

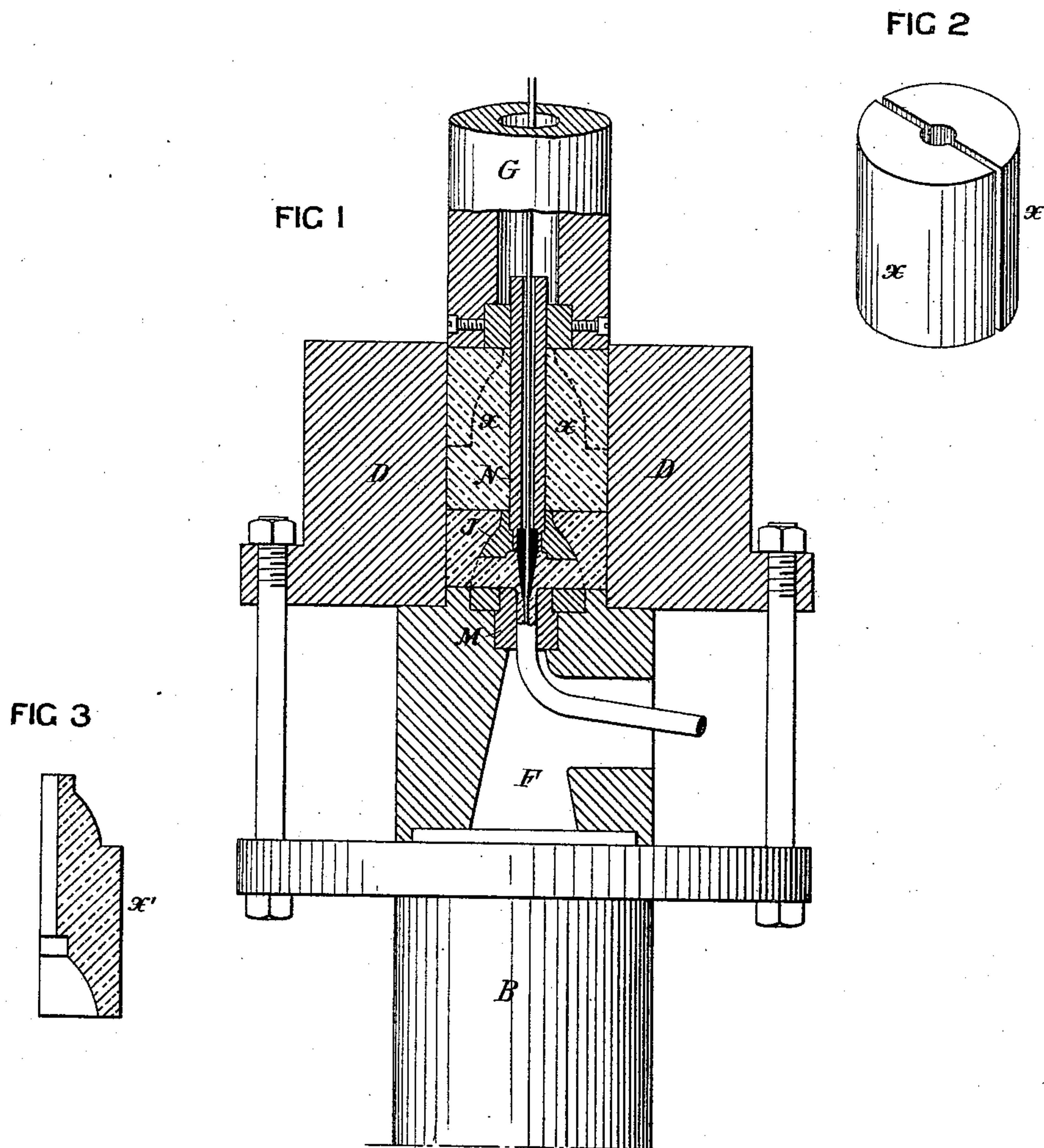
(No Model.)

J. TATHAM.

METHOD OF SHEATHING ELECTRICAL CONDUCTORS.

No. 529,215.

Patented Nov. 13, 1894.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES TATHAM, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF SHEATHING ELECTRICAL CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 529,215, dated November 13, 1894.

Application filed January 2, 1894. Serial No. 495,388. (No specimens.)

To all whom it may concern:

Be it known that I, JAMES TATHAM, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Methods of Sheathing Electrical Conductors or Conductor-Casings, of which the following is a specification.

My invention consists of an improvement in the method of covering insulated electrical
10 conductors with lead set forth in my Patent No. 327,835, dated October 6, 1885, the object of my present invention being to prevent injury to the insulating covering of the conductor by heat during the process of applying
15 the lead covering or sheathing thereto. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1, is a view, partly in section and
20 partly in elevation, of sufficient of the improved lead pipe press forming the subject of my former patent, to illustrate my present invention. Fig. 2, is a perspective view of the charge for the lead cylinder of the press; and
25 Fig. 3, is a view of part of a modified form of charge.

In Fig. 1 B represents part of the piston or plunger of the hydraulic cylinder of the press; D, the lead cylinder; F, the hollow column
30 interposed between the said cylinder and the upper end of the plunger; G, the hollow ram adapted to said lead cylinder; J, the hollow bridge block mounted upon the top of the hollow column and contained in the lower
35 portion of the cylinder; M, the die of the press, and N the hollow core carried by the bridge block and projecting through a block at the lower end of the hollow ram G.

In using this press the insulated conductor
40 was passed down through the hollow ram, thence through the hollow core N and the nozzle at the bottom of the same, thence through the die, and finally out through the lateral passage of the hollow column F, the
45 cylinder being filled with successive charges of molten lead, and each charge being ejected from the cylinder and forced through the die and around the conductor on the rise of said cylinder which was then lowered in order to
50 receive a fresh charge. Some classes of insulation, however, are injured by the heat of the

molten lead, and in order to overcome this objection I now use charges each consisting of a series of segmental slugs x of solid lead
so shaped as to fit snugly to the bore of the
55 cylinder and to the hollow core of the same.

In starting the operation the cylinder may be filled with molten lead up to the level of the top of the bridge block J or the entire charge may in the first instance consist of
60 molten lead which is forced from the cylinder until the portion remaining therein is level with the top of the bridge block. When the cylinder is lowered, the solid segmental slugs
65 x are then inserted so as to fill that portion of the cylinder above the bridge block and the cylinder is then raised so that the pressure of the ram is exerted upon these solid slugs.

I have found in practice that the use of solid slugs of segmental form as a charge for
70 the cylinder is not objectionable for the lead is subjected to such great pressure in forcing it through the die that the segments of the covering are practically welded together, there being no appreciable joint and no material
75 weakening of the strength of the covering.

In carrying out the invention the cylinder of the press, as well as the solid slugs of metal constituting the charges for said cylinder are preferably heated, but not to a degree ap-
80 proaching that of the melted lead, so that there is no injury to the insulating covering of the conductor while it is passing through the hollow core, nozzle, and die of the press.

I prefer to use slugs in the form of semi-
85 circular segments as shown in Fig. 2, but the charge may consist of any desired number of segments without departing from my invention. The slugs may also be shaped at top and bottom so as to accord with the shape of
90 the hollow bridge block J. Hence with the corresponding shaping of the lower end of the die G as shown by dotted lines in Fig. 1, the lead may be entirely expelled from the cylinder on each stroke, such a conformation of
95 the segment being shown at x' in Fig. 3. The plan first described, however, of first filling the lower portion of the cylinder with lead and limiting the stroke of the plunger so that the semicylindrical slugs shown in Fig. 2 can
100 be used for the charge, is much preferred.

In some cases, insulating tubes may be

passed through the press and sheathed with lead, before having the conductors inserted therein, the advantages arising from the use of the solid segmental slugs of lead, in the press, in this case, being precisely the same as in covering the insulated conductors.

Having thus described my invention, I claim and desire to secure by Letters Patent—

10 1. The mode herein described of effecting the sheathing of an electrical conductor or conductor casing in a lead pipe press, said mode consisting in providing the cylinder of the press with a charge consisting of two or
15 more solid segmental slugs of lead, and then imparting pressure to these solid slugs so as to drive the lead through the die and around the conductor or casing, and simultaneously join the segments together, substantially as
20 specified.

2. The mode herein described of sheathing an electrical conductor or conductor casing in a lead pipe press, said mode consisting in filling the lower portion of the cylinder with lead, inserting on the top of this mass a charge 25 consisting of two or more solid segmental slugs of lead, imparting pressure to the charge so as to force the lead through the die and around the conductor, and limiting the extent of each discharge so as to continually maintain a mass 30 of lead in the bottom of the cylinder, substantially as specified.

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

JAMES TATHAM.

Witnesses:

FRANK BECHTOLD,
JOSEPH H. KLEIN.