-rolls and the rotary cutter.

The insulating compound is placed upon a strip of tin and fed across the face of a steam-box C, into which steam is admitted by an induction-pipe D and exhausted through a pipe D'. The web of insulating compound is represented at *xx*. This is drawn forward by the covering-rolls M M' simultaneously with the conductor *z*, which is fed from a suitable reel. Each covering-roll M M' is provided with a peripheral semicircular groove, so that the two wheels together completely inclose the conductor and insulating-envelope as it passes between them. The wheels are milled both on the adjoining edges and in the bottom of the groove, by which they firmly grip the conductor being covered and give a positive feed to the conductor and covering-strip. Good results may be attained when the edges only of the rolls are milled, and when the tin backing is not used the adjoining edges only of the rolls are milled. I prefer, however, to mill the groove also when both compound and tin are used. This is an important advantage over machines of this kind as heretofore used, in which smooth rollers only partially embracing the conductor were used and the latter had to be pulled through the machine by hand while it was in operation. In front of the covering-rolls is a grooved wheel *r*, mounted in a pivoted frame, which may be varied in pressure by adjustment of the sliding weight *v* on the arm *v'*. This wheel guides the conductor to the covering-rolls. The compound is curled about the conductor by means of the ridges II', mounted upon the guide-bar R. The conductor is kept in alignment by a grooved wheel *s*, journaled in springs secured to the pivoted frame, the tension of these springs being varied by means of an adjusting-screw *t*. At the delivery side of the covering-rolls and secured to the guide-bar R is a fixed steel strip W, with which a pivoted strip W' co-operates, the latter being held

elastically against the former by means of a spring T. The strips W W' together form a circular throat, through which the covered conductor is carried. The conductor is fed
 5 by the action of the covering-rolls between these strips, and the excess of material where the edges of the strip were united by the covering-wheels is cut off by the rotary cutter O. The latter is driven by means of gear-wheels
 10 N Q P, operated by one of the covering-rolls. The covering-rolls are mounted in yielding journal-boxes L L', the amount of tension being controlled by a spring l regulated by adjusting-screws ll. Motion is imparted to the
 15 covering apparatus by the pulley G on the main shaft H. As the conductor is drawn forward by the covering-rolls the web of insulating compound, with its metallic backing, is carried across the steam-box C, and the in-
 20 sulating compound is softened, so that its edges will readily unite when squeezed together by the covering-rolls. The wire and web are kept in alignment by the roller S, and the edges of the compound are curled by the
 25 guides I I'. The milled rim of the covering-rolls insures a tight grip upon the tin backing, which results in a perfect feed of the wire and compound and insures perfect ad-
 30 hesion of the edges of the compound. The knife W removes the edge of the seam, so that when the covered conductor emerges from the guides W W' it is provided with a circular covering.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for covering a conductor with an insulating compound, the covering-rolls MM', provided with semicircular grooves for pressing the insulating compound firmly
 40 around the wire, said rolls being milled on their co-operating edges.

2. In a machine for covering a conductor with an insulating compound, the covering-rolls MM', provided with semicircular grooves
 45 for pressing the insulating compound firmly around the wire, said rolls being milled on their co-operating edges and in the grooves.

3. In a machine for covering a conductor with an insulating compound, the combination of the covering-wheels, means for leading
 50 the wire and covering compound thereto, the guide-bars W W', relatively movable, and a cutter for removing the excess of compound from the covered conductor.

4. In a machine for covering a conductor with an insulating-envelope, a fixed heating-surface, means for drawing the insulating
 55 compound over the surface to soften it, and covering-rolls for pressing the compound 6c around the conductor.

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

CHRISTOPHE KLOTZBACH.

Witnesses:

E. C. GRIGG,
 STEPHEN L. COLES.