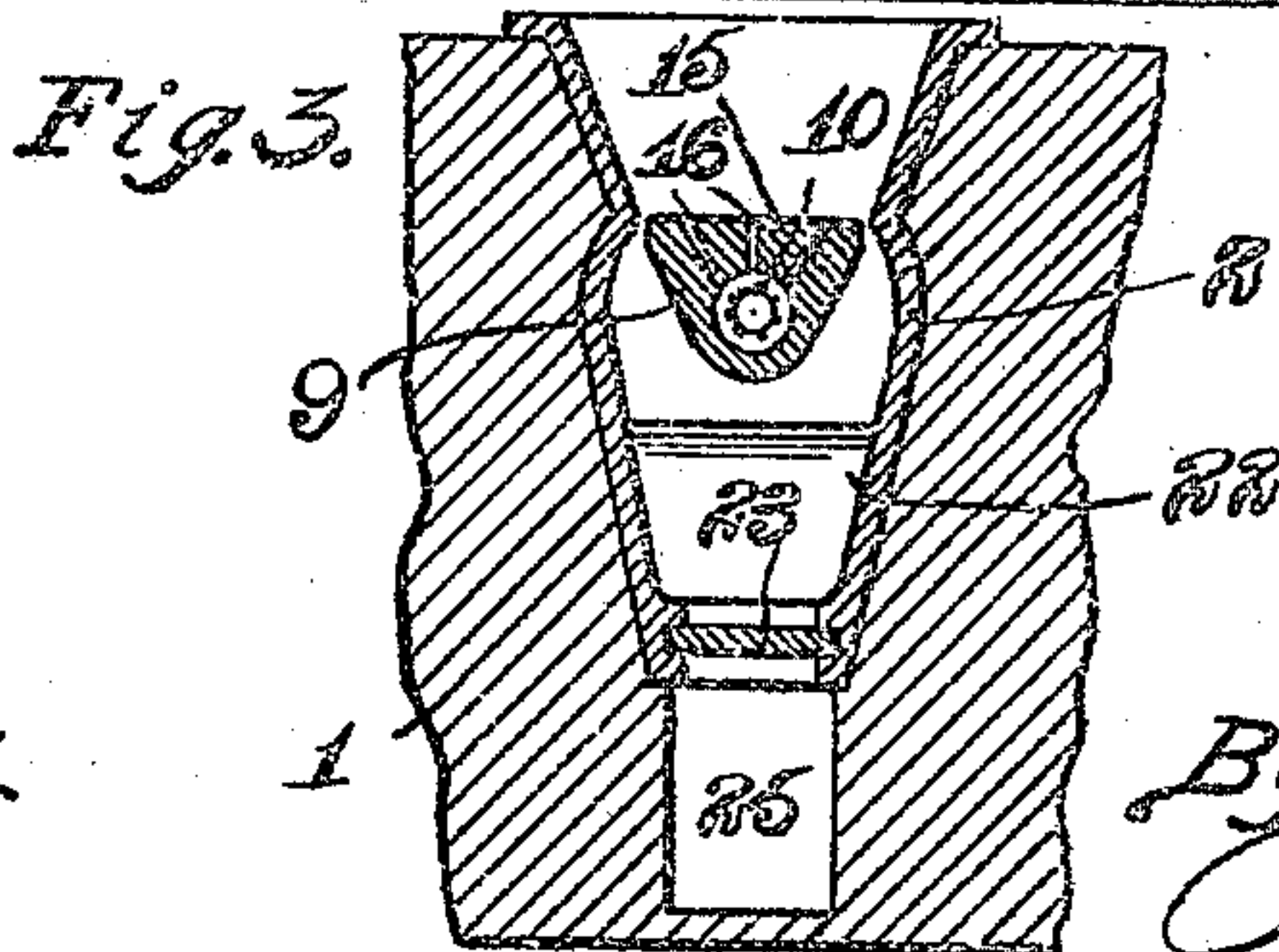
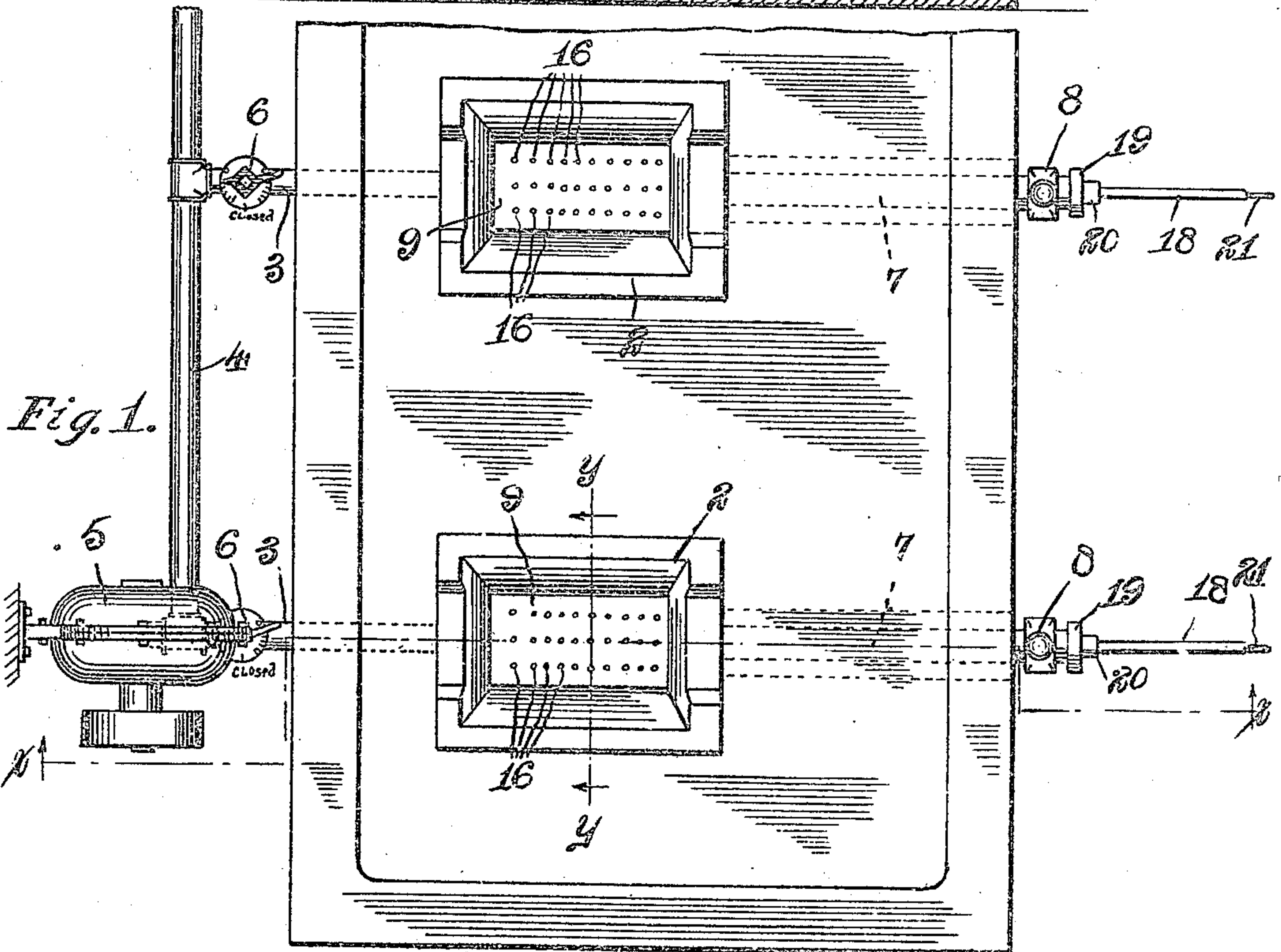
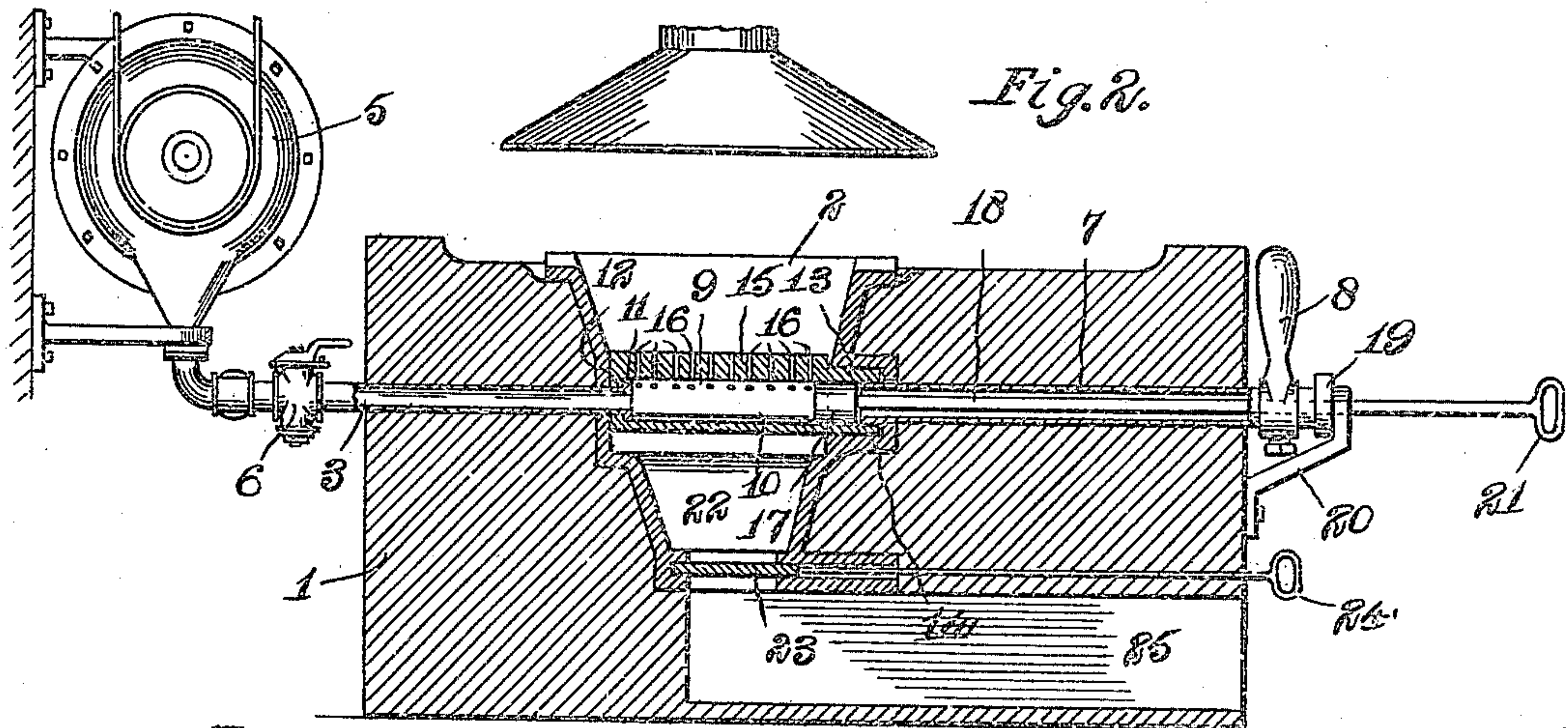


T. J. WARD.
FORGE.
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951,892.

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UNITED STATES PATENT OFFICE.

THOMAS JAMES WARD, OF MOUNT IRON, MINNESOTA.

FORGE.

951,892.

Specification of Letters Patent. Patented Mar. 15, 1910.

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To all whom it may concern:

Be it known that I, THOMAS JAMES WARD, a citizen of the United States, residing at Mount Iron, county of St. Louis, and State of Minnesota, have invented certain new and useful Improvements in Forges, of which the following is a specification.

My invention relates to forges and more specifically to twyer irons embodied therein.

10 The object of my invention is the provision of a device of the character mentioned in which will be provided manually operable means whereby the cross sectional extent or dimensions of air draft issuing from the
15 twyer iron and hence the size of the fire acted upon thereby, may be readily regulated as desired.

A further object is the provision of a twyer iron which may be tilted or rocked
20 to effect the discharge of clinkers or ashes therefrom.

Other objects will appear hereinafter.

With these objects in view my invention consists in a device characterized as above
25 mentioned and in certain details of construction and arrangement of parts all as will be hereinafter fully described and particularly pointed out in the appended claims.

30 My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a top plan view of a forge
35 construction embodying my invention in its preferred form, Fig. 2 is a section taken on substantially the line $x-x$ of Fig. 1, and Fig. 3 is a section taken on line $y-y$ of Fig. 1.

40 Referring now to the drawings, 1 indicates the body or supporting structure of the forge which may be of any suitable design and dimensions and which may be formed of any suitable material. Embedded in the body 1, the upper flanged edges
45 thereof resting upon the upper surface of the latter, is a plurality of metallic fire pots 2 of a preferably flaring or downwardly tapering form as shown. Communicating at their forward ends with the
50 pots 2, the same extending centrally through the rearward walls thereof and rearwardly therefrom, is a plurality of air conduits or air conducting pipes 3 suitably connected
55 at their rearward extremities to a common air supply pipe 4 into which air is

forced by any well known means, a rotary fan inclosed in a suitable casing 5 being illustrated in the accompanying drawings. Interposed in each of the pipes 3 is a
60 suitable air stop cock 6 by means of which the air admitted to each of the former may be regulated as desired. Having their rearward ends journaled in the forward wall of the pots 2, the same extending for-
65 wardly therefrom and being rockingly mounted in the body 1, is a plurality of tubular housings or pipes 7, fixed to the exteriorly projecting forward extremity of each of the members 7 is a handle 8 whereby
70 the latter may be readily rocked.

9 indicates the twyer iron provided in each of the pots 2, the same, as shown, being tubular in form that is, a longitudinally extending cylindrical chamber 10 is formed there-
75 through. Each of the members 9 is rockingly mounted at its rearward end upon the forward extremity of the pipe 3, which, as stated, extends through the rearward wall of each pot into the cylindrical chamber
80 formed through the former, said extremity of said pipe being preferably provided with a circumferential flange 11 which engages with an internal flange 12 formed at said
85 extremity of the member 9 to effect an air tight connection with the latter. The forward end portion 13 of each of said twyer
90 irons is cylindrically formed and is journaled in a cylindrical bearing 14 formed in the front wall of each of the pots 2. Said ends 13 of the members 9 are rigidly fixed to the rearward extremities of the pipe 7 whereby it is evident that through the ac-
95 tuation of the handles 8 said members may be readily rocked in their bearings. The upper portion 15 of each of the members 9 is enlarged or laterally flared to such an extent as to be of substantially the same dimensions as that portion of the pot 2 in
100 planar alinement with the upper surface thereof, hence when said member is in normal position in the pot 2, the same will traverse the passage through the latter, as clearly shown in Fig. 3. Formed in the
105 portion 15 of each of the members 9, is a series of radially disposed air eduction passages 16 communicating at their inner extremities with the chamber 10. Slidably mounted in each of the chambers 10 is a piston head 17 the piston rod or stem 18 of
110 which extends through the tubular casing 7 coaxially arranged therewith and the cap 19

which closes the outer end of the latter, and through the upper end of a supporting bracket 20 secured to the front side of the body 1. Each of the stems 18 is formed at its outer extremity into a grip 21 whereby the former may be readily actuated to adjust the piston head 17 carried thereby to any desired position in its chamber 10.

In use with the provision of a construction as described it is evident, that by simply actuating the stem 18 the number of the eduction passages through which air may be permitted to issue and hence the size of the fire or flame acted upon by the air draft may be readily governed. By the provision of a stop cock 6 interposed in the air supply pipe of each of the twyer irons the quantity of air admitted to the latter and hence the velocity of the air passing therethrough may also be regulated. Because of the rockable mounting of the twyer irons and the operative connections thereof with the actuating handles 9, the former may evidently be readily tilted to discharge clinkers and ashes to compartment 22 formed in the fire pots below the twyer irons. However, the last mentioned means for effecting the rocking adjustment of the twyer irons may or may not be incorporated, since the latter may if desired be rigidly supported in the fire pot.

23 indicates a closure plate traversing the lower end of each of the fire pots, the same being slidably mounted in the latter and operable therein by means of a stem 24 secured thereto and forwardly exteriorly projecting therefrom. By withdrawing said plate ashes dropped thereon from the twyer irons will be discharged into the ash and clinker pit 25 below.

While I have shown what I deem to be the preferable form of my device I do not wish to be limited thereto as there might be various changes made in the details of construction and the arrangement of parts without departing from the spirit of the invention comprehended within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a forge, the combination of a supporting structure, a fire pot embedded therein, a twyer iron mounted in said fire pot having a cylindrical chamber longitudinally extending therethrough, passages formed in said twyer iron and upwardly and radially

extending from said chamber, a piston slidable in said chamber adapted to shut off communication between said air supply pipe and said air eduction passages, an exteriorly projecting operating stem secured to and forwardly projecting from said piston, and a tubular housing for said stem, substantially as described.

2. In a forge, the combination of a supporting structure, a fire pot mounted therein, a twyer iron substantially triangular in cross section rockingly mounted in said fire pot having a cylindrical chamber longitudinally extending therethrough, an air supply pipe communicating with one end of said chamber, an air stop cock interposed in said pipe, a series of air eduction passages formed in said twyer iron upwardly and radially extending from said chamber to the top side of said twyer iron, a piston slidable in said chamber adapted to shut off communication between said air supply pipe and said air eduction passages, an operating stem connected to said piston, and a rotatable housing for said stem having its rearward end fixed to said twyer iron for rotating the latter, substantially as described.

3. In a forge, the combination with a supporting structure, a fire pot mounted therein, a twyer iron having a flaring upper portion rockingly mounted in said fire pot, a cylindrical chamber longitudinally extending through said twyer iron, an air supply pipe communicating with the rearward end of said chamber, a stop cock interposed in said supply pipe, said pipe serving as a supporting stud for the rearward end of said twyer iron, a series of air eduction passages upwardly and radially extending from said chamber, a piston slidable in said chamber adapted to shut off communication between said supply pipe and said eduction passages, an operating stem secured to and forwardly projecting from said piston, a rotatable tubular housing for said stem having its rearward end fixed to the forward end of said twyer iron, and an actuating handle provided upon the forward end of said housing whereby said housing and said twyer iron may be rocked, substantially as described.

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

THOMAS JAMES WARD.

Witnesses:

JOHN FERGUSON,
A. E. FERGUSON.