

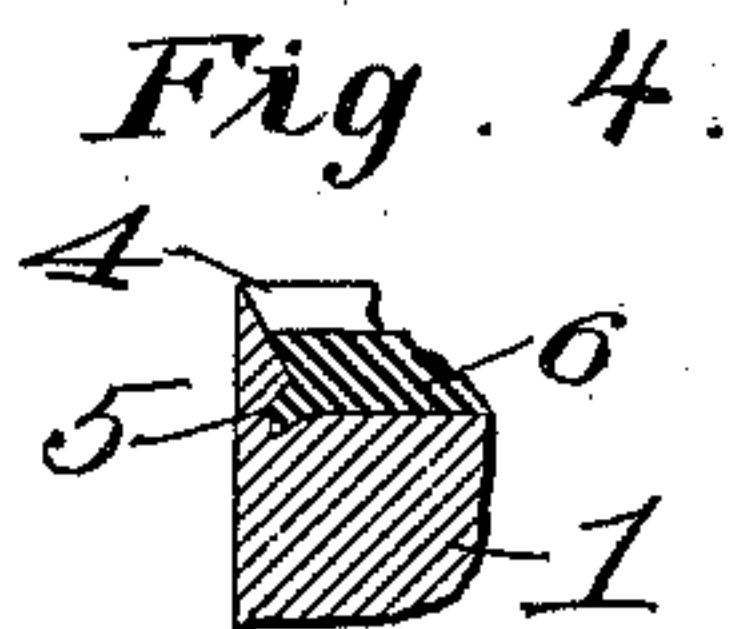
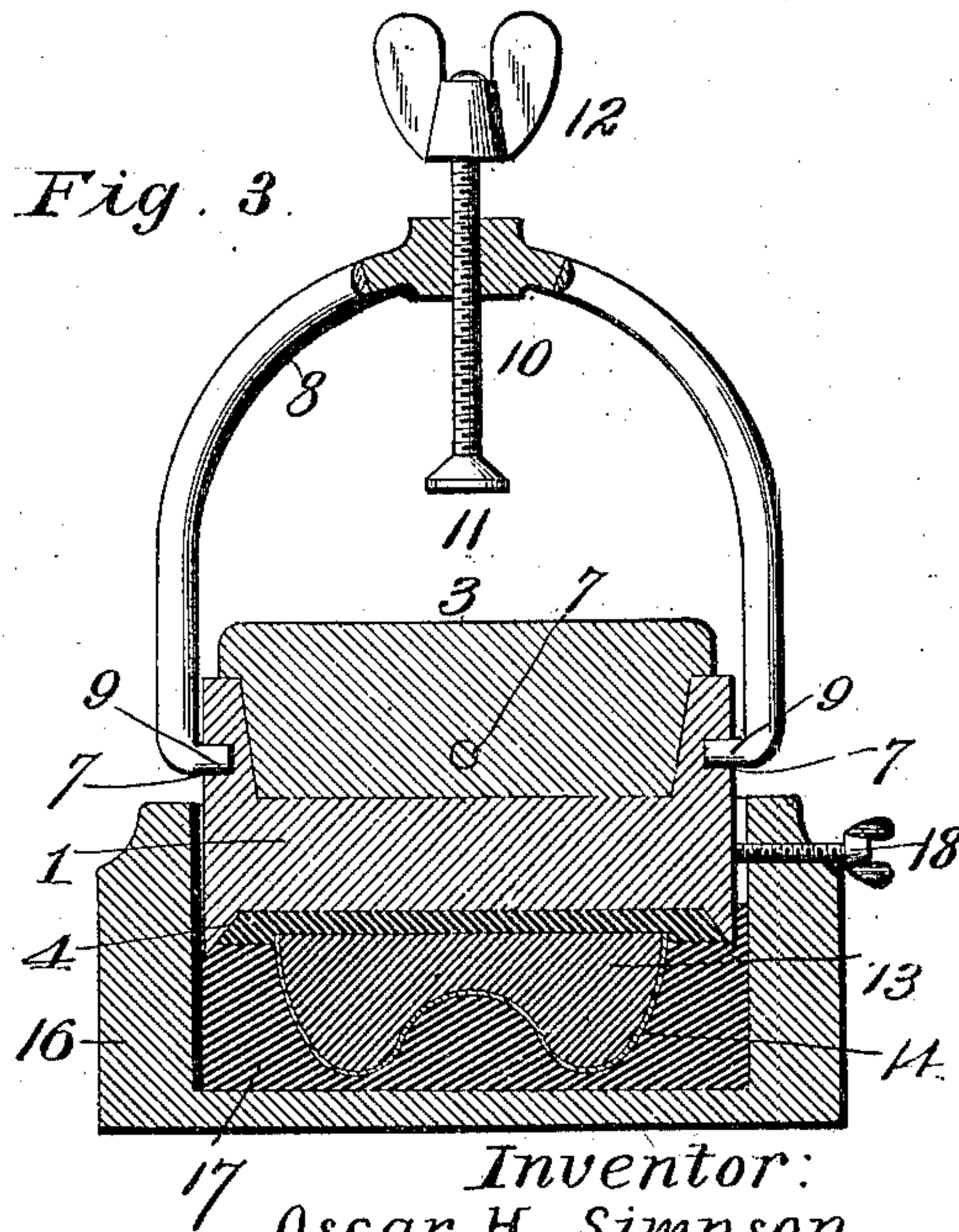
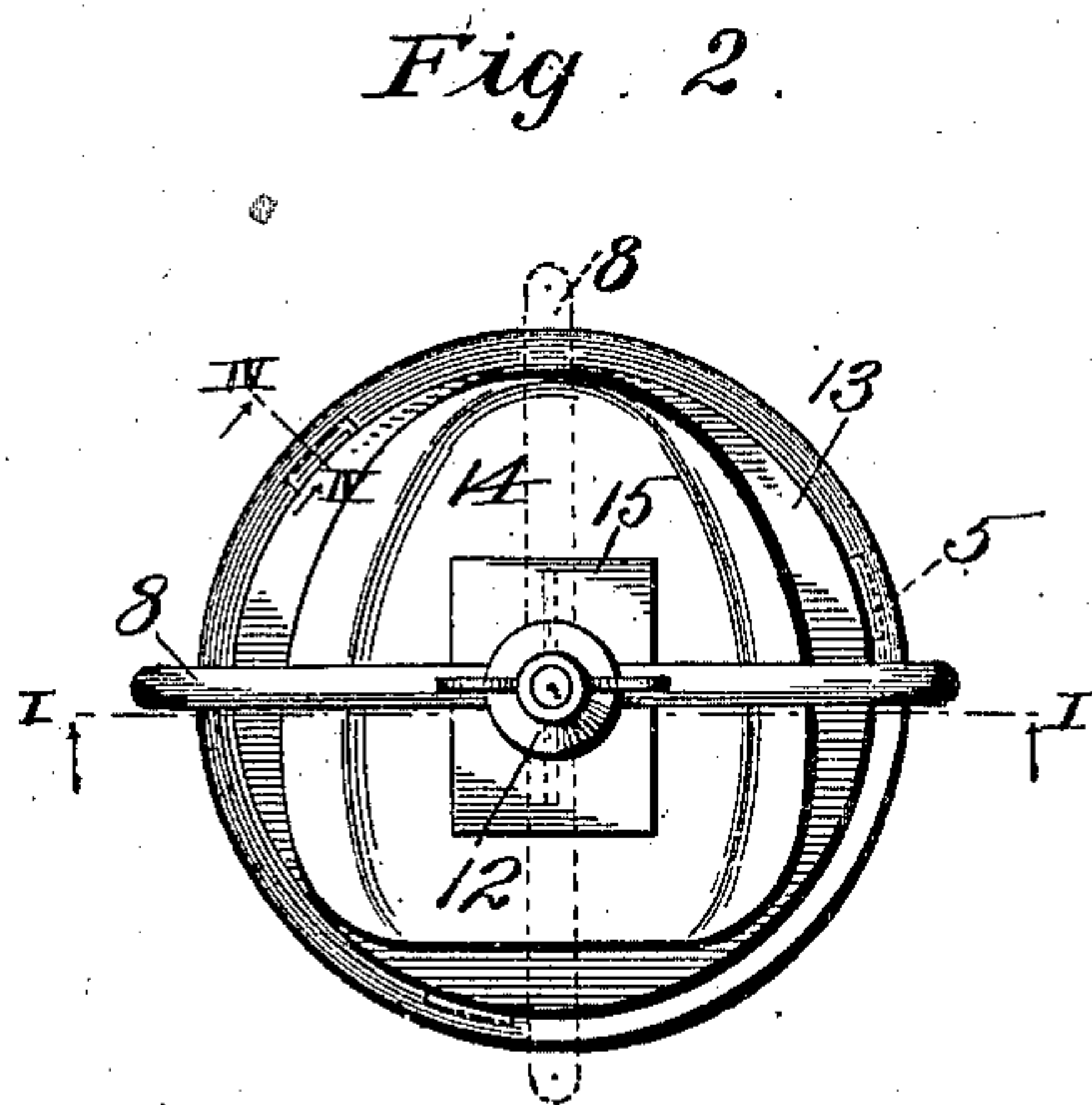
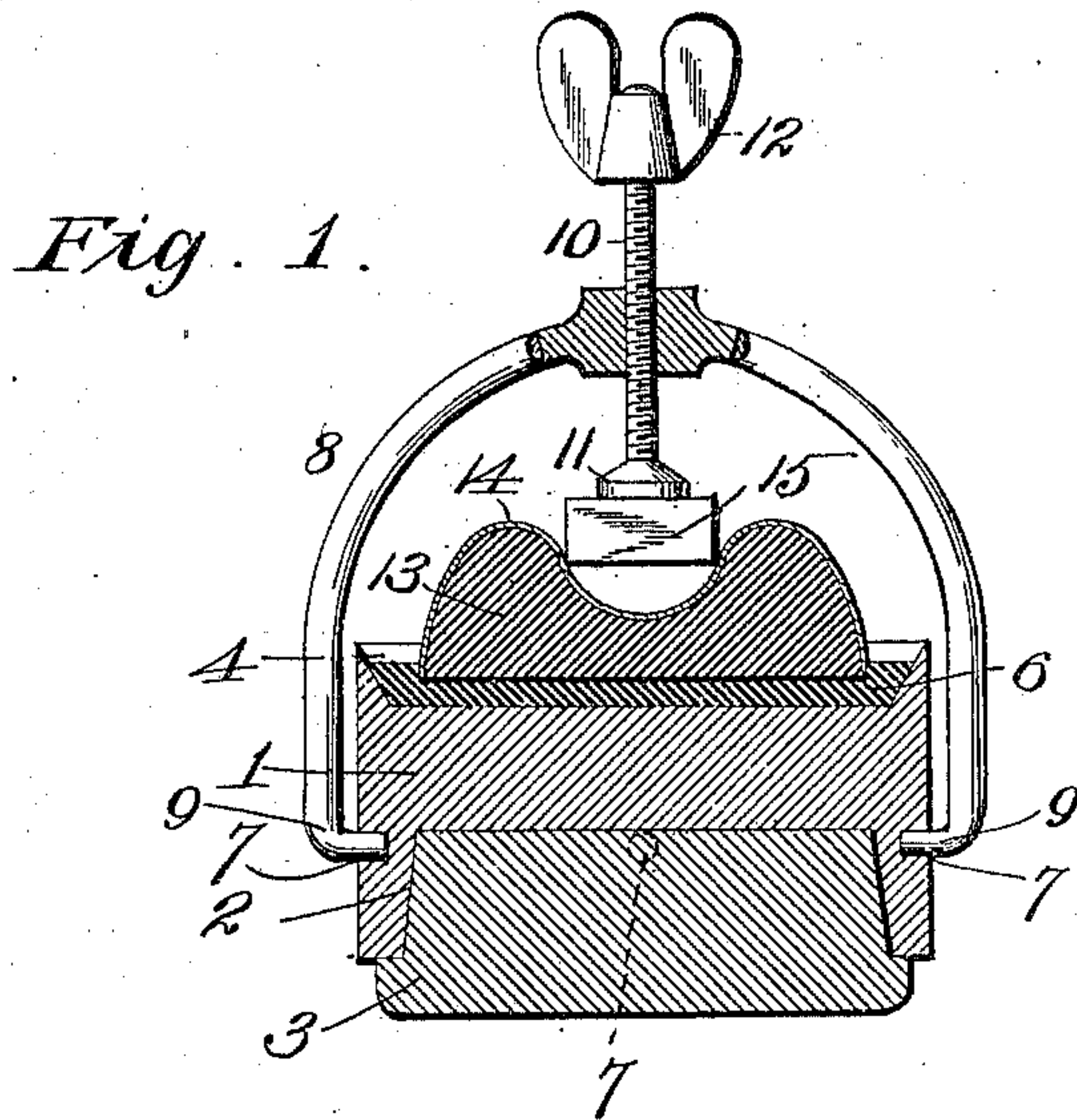
No. 687,859.

Patented Dec. 3, 1901.

O. H. SIMPSON.  
SWAGING DEVICE.

(Application filed Mar. 14, 1901.)

(No Model.)



Witnesses:

H. C. Rodgers.  
A. M. Cobb.

Inventor:  
Oscar H. Simpson  
By Fischer & Phelps  
Attys



# UNITED STATES PATENT OFFICE.

OSCAR H. SIMPSON, OF DODGE CITY, KANSAS.

## SWAGING DEVICE.

SPECIFICATION forming part of Letters Patent No. 687,859, dated December 3, 1901.

Application filed March 14, 1901. Serial No. 51,098. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR H. SIMPSON, a citizen of the United States, and a resident of Dodge City, Kansas, have invented a new and useful Swaging Device, of which the following is a specification.

My invention relates to dental swaging devices; and my object is to provide a device of this character which facilitates the work of swaging impression cups, plates, &c., and which is efficient and reliable in operation.

A further object is to produce a device of this character which is simple, strong, durable, and cheap of construction.

With these objects in view and others as hereinafter appear the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a vertical section taken on the line I I of Fig. 2, showing the device as holding the die and the metal plate thereon reliably in position. Fig. 2 is a top plan view of the same with the bail turned at right angles in dotted lines. Fig. 3 is a view similar to Fig. 1, but with the die-carrying follower and the die embedded in paraffin, wax, or a similar substance contained in a pot or receptacle. Fig. 4 is a detail section taken on line IV IV of Fig. 2, showing one of the undercuts in the follower and also showing engaged therewith the low-fusing metal used as a binder for the die, this relation of the undercut and said metal insuring the retention of the die in position.

In the said drawings, where like reference-numerals designate corresponding parts, 1 designates a metal follower of cylindrical form and provided in one face with a deep cavity 2, in which a wood or equivalent plug 3 is removably secured in any suitable manner. The opposite face of the follower is provided with a flaring-mouthed recess 4 and with a number of undercuts registering with the recess at its base, preferably as at 5, said undercuts being adapted to receive low-fusing metal 6, poured into said recess 4 to a suitable depth. At diametrically opposite points the follower is provided with the pivot-holes

7, there being two sets of these holes at right angles to each other, one set only being illustrated in full lines.

8 designates an inverted-U-shaped bail having inwardly-projecting trunnions 9, engaging one or the other of said sets of pivot-holes 7, to provide or form at once a handle for the device or a support which facilitates the inversion of the follower when desired.

10 designates a clamping-screw mounted in the upper portion of the bail and extending radially of the axis of the follower, being provided with a clamping-foot 11 at its lower end and a wing-nut head or handle 12 at its upper end for convenience in adjusting it.

13 designates a metal die formed in the usual or any preferred manner and arranged to be seated, or rather embedded, in the low-fusing metal 6 before the latter has become set in order that it shall be anchored to the follower as though it were a part of the same.

14 designates a gold plate which is fitted over the die and pressed snugly thereon in the usual manner. A wood or equivalent plug 15 is then placed upon the plate and the screw adjusted to clamp said plug or cushion tightly upon the plate and the latter immovably upon the die, and as the plug is of softer material than the plate it eliminates possibility of defacing the latter, and by holding the plate rigidly upon the die it eliminates any grinding action during the process of swaging, and therefore prevents the opposite face of the gold plate being contaminated by having the base metal of the die ground into it and also prevents defacement of the die. With the parts thus arranged a wood or horn mallet or equivalent device is employed in the usual manner to cause the gold plate to conform to or articulate as accurately as possible with the die, and in order that the operator may have convenient access with his mallet to all parts of the plate he disengages the clamp and turns the bail from the position shown in full to the position shown in dotted lines, Fig. 2, effecting this object without disturbing the cushion or the plate, the trunnions of the bail of course engaging the other pair of pivot-holes 7, as will be readily understood. After the screw is adjusted to again clamp the parts reliably together the mallets are brought into use on the parts of the plate before protected



by the bail. Assuming now that the preliminary swaging with mallets has been satisfactorily accomplished, the dentist, using the bail as a handle, may convey the device, as shown in Fig. 1, to his anvil, wherever that may be located, without the possibility of movement of the die or the plate on the die. He then places the pot or receptacle 16, containing the counter-die 17, in the form of paraffin, wax, or equivalent substance, upon the anvil. He next adjusts screw 10 to release the cushion, and then removing said cushion permits the follower to rotate on the trunnions of the bail to an inverted position, as shown in Fig. 3. The follower is then lowered into the pot or receptacle and pressed downward therein as far as possible, the flaring mouth of recess 4 tending to deflect the paraffin or wax inward and concentrate it tightly around the plate upon the die. The wood plug 3 is now struck a heavy blow with a hammer in order that the wax or paraffin concentrated around the plate, as stated, shall cause the latter to conform perfectly to the die and fit so accurately thereon that when placed in the mouth of the patient as a base for artificial teeth it shall be an exact counterpart of the mouth and gums and atmospheric pressure alone will hold it reliably in place.

The device is also designed for swaging plates of different shapes and materials and for different purposes from that described.

If desired, before conveying the device to the anvil—which may be at the nearest blacksmith's shop, all dentists not being provided with the same—the follower may be inverted and pressed down into the paraffin-carrying pot or receptacle, and the clamping-screw 18, mounted in the latter, utilized to clamp the follower with sufficient power to sustain the weight of the pot and its contents. As thus arranged the bail can be used as a handle to carry the complete device and can also be employed as a handle in withdrawing the follower and the connected parts from the wax or equivalent substance, as will be readily understood.

When the wood plug 3 is practically worn out, it can be easily and cheaply replaced, and in this connection it may be stated that the low-fusing metal for attaching the metal die to the follower gives the former an absolutely solid bed, and thereby prevents it cracking or warping under the severe strain put upon it while the swaging operation is in progress.

From the above description it will be apparent that I have produced a swaging device which embodies the features of advantage enumerated as desirable in the statement of invention, and while I have illustrated and described the preferred embodiment of the invention it is to be understood that it is susceptible of various changes as regards its form, proportion, detail construction, or ar-

rangement of the parts without departing from the spirit and scope or sacrificing any of the advantages.

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

1. A swaging device, comprising a pot or receptacle, a follower arranged to operate therein, a pivoted bail attached to the follower, a die attached to the follower, and a clamp carried by the bail and adapted to secure a plate rigidly upon the die, substantially as described.

2. A swaging device, comprising a pot or receptacle, a follower arranged to operate therein, a die attached to the follower, a bail pivoted to the follower, a clamp carried by the bail, and adapted to secure a plate rigidly upon the die, and a cushion interposed between the clamp and said plate, substantially as described.

3. A swaging device, comprising a bail, a follower pivotally carried thereby, and provided with a flaring recess in one face and undercuts communicating with said recess, a low-fusing metal in said recess and undercuts, a die embedded in and held by said metal, and a clamp mounted on the bail and adapted to clamp a plate rigidly upon the die, substantially as described.

4. A swaging device, comprising a bail, a follower pivotally carried thereby, a die attached to the follower, a clamp mounted in the bail and adapted to secure a plate rigidly upon the die, and a removable plug mounted in the opposite face of the follower, substantially as described.

5. A swaging device, comprising a pot or receptacle, a follower arranged to operate therein, a die attached to the follower, a bail pivoted to the follower and adapted to assume different radial positions thereon, and a clamp mounted in the bail and adapted to secure a plate rigidly upon the die, substantially as described.

6. A swaging device, comprising a bail, a follower pivotally carried thereby and provided with a flaring-mouthed recess, a die attached to the follower in said recess, and a clamp mounted in the bail and adapted to secure a plate rigidly upon the die, in combination with a pot or receptacle containing a plastic counter-die, to receive the metal plate and die on the follower when the latter is inverted with respect to the bail, substantially as described.

7. A swaging device, comprising a bail, a follower pivotally carried thereby and provided with a flaring-mouthed recess, a die attached to the follower in said recess, and a clamp mounted in the bail and adapted to secure a plate rigidly upon the die, in combination with a pot or receptacle containing a plastic counter-die, to receive the metal plate and die on the follower when the latter is in-

verted with respect to the bail, and a clamping-screw secured to the pot or receptacle to clamp the same and the follower rigidly together, substantially as described.

- 5 8. In a swaging device, the combination of a pot or receptacle, a follower adapted to operate therein, a die attached to one face of the follower, a bail pivotally carrying the fol-

lower, and a clamp for securing a plate rigidly upon the die, substantially as described. 10

In testimony whereof I affix my signature in the presence of two witnesses.

OSCAR H. SIMPSON.

Witnesses:

B. S. WILLIAMS,

C. C. STERRITT.