

(No Model.)

F. M. DAVIS.
CHILL MOLD FOR PULLEYS.

2 Sheets—Sheet 1.

No. 444,606.

Patented Jan. 13, 1891.

Fig. 1.

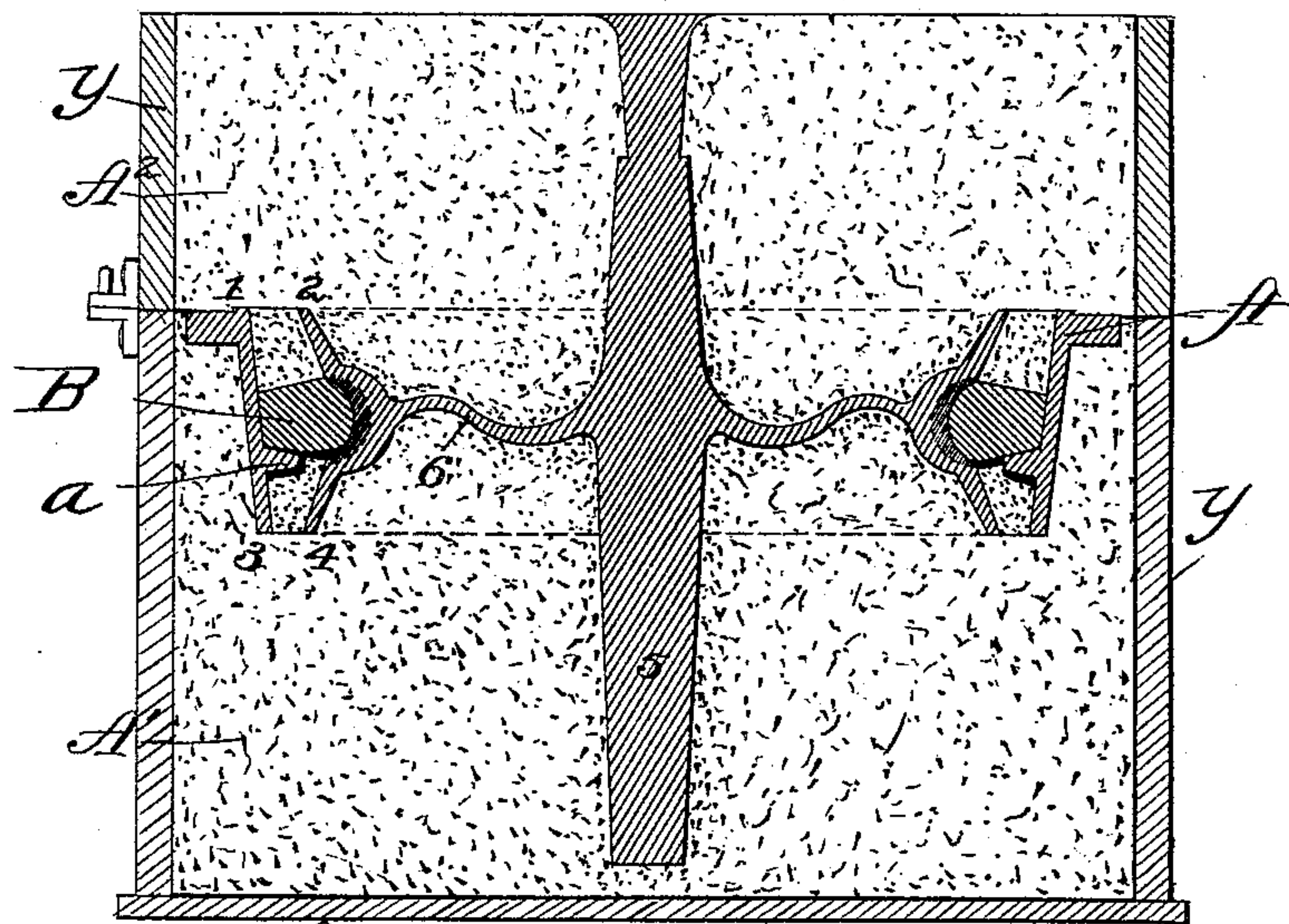
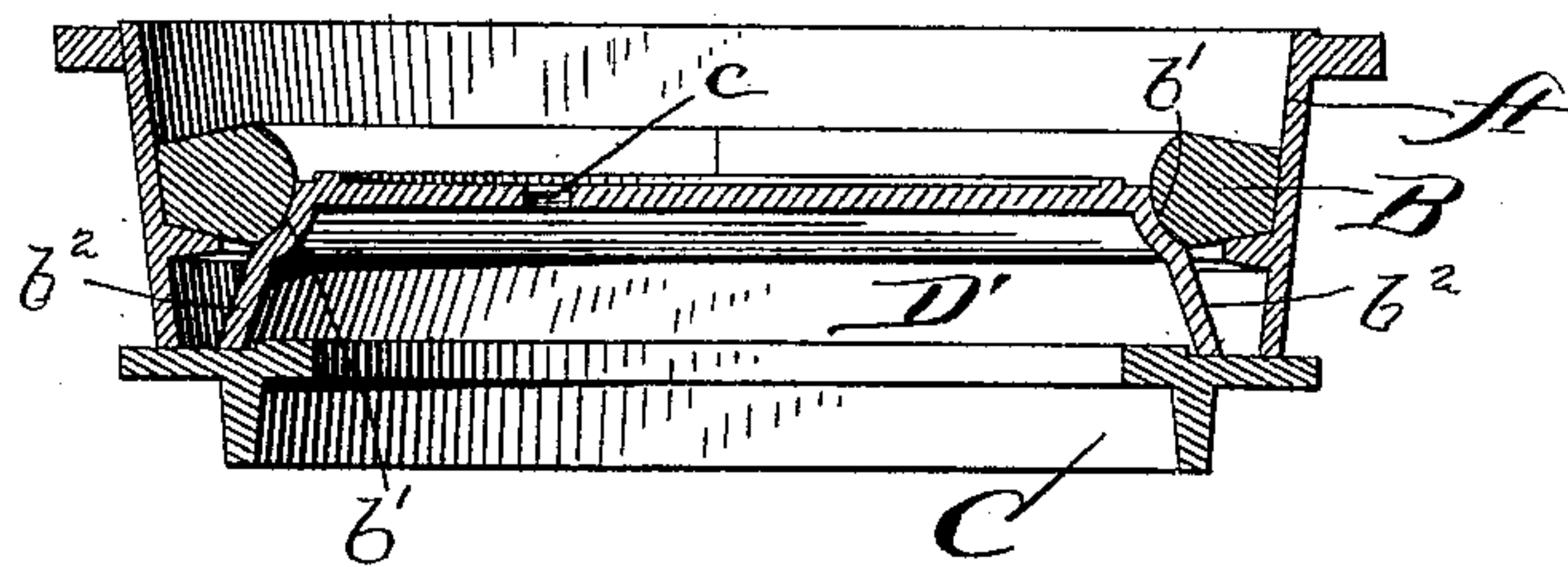
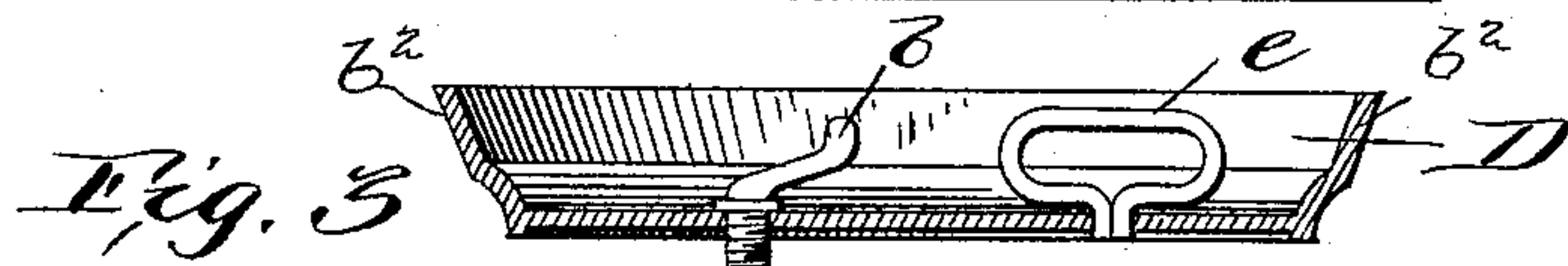
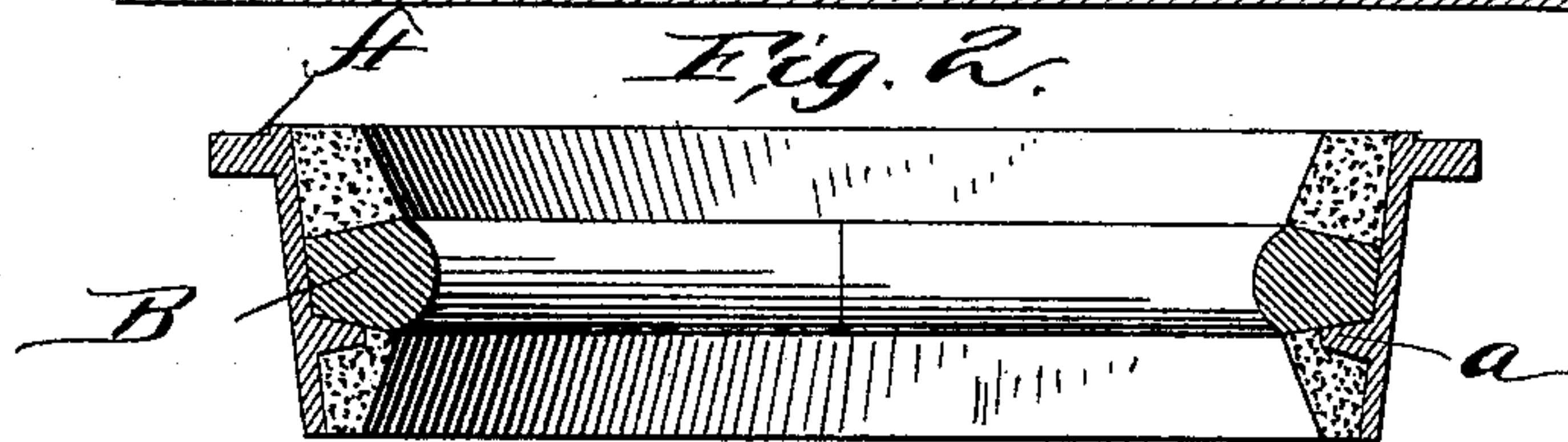


Fig. 2.



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Fig. 4.

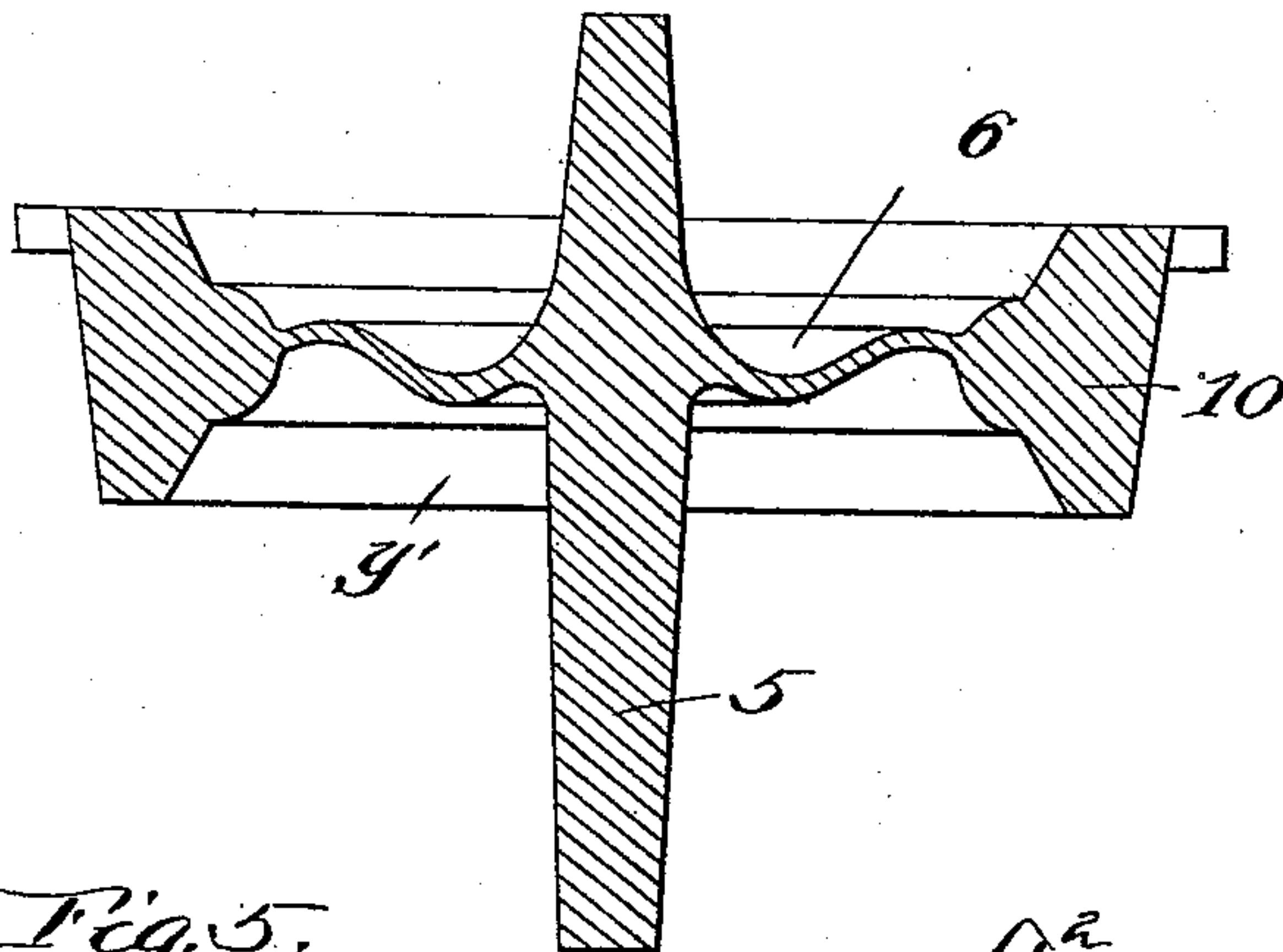


Fig. 5.

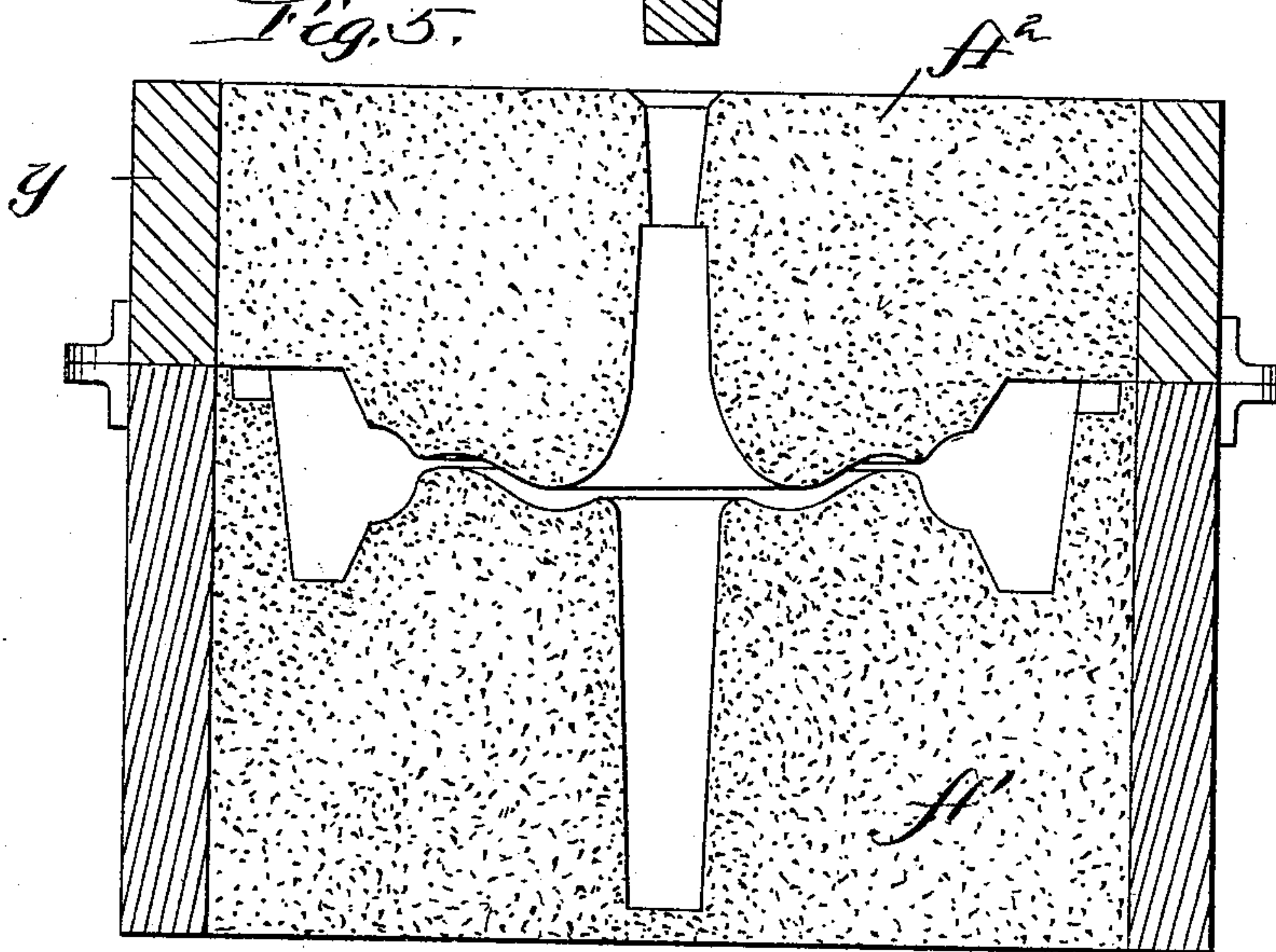
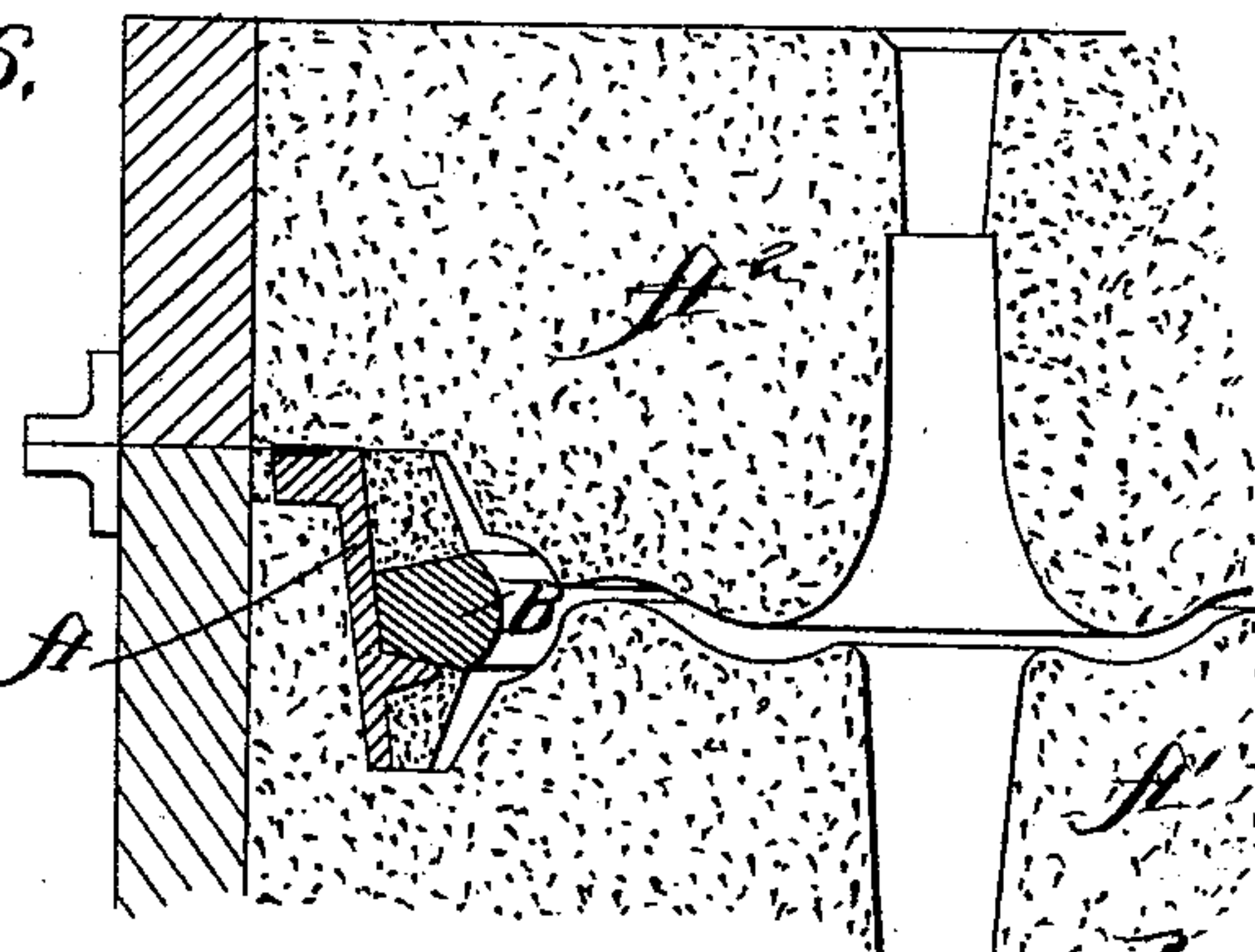


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRANCIS M. DAVIS, OF DENVER, COLORADO.

CHILL-MOLD FOR PULLEYS.

SPECIFICATION forming part of Letters Patent No. 444,606, dated January 13, 1891.

Application filed December 30, 1889. Serial No. 335,313. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. DAVIS, of Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful
5 Improvement in Molds and Chills for Pulleys; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improved chill, adapted
10 particularly for casting sheaves such as used in cable roads for the support of the cable; but it will of course be understood that the invention may be used in connection with the casting of other forms of pulleys.

15 In the accompanying drawings, Figure 1 is a section through the mold, showing the chill and seat and the casting. Fig. 2 is a section of the chill-seat, chill, and sand for forming the face of the pulley. Fig. 3 is a section of
20 the core-box, chill-seat, and chill; and Fig. 4 is a detail view of the pattern used in forming the mold. Fig. 5 is a vertical section of the upper and lower mold-sections after the pattern has been removed. Fig. 6 is a similar
25 view of the two parts of the mold in place with the drill-seat in position ready to receive the metal.

In the drawings, A represents the chill-seat, which is formed of an annular body portion having an open center, the walls being
30 slightly tapering outwardly from the bottom. This seat has a flange *a* projecting into the interior below the central line of the seat, and this flange supports the chill B, which is
35 an annular ring fitting snugly against the interior periphery of the seat and having its inner periphery rounded, as shown, the convex surface thus formed making the corresponding concavity or groove in the periph-
40 ery of the pulley formed in the mold. The upper and lower faces of the ring B are inclined rearwardly and form a bearing for the sand which is packed above and below the ring, the face of the sand inclining from the
45 edge of the convex face of the ring B on each side toward the top and bottom, respectively, of the chill-seat, and the upper periphery of the pulley or sheave will of course conform to the shape of the sand and the interposed
50 chill.

In Fig. 3 I have shown a stand C for sup-

porting the chill-seat, and the conical-shaped sections D D' are for the purpose of ramming or packing the sand on either side of the central chill B. The bottom section D' has
55 its lower part made flaring, and the space between it and the wall of the chill-seat is filled with sand. Around the upper part of the periphery of this section a concavity or groove *b'* is formed, which is adapted to bear
60 upon the convexity of the chill B, and the upper section D is adapted to be placed upon the lower section and the two secured together by means of the screw *b* entering the threaded opening *c*. A handle *e* allows the up-
65 per part to be manipulated. By this means the sand is rammed, and the flaring walls *b*² of the parts D and D' leave the sand in a condition to form an exactly similar periphery
70 on the pulley or sheave.

In forming the mold a two-part flask *y*, of well-known form, is used, the upper and lower sections of sand A² A' being properly formed, as in Fig. 5, by a pattern *y'*, Fig. 4, which
75 conforms in shape to the spindle 5 and the web 6 of the desired form of sheave or wheel to be cast. The pattern has also a flange 10, the outside dimensions of which include the space covered by the chill-seat A, chill B, and
80 flange of the sheave, (indicated between the points 1 2 3 4, Fig. 1.) After the two parts of the mold are formed by the pattern as in Fig. 5, it is removed, and the chill-seat A, with the chill B and the sand packed as in Fig. 2,
85 are put in place, as shown in Fig. 6, in the lower portion of the mold. The sand shown in Fig. 2 above and below the chill-seat having been packed by the plates D is held by the chill-seat. After said seat is put in place the
90 upper section of the mold is positioned and the mold of Fig. 6 produced, ready to receive the metal.

I claim as my invention—

1. In an apparatus for casting sheave-pul-
leys, a chill-seat A, to be placed in the mold, 95 an annular chill B, supported by said seat, extending inwardly about midway thereof to leave a space above and below within the seat for the sand, substantially as described.

2. In combination, the seat having an in- 100 terior flange, and the movable chill B, supported by said flange and projecting inwardly

beyond the same, leaving a space above and below within the seat for the reception of the sand, substantially as described.

- 5 3. In combination, the seat and the chill supported about midway thereof, said chill having its upper and lower surfaces inclining and converging outwardly, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two 10 subscribing witnesses.

FRANCIS M. DAVIS.

Witnesses:

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F. W. BLOOD.