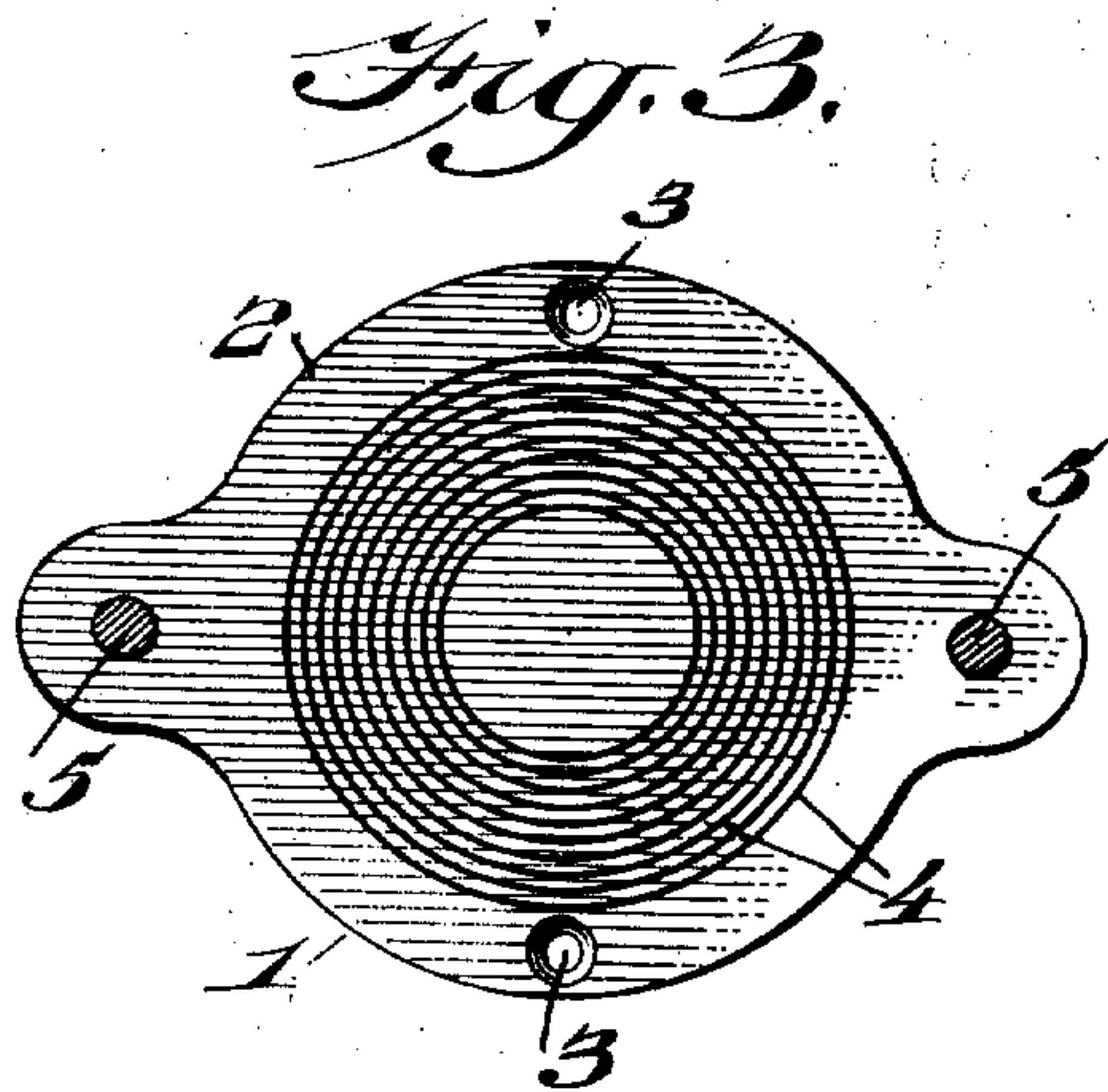
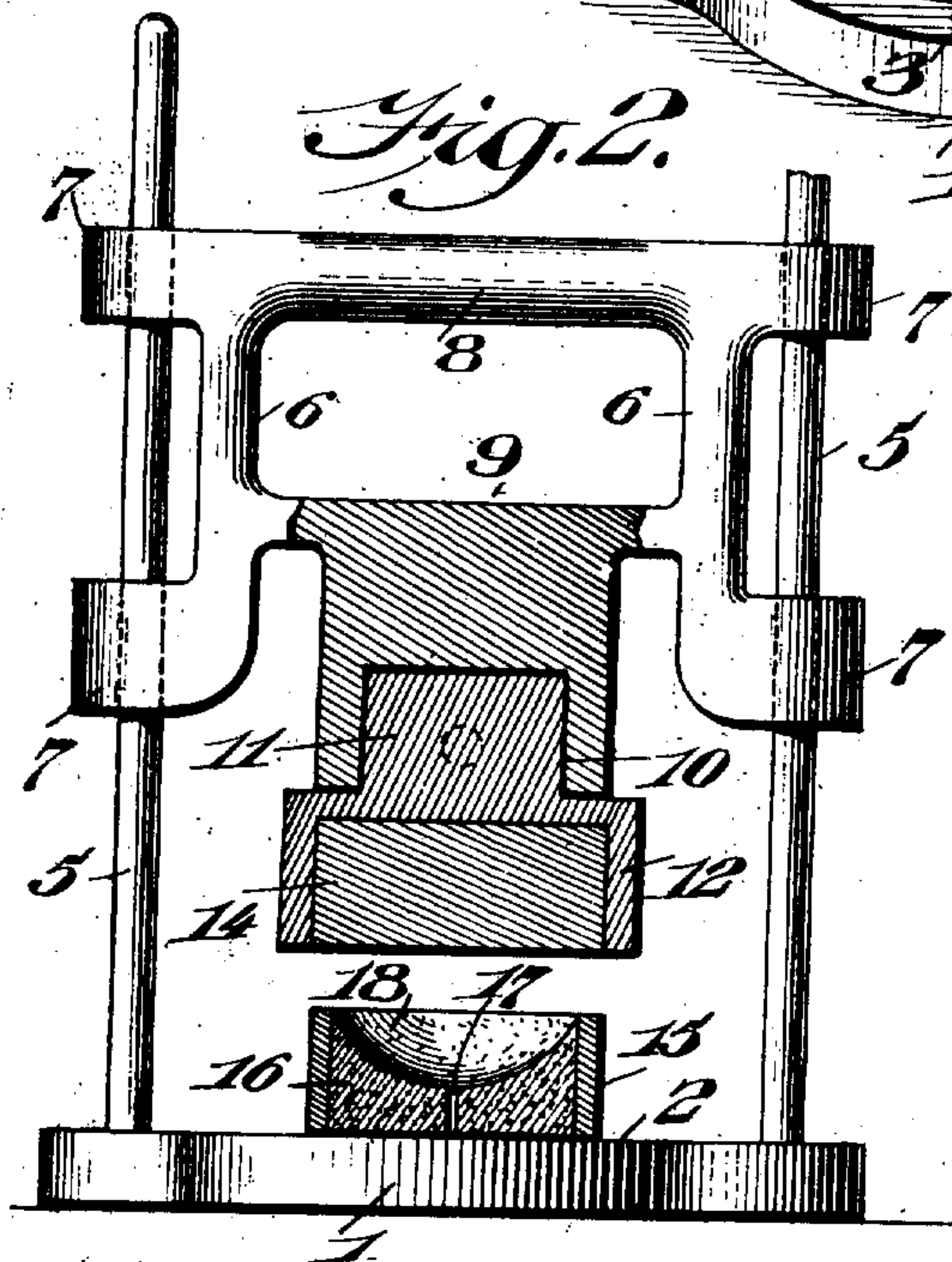
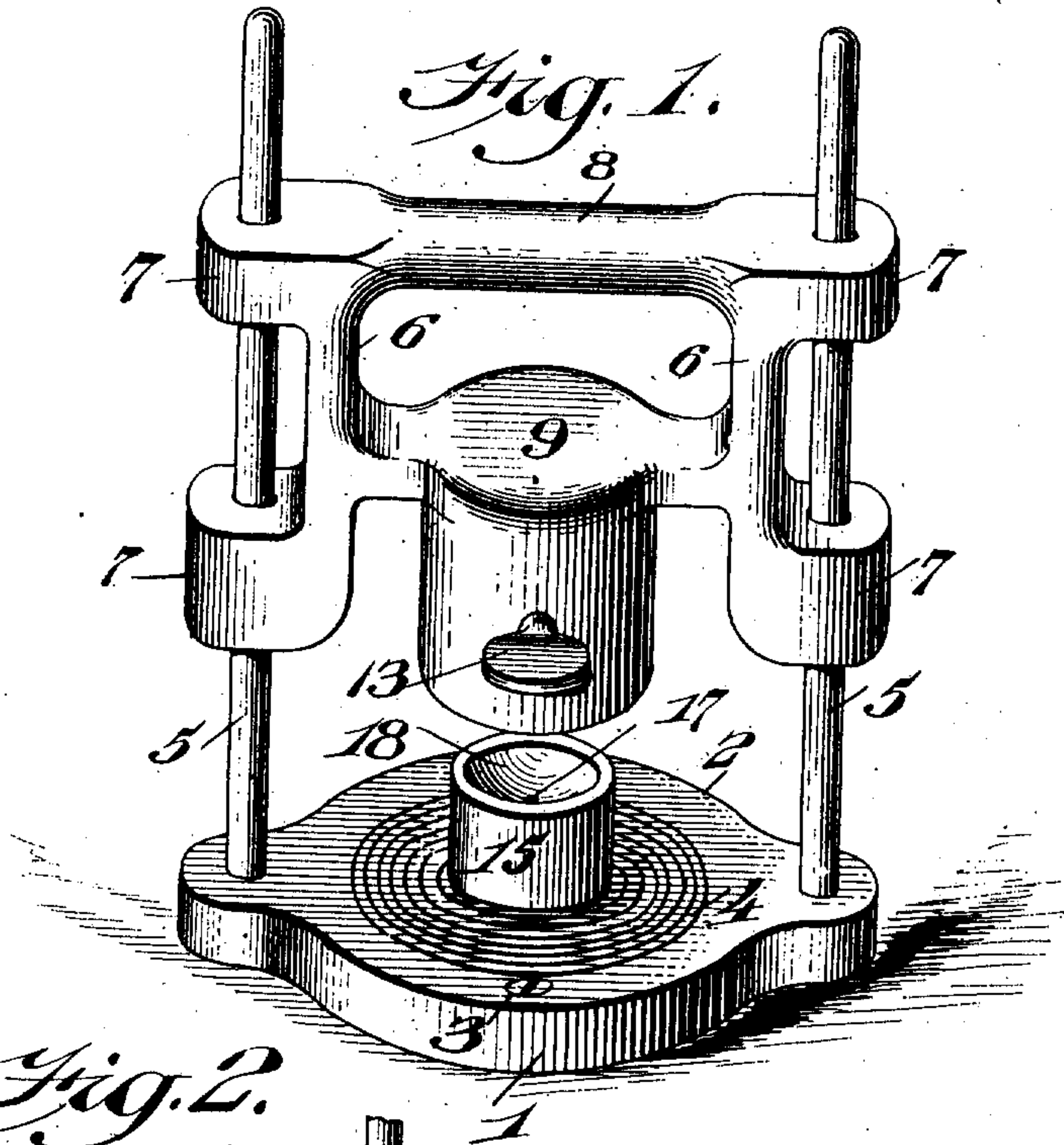


899,255.

H. G. MAIZE.  
DENTAL CASTING MACHINE.  
APPLICATION FILED FEB. 19, 1908.

Patented Sept. 22, 1908.



Witnesses

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# UNITED STATES PATENT OFFICE.

HARRY G. MAIZE, OF PHILADELPHIA, PENNSYLVANIA.

## DENTAL CASTING-MACHINE.

No. 899,255.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed February 19, 1908. Serial No. 416,679.

*To all whom it may concern:*

Be it known that I, HARRY G. MAIZE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Dental Casting-Machine, of which the following is a specification.

My invention relates to a new and novel form of casting machine for use in dental work in which the material may be cast, easily, simply and accurately, dispensing with the usual complicated steps incident to the common swaging process.

It further consists in providing a machine which is adapted to cast metal under pressure, and which may be used with many different sized flasks.

For the purpose of illustrating my invention, I have shown in the accompanying drawings a preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

It further consists of other novel features of construction all as will be hereinafter fully set forth.

Figure 1 represents a perspective view of a machine embodying my invention. Fig. 2 represents a side elevation thereof partly in section. Fig. 3 represents a plan of the bed plate.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates the supporting plate of my machine, the upper face of which is preferably flat as at 2 and has apertures 3 for the reception of screws or other suitable means, by which the plate may be suitably secured against movement. In order to properly center different sizes of flasks upon the supporting plate 1 the surface is provided with suitable marks, to indicate the location of such flasks relative to the upper press member to be hereinafter described. In the present instance a series of concentric grooves 4 are formed for this purpose.

5 designates suitable spindles mounted on the plate 1 which are adapted to form guides for a press frame 6 having lugs 7 secured and

forming sliding bearings to fit the spindles 5. Attached to the frame 6 and preferably integral therewith is a hand grip 8 and a head 9, the latter being provided with a recess 10 adapted to receive the stem 11 of a suitable receptacle 12 which may be firmly held in place by the set screw 13. This receptacle 12 is provided with a bore 14 for the reception of a suitable material, preferably of a plastic nature, and is of such size as to fit over a flask 15 positioned upon the plate 1 in the path of movement of the press frame 6. In the present instance the flask 15 is of tubular shape and is finished to rest flush with the surface of the supporting plate 1 and is adapted to receive a suitable molding material 16, whereby the flask and material form a suitable casting mold.

In the operation of my device the flask is filled with the molding material 16 and the pattern from which a casting is to be produced is placed in the center of the material in the flask. A gate 17 is then formed leading from the outside of the flask to the pattern and a portion of the molding material is carefully removed, to form a funnel shaped recess 18 for the reception of the molten casting material. In the casting process the next step is to melt out the pattern which is preferably made of wax and at the same time harden the investment in the flask. This step having been accomplished the mold is ready for the material, which is then placed into the funnel shaped recess of the flask in the form of a metallic bead or scraps of material as the case may be and a blow pipe is then brought into use to reduce the material to a molten state. Since there are no air vents from the mold the metal will collect in the bottom of the receptacle 18 and when the proper conditions have been reached, that is when the metal is properly fused, the frame 6 is lowered so that the receptacle 12 surrounds the flask 15 and the plastic material within the receptacle comes into contact with the molten metal. Attention is called to the fact that the material with which the receptacle 12 is filled has previously been mixed with a sufficient amount of water to saturate the same so that when the frame 6 is lowered to bring this material into contact with the heated mass of metal the steam will be generated. The frame is now brought down under considerable pressure and the fused metal becoming subject to the steam pressure will be



forced into the mold, filling all portions thereof and giving an exact reproduction of the pattern.

It will be noted that in the present instance I have shown but a single gate leading into the mold and this is a preferred form for small castings but it will be understood that I do not desire to be limited in this respect, as it will be necessary in larger work, to provide several gates leading to the mold in order that the molten material will properly flow into the opening formed by the pattern and accurately fill the same.

It will be seen that this casting under pressure is a very efficient and exact means of producing work for dental uses since it substantially eliminates all shaping of the parts after they have been inserted in the tooth of a patient thereby saving a large amount of time and attaining at once accurate castings for inserts and the like.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character described, a mold, a support therefor, a plurality of concentric grooves in said support whereby said mold is centered and a receptacle adapted to embrace said mold to force material into said mold under pressure.

2. In a device of the character described, a flask, a mold in said flask, a support therefor, guides secured to said support, a frame adapted to slide on said guides, a receptacle on said frame adapted to inclose said flask and means in said receptacle to force material into said mold under pressure.

3. In a device of the character described, a flask, a mold in said flask, a support therefor, guides secured to said support, a frame adapted to slide on said guides, a head on said frame a receptacle detachably secured to said head and adapted to inclose said flask, and means in said receptacle to force a material

under pressure into said mold when said frame is lowered.

4. In a device of the character described, a base, concentric grooves in said base adapted to center different sized flasks, guide spindles secured to said base, a frame slidably mounted on said spindles, a receptacle secured to said frame adapted to inclose a flask, and means in said receptacle for forcing material into a mold formed in said flask.

5. In a device of the character described, a base having a plurality of concentric grooves for centering different sized flasks, guide spindles secured to said base, a frame slidably mounted on said guide spindles, a hand-grip for manual operation thereof, a receptacle secured to said frame adapted to inclose a flask, and means in said receptacle to force a material into a mold formed in said flask.

6. In a device of the character described, a base having a plurality of concentric grooves therein for centering different sized flasks, guide spindles secured to said base, a frame slidably mounted on said guide spindles, a head on said frame adapted to receive interchangeable receptacles, and means in said hub for forcing the material into a mold formed in said flask.

7. In a dental casting machine, a flask, a mold in said flask, a support therefor, a head member carried by said support, a receptacle on said head adapted to inclose said flask, and means in said receptacle to force a material into said mold under pressure.

8. In a dental casting machine, a flask, a receptacle adapted to receive means for forcing a material in the flask under pressure, said receptacle being adapted to inclose said flask, and a movable carrier for said receptacle.

HARRY G. MAIZE.

Witnesses:

E. B. MORRIS,  
ROBERT M. BARR.