

H. GASCHE & K. WENSKÝ.

MOLD.

APPLICATION FILED JAN. 27, 1910.

967,012.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

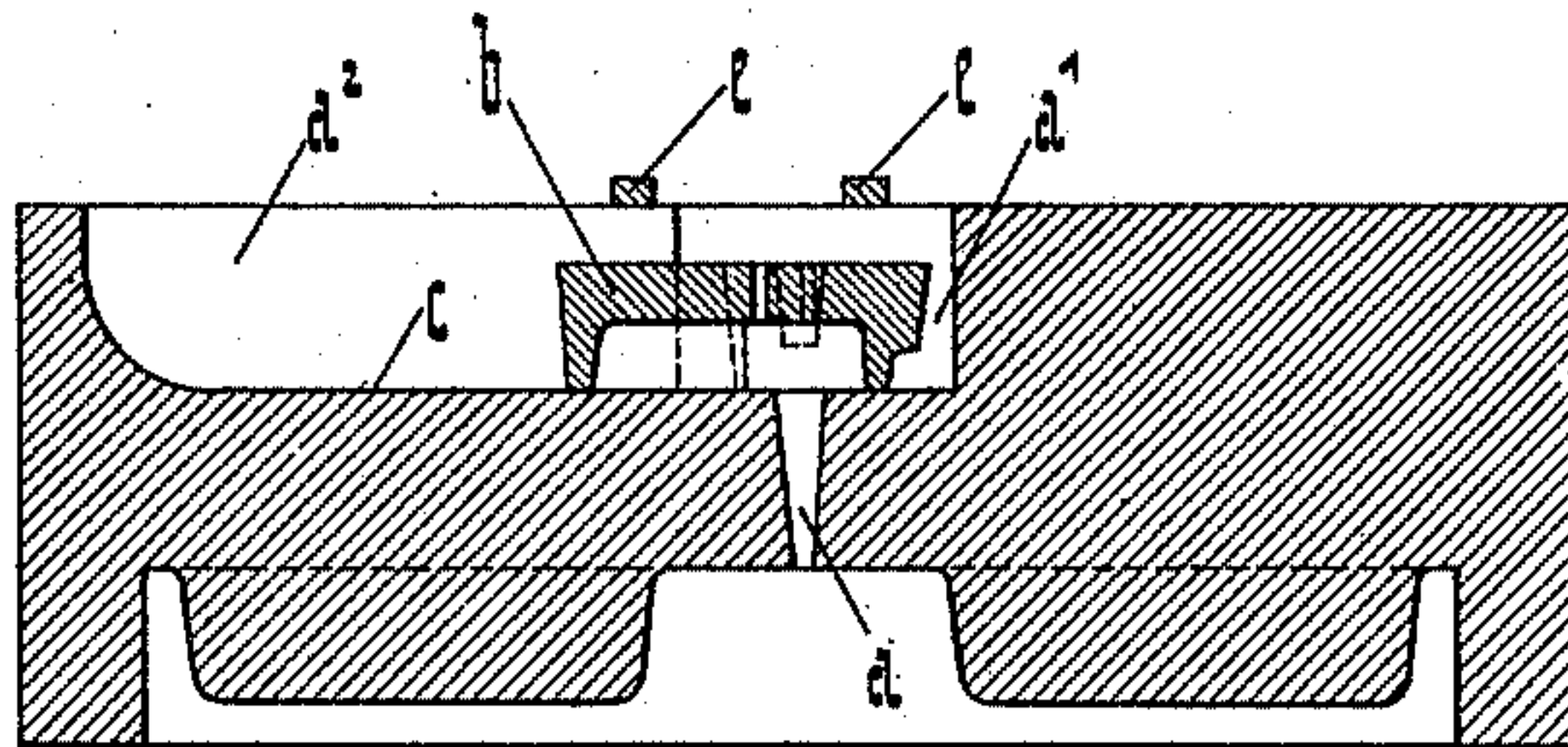


Fig. 2.

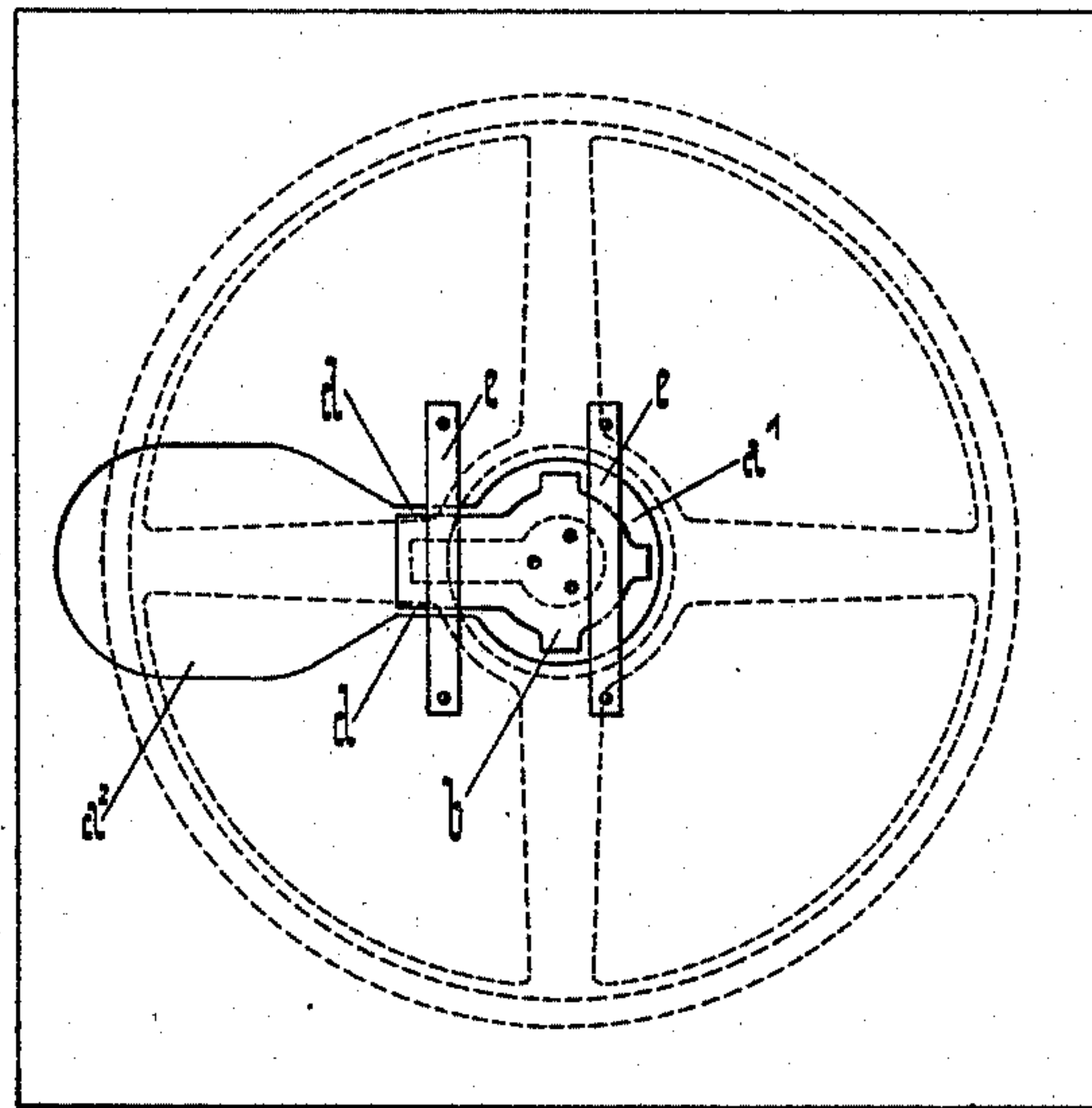


Fig. 3.

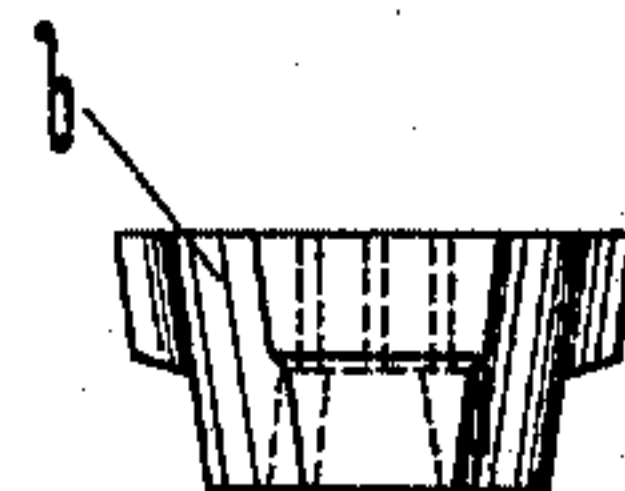
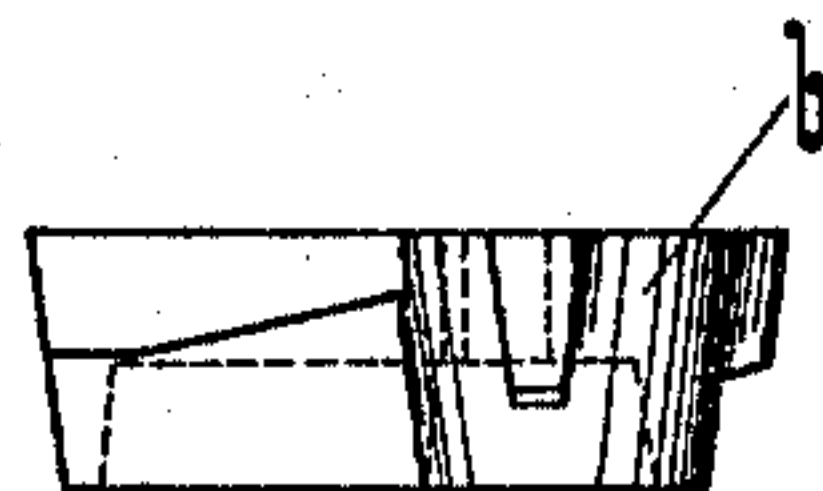
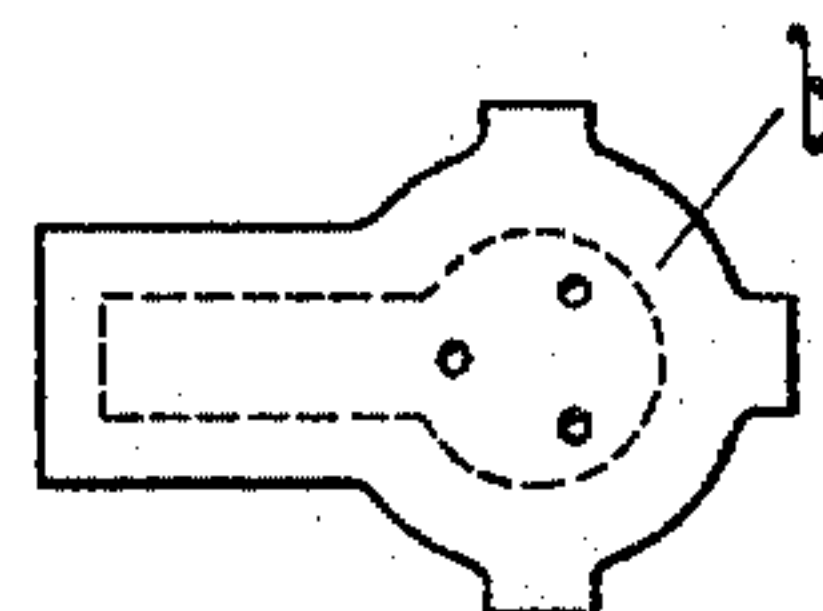


Fig. 4.

Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 6.

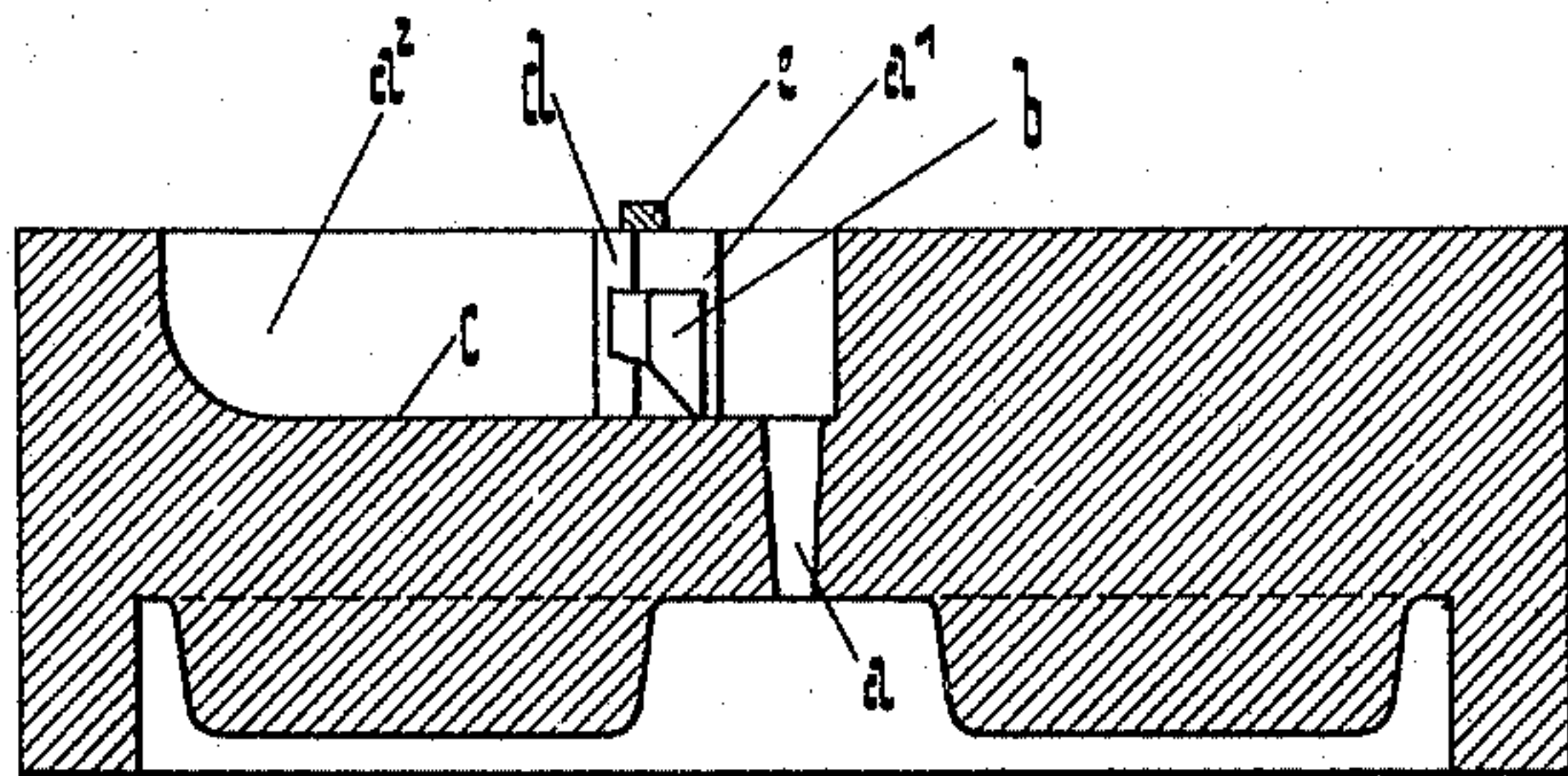
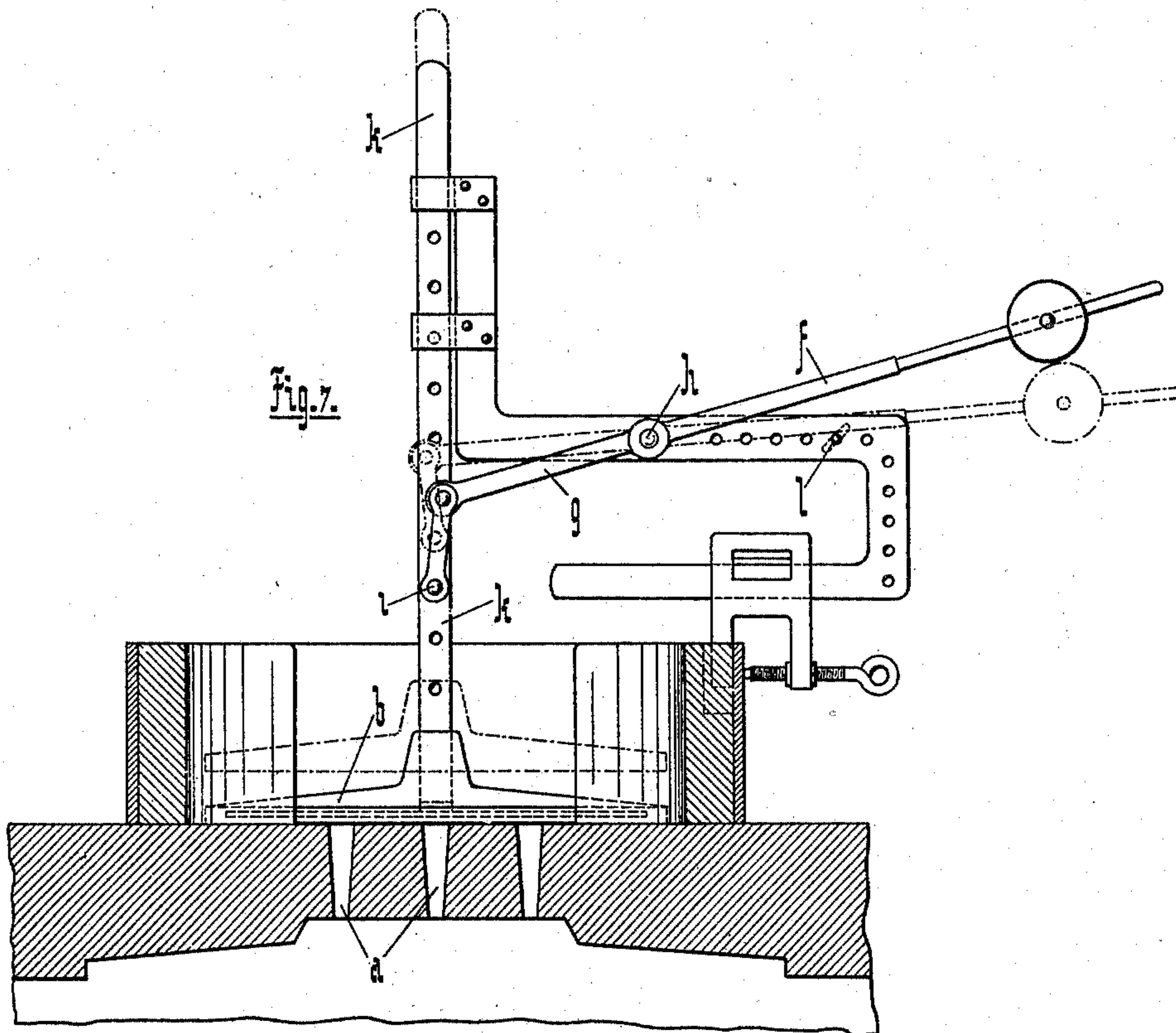


Fig. 7.



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# UNITED STATES PATENT OFFICE.

HEINRICH GASCHE AND KARL WENSKÝ, OF FRANKFORT-ON-THE-MAIN, GERMANY.

MOLD.

967,012.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed January 27, 1910. Serial No. 540,570.

To all whom it may concern:

Be it known that we, HEINRICH GASCHE, residing at Solmstrasse, and KARL WENSKÝ, residing at 17 Nauheimerstrasse, Frankfort-on-the-Main, Germany, both citizens of the German Empire, have invented a certain new and useful Improvement in Molds, of which the following is a specification.

Defective metallic castings, which result from the entrance of slag to the mold during the casing operation are of daily occurrence in large foundries, the trouble being largely due to an insufficient quantity of metal in the pouring ladle. When a mold is only partially filled and the ladle empty, the slag enters the mold, and although an additional charge of metal is poured into the mold, the result is a defect in the casting which in most cases renders it worthless. It is a common practice to provide a pouring gate with a plurality of compartments or cavities which are connected together by a narrow channel designed to hold back impurities, but such devices do not obviate the trouble above referred to.

This invention relates to improvements in pouring gates of the character above indicated, the object being to prevent the entrance of slag or other impurities to the mold, and to accomplish this object we make use of the difference in specific gravity between molten metal and slag by providing a float which will be raised or lifted by the metal for opening the gate, but which will not be lifted by the slag, so that as soon as the metal passes from beneath the float the latter will settle down and operate to hold back the slag.

To more particularly describe our invention we will refer to the accompanying drawings in which—

Figure 1 is a vertical section through a portion of a mold illustrating our invention. Fig. 2 is a plan view of Fig. 1. Figs. 3, 4 and 5, respectively illustrate the float in side, end and top views. Fig. 6 is a view similar to Fig. 1 showing a slightly modified form of our invention and Fig. 7 illustrates still another form of our invention.

Referring to Fig. 1 the mold there shown is provided with a gate *a* having the usual enlarged mouth *a'* which is cut into the mold and made sufficiently large to receive the float *b*. A cavity *a<sup>2</sup>* is also cut into the mold for receiving the molten metal from the ladle, the bottom wall *c* of this cavity form-

ing the pouring surface. Said cavity *a<sup>2</sup>* and the mouth *a'* of the pouring gate are connected by a narrow channel *d* through which the metal passes to the gate *a*. The float *b* is made of such size as will properly rest upon the bottom wall of the mouth *a'* to cover the gate *a*, and as illustrated in Fig. 2 the float is so shaped as to extend into the channel *d* so as to reduce the possibility of slag entering the mouth *a'*. As hereinbefore indicated the float *b* has a specific gravity less than that of the molten metal but greater than the specific gravity of the slag, so that it will be raised by the metal to enable the latter to enter the mold, but will sink as soon as the surface of the metal falls below the mouth of the gate, and thus operate to shut out the slag. The float may be made of sand, clay, chamotte, graphite, or any other suitable material, and may, if necessary, be weighted with metal. To permit a speedy run of the liquid metal when the ascension of the float is slight, the bottom surface of the latter should be comparatively large, and for this reason its bottom surface is made concave, and to permit the escape of gases small vertical holes are made through the float, as clearly shown. Bars *e, e*, are secured above the float to limit its upward movement.

In Fig. 6 we have illustrated the float *b* which is arranged to extend across the channel *d* to prevent slag from flowing from the cavity *a<sup>2</sup>* to the mouth *a'* of the gate *a*, as will be readily understood.

In Fig. 7 we have illustrated a form of our invention in which the float may be raised mechanically and then allowed to sink down with the gradually lowering surface of the liquid metal. In this case the float is held down until the filling cavity contains a sufficient amount of the liquid metal, and for this purpose we provide a two-arm lever *f, g*, which is pivotally supported on a suitable frame and connected by a link *i* to a guide rod *k*, which latter is secured to and forms a guide for the float *b*. The float is held down or raised by means of the lever arm *f*, the downward movement of the arm being limited by means of a pin *l*, which in turn limits the upward movement of the float. The lever and float may be more or less balanced by means of a weight as shown, so that the buoyancy of the float may be adjusted to close the gate before a certain layer of the molten metal which carries slag is run off.



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

5 The combination with a mold provided with a pouring gate having an enlarged mouth and a pouring cavity communicating therewith, of a float arranged to close the gate to the entrance of slag, said float hav-  
10 ing such specific gravity and proportionate displacement as will cause it to be raised by molten metal to open the gate and to sink in

the slag to close the same, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of 15 two subscribing witnesses.

HEINRICH GASCHE.

KARL WENSKÝ.

Witnesses:

JEAN GRUND,

CARL GRUND.