

(No Model.)

F. TYERS.

MOLD FOR MAKING PLUMBERS' JOINTS.

No. 502,893.

Patented Aug. 8, 1893.

Fig 1

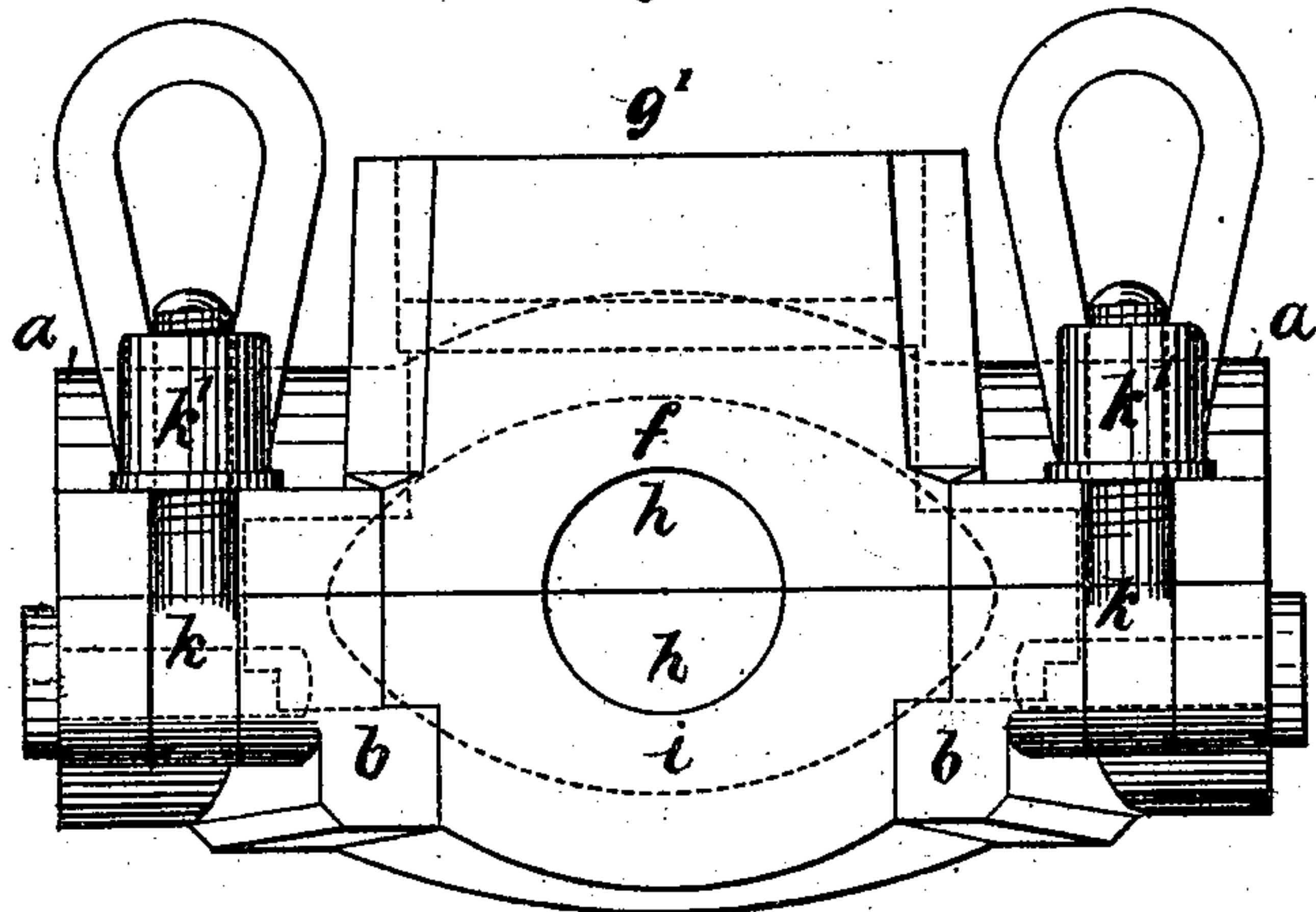


Fig. 2.

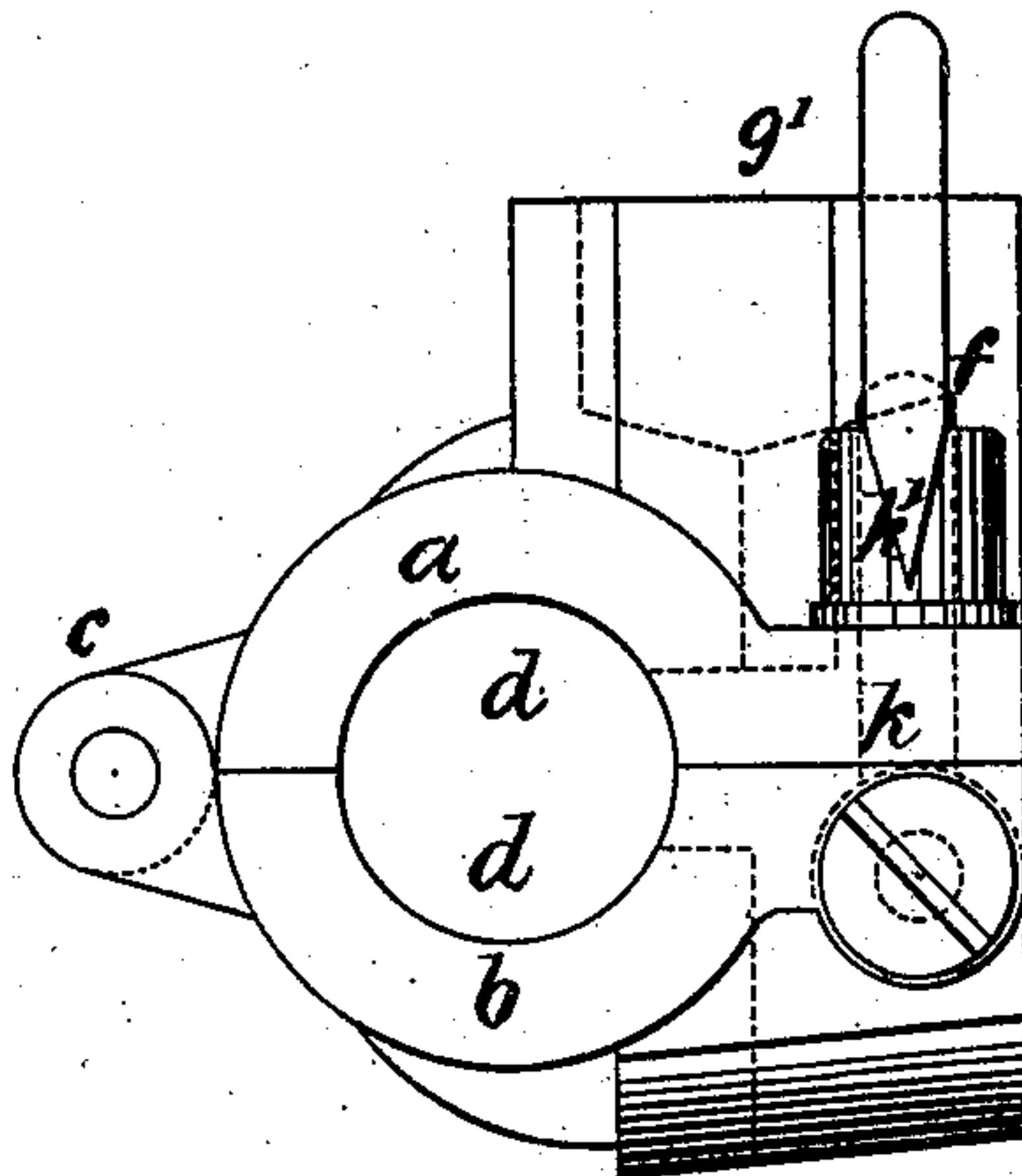


Fig. 3.

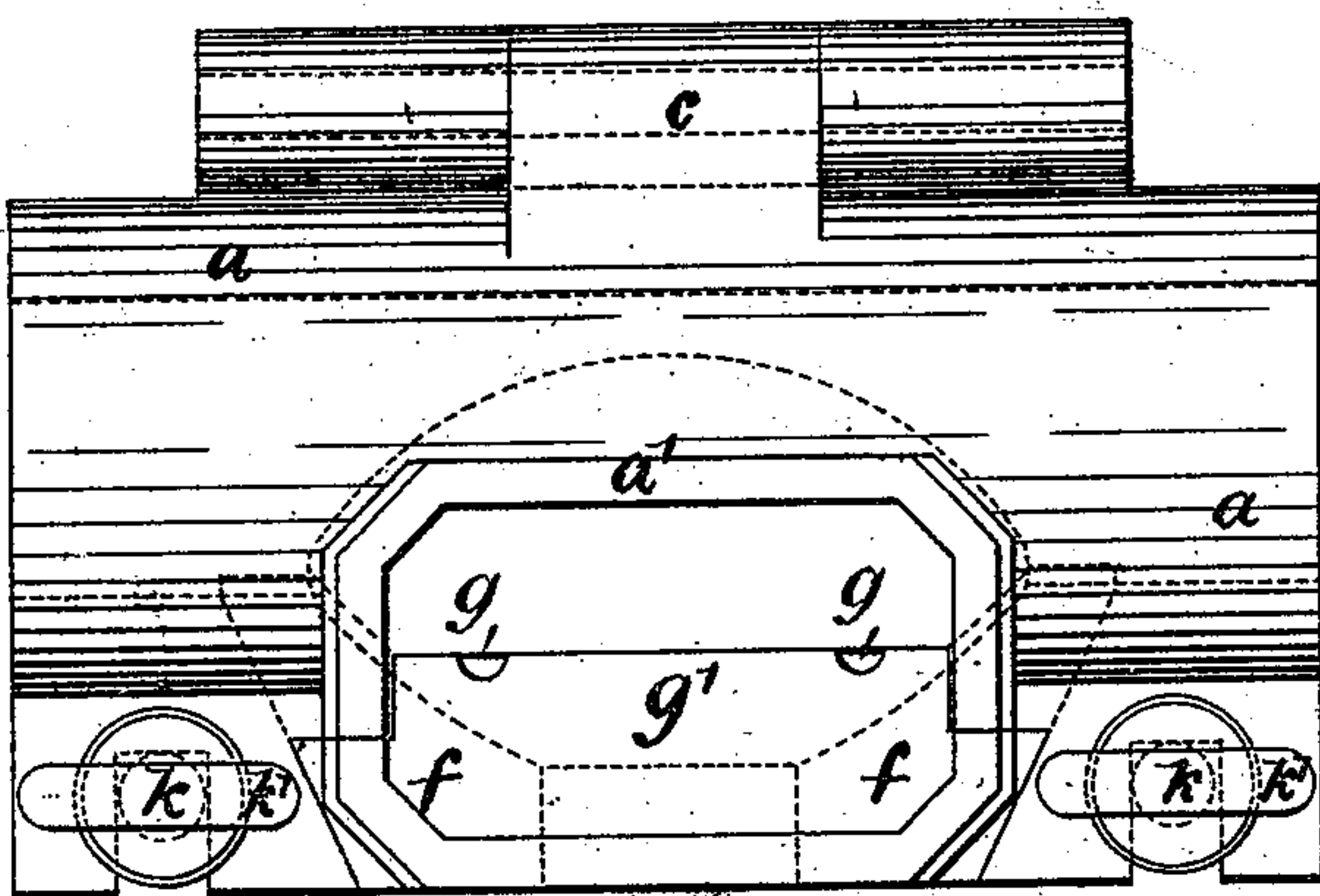


Fig. 4.

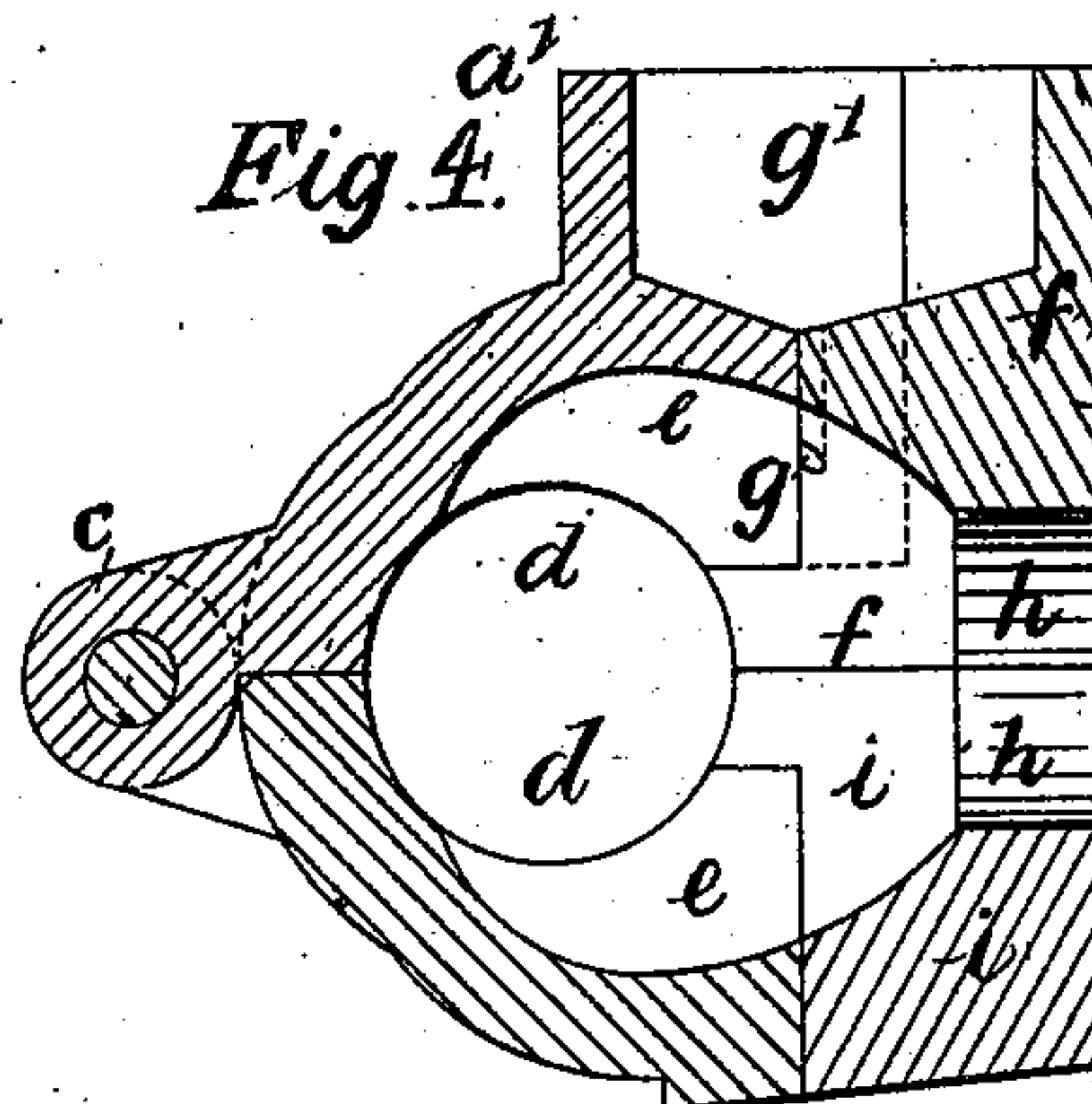
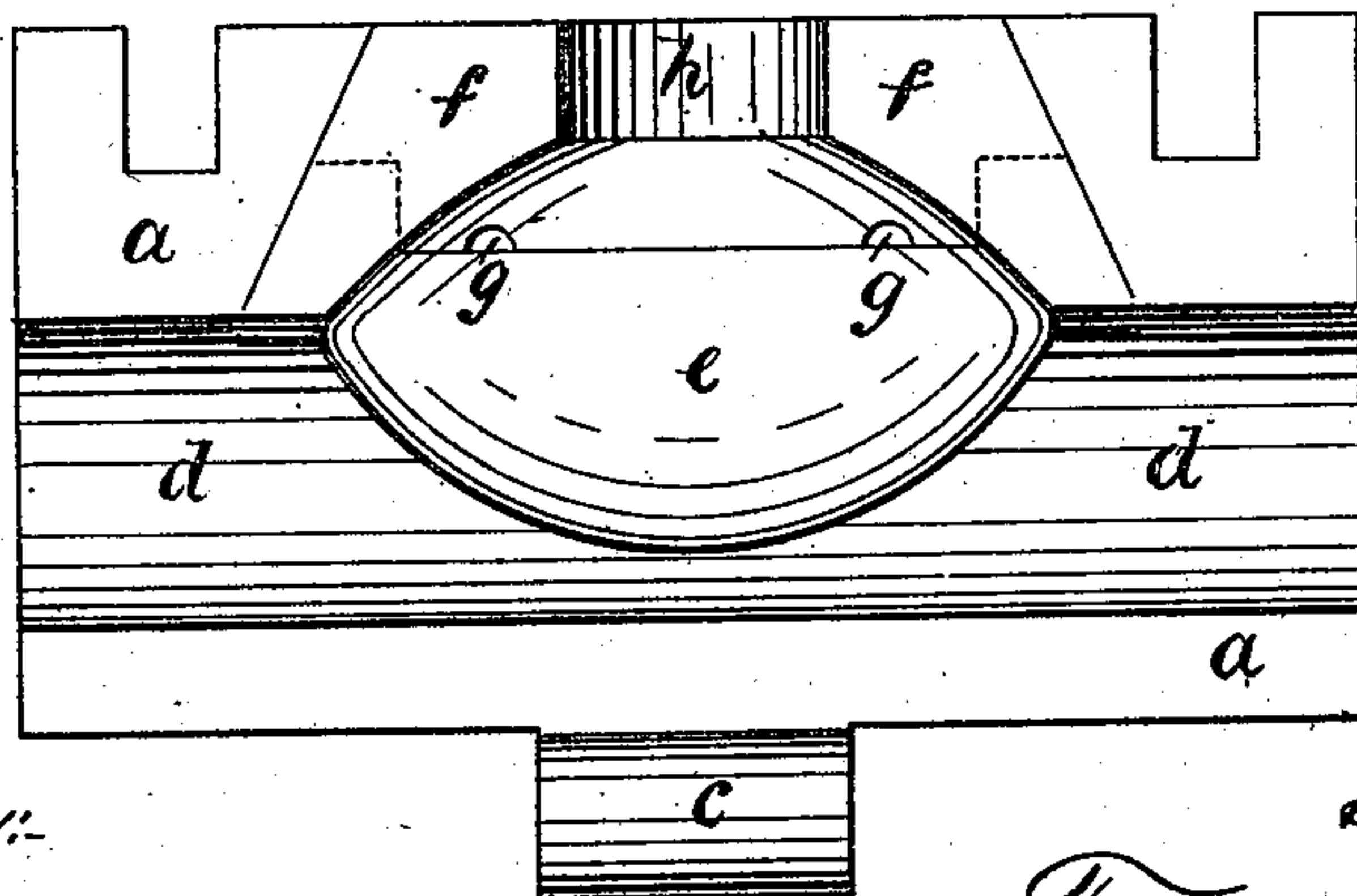


Fig. 5.



Witnesses:

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Inventor:

Frederick Tyers,

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# UNITED STATES PATENT OFFICE.

FREDERICK TYERS, OF NOTTINGHAM, ENGLAND.

## MOLD FOR MAKING PLUMBERS' JOINTS.

SPECIFICATION forming part of Letters Patent No. 502,893, dated August 8, 1893.

Application filed January 9, 1893. Serial No. 457,809. (No model.) Patented in Belgium January 23, 1891, No. 98,035; in England March 10, 1891, No. 4,300; in France January 21, 1892, No. 218,828, and in Germany January 23, 1892, No. 64,551.

*To all whom it may concern:*

Be it known that I, FREDERICK TYERS, a subject of the Queen of England, residing at Nottingham, England, have invented new and  
5 useful Improvements in Molds for Making Plumbers' Joints, (for which Letters Patent have been granted me in England, No. 4,300, dated March 10, 1891; in France, No. 218,828, dated January 21, 1892; in Belgium, No.  
10 98,035, dated January 23, 1891, and in Germany, No. 64,551, dated January 23, 1892,) of which the following is a specification.

This invention relates to the making of plumbers' branch or T joints generally for  
15 connecting lead or composite piping or fittings thereto. It will be best understood by reference to the accompanying drawings in which—

Figure 1 is a front elevation of a mold constructed according to my invention. Fig. 2  
20 is a side or end elevation. Fig. 3 is a plan. Fig. 4 is a vertical cross section taken centrally through the mold, and Fig. 5 is a view of the interior of the upper part of the mold.

25 Like letters indicate like parts throughout the drawings.

In carrying out this invention the piping and the end of the branch or fitting are prepared and tinned in the usual manner and  
30 are placed in position and held by a mold of special construction fitting on the piping, and branch or fitting, formed with an enlarged recess corresponding to the size and shape it is desired to make the joint. Molten metal  
35 is then poured into the mold so as to fill the enlargement, which metal when set is securely attached to the piping and branch or fitting, after which the mold may be removed.

The mold is formed by an upper part *a* and  
40 lower part *b* hinged together at *c*, in the inner surfaces of which are corresponding semi-circular recesses *d* and *h* to fit on the piping and branch or fitting respectively, and an enlarged recess *e* of a suitable shape as shown.

45 The upper part *a* is formed with a detachable part *f* fitting from the inner side into a dovetailed recess in the main part so as to be retained when the mold is closed, on the inner surface of which part *f* or the main part *a* or  
50 both are formed one or more runners *g*. By

employing a detachable part *f* the inner surface of which meets the main part *a* at the point where the runners are placed so as to divide at that part, and leave the runners the mold may be removed without difficulty when  
55 the metal is set, and the runners cut off.

In the upper portion of the detachable part *f* and upward extensions *a'* of the part *a* is formed a cup or box *g'* in connection with or continuous with the runners *g* and into which  
60 the metal may be poured and simultaneously fed to both runners.

The recess *h* in the upper part *a* of the mold is preferably formed in the under side of the detachable part *f*, and the runners *g*  
65 are placed at the side of the pipe and on each side of the branch or connection as shown so that the molten metal will not run on the pipe or the branch.

The lower part *b* of the mold may also be  
70 provided with a detachable part *i* corresponding to the part *f* in the upper part of the mold, and these detachable parts *f* and *i* may be interchangeable with duplicate parts having different sized recesses *h* to fit on branch  
75 pipes or connections of different diameters.

The mold may be held in a closed position by a shackle, with its two ends pivoted to the upper part *a* of the mold and provided with  
80 a screw the end of which bears on a projection on the lower part, or as shown in Figs. 1 and 2 by pivoted bolts *k* provided with nuts *k'* the bolts being pivoted in projections on the upper or lower part and turn into slots in  
85 projections on the other part, and on which projections the nuts bear.

In making a joint the pipe and branch or connection may be prepared and tinned in the usual manner. The mold is then adjusted and  
90 the molten metal poured in until it is filled and set after which the mold is removed and the runners cut off. By this means a clean, secure and more perfect joint is obtained in a more expeditious manner than by the process known as wiping. Instead of a mixture of  
95 tin and lead as used in the usual process pure lead may be employed and consequently the joint will not be liable to sweat.

To make a connection to a pipe which is in a vertical position a bend or cover may be  
100



fitted on the cup or box *g'* which feeds the runners *g* the bend being placed parallel with the piping and the metal poured in. To facilitate the removal of the bend from the metal core it may be made in two halves and hinged together in the same manner as the mold.

I claim—

1. In a mold for making plumbers' branch or T-joints, the combination of the upper part *a*, and the lower part *b*, pivoted together, corresponding semi-circular recesses *d, d*, formed in said parts and adapted to receive a piping, corresponding semi-circular recesses *h, h*, adapted to receive a branch or connection extending at an angle to the said piping, and enlarged recesses *e, e*, also formed in said parts *a*, and *b*, and adapted to receive molten metal, as described for the purpose specified.
2. A mold for making plumbers' branch or T joints formed in two parts *a* and *b*, with recesses *d d* for the pipe, recess *h* for the branch or connection and enlarged recess *e*, provided with runners *g* substantially as described.
3. In a mold for making plumbers' branch or T-joints, the combination of the upper part *a*, and lower part *b*, provided with corresponding recesses to receive a piping, a detachable part *f*, carried by the upper part, a semi-circular recess in the lower side of said part *f*, adapted to cooperate with a like recess of the part *b* to receive a branch or connection extending at an angle to the said piping, corresponding enlarged recesses in the parts *a, b*, and adapted to receive molten metal, and runners communicating with the said enlarged

recesses, the inner surface of the part *f*, meeting the part *a*, at the point where the said runners are located, for the purpose specified.

4. In a mold for making plumbers' branch or T-joints, the combination of the upper part *a*, and the lower part *b*, pivoted together, corresponding semi-circular recesses formed in said parts and adapted to receive a piping, corresponding semi-circular recesses adapted to receive a branch or connection extending at an angle to said piping, enlarged recesses in the parts *a, b*, adapted to receive molten metal, runners in the part *a*, communicating with said enlarged recesses, and a hollow extension *a'* on part, *a*, forming a cup or box in communication with the runners, for the purpose specified.

5. In a mold for making plumbers' branch or T-joints, the combination of the upper part *a*, and lower part *b*, hinged together, corresponding recesses in said parts to receive a piping, a detachable part *f*, carried by the part *a*, a detachable part *i*, carried by the part *b*, corresponding semi-circular recesses in said detachable parts and adapted to receive a branch or connection extending at an angle to the said piping, and enlarged recesses in the parts *a, b*, adapted to receive molten metal, for the purpose specified.

In testimony whereof I have hereto set my hand in the presence of the two subscribing witnesses.

FREDERICK TYERS.

Witnesses:

H. C. SHELDON,  
M. C. BILLSON.