

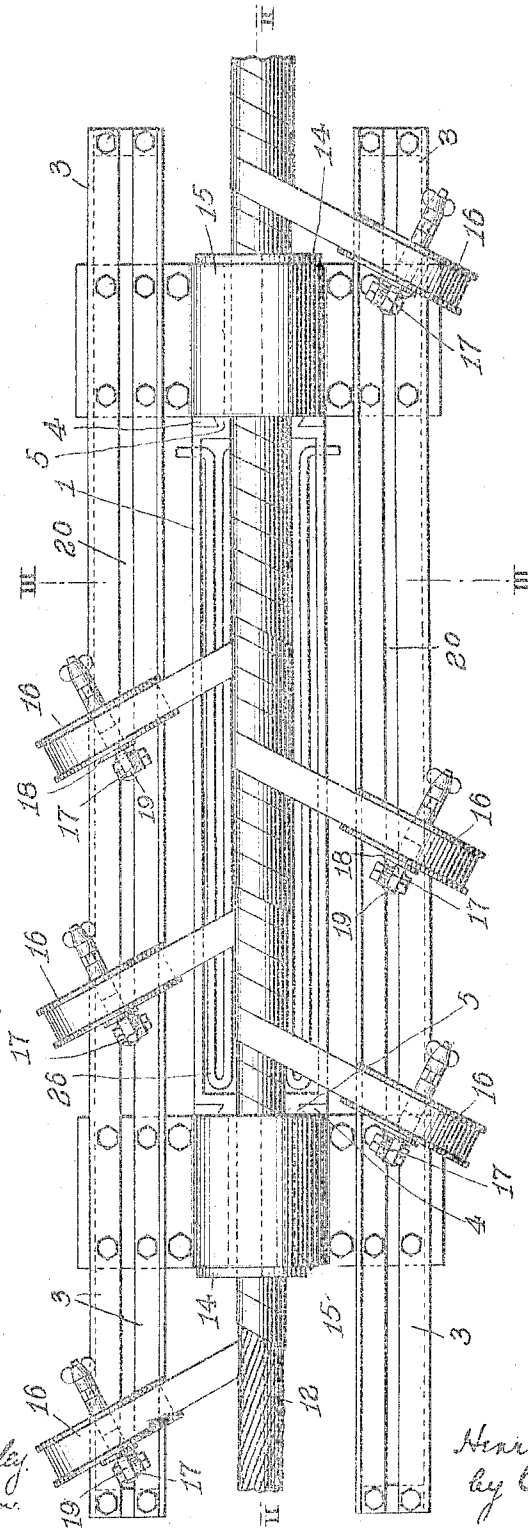
H. W. FISHER.
 MACHINE FOR COVERING ELECTRICAL CONDUCTORS.
 APPLICATION FILED MAR. 20, 1911.

1,009,732.

Patented Nov. 28, 1911.

3 SHEETS-SHEET 1.

FIG. 1.



WITNESSES:

J. Herbert Bradley
Francis J. Tomassone

Henry W. Fisher INVENTOR
by Christy and Christy Attys

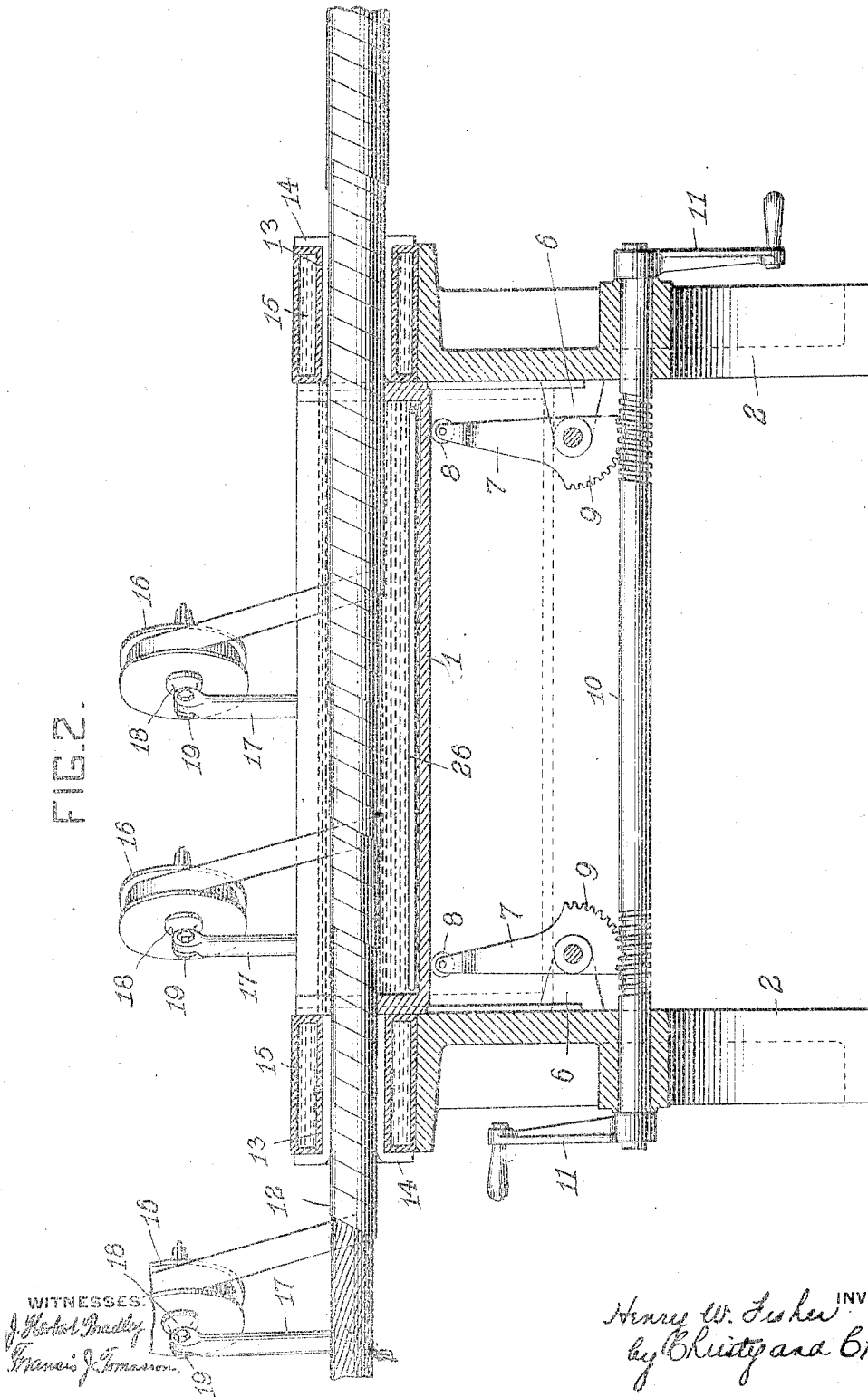
H. W. FISHER.
MACHINE FOR COVERING ELECTRICAL CONDUCTORS.
APPLICATION FILED MAR. 20, 1911.

1,009.732.

Patented Nov. 28, 1911.

3 SHEETS—SHEET 2.

FIG. 2.



WITNESSES.

J. H. H. Bradley
Francis J. Emerson

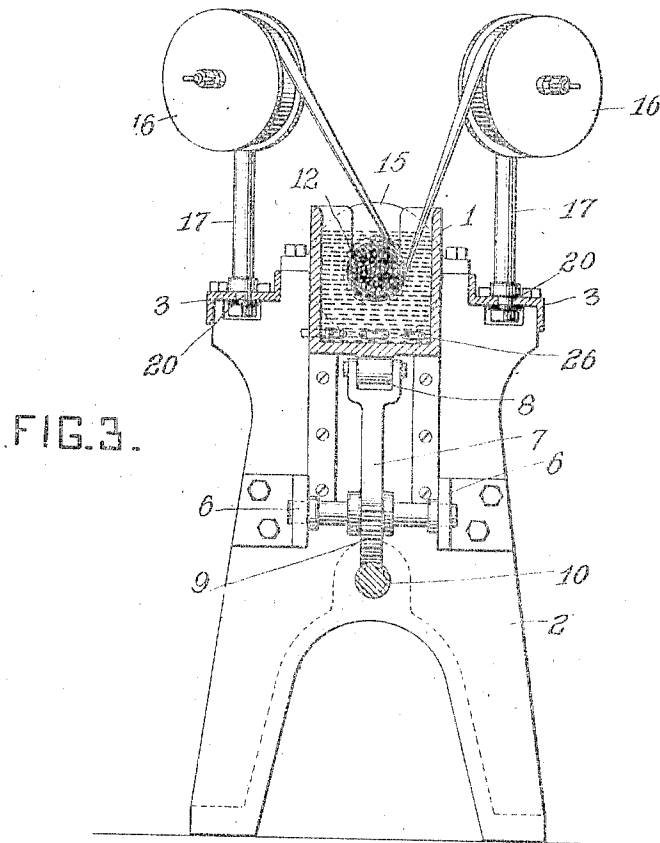
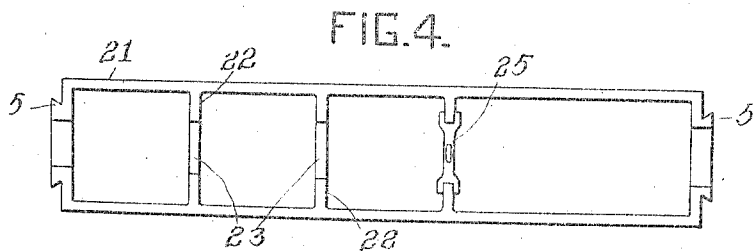
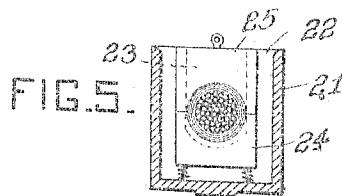
Henry W. Fisher INVENTOR
by Christy and Christy Atty's

H. W. FISHER.
MACHINE FOR COVERING ELECTRICAL CONDUCTORS.
APPLICATION FILED MAR. 20, 1911.

1.009,732.

Patented Nov. 28, 1911

3 SHEETS—SHEET 3.



WITNESSES:

J. Herbert Bradley.
Francis J. Tomassoni.

INVENTOR

Henry W. Fisher
by Christy and Christy
Atty's

UNITED STATES PATENT OFFICE.

HENRY W. FISHER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO STANDARD UNDERGROUND CABLE COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

MACHINE FOR COVERING ELECTRICAL CONDUCTORS.

1,009,732.

Specification of Letters Patent.

Patented Nov. 28, 1911.

Application filed March 20, 1911. Serial No. 615,603.

To all whom it may concern:

Be it known that I, HENRY W. FISHER, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Machines for Covering Electrical Conductors, of which improvements the following is a specification.

My invention relates to the manufacture of electrical conductors, which have an insulating fabric, rubber, or paper, braided or wound thereon, and the object of my invention is to provide a means whereby the conductor may be covered with such insulation while immersed in an insulating compound.

My invention is illustrated in the accompanying drawings, which form part of my specification, and in which—

Figure 1 is a plan view of a cable core, immersed in a receptacle of insulating compound and in the process of being wrapped with insulating tapes; Fig. 2 a vertical longitudinal section of the same taken upon line II—II, Fig. 1; Fig. 3 a vertical cross-section of the same taken on lines III—III, Fig. 1; and Figs. 4 and 5 are plan and sectional views of a modified form of a trough.

In the several figures like numerals are used to designate like parts.

In the practice of my invention I provide a suitable insulating-compound-containing trough and cause a cable core or other conductor to move therethrough, simultaneously giving the immersed conductor a movement of rotation in any desired manner, to the end that an insulating fabric, rubber, or paper, may be wound or braided thereon.

In the disclosure of my invention specifically shown in the drawings I provide a tank 1, which is preferably vertically movable to and from a position wherein an advancing rotating cable 12 may pass therethrough from end to end. Such vertical movement may be accomplished in any desired manner, and in the drawings I show one convenient method for accomplishing the same. As shown, the tank 1 is slidably mounted between uprights 2, which are suitably united by tables 3, and which are suitably recessed, as at 4, to receive the dove-tail extensions 5 of the said tank so that a fluid-

tight engagement may be made. And to the end that the tank may be held at any desired vertical position, I preferably secure lugs 6 to the said uprights, and between each pair of lugs a lever 7 is mounted, each of which is suitably provided with a bearing roller 8 at one end, and with a toothed surface 9 at the other end to mesh with the worm-shaft 10. It will be understood that, by rotating the worm-shaft 10, as by a hand lever 11, the tank 1 may be brought to any desired position relative to the conductor.

The path of the advancing conductor may be fixed by passing the said conductor through suitable orifices 13, disposed at the upper end of the uprights, and a split sleeve 14, of the same outside diameter as the internal diameter of the orifice and of an inside diameter to correspond to that of the conductor passing therethrough, may be placed in each orifice to prevent the escape of insulating compound from the tank. Furthermore, to the same end, I provide a suitable cooling jacket 15 surrounding each orifice, and, it will be understood, that, by connecting the said jackets to a cooling fluid, whatever insulating compound escapes into each orifice will be rendered more viscous by being cooled.

To the end that compound within the tank may be kept at the proper temperature a suitable heating device may be employed. As shown on the drawing such may consist of a heating coil 26, having suitable flexible connections to a steam or hot water pipe, may be placed in the tank.

While reels of insulation of any suitable form may be placed at any desired point relative to the advancing conductor, I preferably mount the reels on the tables 3, which extend beyond the uprights to the end that insulation may be wound upon the conductor both before and after the cable enters the compound, as well as while passing therethrough. Each reel 16 is preferably mounted upon an axle 18, secured with pivotal adjustment 19 to a support 17, which in turn is adjustably secured to a table 3, as by being clamped thereto through the slot 20. It will be observed that the proper position of each reel, relative to the lineal and rotary speed of the conductor, may be obtained by

the pivotal adjustment 19 and the longitudinal as well as axial adjustment within the slot 20.

When it is desirable to have the conductor 5 submerged under different insulating compounds while being covered by successive layers of insulating material, a series of troughs 1 may be employed, each containing the desired compound, or a single trough 10 21, (shown in Figs. 4 and 5) having partition walls 22, may be used. To prevent an intermingling of the various compounds, the slot 23 of each partition wall may be provided with a closing piece 24, held yieldingly 15 by the advancing cable against the lower side of the conductor, and a second closing piece 25, vertically slidable upon the partition walls, may rest upon the top of the conductor. It will be understood that, when the trough is lowered, the closing piece 24 will follow the egressing cable while the closing piece 25 will be lifted out of the trough, and that such closing pieces will sufficiently prevent an intermingling of the compound, 25 when the trough is in lowered, as well as raised position.

In the operation of my machine for insulating cables, during such time as the cable is being threaded through the orifices 13, the sleeves 14 are being put in place, and the wrapping of the insulation started, the compound-tank may be in lowered position, as shown in dotted lines in Fig. 2, and in such lowered position the escape of insulating 35 compound from the tank will be prevented by the fluid-tight engagement of the ends of the tank with the sides of the uprights. The tank may then be raised to the end that the insulation may be wrapped upon 40 the conductor to the exclusion of air.

I do not wish to limit myself to the details of construction shown herein, for obvi-

ously many changes may be made therein without departing from the spirit of my invention.

I claim as my invention:

1. In a machine for covering electrical conductors, the combination of a trough for insulating compound composed of opposite stationary walls and an intermediate body 50 moving in fluid tight engagement with the opposite faces of said stationary walls, said stationary walls provided with fluid-tight passageways for the article under treatment, and means for moving the movable body of 55 said trough, substantially as described.

2. In a machine for covering electrical conductors, the combination of a vertically moving insulating-compound tank, a support for and forming the end walls of said 60 compound-tank and provided with inlet and outlet orifices, means for cooling the walls of said orifices, and means for moving said tank with reference to said support, substantially as described. 65

3. In a machine for wrapping insulating material upon an electrical conductor, the combination of a pair of uprights, an insulating-compound tank provided with orifices 70 in the walls thereof for the passage of a conductor therethrough, said tank being movable in fluid tight engagement with said uprights and in its movement bring the said tank orifices in register with orifices in the said uprights, means for moving said tank, 75 and a reel for wrapping material arranged adjacent to said tank, substantially as described.

In testimony whereof I have hereunto set my hand.

HENRY W. FISHER.

Witnesses:

GEORGE E. MILLS,
THOMAS WATERS.