

(No Model.)

2 Sheets—Sheet 1.

J. J. POWERS & R. VAN BUREN.
MACHINE FOR MAKING CLAY CONDUITS.

No. 419,793.

Patented Jan. 21, 1890.

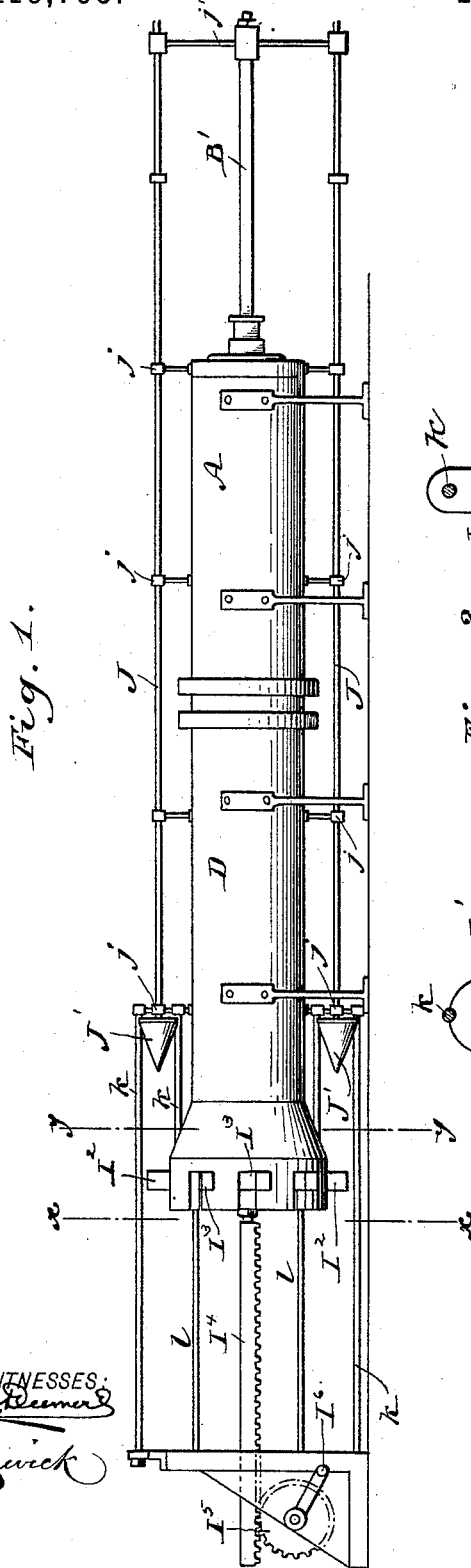


Fig. 1.

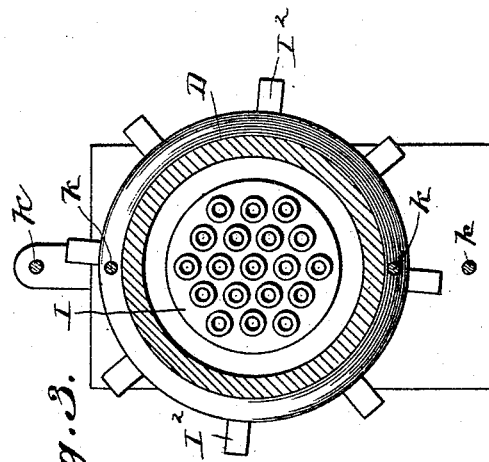


Fig. 3.

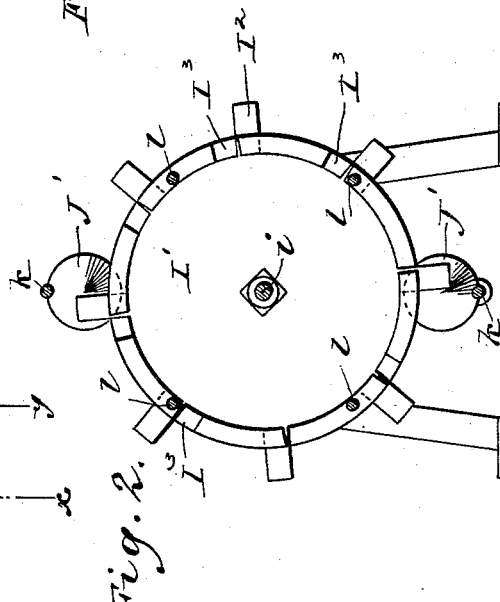


Fig. 2.

WITNESSES:
John H. Deemer
C. Sedgwick

INVENTOR:
J. J. Powers
R. Van Buren
BY Munn & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES J. POWERS AND ROBERT VAN BUREN, OF BROOKLYN, NEW YORK.

MACHINE FOR MAKING CLAY CONDUITS.

SPECIFICATION forming part of Letters Patent No. 419,793, dated January 21, 1890.

Application filed November 30, 1889. Serial No. 332,091. (No model.)

To all whom it may concern:

Be it known that we, JAMES J. POWERS and ROBERT VAN BUREN, both of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Machine for Making Clay Conduits, of which the following is a full, clear, and exact description.

This invention relates to a machine for making conduits for electric wires and for other purposes of clay; and the invention consists, principally, of means operated by hydraulic or fluid pressure for compressing the clay into form and for forming apertures in the section, two pistons and two cylinders being used, one shaped in part to form the mold.

The invention also consists in the construction, arrangement, and combination of parts, all as hereinafter described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of our invention. Fig. 2 is a cross-sectional view on line xx of Fig. 1. Fig. 3 is a similar view on the line yy of Fig. 1. Fig. 4 is a longitudinal sectional elevation. Fig. 5 is an enlarged detail sectional view showing the perforated head between the power-cylinder and the mold-cylinder and showing the rods working in stuffing-boxes in said head. Fig. 6 is a cross-sectional view taken on the line zz in Fig. 5, and Fig. 7 is a longitudinal sectional view showing sections of the conduit placed together.

A represents the power-cylinder provided with the piston B and induction and eduction pipes C C, and D represents the working-cylinder in which the clay is pressed. In this latter cylinder is fitted the piston-head E, which slides upon the rods F, which are held by the head-block or partition G, held between the adjacent ends of the two cylinders A D. The piston-head E is attached to the power-piston B by the rods F', which pass through stuffing-boxes in the said partition. The clay is introduced into the cylinder D in front of the piston-head E and around the rods F through the opening H. (Shown in Fig. 4.) The outer end of the working-cylinder D is closed by an automatically-removable head I.

This removable head receives the pressure of the clay up to a certain point, and is then automatically unlocked or released from the cylinder, and the movement of the pistons forces the compressed and apertured block or section of conduit out of the mold-space M. The blocks or sections in this instance are of the form shown at M', Fig. 7, but may be of any other appropriate form. The said head I may be variously constructed and connected to the cylinder, in order that it may be automatic in detachment; but we prefer to connect it by a central bolt i to the locking plate or spider I', formed with locking-lugs I², which are adapted to enter bayonet-slots I³, formed in the edge of the cylinder D, as shown clearly in Fig. 1. The locking plate or spider is detached from the locking-slots at the proper time by the blocks J', attached to the reciprocating rods J, which blocks act like cams to rotate the locking plate or spider to bring the lugs I² in line with the open parts of the bayonet-slots. The rods J move in ways or bearings j , and are reciprocated by the cross-piece j' , attached to the piston-rod B' of the power-cylinder A. After the block or section of compressed clay has been expelled the head I and locking plate or spider I' are returned to place to close the cylinder by the rack I⁴ and gear-wheel I⁵, which may be turned by a crank I⁶. (Shown clearly in Figs. 1 and 4.) The cam-blocks J' are guided by the rods k and the locking plate or spider by the rods l . The inner face of the head I is extended in the center to form cavities m in the end of the clay sections and on this extension are a series of nipples i' , to form small cavities m' in the clay section to receive the small projection m^2 of the adjoining section, as shown in the center of Fig. 7. These projections are formed by cavities e in the piston-head E, surrounding the perforating-rods F. The nipples i' are each formed with a socket i^2 to receive the points of the rods F to hold them in line when pressure is exerted upon the clay.

n n represent perforations in the resistance-plate I, for the escape of superfluous clay.

By this construction we are enabled to compress the clay into form, and then to auto-

atically expel the section from the mold by a continuous forward movement of the two piston-heads.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A machine for making clay conduits, comprising two aligned cylinders divided by a partition, a piston-head working in each cylinder and connected to each other by connecting-rods passing through the partition, perforating-rods held in the working-cylinder, and an automatically-removable resistance-head, substantially as and for the purposes set forth.

2. The two aligned cylinders divided by a partition and the two piston-heads connected together and working in said cylinders, in combination with the resistance plate or head I, a locking plate or spider applied thereto, and the cam-blocks attached to movable rods for actuating the locking-spider, substantially as and for the purposes set forth.

3. The cylinders A D, partition G, and con-

nected piston-heads, and locking-slots I³, formed in the end of the cylinder D, in combination with the resistance-plate I, and the locking-spider I', attached to said resistance-plate and adapted to engage with the locking-slots, substantially as described.

4. The two aligned cylinders A D, pistons B E, connected together and placed in said cylinders, and the rods J, and cam-blocks J', in combination with the resistance-plate I, locking plate or spider I', and locking-slots formed in the edge of the cylinder D, substantially as described.

5. The resistance-plate I and locking-spider I', attached thereto, in combination with the rack I⁴, attached to the locking-spider, and the gear-wheel I⁵, engaging with the rack, substantially as and for the purposes set forth.

JAMES J. POWERS.

ROBERT VAN BUREN.

Witnesses:

H. A. SUMMERS,

J. M. BULWINKLE.