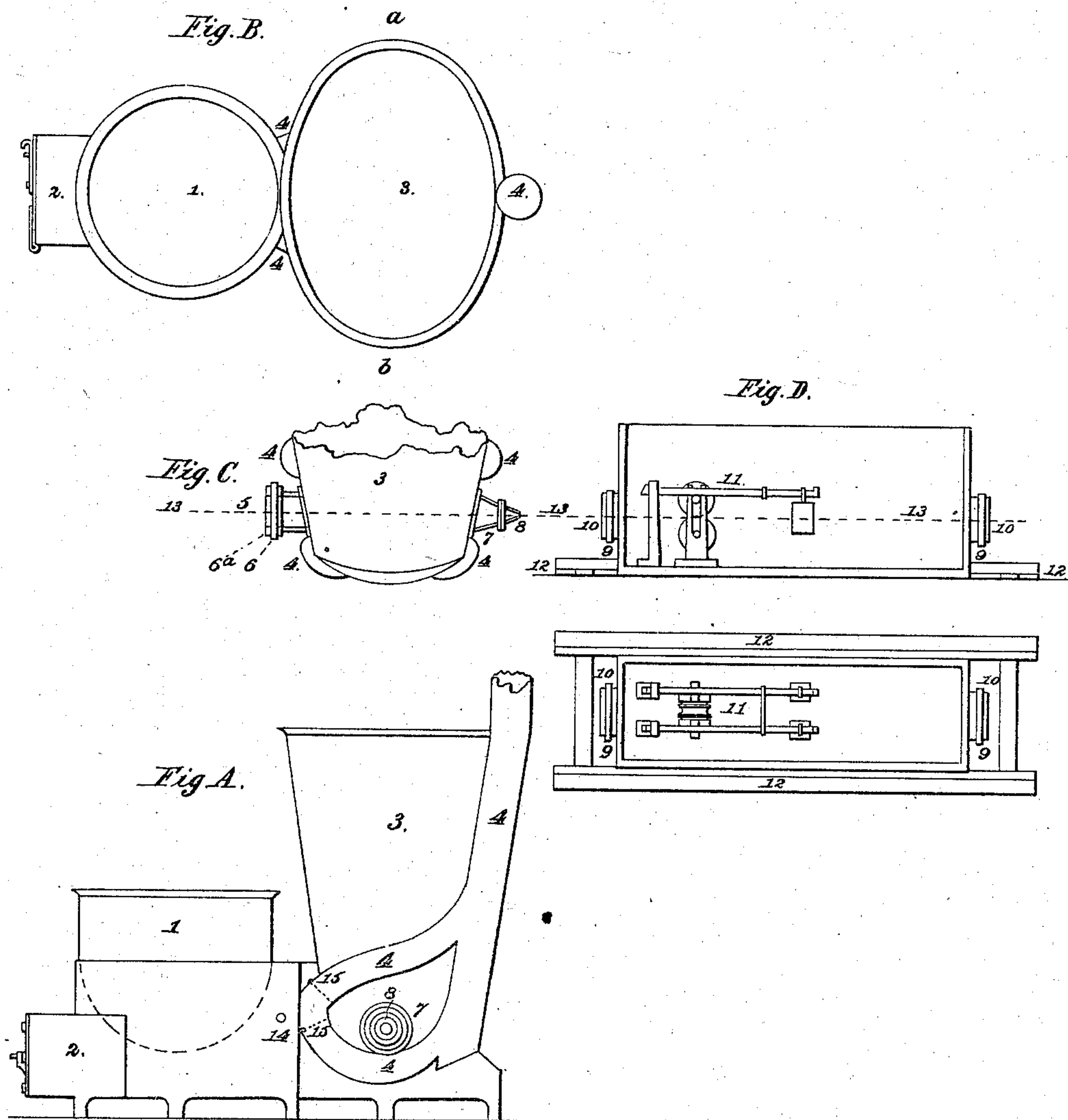


J. B. HYDE.

APPARATUS FOR COATING TELEGRAPH WIRES.

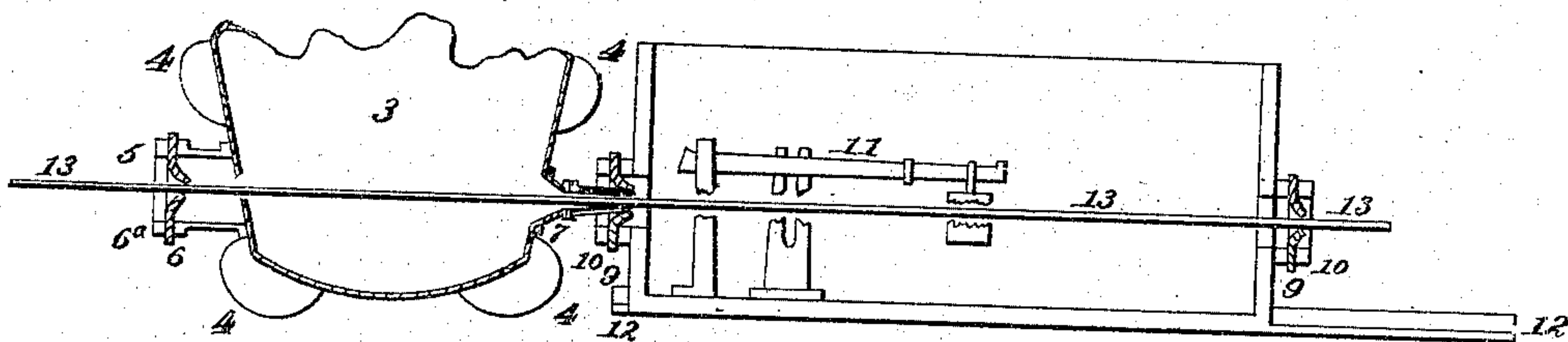
No. 11,552.

Patented Aug. 22, 1854.



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*Fig. D2.*





# UNITED STATES PATENT OFFICE.

J. BURROWS HYDE, OF NEW YORK, N. Y.

## IMPROVEMENT IN APPARATUS FOR COATING TELEGRAPH-WIRES.

Specification forming part of Letters Patent No. 11,552, dated August 22, 1854.

*To all whom it may concern:*

Be it known that I, JOSHUA BURROWS HYDE, of the city, county, and State of New York, have invented certain improvements in machinery or apparatus for coating or covering metallic wires to be used for telegraphic purposes with a composition, for which I have made separate application for Letters Patent, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, to be hereinafter described.

My invention relates to an apparatus for coating telegraphic wires with a composition for which I have made a separate application for Letters Patent; and it consists in the employment of a kettle for containing either of the compositions in the melted state, and provided with two apertures, one aperture covered with a disk of india-rubber or some equivalent substance, with a hole in the center, so that the wire can be forced through it into the kettle without permitting the liquid compound to escape, and the other aperture being provided with a die for determining the thickness of coating to be put on; and my invention also consists in the employment of a water-vessel, in combination with and after the wire has passed through the kettle, to receive the kettle, the said water-vessel or cooler being provided with two apertures and their appendages in manner similar to the kettle for holding the compositions, for the purpose of hardening the compositions as the wires pass out.

In the accompanying drawings, Figure A is a side elevation of the melting-kettle 1 and furnace 2, with the molding-kettle 3 and the flues 4; and Fig. B shows a plan of the same. Fig. C is a sectional elevation, through *a b* of Fig. B, of the bottom part of the molding-kettle; 4 4, the flues; 5, a projecting tube, secured by flanges near the bottom of the molding-kettle; 6, a thick piece of vulcanized india-rubber punctured in the center, covering the end of the pipe 5; and 6<sup>a</sup> is a flat iron ring secured to the flanges of the tube to hold the rubber in its place. This appendage is to allow the wire to be passed into the kettle when charged with composition. The puncture in the india-rubber closes and prevents the melted mixture from escaping, and when the end of the wire is forced into the orifice the surface of the rubber is depressed inward and the punctured

part expands and allows the wire to pass, while it closes firmly around it.

7 is a projecting conical tube opposite the former and similarly attached to the kettle. This tube has a flange on its outer end to receive the die-nozzle 8, to determine the diameter and shape of the composition covering the wire.

15 15, Fig. A, represent dampers for governing the draft around the molding-kettle.

Fig. D is a longitudinal section of the water trough or cooler, and Fig. D<sup>2</sup> longitudinal section of the molding-kettle and cooler in position for working. This trough has an opening at each end, furnished with punctured india-rubber disks 9 and flat iron ring 10 to secure the same, similar to that on the molding-kettle at 5. Inside the trough is an arrangement, 11, for receiving the coated wire between two grooved rollers, weighted down, for the pressing of the composition into solid and uniform shape. 12 12 are wood rails, within or upon which the trough must slide to and fro easily. For portable purposes this trough should be placed on a convenient carriage or truck.

13 13 represent the line of the wire in dotted lines passing through the apparatus.

In commencing operations the melting-kettle should be well charged with prepared composition and the molding-kettle clean and free from composition from previous work, insured by cleaning it while hot before stopping operations.

At 14, Fig. A, an orifice is represented in the side of the flue. Another one (not seen in the drawings) is made directly opposite on the other side of the flue. The object of these holes is to receive the wire as a first operation, and in passing through the heat of the flue the wire becomes warmed preparatory to receiving the composition.

The wire may be warmed by other means, but none, I think, so convenient.

I now, having the molding-kettle and cooling-trough in proper line, draw the trough about twelve inches from the cone of the molding-kettle, fill the trough with water about an inch above the orifices in the rubber, place a wooden plug in the outer end of the molding-nozzle, this plug projecting several inches from the cone and pressed in gently; now pour the composition into the kettle 3 to a few inches above the top of the orifices; push the trough



against the kettle so that the molding-nozzle shall pierce the rubber 9 in the trough; now insert the wire at 5 and press it through until it is arrested by the plug, which must now be withdrawn on the inside of the trough. Guide, if necessary, the wire between the rolls, thence through the trough, and out at the opposite end, where it is received by an attendant, who pulls it through. At the same time water is allowed to flow freely into the trough and escape as convenience may indicate, to keep it cool. When one length of wire has passed another should follow immediately behind and against it.

The wire may be coated in short lengths by passing it perpendicularly through a vessel with a tube and nozzle in the bottom and a water-tank below, but not so conveniently as by the mode described.

I am aware that it has been attempted to coat wires with gutta-percha by means of a cylinder to which is fitted a piston, and having holes through one side of the size of the wires, on the other side the holes being of the size of the wires when coated, and the coating being applied by the pressure of the piston while the gutta-percha is in a melted state by heat applied externally to the cylinder, and therefore I do not claim, broadly, the coating of wires by drawing them through a vessel having holes on opposite sides; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The employment of the molding-kettle, with or without the melting-kettle, provided and combined with an aperture covered with a disk of india-rubber or its equivalent, having a hole or puncture in the center which admits the wire and prevents the escape of the contained composition, and with the nozzle or die for determining the thickness of coating of compound to be put on the wire, substantially as and for the purpose specified.

2. The use of the cone which determines the thickness of the coating in such manner as that the outer end or nozzle thereof shall, when in use, terminate in and be covered by water, so that the covered wire shall emerge from the cone directly into or while the latter is in the water, through which the wire will then pass, as hereinbefore described, for the purpose of cooling the composition.

3. I do not claim the use of the apparatus solely for the purpose of covering telegraphic wires, but it may be applicable and useful for other equivalent uses, all of which I desire to have secured by Letters Patent.

J. BURROWS HYDE.

Witnesses:

WM. H. BISHOP,  
CHAS. W. BAMBURGH.