

(No Model.)

R. A. REGESTER.

DEVICE FOR MOLDING CORES.

No. 386,606.

Patented July 24, 1888.

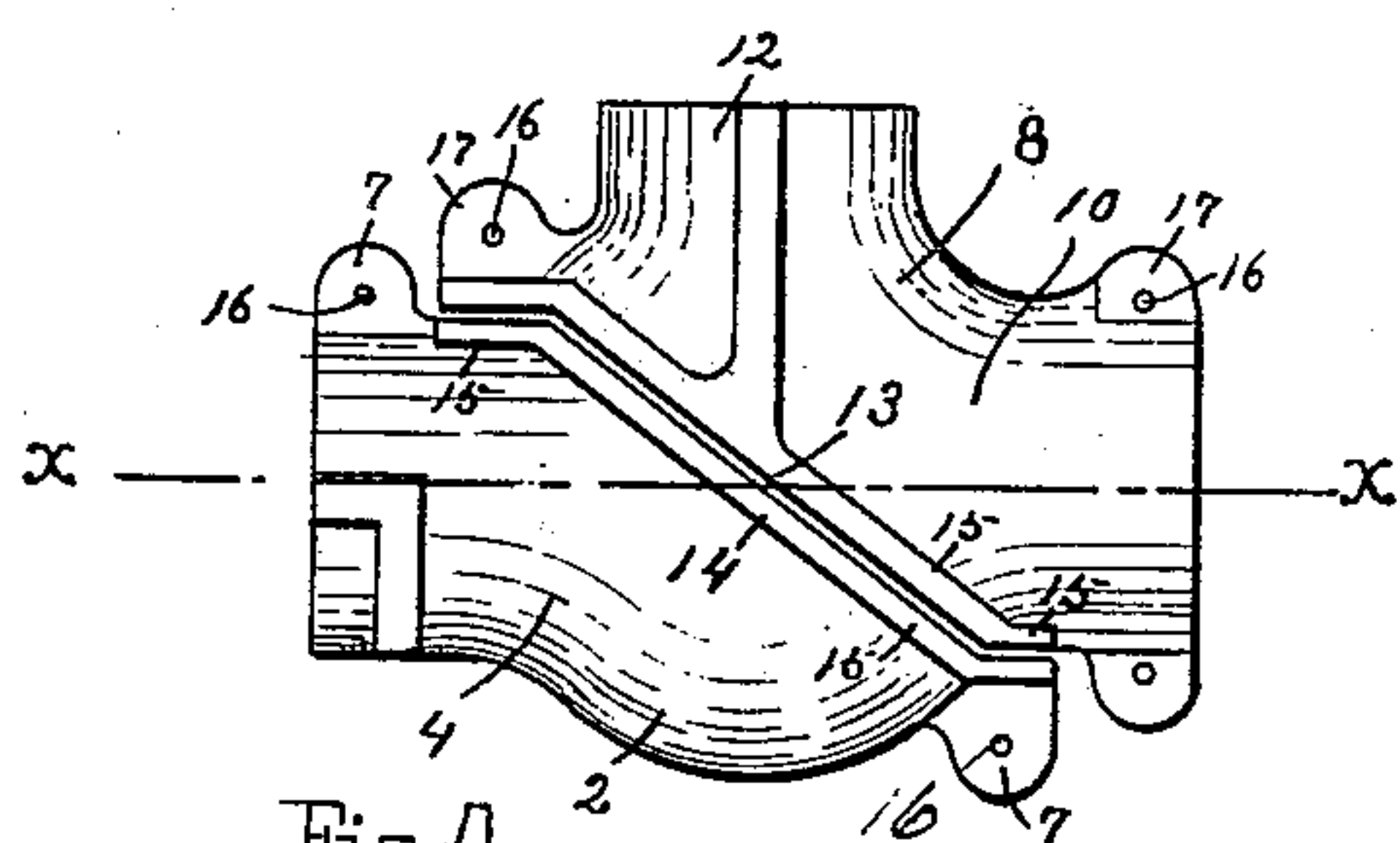


Fig. A.

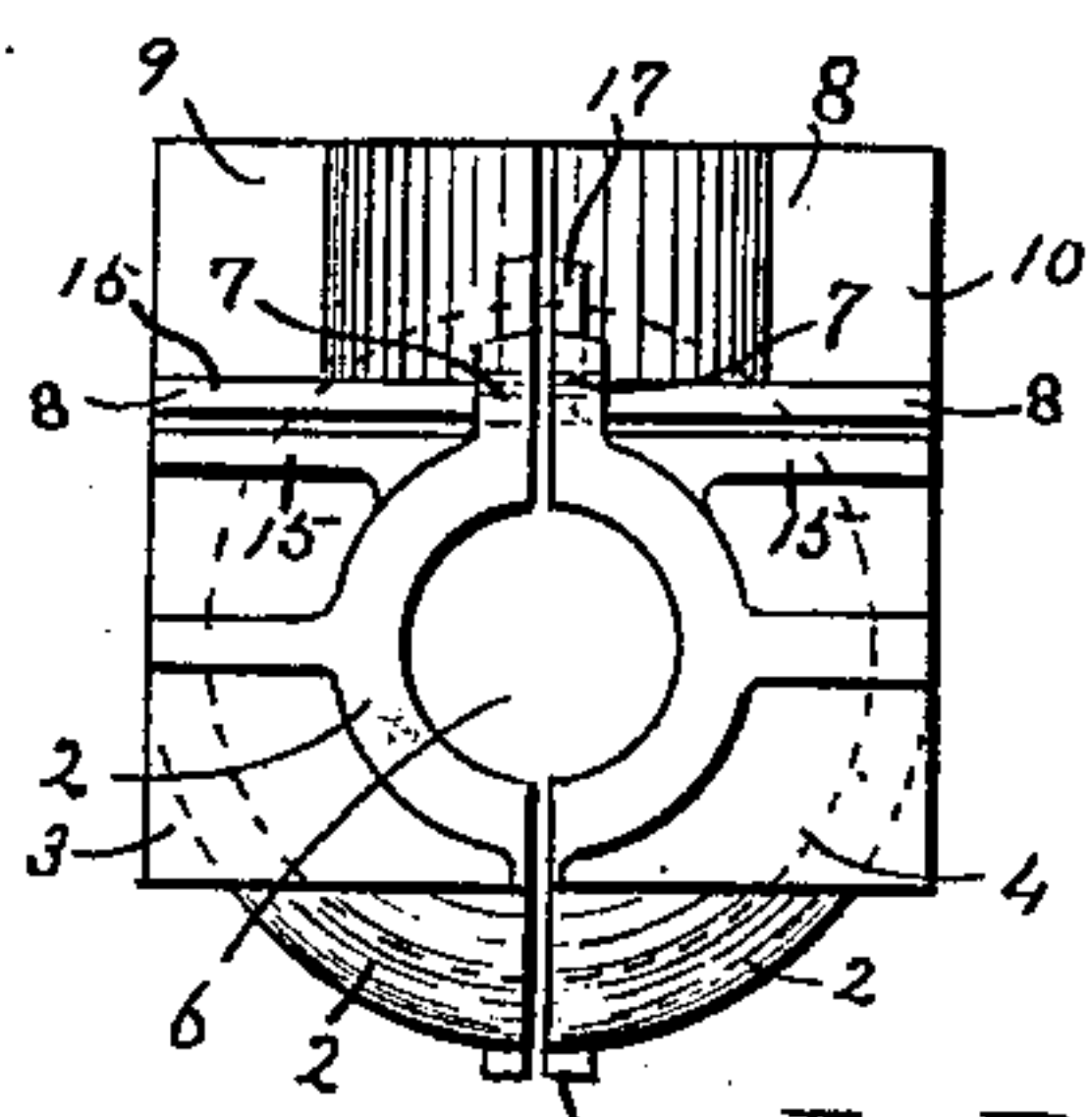


Fig.B.

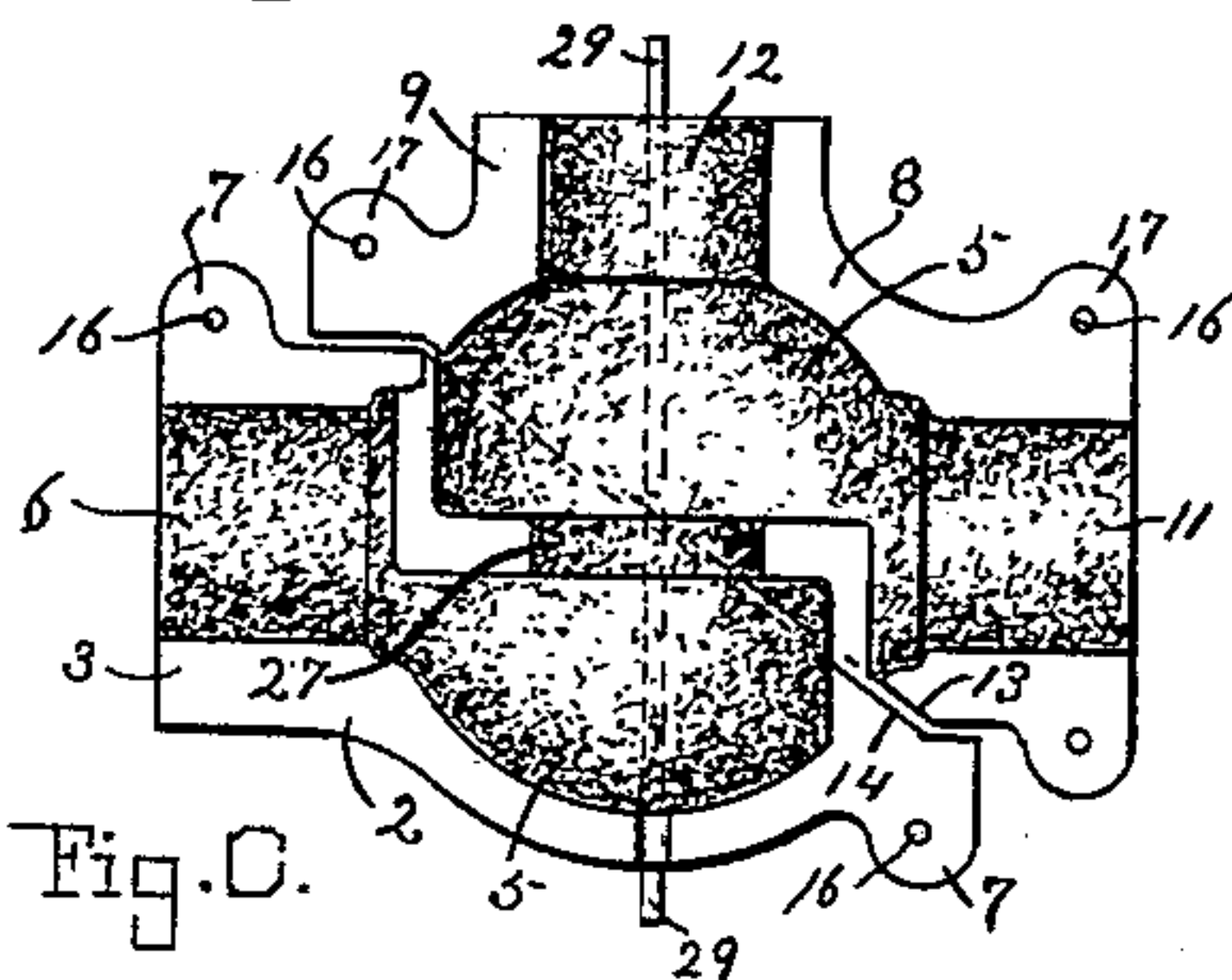


Fig.C.

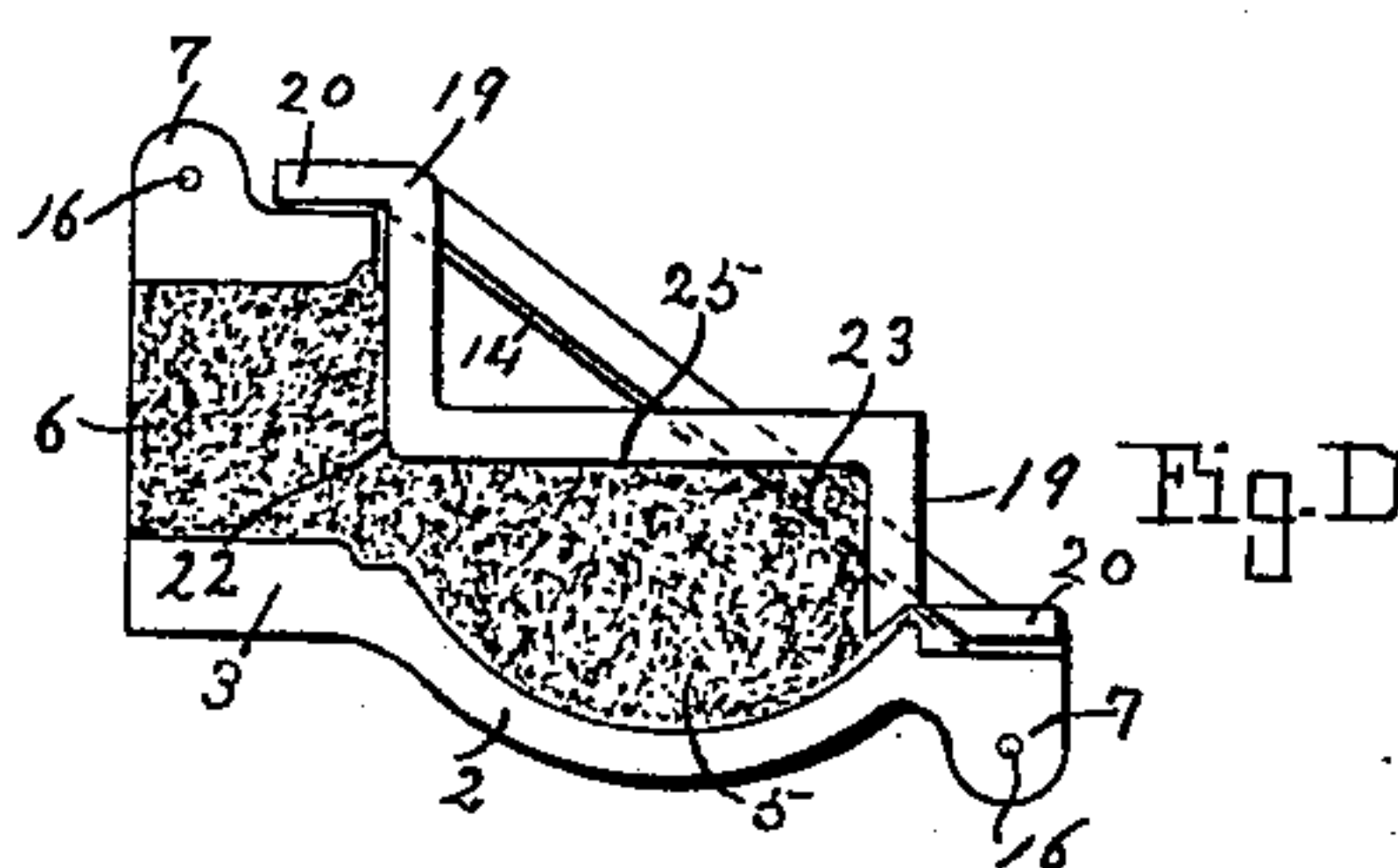


Fig.D

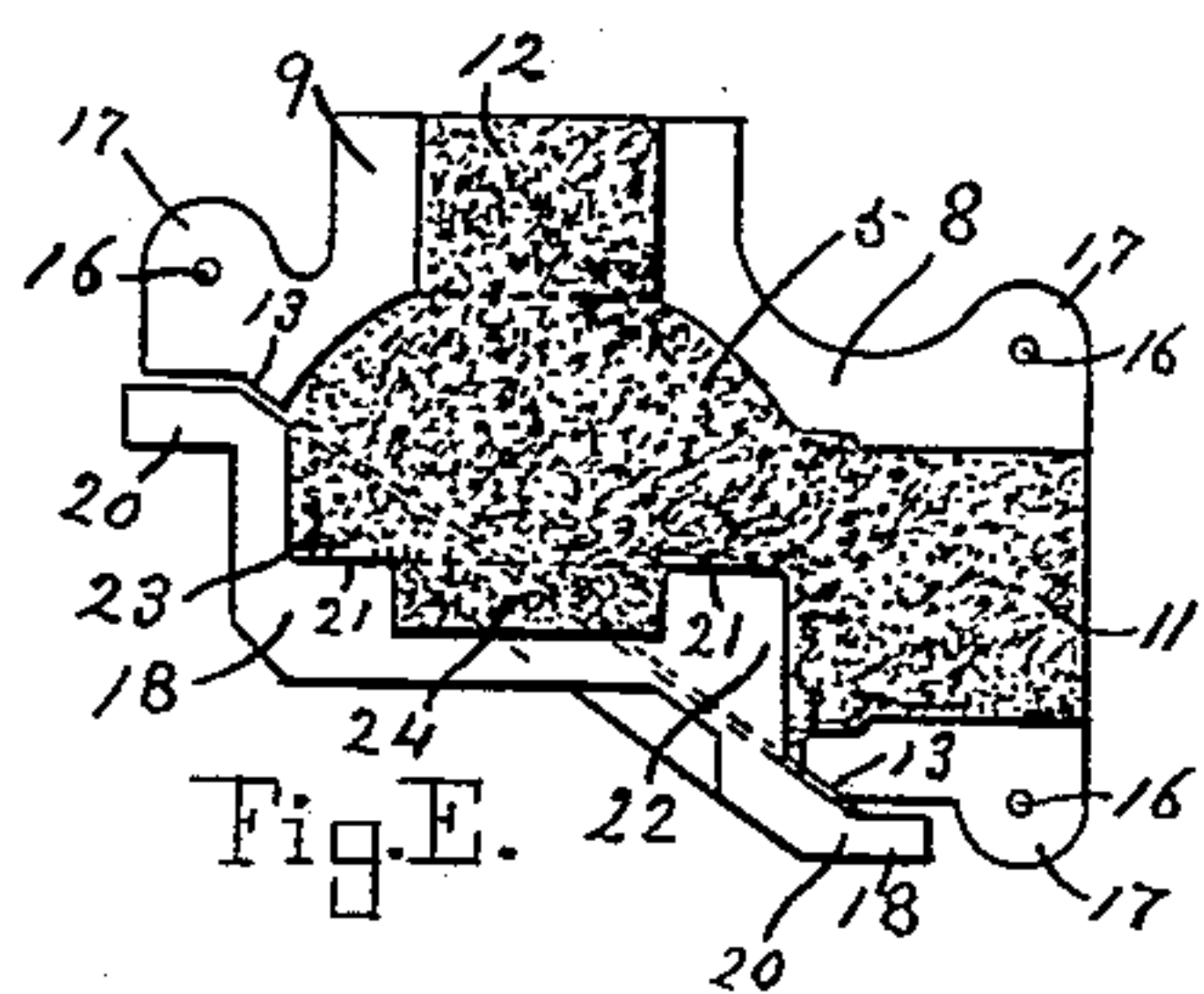


Fig.E.

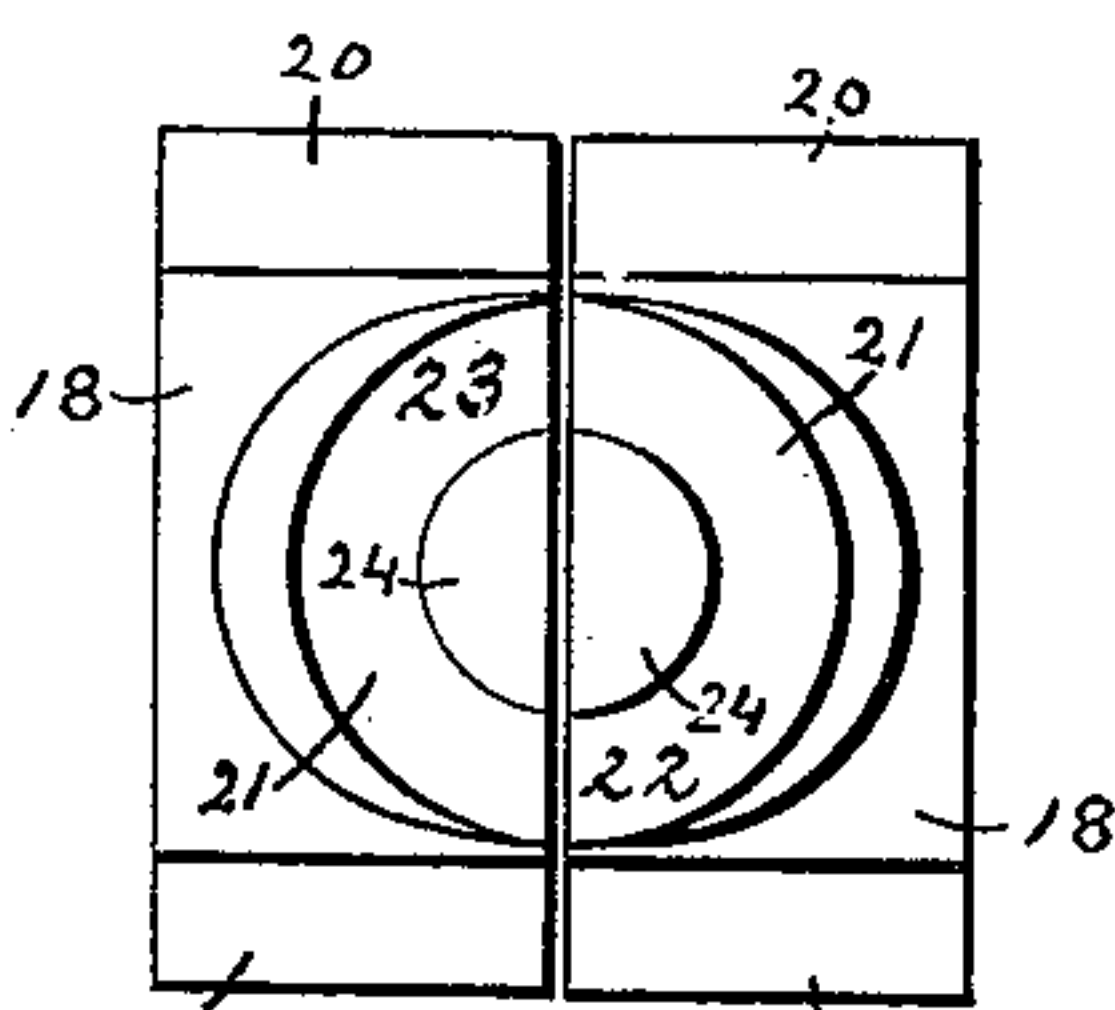


Fig.F.

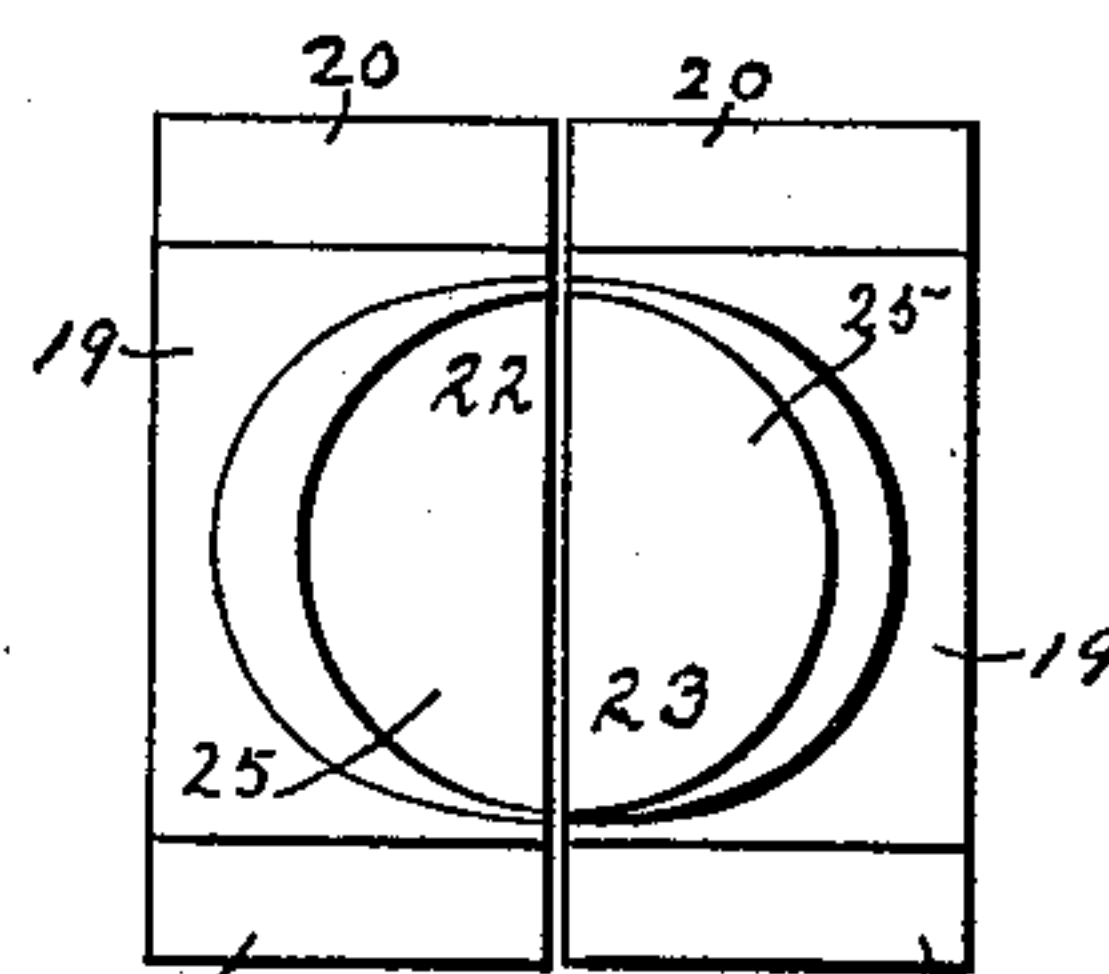


Fig. G.

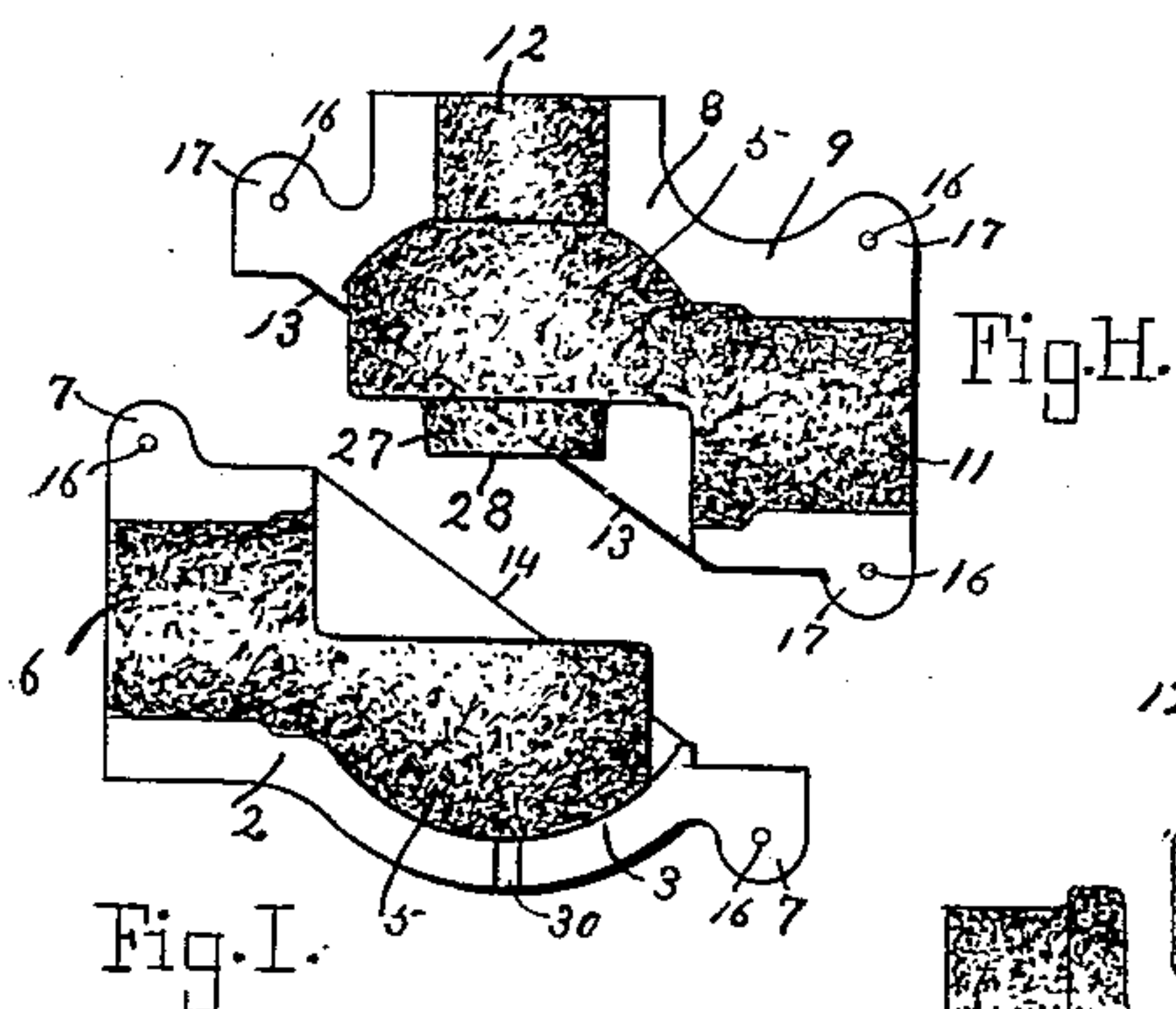


Fig. I.

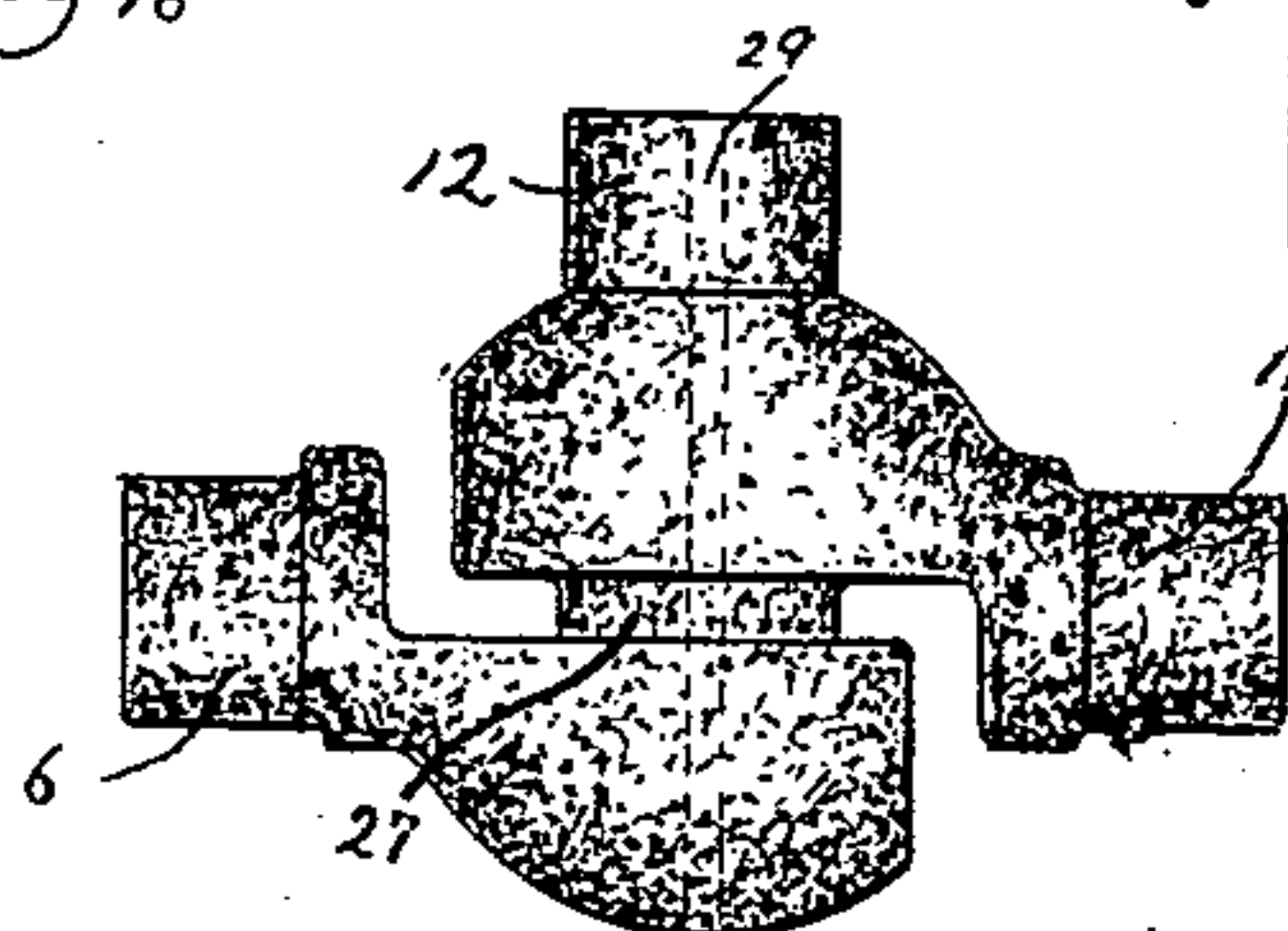


Fig.K.

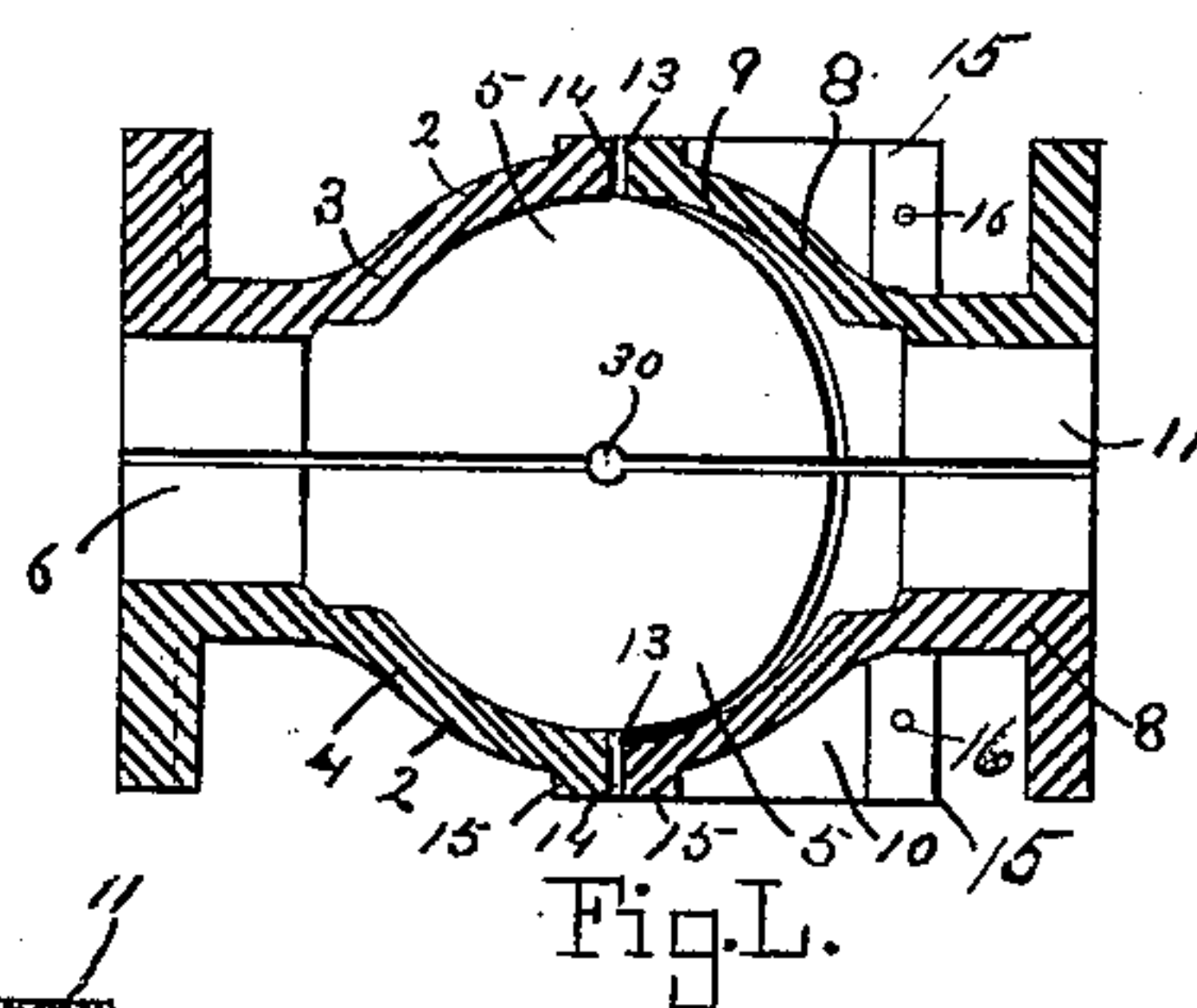


Fig.L.

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# UNITED STATES PATENT OFFICE.

ROBERT A. REGESTER, OF BALTIMORE, MARYLAND.

## DEVICE FOR MOLDING CORES.

SPECIFICATION forming part of Letters Patent No. 386,606, dated July 24, 1888.

Application filed May 12, 1888. Serial No. 273,712. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT A. REGESTER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Devices for Molding Cores of Globe-Valves; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-  
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

15 In the manufacture of globe-valves it is needful that in the casting a smooth and sound surface be formed on the valve-seat and interior parts thereof. To accomplish this result is the object of my invention; and it consists  
20 of a convenient box or mold in which the core for a globe-valve is formed, the construction and manner of operating the core-box permitting the core to be made in such sections that all parts thereof may be gotten at for smooth-  
25 ing and painting, and, finally, all these parts securely united in the green state to form the complete core, to which end I make use of the devices hereinafter fully described and claimed, reference being had to the accompa-  
30 nying drawings, in which—

Figure A is a side elevation in full of the cope and drag which form the core-box. Fig. B is a view in full, looking from the left on the end of the device shown in Fig. A. Fig.  
35 C shows a view of the interior of the device shown in Fig. A, a section each of the cope and drag having been removed, showing also the completed core in place. Fig. D is a detailed view of one section of the drag, as shown  
40 in Fig. C, the mold-plate for forming a face of valve seat and part of the wall attached thereto and one section of the lower part of the core molded therein. Fig. E is a detailed view of one section of the cope, as shown in Fig. C,  
45 its mold-plate for forming the other face of valve-seat and part of the wall attached thereto, one section of the upper part of the core shown molded therein. Fig. F is a view in full, showing the molding-face of both mem-  
50 bers of the cope mold-plate. Fig. G is a view in full, showing the molding-face of both mem-

bers of the drag mold-plate. Figs. H and I show, respectively, the devices shown in Figs. D and E, the mold-plates having been removed therefrom. Fig. K shows a side elevation in full of the completed core. Fig. L shows a  
55 section through the cope and drag, indicated by the line X X in Fig. A.

The same figures refer to the same or similar parts throughout the several views. 60

The figure 2 denotes the drag of the core-box, which is composed of two sections, 3 and 4, the line of separation of these two sections so dividing the drag that the said castings 3 and 4 are reverse fac similes of each other, a  
65 recess, 5, being formed in each, which conforms to the interior of the globe or shell to be cast, the rear ends of the said two castings uniting to form the cylindrical recess, which communicates with the recess 5, and serves to mold  
70 one of the core-prints 6, the lugs 7 being provided on the said casting, wherein are suitable dowels or pins, 16, to properly register these two sections of the drag when united. The cope 8 is likewise formed of two castings, 9  
75 and 10, the line of separation so dividing these castings that they are reverse fac-similes of each other, the recess 5, with which each is provided, uniting with the corresponding recess 5 in the drag to complete the contour of  
80 the inner surface of the globe or shell to be cast. The rear ends of these castings 9 and 10 serve together to form a cylindrical recess, which communicates with the recess 5, and wherein is molded another core-print, 11,  
85 the upper parts of the said castings 9 and 10 together forming a cylindrical recess, in which is molded that part of the core which forms the neck 12 of the valve. To unite these sections 9 and 10 of the cope to the sections 3 and  
90 4, which form the drag, so that all the parts thereof will properly register, those parts of the cope which meet those parts of the drag are made of the inclined form shown in Fig. A—that is to say, the bearing-surfaces of  
95 the cope is formed by the inclined surface 13, which rests upon and conforms to the inclined surface 14 of the drag, a flange, 15, being extended around the edges of these inclined surfaces 13 and 14, in which are placed  
100 suitable pins or dowels, 16, for the proper adjustment of the members of the core-box, suit-



able lugs, 17, being likewise provided on the castings 9 and 10 of the cope that they may be properly united.

Thus far I have described the core-box by which the outer surfaces of the core are formed, and I now come to the description of the separate and independent devices by which the valve-seat and division-walls for the casting are formed in the core, and by which the several sections of the core are independently formed, thus permitting accessibility to all parts thereof for properly smoothing and painting. To accomplish this I employ the molding-plates 18 and 19, which are used, respectively, with the cope 8 or drag 2 and independently of the complete core-box. The said molding-plates are of the forms shown in Figs. D, E, F, and G, and are made each of two castings, as shown in Figs. F and G. The said plates are formed with the inclined ends 20 thereon, whereby they may be properly united, respectively, to the drag or cope. The plate 18, which forms the upper surface of the valve-seat and part of the wall in the cope, Fig. E, has thereon the circular molding-face 21, which, in consequence of its inclination relatively to the plate 18, is partly formed by the projection 22 therefrom and partly by the recess 23 therein, this recess 23 serving to form a part of the wall in the core. The circular molding-face 21 of this cope molding-plate has therein the cylindrical recess 24, for a purpose which will presently appear. The molding-plate 19, which is used in connection with the drag 2, Fig. D, is employed to form the lower face of the valve-seat, and the remaining part of the wall in the core being provided with a circular molding-face, 25, thereon, which, in consequence of its inclination relatively to the molding-plate 19, is partly formed by a projection and partly by a recess, as described above in the cope molding-plate 18. As stated, these molding-plates 18 and 19 are each made in two sections for convenience of manipulation, the sections of each being respectively reverse fac-similes one of the other, the projecting inclined ends 20 thereof conforming to the surface of that part of the core-box to which it is to be united, so that the said plates may be properly united therewith to form the section of the core.

The manner of forming the core is as follows: The section 3 of the drag 2 is laid on its side and its corresponding section of the molding-plate 19 is placed against the inclined side 14 thereof, as shown in Fig. D. This half-section 3 of the drag is now filled and rammed with the greensand, in the usual manner, after which the other half-section, 4, of the drag has its member of the molding-plate 19 affixed thereto in the manner just described, and in like manner this part of the core box is filled and rammed with the green sand. The joining surfaces of these two sections 3 and 4, which have been leveled, are now painted with whitening and united, the whitening joining these two surfaces securely together, and thus forming

that part of the core which is in the drag. In like manner the two sections 9 and 10 forming that part of the core in the cope are molded and united, the molding-plate 18, Fig. E, being employed to form the upper surface of the valve-seat and part of the wall of the casting, the recess 24, which is in the molding-face 21 of this molding-plate 18, forming the cylindrical projection 27 on the core, Fig. H. At this stage the molding-plates 18 and 19 are removed, respectively, from the cope and the drag, and the molded surfaces of the valve-seat and walls will be exposed to view, as shown in Figs. H and I, accessible for smoothing and painting. The seams which have been made by the molds are erased therefrom and all parts thereof rendered perfect. When this is done, the upper and lower parts of the core are ready for uniting, which is done by painting with whitening the surface 28 of the cylindrical projection 27, and then bringing the two members of the core-box together, as shown in Fig. A, the whitening with which the surface 28 has been painted serving to unite it to that part of the lower portion of the core with which it is in contact, which union at this stage may be made more secure by passing the wire 29 through this point of contact, as shown in Fig. C, a hole, 30, being made in the drag for passing this wire through. The upper section, 4, of the drag and the upper section, 10, of the cope are now gently tapped to release the core therefrom, and these sections are removed, leaving the united and completed core exposed to view, as shown in Fig. C, in the lower sections, 3 and 9, of the core-box, from whence it is transferred to some suitable form for baking, after which the complete core (shown in Fig. K) is ready for use. It is very necessary, as stated, that all parts of the core should be accessible for smoothing and painting, and particularly is this the case about those parts which form the valve seat and the interior walls of the casting. By the device herein described and the operations performed therewith it will be seen that this result is perfectly accomplished, and the entire operation of forming the core is performed in the green state, the core being completed before it leaves the operator's hands.

Having described my invention and manner of operating, what I claim, and desire to secure by United States Letters Patent, is--

1. A core-box for globe-valve cores, consisting of a drag made in two sections and a cope made in two sections, the said cope and drag having matching inclined surfaces which pass obliquely through the axis and through the center of the matrix-cavity, the said cope and drag forming the exterior surfaces of the core, in combination with a subsidiary molding-plate, 18, provided with the molding-surface 21, having therein the recess 23, whereby the upper surface of the valve-seat and a part of the interior walls will be formed, and the molding-plate 19, provided with the molding-



surface 25, whereby the lower surface of the valve-seat and part of the interior walls of the valve will be formed, for the purpose set forth.

- 5 2. A core-box for globe valve cores, consisting of a drag made in two sections and provided with an opening, 30, in the bottom thereof, and a cope made in two sections, the said cope and drag having matching inclined  
10 surfaces which pass obliquely through the axis and through the center of the matrix-cavity, the said cope and drag forming the exterior surfaces of the core, in combination with a subsidiary molding-plate, 18, provided with  
15 the molding-surface 21, having therein the re-

cess 23, whereby the upper surface of the valve-seat and a part of the interior walls will be formed, the molding-plate 19, provided with the molding-surface 25, whereby the lower surface of the valve-seat and part of the interior  
20 walls of the valve will be formed, and the wire 29, by which the union of the two parts of the core is strengthened, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT A. REGESTER.

Witnesses:

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WM. L. BAILIE.