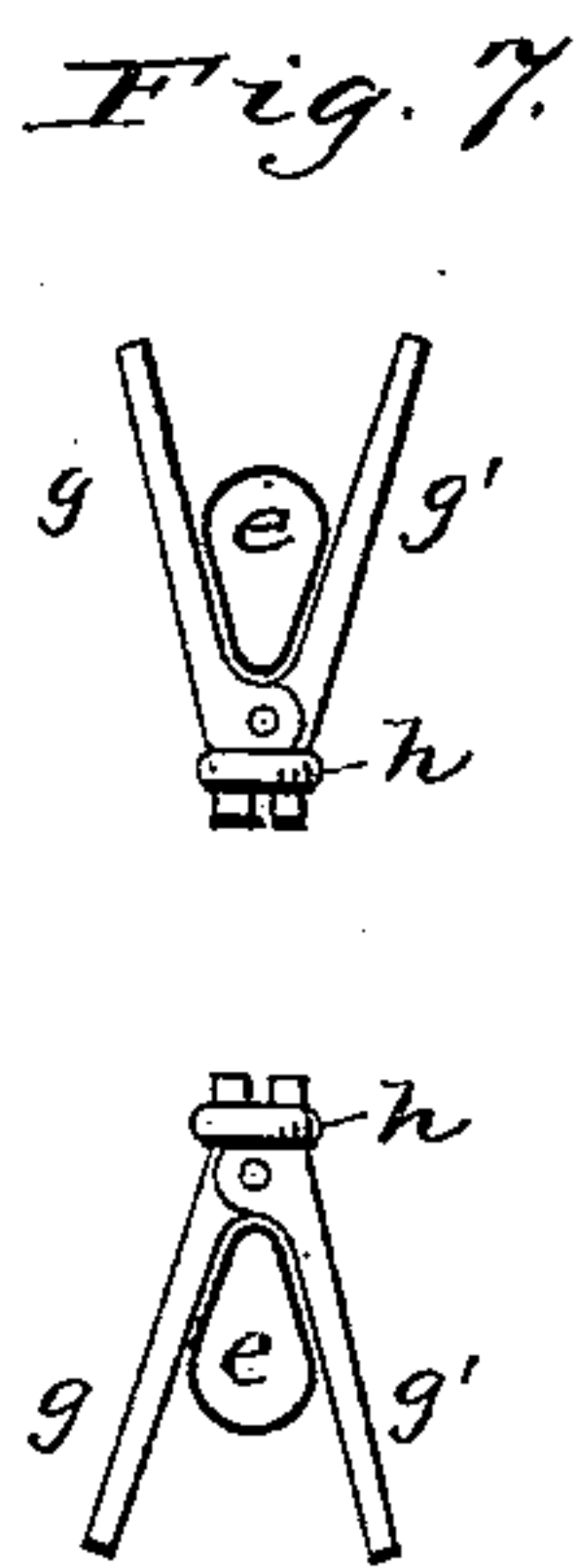
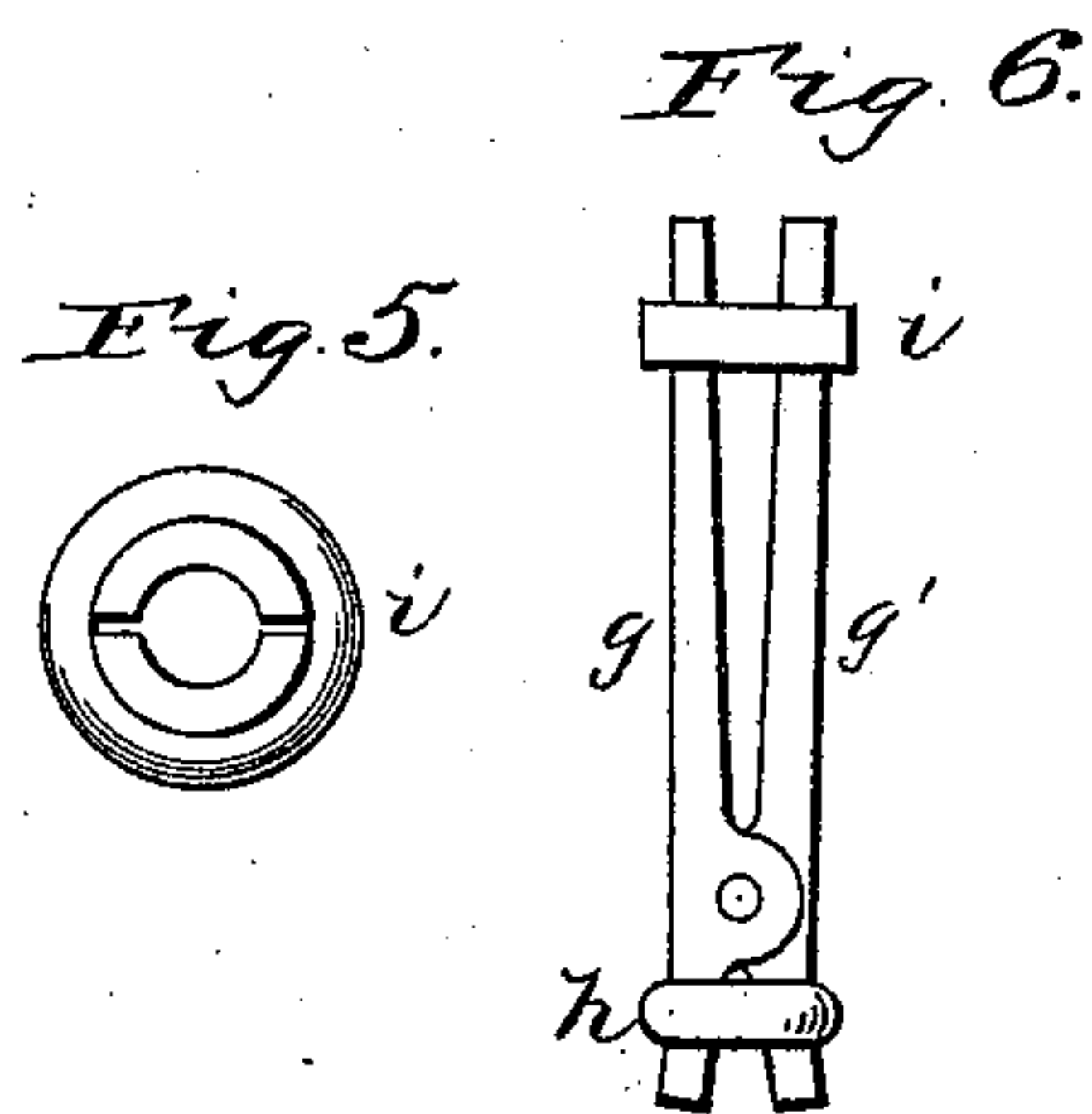
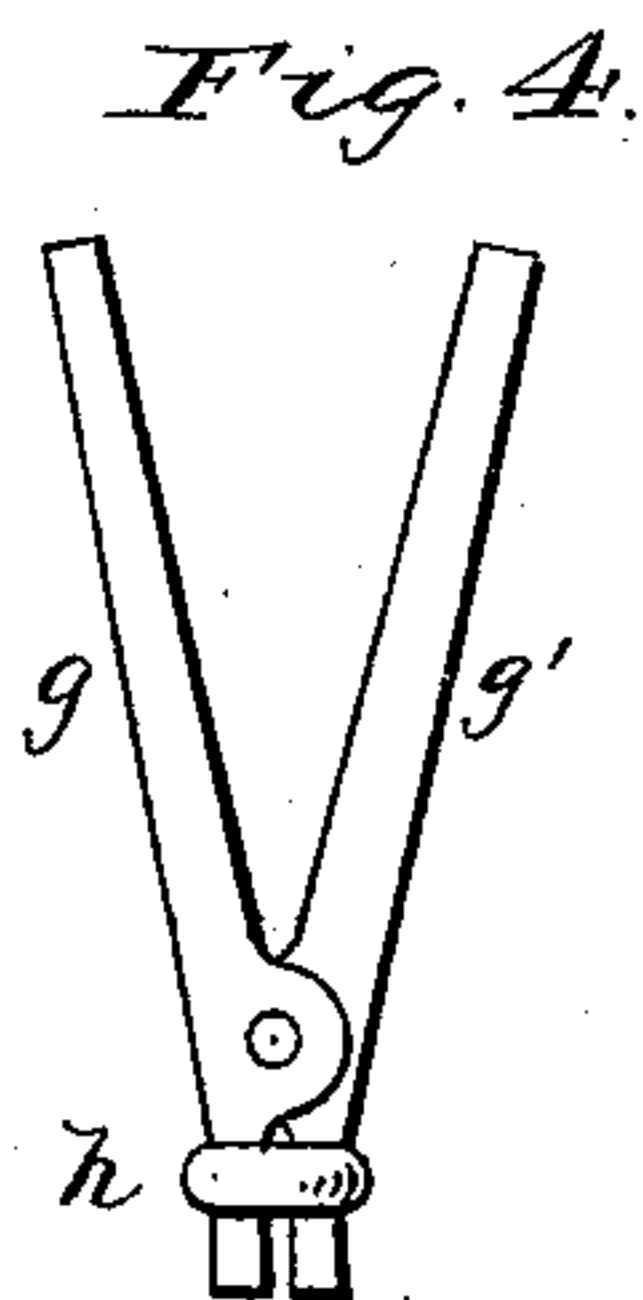
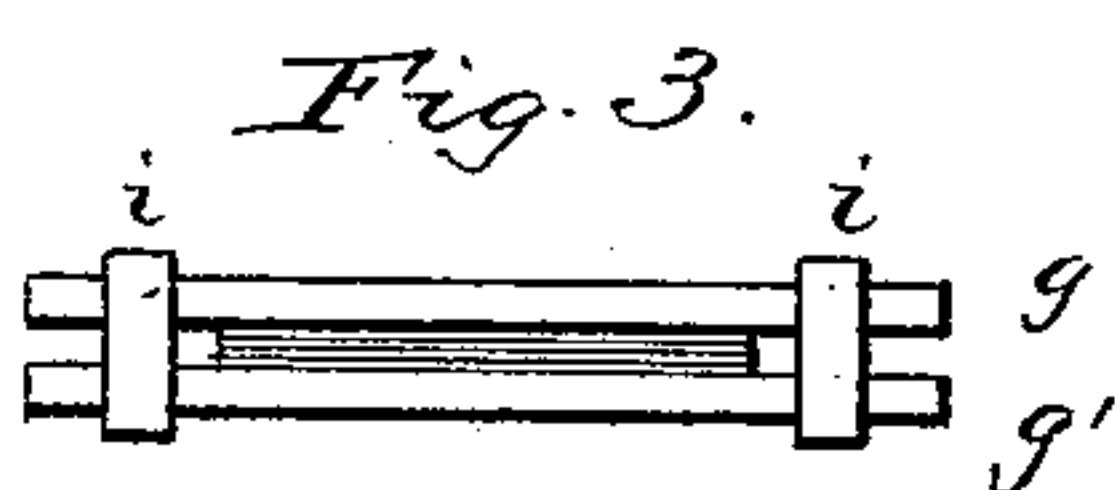
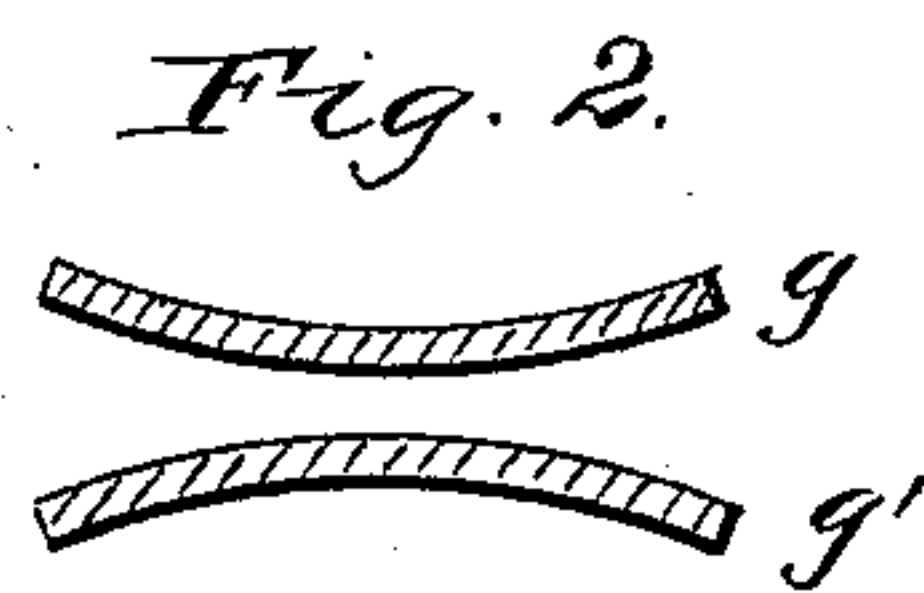
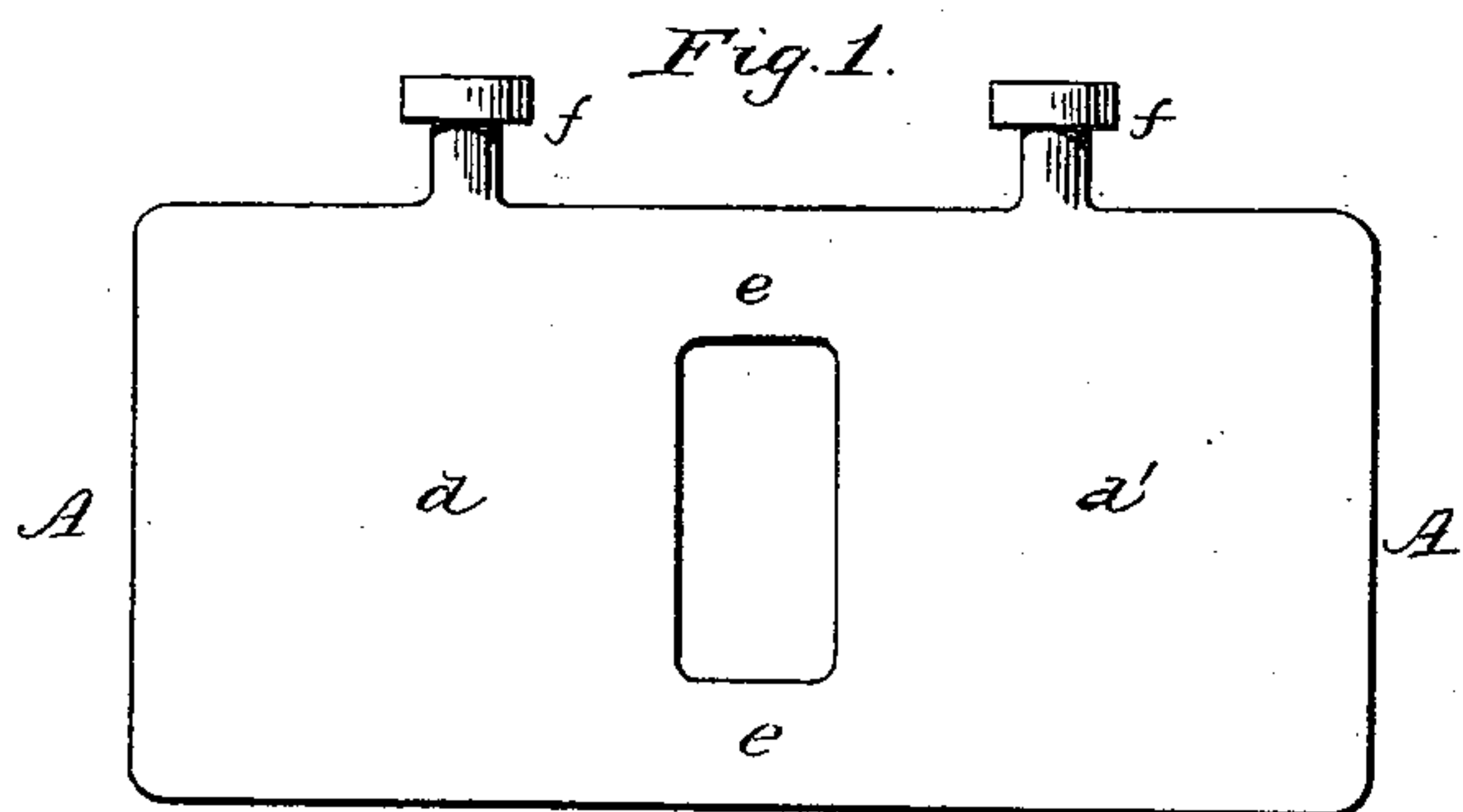


(No Model.)

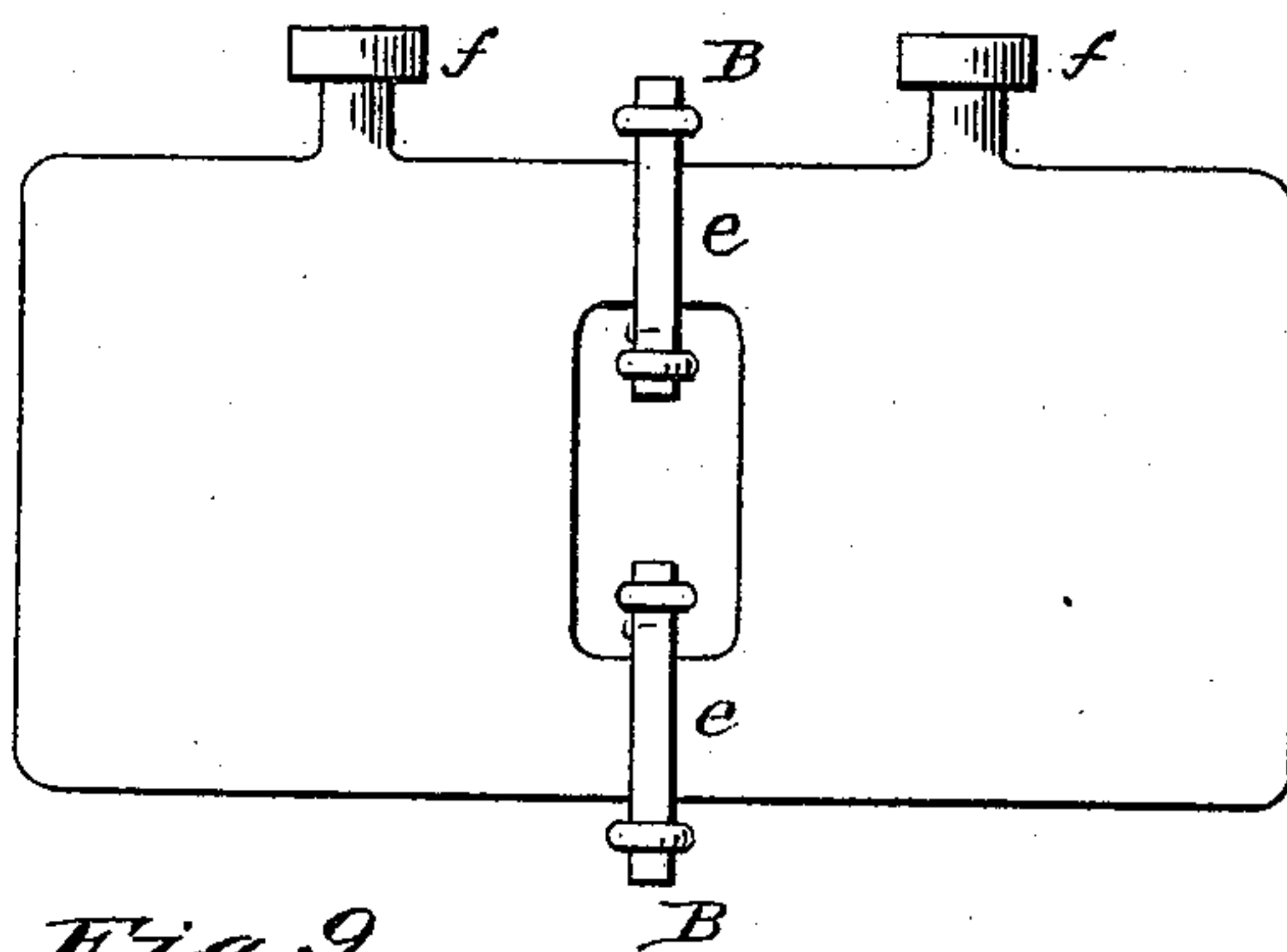
C. FRATTINI.  
FLOAT.

No. 450,408.

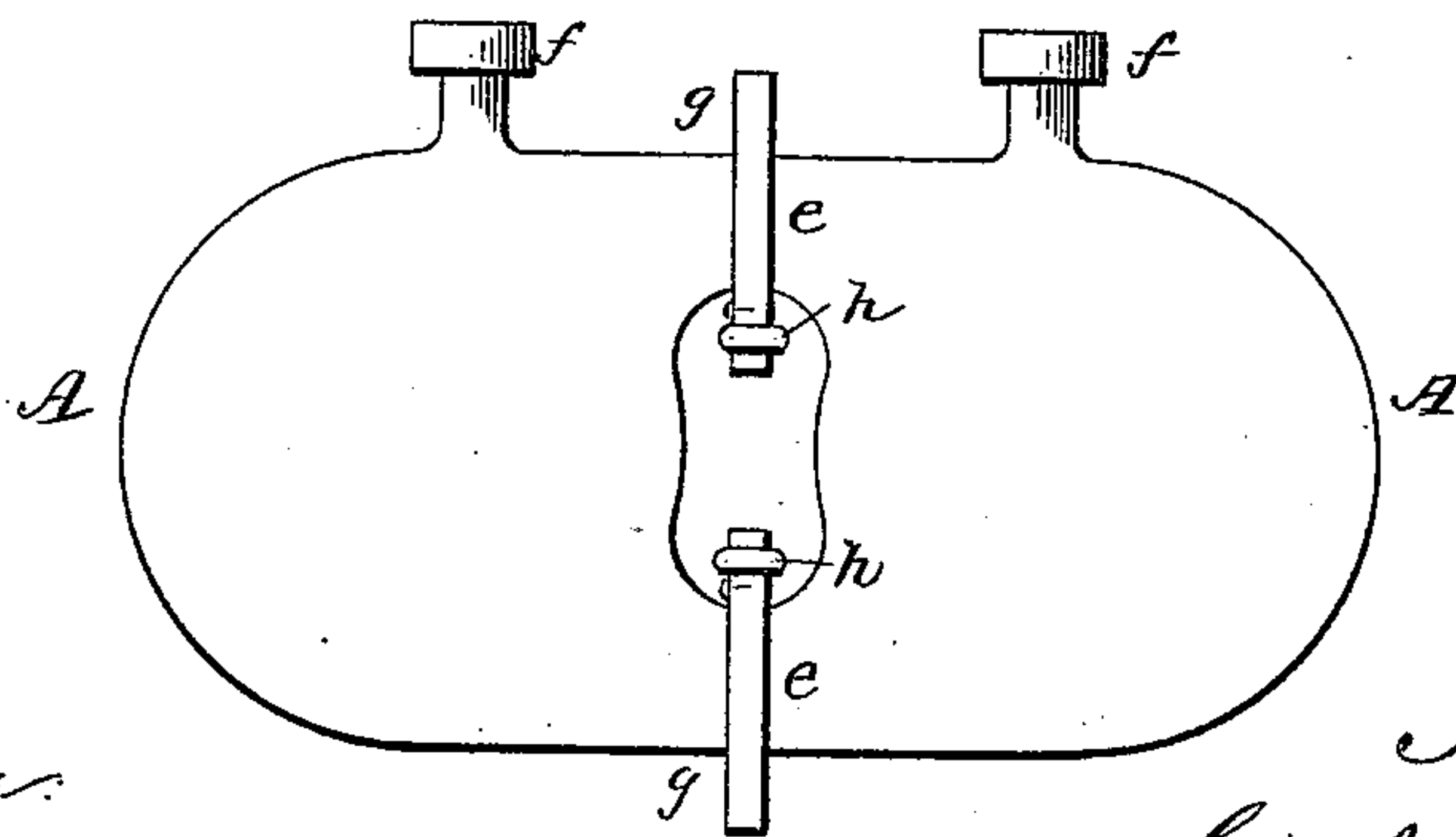
Patented Apr. 14, 1891.



*Fig. 8.*



*Fig. 9.*



Witnesses:  
Chas Rhodes.  
L. A. Conner.

Inventor:  
Carlo Frattini  
by Richards & Co.

# UNITED STATES PATENT OFFICE.

CARLO FRATTINI, OF ROME, ITALY.

## FLOAT.

SPECIFICATION forming part of Letters Patent No. 450,408, dated April 14, 1891.

Application filed September 30, 1889. Serial No. 325,624. (No model.) Patented in Italy May 14, 1889, No. 24,912.

*To all whom it may concern:*

Be it known that I, CARLO FRATTINI, a subject of the King of Italy, residing at Rome, Italy, have invented a new and useful Improvement in Floats which Inflate Automatically when Immersed in Water, (for which I have obtained a patent in Italy under the date of May 14, 1889, No. 24,912,) of which the following is a full, clear, and exact description.

The present invention belongs to the class of flexible floats made of impermeable cloth or like material which can be inflated with air or any other gas; but there is an essential difference in the manner in which the inflation of my float is accomplished and the manner in which other floats are inflated, for, as far as I am aware, my float is automatically inflated as soon as it is plunged in the water by means of special arrangements and constructions, as will be hereinafter more fully described.

My float is illustrated in the annexed drawings, which form a part of this specification. I wish it understood, however, that the float there shown only serves me as an example, because within certain limits, which are, in fact, very wide, my invention can be used for floats of any capacity, shape, and kind.

Figure 1 is a side elevation of a float without the clamps. Fig. 2 shows one form of the clamps used in my invention. Fig. 3 shows a side view of these clamps and their binding-rings. Fig. 4 shows a side view of another form of clamps, showing the same in an open position. Fig. 5 is a sectional elevation of the cap or ring *i*. Fig. 6 is a side view of the clamp shown in Fig. 5, showing the arrangement of the caoutchouc ring *h* and the ring *i*. Fig. 7 shows a side view of these clamps as they appear when in place on the float embracing the passages *e e*. Fig. 8 is a side elevation of a float before it is inflated, showing the clamp in place. Fig. 9 is a side elevation of a float as it appears inflated.

The apparatus is composed of three principal parts—*i. e.*, the receptacle or bag, the clamp or clamps, and the chemical substances.

The receptacle A, Figs. 1, 8, and 9, is a bag made of caoutchouc, ducking, or any other impermeable and flexible material divided in

two compartments of equal or different capacity *d d'*, as may be preferable, which are in free communication by means of one or several passages *e*. Each of these compartments has a mouth-piece *f*, which can be closed air-tight for the introduction into the bag of the chemical substances hereinafter described.

The clamp B (which is one of the principal features of my invention) is composed of two superposed metallic blades *g* and *g'*, Figs. 4 and 6, hinged together near their ends. A caoutchouc ring *h* is arranged on the short arms of the blades *g* and *g'* and presses the same together, thereby opening, of course, the long arms. A cap or ring *i*, Fig. 5, formed of two metallic half-rings pressed together by a band of blotting or gumless paper, which is wound around the same several times, is arranged on the end of the long arms of the blades *g g'*, Fig. 6, when the clamp is closed. This clamp is mounted on the outside of the bag over the passage or passages *e*, Figs. 7 and 9, by means of a solution of gum or any other cement not dissolvable in water. The clamp can also be formed of two elastic metallic blades *g* and *g'*, Figs. 2 and 3, not hinged together and pressed together by rings *i*, arranged on their ends, as heretofore described.

The chemical substances may be any of those which generate gas merely by their contact. In order to obtain a quick formation of gas, it is preferable that both the substances be liquid; but at all events it is absolutely necessary that at least one of them be in a liquid state. I quote the following specimens: acidulated water with a solution of carbonate of ammonia; acidulated water with a solution of bicarbonate of soda; acidulated water with turnings of iron and zinc; pure water with effervescent magnesia, citrates, &c.

The apparatus is brought into working order as follows: First, the communication between the two compartments *d* and *d'* is cut off by pressing together the clamp B, Fig. 8, and arranging the rings *i* on the blades; second, the chemical substances are separately put into the compartments of the bag in a quantity proportionate to the gas which they develop and to the capacity of the receptacle.



The compartments are then hermetically closed.

Owing to the nature of the blotting or gumless paper to lose its consistency almost instantaneously when moistened, it is evident that when the apparatus is plunged in the water the caps or rings *i* will be broken up, while at the same time the caoutchouc rings *h* will open the clamps, thus restoring the communication between the two compartments of the bag. The two chemical substances contained in the compartment will consequently come in contact and thus develop the gas and cause the inflation of the apparatus, which will then float on the water, Fig. 9.

My float, which has a very small volume before its immersion and becomes automatically inflated as soon as it is plunged in the water, can be used for humanitarian or in-

dustrial purposes to save men and animals from drowning and merchandise or even boats from sinking in accidents on the sea, lakes, or in case of floods.

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

In a float, the combination of a bag and the clamp separating said bag into two compartments and consisting of blades *g g'* and rings holding said blades, one of said rings being of material adapted to be softened by the water, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CARLO FRATTINI.

Witnesses:

C. GUYORONO,

E. V. DOBRILOVICHE.