

(No Model.)

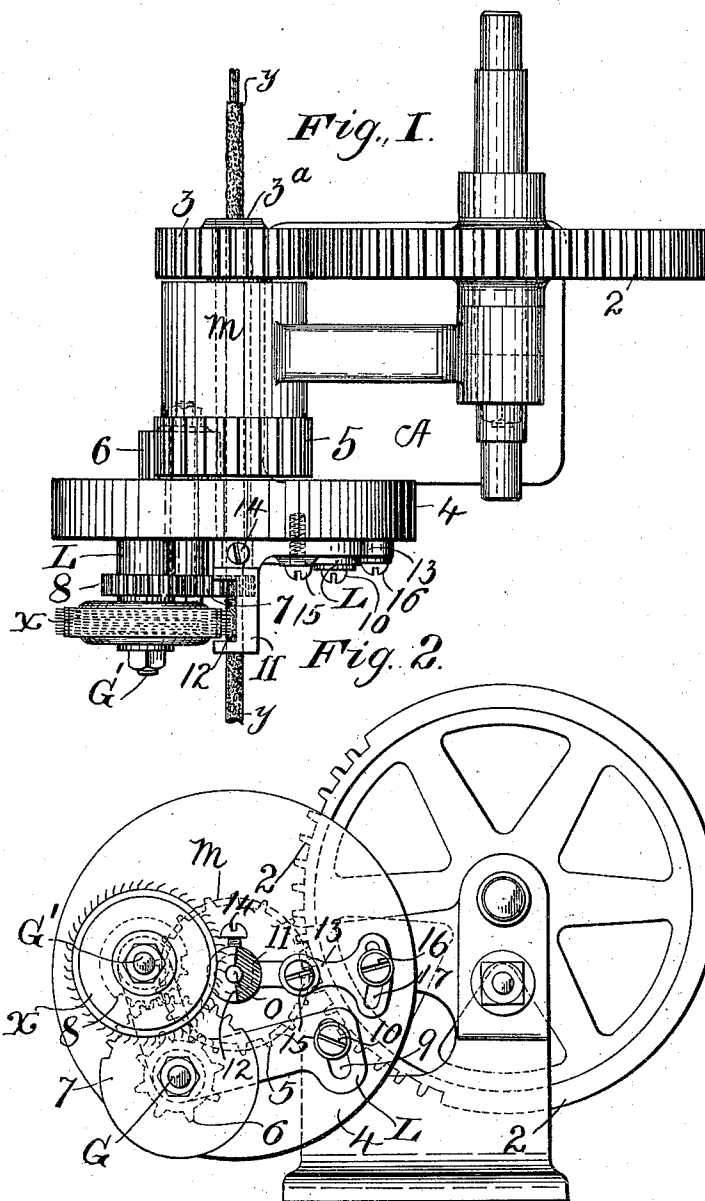
2 Sheets—Sheet 1.

L. W. DOWNES.

APPARATUS FOR MANUFACTURE OF INSULATED ELECTRICAL CONDUCTORS.

No. 534,786.

Patented Feb. 26, 1895.



Witnesses
W. Russ Edglen.
Rear Lewis.

Inventor
Louis R. Downer
by John Mauro
his attorneys.

(No Model.)

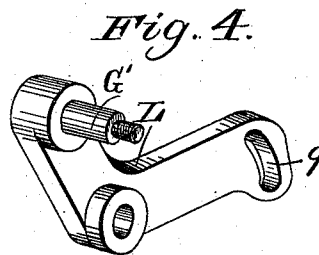
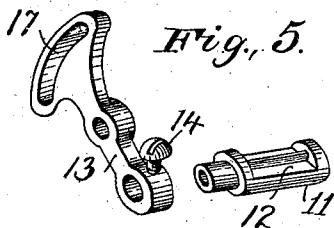
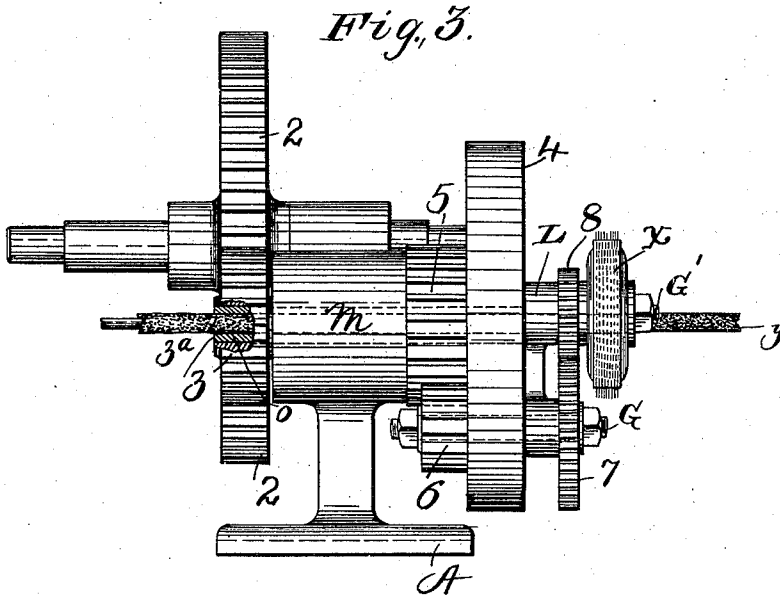
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Reis Lewis.

Inventor.

Louis W. Downes
by Tolson Maurer
his attorneys.

UNITED STATES PATENT OFFICE.

LOUIS W. DOWNES, OF PROVIDENCE, RHODE ISLAND.

APPARATUS FOR MANUFACTURE OF INSULATED ELECTRICAL CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 534,786, dated February 26, 1895.

Application filed December 11, 1894. Serial No. 531,490. (No model.)

To all whom it may concern:

Be it known that I, LOUIS W. DOWNES, of Providence, Rhode Island, have invented a new and useful Improvement in Apparatus for the Manufacture of Insulated Electrical Conductors, which is fully set forth in the following specification.

The present invention relates to apparatus for the manufacture of insulated conductors, and particularly to improvements in that part of the mechanism described in my application, filed August 22, 1894, Serial No. 521,029, for combing or brushing out the asbestos covering to remove all superfluous lumps, irregularities, &c., and for laying the nap all in one direction in the application of said covering as an insulation to electrical conductors.

The improvement herein consists in causing a card or cards in the form of a wheel, to revolve rapidly while passing around the circumference of the wire, instead of simply rotating a comb about the wire as in my former apparatus, thus producing the desired results in a much more efficient manner and enabling me by adjustment of the carding-wheel to reduce the thickness of insulation to almost any desired point.

Although described in connection with apparatus for applying insulation to electrical conductors, the invention herein embraces all other analogous uses to which it may be applicable.

What is considered the best embodiment of my invention in a practical apparatus will be described in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view. Fig. 2 is a side elevation. Fig. 3 is an end elevation, and Figs. 4 and 5 are detail views.

Referring to the drawings A is the frame supporting driving gear 2 to which motion is communicated from any suitable source. Gear 2 meshes with a gear 3 on a hollow shaft 3^a bearing in a sleeve *m* on frame A, and carrying at its opposite end a disk 4. The circumference of the sleeve *m* adjacent to the disk 4 is formed with gear-teeth, as at 5. A short shaft G projecting through disk 4 carries at one side of the disk a pinion 6, which meshes with the gear-teeth 5 on sleeve *m*, and at the other side of the disk it passes through

and constitutes the pivot of an adjusting arm L for the carding-wheel *x* and also carries a gear-wheel 7. Although a carding-wheel is preferred any other analogous form of wheel suitable for the purpose may be employed. The adjusting arm L is shaped like a bell-crank lever, being pivoted in the point of the angle, and carrying at its free end a pin G' constituting an axis upon which the carding-wheel *x* is rotated through a pinion 8 thereon meshing with gear 7. At the other extremity of the arm L is a slot 9 through which a set-screw 10 passes into the face of the disk 4. By loosening the set-screw 10 and swinging arm L on its pivot the axis of the carding-wheel is caused to describe an arc which if extended would intersect the orifice of passage *o* in sleeve 3^a, through which the covered wire to be operated upon is led to the carding-wheel. It will thus be observed that by adjusting the position of the carding-wheel *x* the thickness of the covering on the electrical conductor can be regulated. The rotation of the disk 4 through gears 2 and 3 causes the carding-wheel *x* to be rapidly revolved as it is carried around by the disk through the intermediary of the pinion 6, gear 7 and pinion 8, the former meshing with the stationary gear teeth 5.

In order to properly support the wire *y* while subjected to the action of the carding-wheel a suitable holder is provided consisting of a tube 11 proportioned to the size of the wire being operated upon, which passes through it, and cut away for a portion of its length on one side as at 12 so as to allow the teeth of the carding wheel to reach the surface of the insulating covering on the wire, and a plate 13 in one end of which the tube 11 is sleeved and secured by set-screw 14 at right angles thereto. The plate 13 is pivoted to the face of the disk 4 by a screw 15 and is held in its adjusted position by a set-screw 16 passing into disk 4 through a slot 17 in the extremity of arm 13.

From the passage *o*, through the hollow shaft 3^a, the wire *y* passes through the tube 13 where it is operated upon by the carding-wheel at the point where it is exposed through the cut-away portion of the tube. In order to keep the wire firmly seated against the wall of the opening through the tube 11, while it

is being operated upon, as in cases where the diameter of the wire is somewhat less than the diameter of the opening through the tube, I have provided for a slight adjustment of the holder by means of set-screw 16 passing through slot 17 as already described. Different sized holders are however provided to conform as nearly as possible to the diameter of the covered wire.

10 What I claim as my invention is—

1. In apparatus for brushing, or combing out, the covering applied to electrical conductors for insulating the same, and for analogous purposes, a revolving carding-wheel adapted to be rotated about and in contact with the circumference of the insulated conductor, substantially as described.

2. In apparatus of the kind described the combination with means for holding the covered wire, of a revolving carding-wheel adapted to be rotated about and in contact with the circumference of the covered wire and means for adjusting said wheel toward and from the axis of the wire, substantially as described.

3. In apparatus of the kind described the combination with a rotating disk mounted

upon a hollow shaft through which the covered wire is fed, of a carding-wheel for operating upon the covered wire, mounted upon and rotating with said disk, a short shaft passing through the disk carrying at one side of the latter a pinion meshing with stationary gear-teeth and at the other side a gear-wheel engaging with a pinion on the carding-wheel, whereby the latter is revolved as it is rotated about and in contact with the circumference of the covered wire, substantially as described.

4. The combination with the disk and the rotating, revolving carding-wheel, of a holder for the covered wire composed in part of a tube through which the wire passes cut away at one side to expose the latter to the action of the teeth on the carding-wheel, substantially as described.

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

LOUIS W. DOWNES.

Witnesses:

GILMAN E. JOPP,

ROBERT M. REIRDON.