

(No Model.)

2 Sheets—Sheet 1.

A. S. HODGES.
DEVICE FOR CASTING SASH WEIGHTS.

No. 527,984.

Patented Oct. 23, 1894.

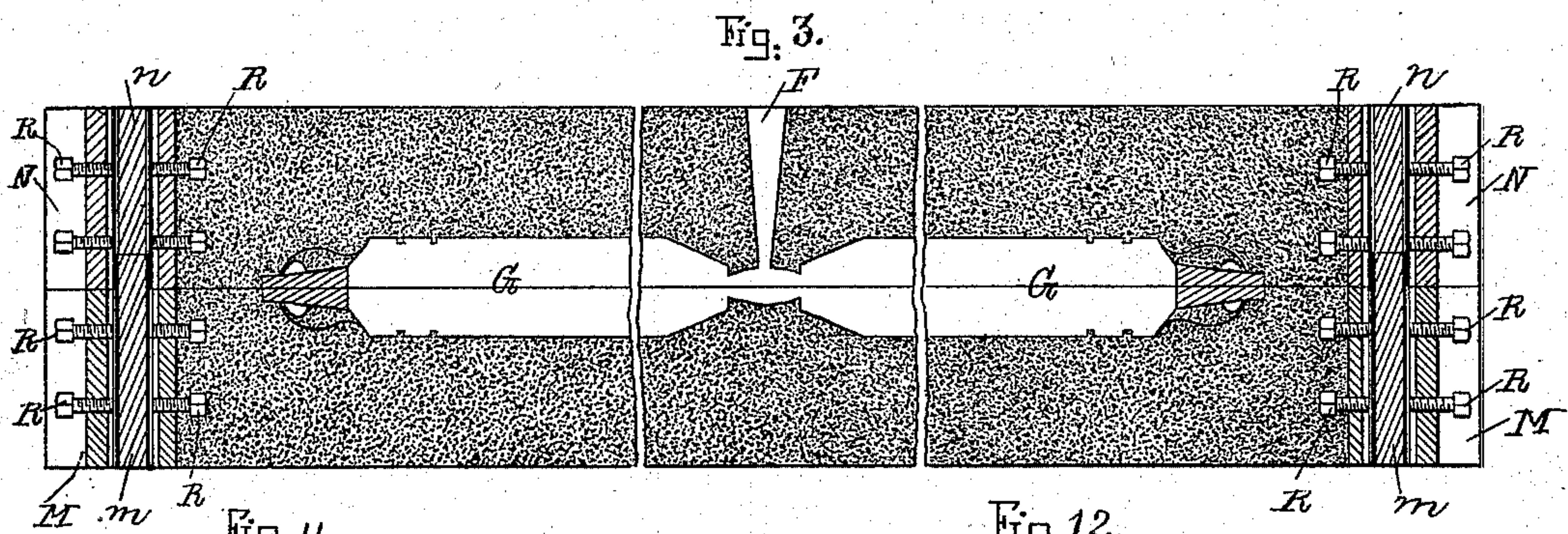
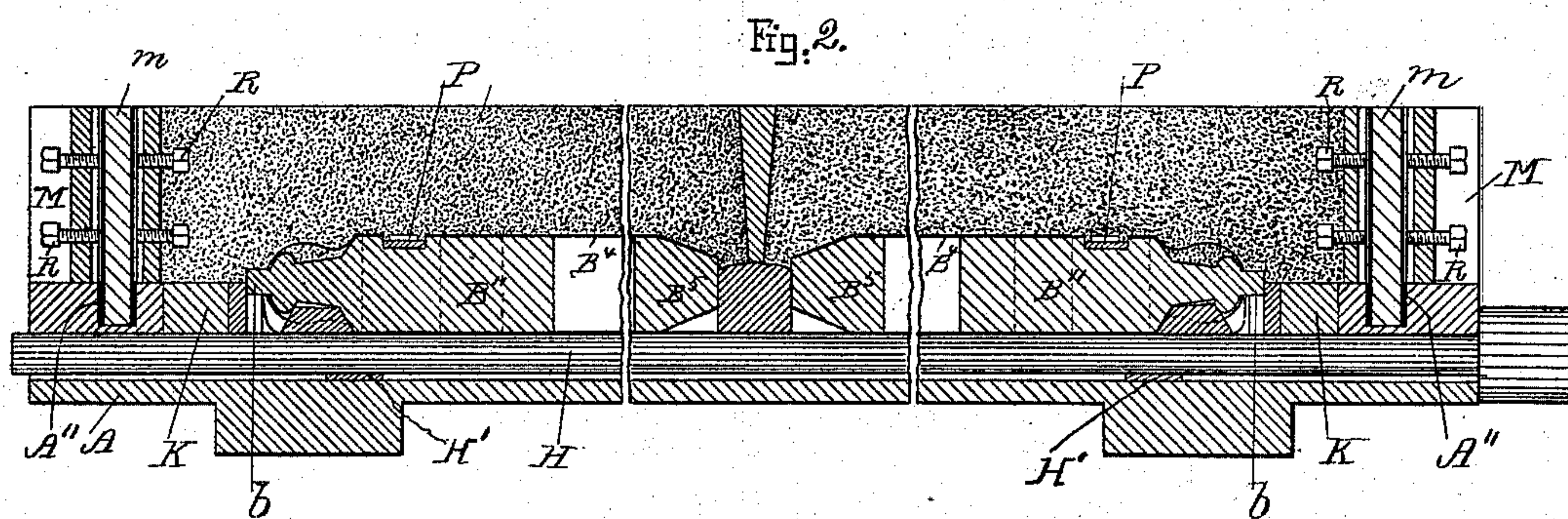
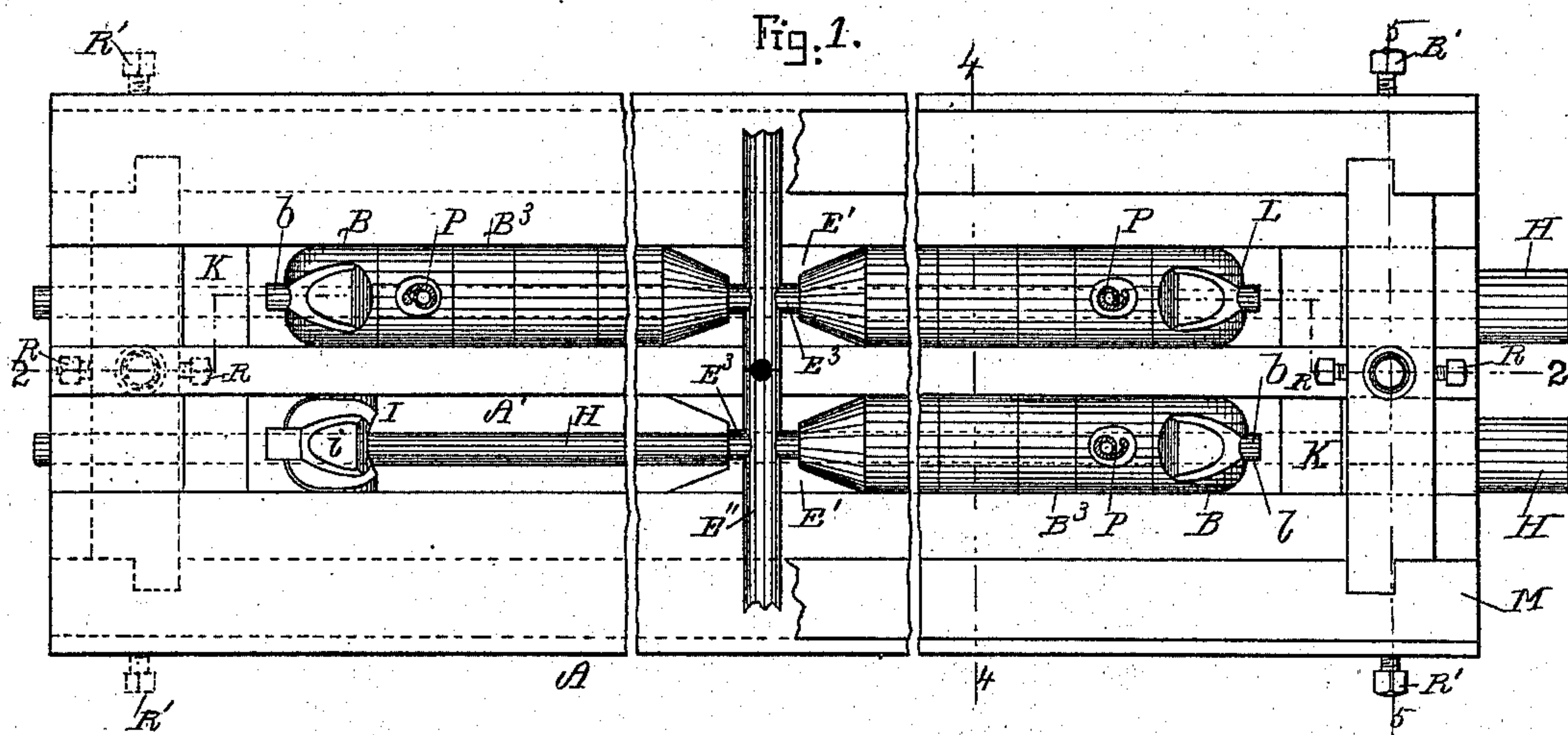


Fig. 11.

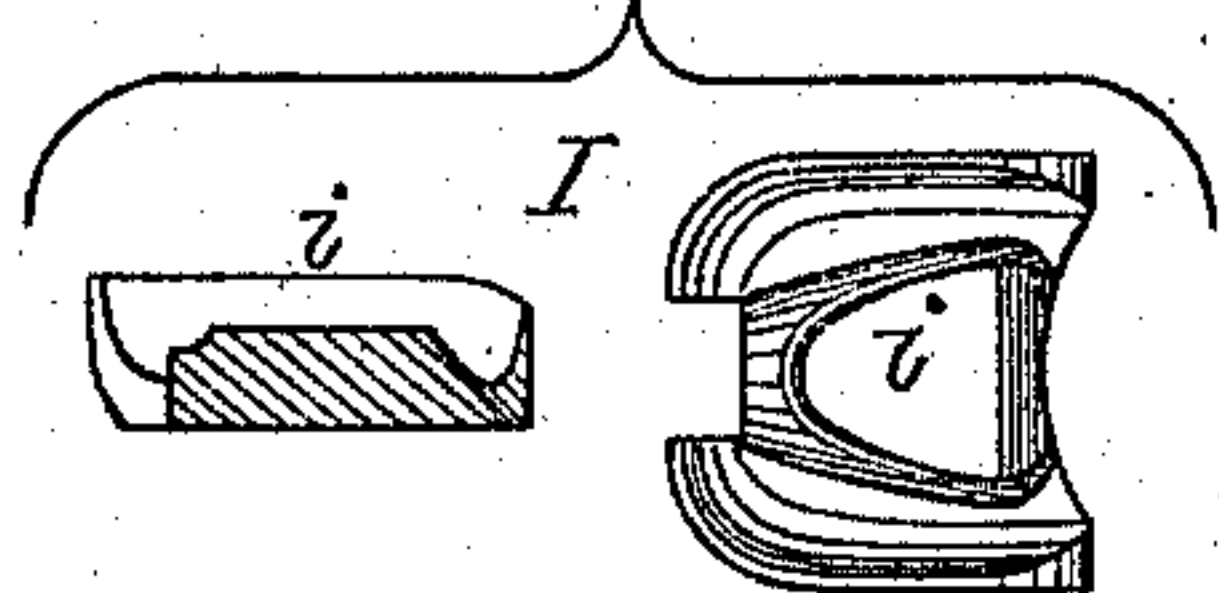


Fig. 12.

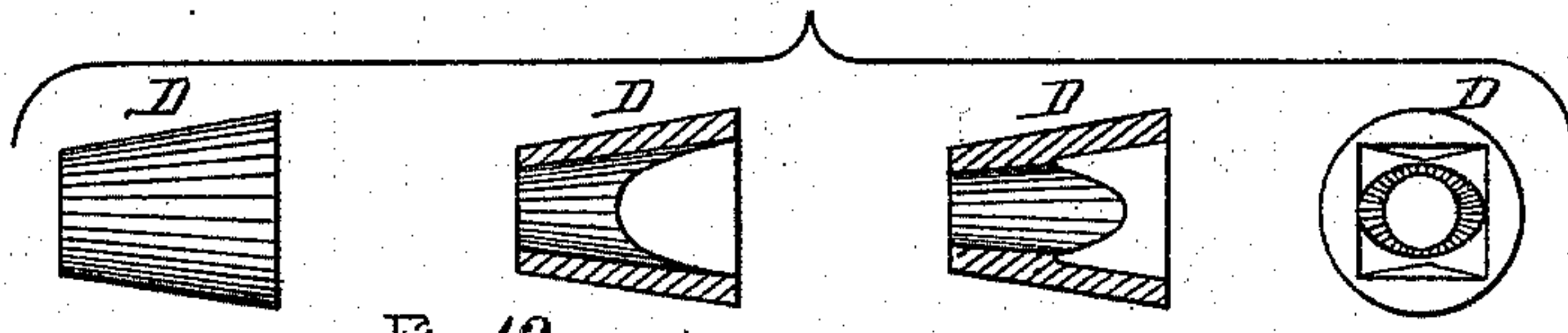
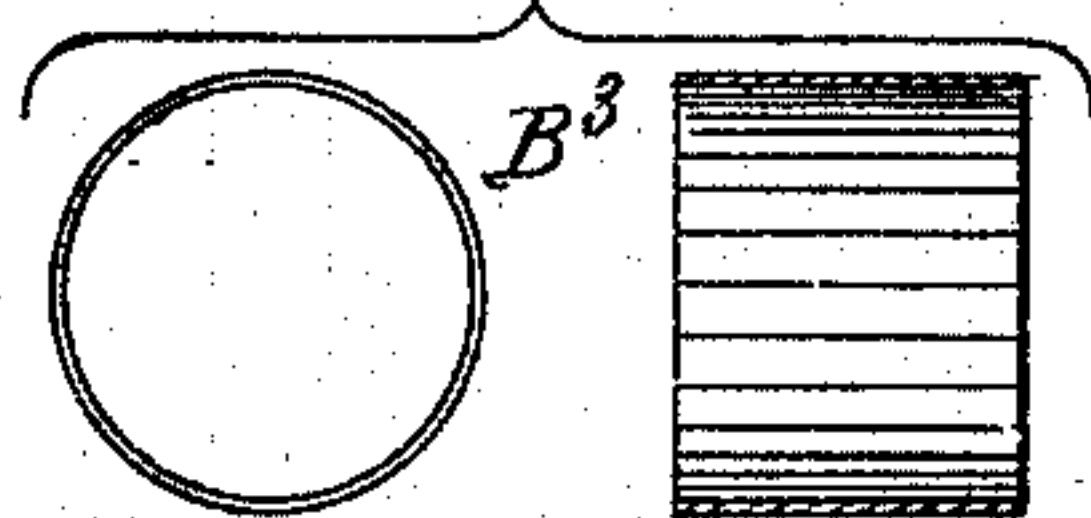


Fig. 13.



Witnesses.

Lauritz N. Möller,
Ketti M. Hanson

Inventor.

Addison S. Hodges
by *W. H. K. K. K.*
his atty.

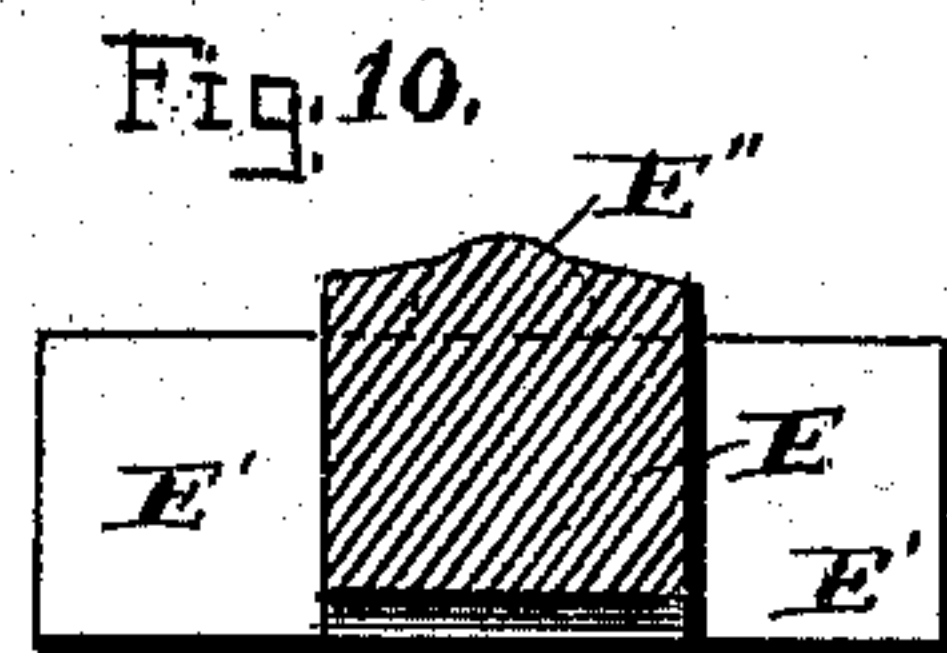
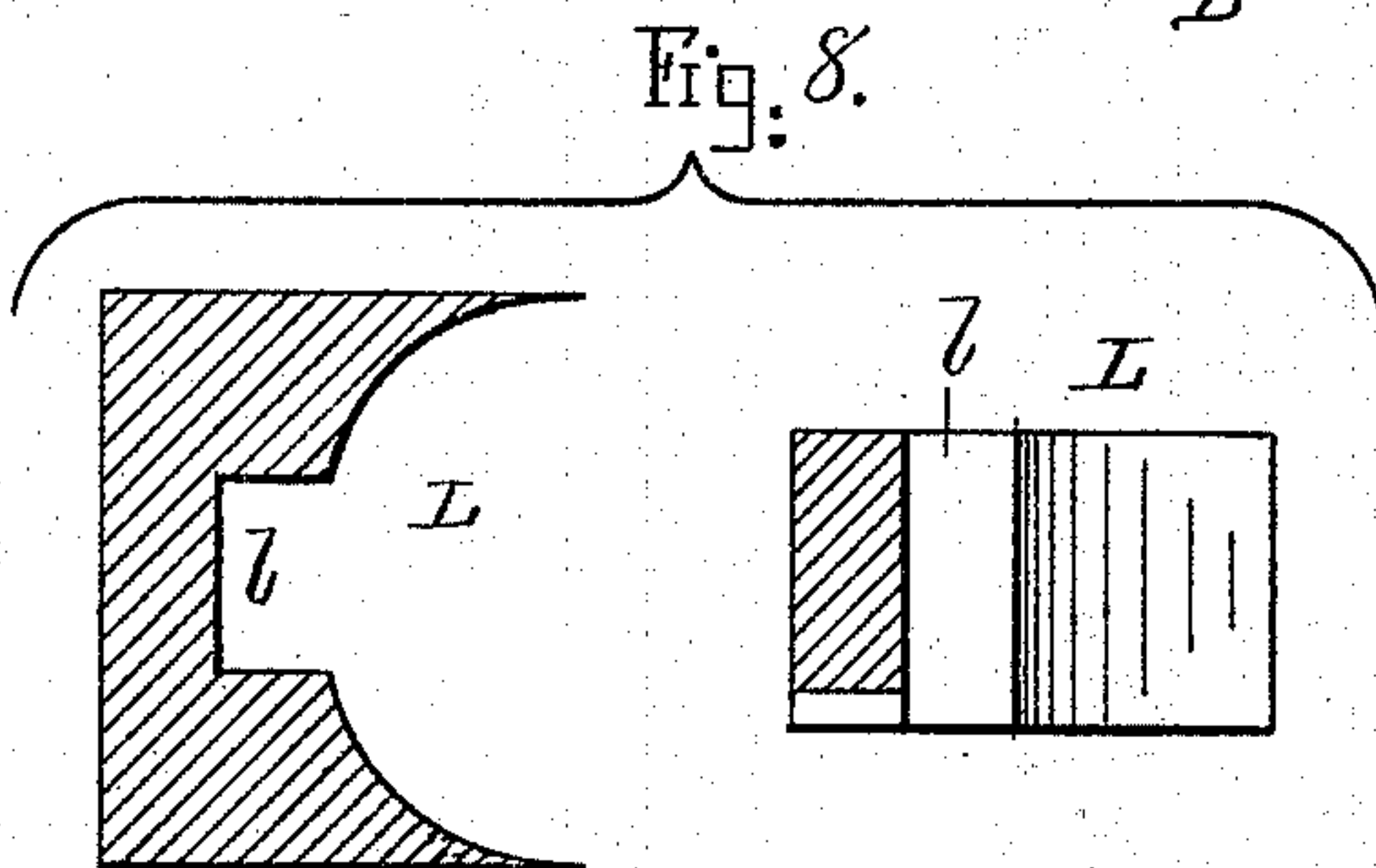
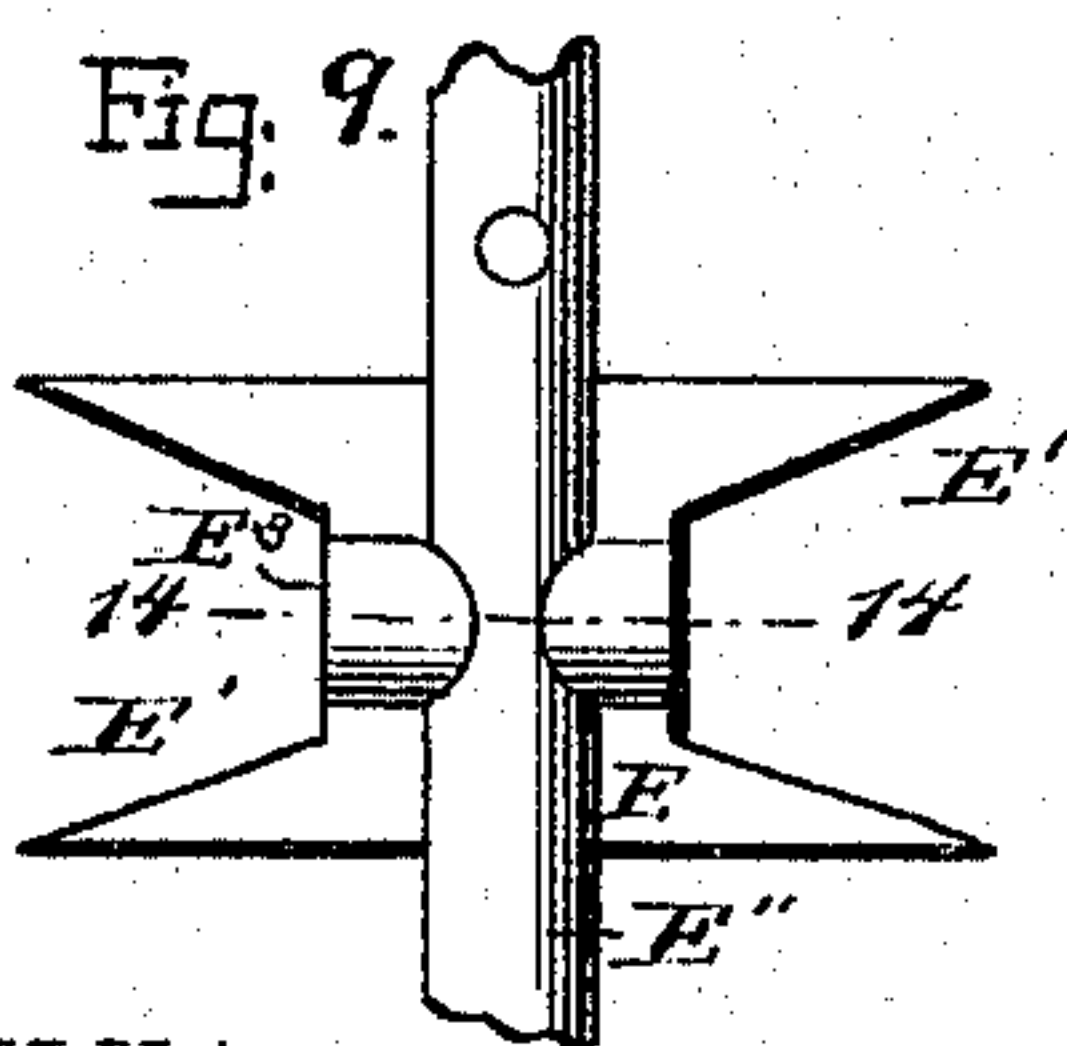
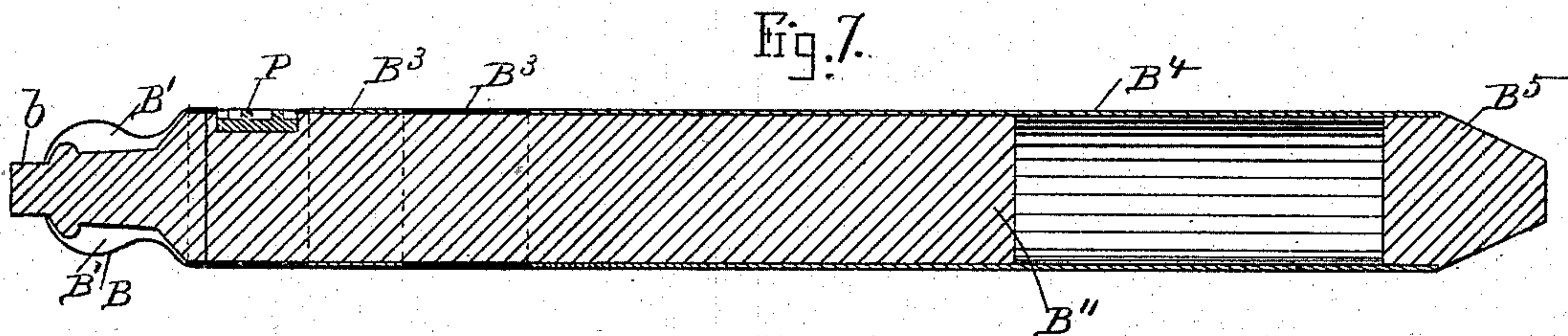
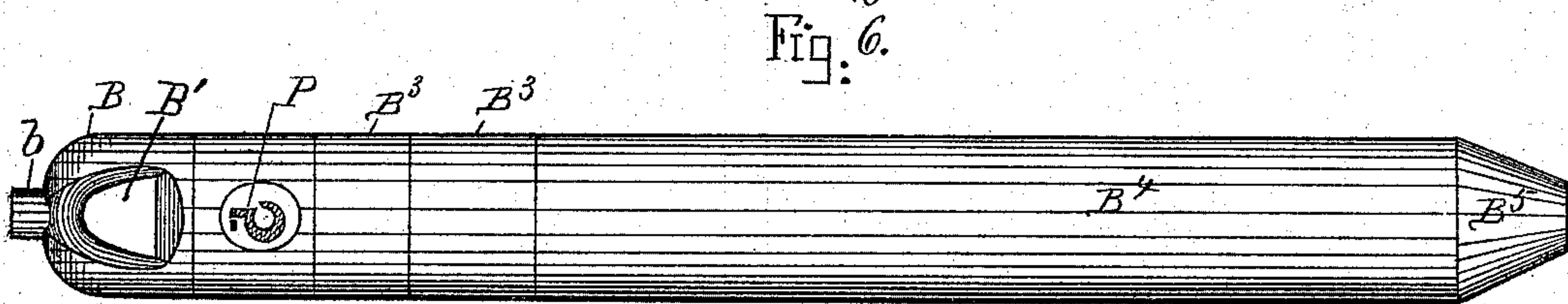
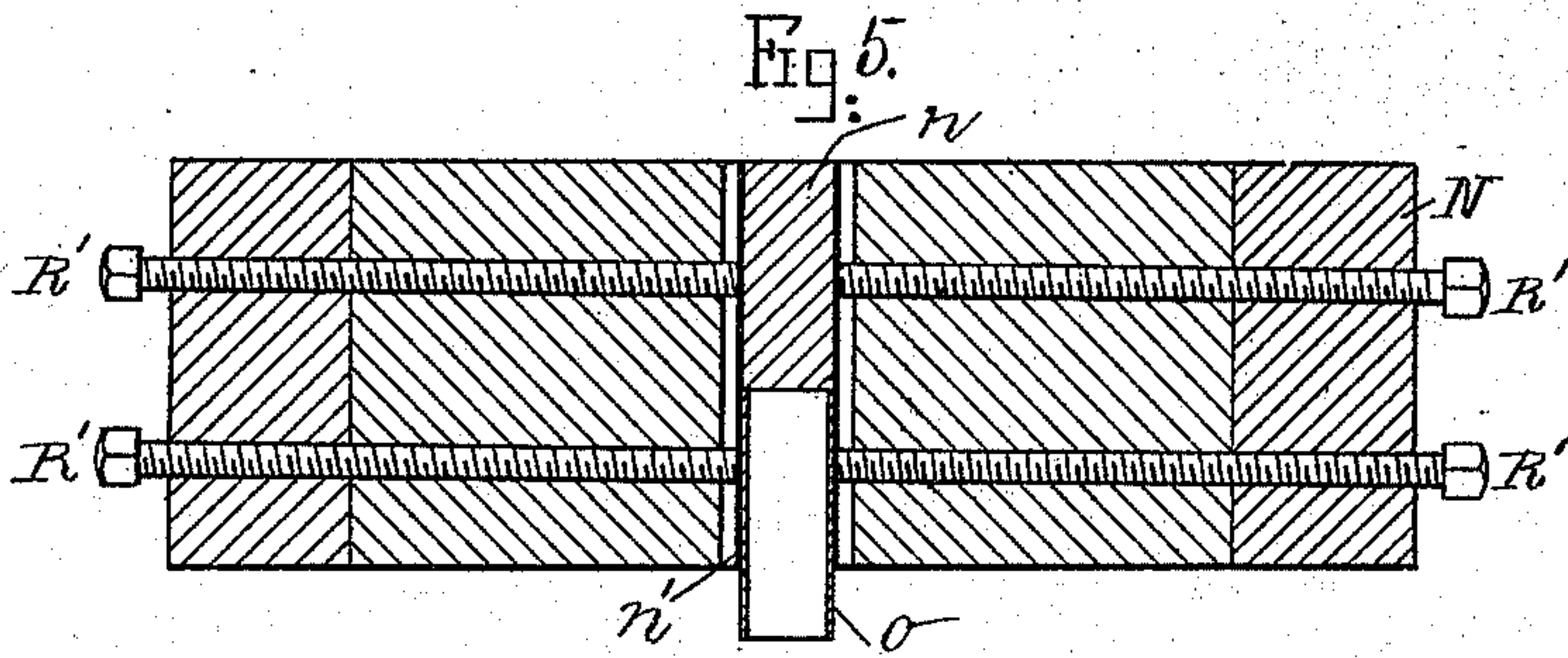
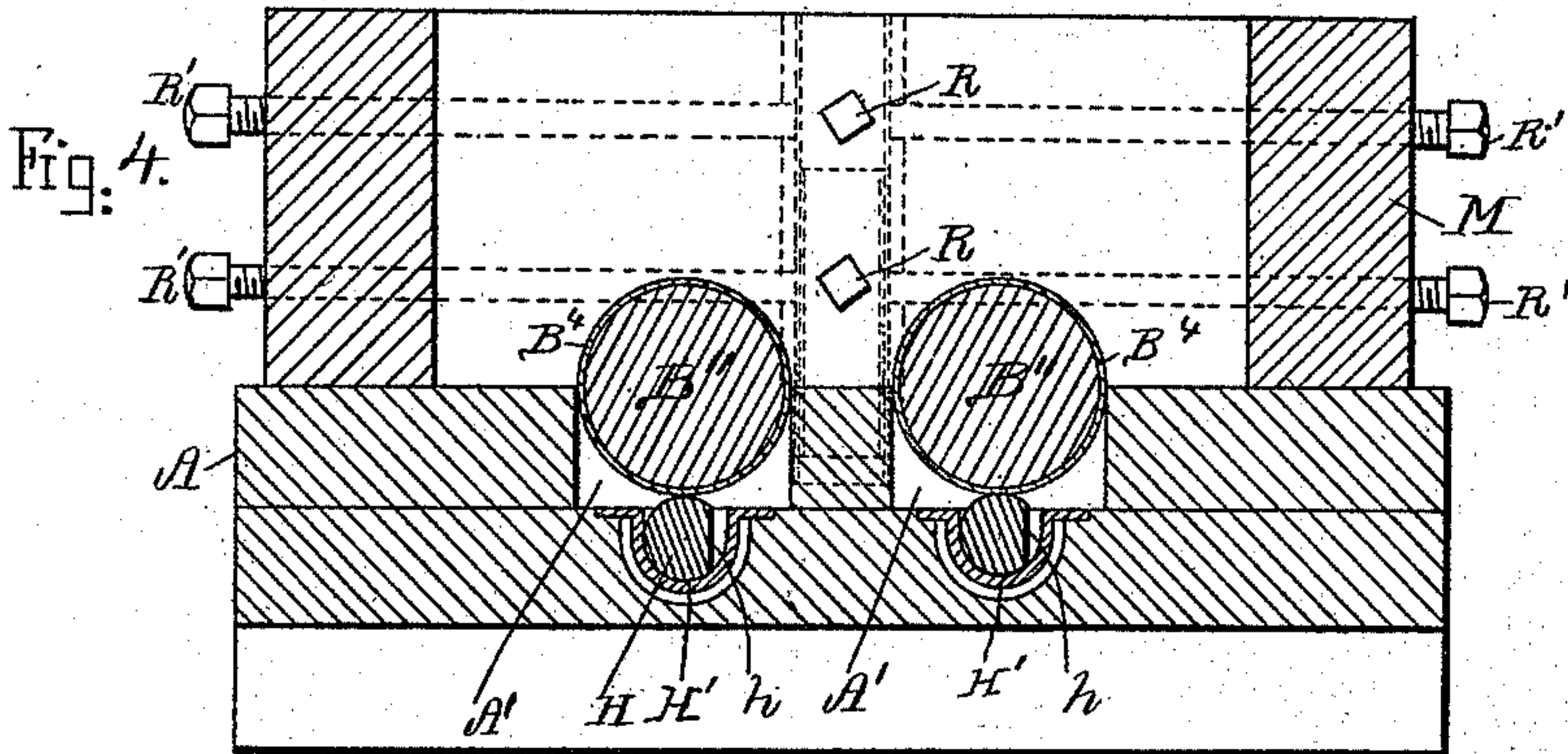
(No Model.)

2 Sheets—Sheet 2.

A. S. HODGES.
DEVICE FOR CASTING SASH WEIGHTS.

No. 527,984.

Patented Oct. 23, 1894.



Witnesses.

Lauritz N. Möller.
Alfred M. Hanson

Inventor.

Addison S. Hodges
by *Alban Andrieu*
his atty.

UNITED STATES PATENT OFFICE.

ADDISON S. HODGES, OF CHELSEA, ASSIGNOR OF ONE-HALF TO ALONZO H. SMITH, OF SALEM, MASSACHUSETTS.

DEVICE FOR CASTING SASH-WEIGHTS.

SPECIFICATION forming part of Letters Patent No. 527,984, dated October 23, 1894.

Application filed December 21, 1893. Serial No. 494,267. (No model.)

To all whom it may concern:

Be it known that I, ADDISON S. HODGES, a citizen of the United States, and a resident of Chelsea, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Apparatus for Casting Sash-Weights, of which the following, taken in connection with the accompanying drawings, is a specification.

10 This invention relates to improvements in apparatus for casting sash weights without drawing out the pattern lengthwise and without producing a fin at the junction of the sand in the upper and lower flasks, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1, represents a plan view of the mold board showing some of the sash weight patterns in position and showing one of the flasks placed in position on top of said mold board. Fig. 2, represents a longitudinal section on the line 2—2 shown in Fig. 1. Fig. 3, represents a longitudinal section of the flasks showing the patterns removed, the flasks rammed ready for the casting operation. Fig. 4, represents a cross section on the line 4—4 shown in Fig. 1. Fig. 5, represents a cross section on the line 5—5 shown in Fig. 1. Fig. 6, represents a side elevation of one of the adjustable sash weight patterns; and Fig. 7, represents a central longitudinal section of the same. Fig. 8, represents in horizontal and vertical section one of the core print guides. Fig. 9, represents a detail top plan view of one of the middle dividing blocks by means of which the tapering ends of the sash weight patterns are separated from each other. Fig. 10, represents a cross section on the line 14—14 shown in Fig. 9. Fig. 11, represents in top plan and section one of the head rests for the sash weight patterns while supported on the mold board. Fig. 12, represents in side and end views and longitudinal sections one of the core boxes for making the core for the perforated head of the sash weight; and Fig. 13, represents in end view and longitudinal section one of the thimbles or rings by means of which the sash weight patterns are lengthwise adjusted according to the length desired to be given to the sash weights.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In Figs. 1, 2 and 4, A, represents the mold board having one or more longitudinal pattern receiving grooves A' in which the sash weight patterns shown in detail in Figs. 6 and 7 are laid previous to the molding operation.

Each of the sash weight patterns consists of a head B, having side recesses B' B' for producing a portion of the eye, or lateral perforation in the head of the finished sash weight. The balance of said perforation is produced by coring by means of a core made in the tapering core box D, shown in Fig. 12, by means of which is also produced the end perforation in the sash weight.

To the head B, of the sash weight pattern is secured preferably a wooden spindle or shank B'' on which are slipped one or more removable rings, thimbles or ferrules B³ B³ as well as a telescopic tube B⁴ closed in its opposite end with a tapering plug B⁵ for the formation of the tapering end C³ of the sash weight as shown. By this arrangement I can easily adjust the length of the patterns according to the desired length of the sash weights simply by adding or removing one or more of the ferrules B³ and adjusting the position of the tube B⁴ accordingly as shown in detail in Figs. 6 and 7.

b in Figs. 6 and 7 represents the core print at the head end of the sash weight patterns and is adapted to make a print or recess in the sand for receiving the end of the eye core which is molded in the core box D.

In the middle portion of each mold board groove A' is laid a middle block E, having notches E' E' adapted to receive the tapering ends B⁵, B⁵, of the sash weight patterns as shown in Figs. 1 and 2 as well as in detail in Figs. 9 and 10. Said middle block is provided with a top rib E'' for making a groove in the said mold so as to connect all the sash weight molds in the flask from a single sprue hole F. Shown in Fig. 3.

E³ E³ are projections on the middle block E, which serve as prints for making channels in the sand in the flasks through which the molten metal is conveyed into the mold

cavities G, G, shown in Fig. 3 during the casting of the weights.

In the bottom of each groove A' is loosely supported or journaled in suitable bearings 5 H' H' a cam or crank spindle H, on which the sash weight patterns are made to rest during the molding operation as shown in Figs. 1, 2 and 4. Each spindle H has a reduced portion or flattened surface h, shown in section in 10 Fig. 4, adapted to serve as a lower support for said patterns when said spindles are turned around their axes a portion of a revolution and by this means the said patterns may be slightly raised and lowered while held 15 in the grooves A' A' for a purpose as will hereinafter be more fully described.

At or near the outer end of each groove A' is laid loosely on the spindle H, a pattern head rest I (shown in detail in Fig. 11) which serves 20 as a support for the notched head of the pattern and has a projection, i, adapted to enter the recess B' in the head B of the sash weight pattern as shown in Fig. 2, by which arrangement said patterns are prevented from turning 25 round while placed in the grooves or mold board recesses A'.

K K represent space blocks placed in the outer ends of the grooves A' outside of the core print guides L L each of the latter having 30 a recess l, adapted to receive the head core print b, on the sash weight pattern as shown in Figs. 1, 2 and 8.

M and N represent the flasks adapted to be placed one at a time upon the top of the mold 35 board A as shown in Figs. 1, 2 and 4 and properly centered and held in position thereon while the sand is rammed in said flask and around that portion of the patterns which is above the mold board.

40 For the purpose of properly holding and locating the flasks on the mold board and for the purpose of centering and holding the pair of flasks properly in position relative to each other as shown in Fig. 3, I make in each end 45 of the mold board a vertical recess or hole preferably lined with a metal ferrule A'' which is adapted to receive centering projections m, m, on the flask M as shown in Fig. 2. The other flask N, has similar centering 50 projections n, n, having each a tubular ferrule n' n' (shown in Fig. 5) which extends even with the under side of such flask, such ferrule being of an interior diameter equal to the centering projections m, m, on the flask 55 M, so that the said flasks may be preferably centered and connected during the casting operation by inserting the projecting end of the centering projection m, m, on the flask M, into the tubes n' n' on the flask N as shown 60 in Fig. 3.

When the flask N is to be centered relative to the mold board during the ramming operation, a small tube O shown in Fig. 5, is inserted in the tube n' on the flask N which tubes 65 serve as centering projections to be received

into the recesses or sockets A'' on the mold board A.

P in Figs. 1, 2, 6 and 7 represents a detachable number or size pattern temporarily attached in a side recess of the sash weight 70 pattern to indicate the weight or size of the sash weight. Such number pattern is interchangeable with other of higher or lower denomination according to the length or weight 75 of the sash weight and it is generally made to correspond with and to indicate the weight in pounds of the sash weight.

For the purpose of properly adjusting and centering the pins m, n, on the flasks M, N, relative to each other as well as to the recesses A'' in the mold board A, I provide 80 such pins with adjusting screws R, R, and R' R' arranged at right angles to each other and by means of which said pins may be properly adjusted and secured after adjustment 85 so as to cause the impression in the sand of one flask to coincide exactly with the corresponding impression in the opposite flask.

In casting the sash weights with my improved apparatus I proceed as follows: I first 90 regulate the length of the sash weight patterns according to the sizes required and fill up the outer ends of the mold board grooves A' with proper sized space blocks K, K, and place the core print guides L, L, head rests 95 I, I, and middle block E, in the grooves A' A' as fully shown in Figs. 1 and 2. I now place the sash weight patterns in the mold board grooves A' A' and in such a manner as to cause them to be supported on the highest 100 portions of the crank or cam rods H, H, as shown in Figs. 1, 2 and 4. I now place one of the flasks in position on the mold board and ram the sand as shown in Fig. 2. Before removing such rammed flask from the mold 105 board I turn the cam or eccentric supporting spindles H, H, about a fourth of a revolution, or more or less, so as to cause the sash weight patterns to sink slightly deeper into the mold board grooves and in so doing the patterns 110 are released from the sand in the flask which is firmly supported on top of the mold board by which the edges of the sand at the sides of the pattern are prevented from breaking or crumbling, thus preventing the formation 115 of a fin where the sand in one flask joins the sand in the other. I now remove such rammed and sand released flask and proceed in the same manner with another after which the cores for producing the side and end perforations 120 in the head are placed in their proper positions in one of the flasks and the two rammed flasks connected together as shown in Fig. 3, the sand in the uppermost flask being provided with sprue holes through 125 which the molten metal is poured as usual, as shown in said Fig. 3. After the metal is sufficiently cooled the flasks are taken apart, the weights removed and detached from each other and in this manner I am enabled to 130

produce sash weights of a very smooth and even exterior and without any longitudinal fins at the junction of the two flasks as is an objectionable feature where sash weights and
5 similar objects have been cast in divided flasks.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

10 1. In a device for casting sash weights, the combination of a moldboard provided with recesses for receiving the patterns, a groove formed in the moldboard below the recesses, and a cam spindle arranged within said groove
15 for lowering the patterns, substantially as described.

20 2. In a device for casting sash weights, the combination of a mold board provided with recesses for receiving the patterns, the patterns provided with notched heads, head rests

for preventing the latter from turning, core print guides, and a central divider block, substantially as described.

3. In a device for casting sash weights an adjustable sash weight pattern consisting of
25 a head having a shank or spindle secured to it and an adjustable tube adapted to be drawn out or in on said spindle and a series of intermediate rings or ferrules for the purpose of adjusting the length of said pattern
30 substantially as specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 2d day of November, A. D. 1893.

ADDISON S. HODGES.

Witnesses:

ALBAN ANDRÉN,
MARCUS MORTON.