

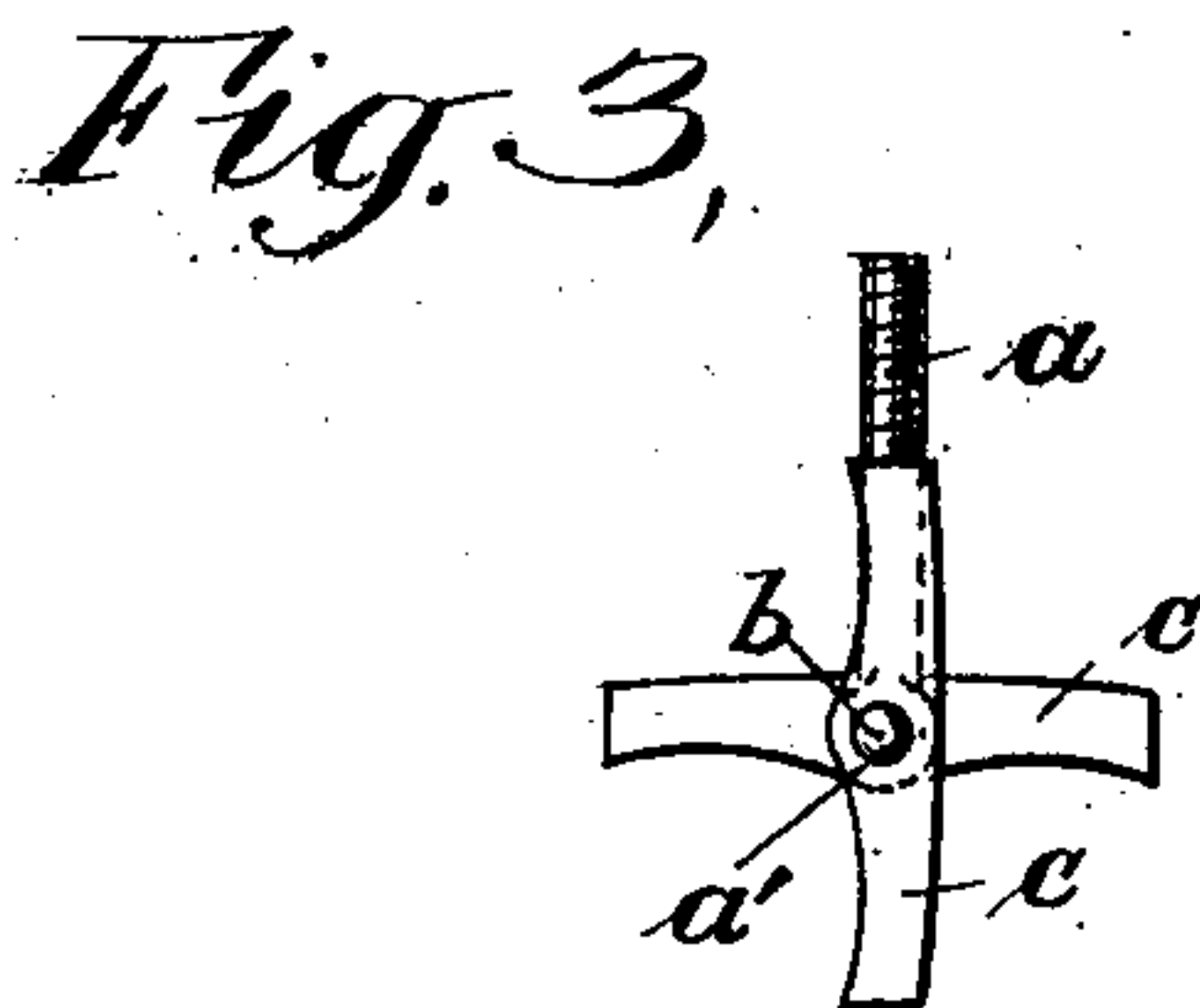
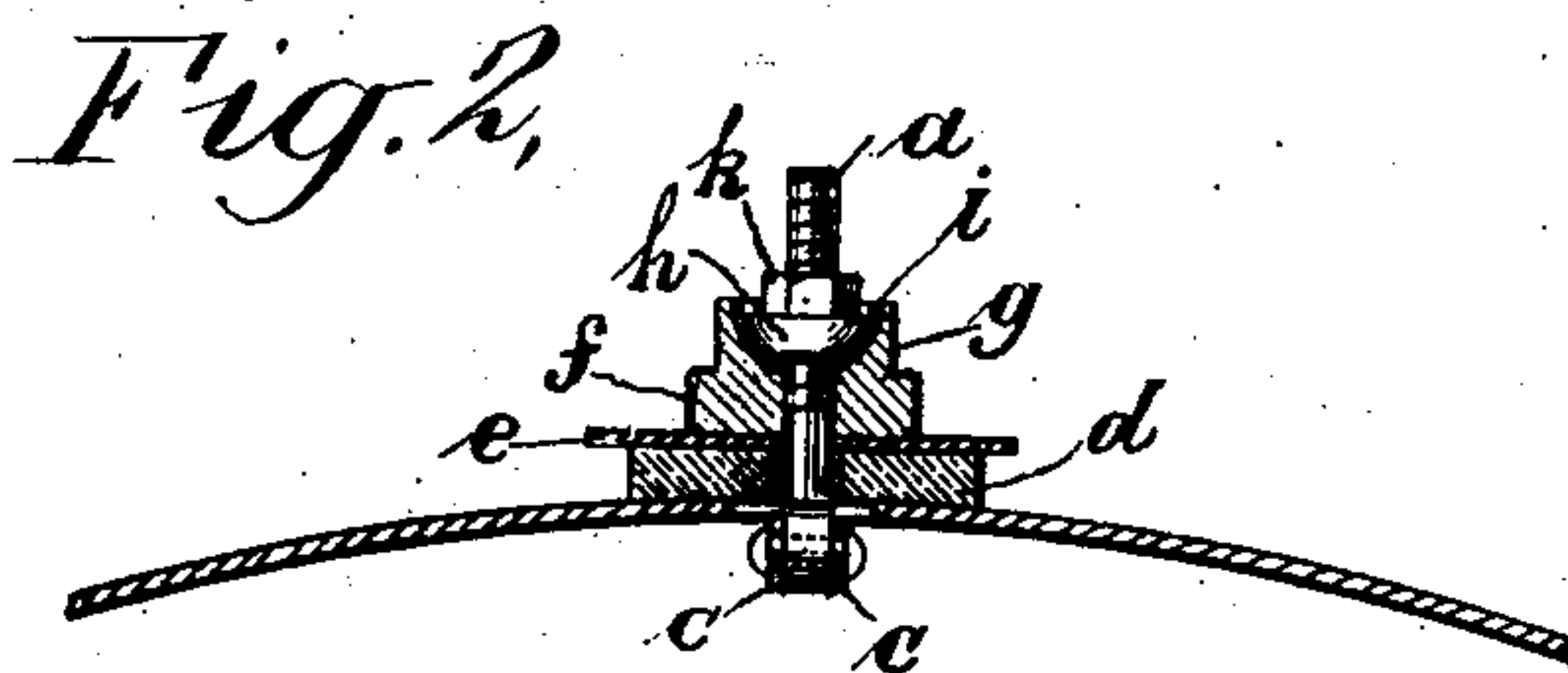
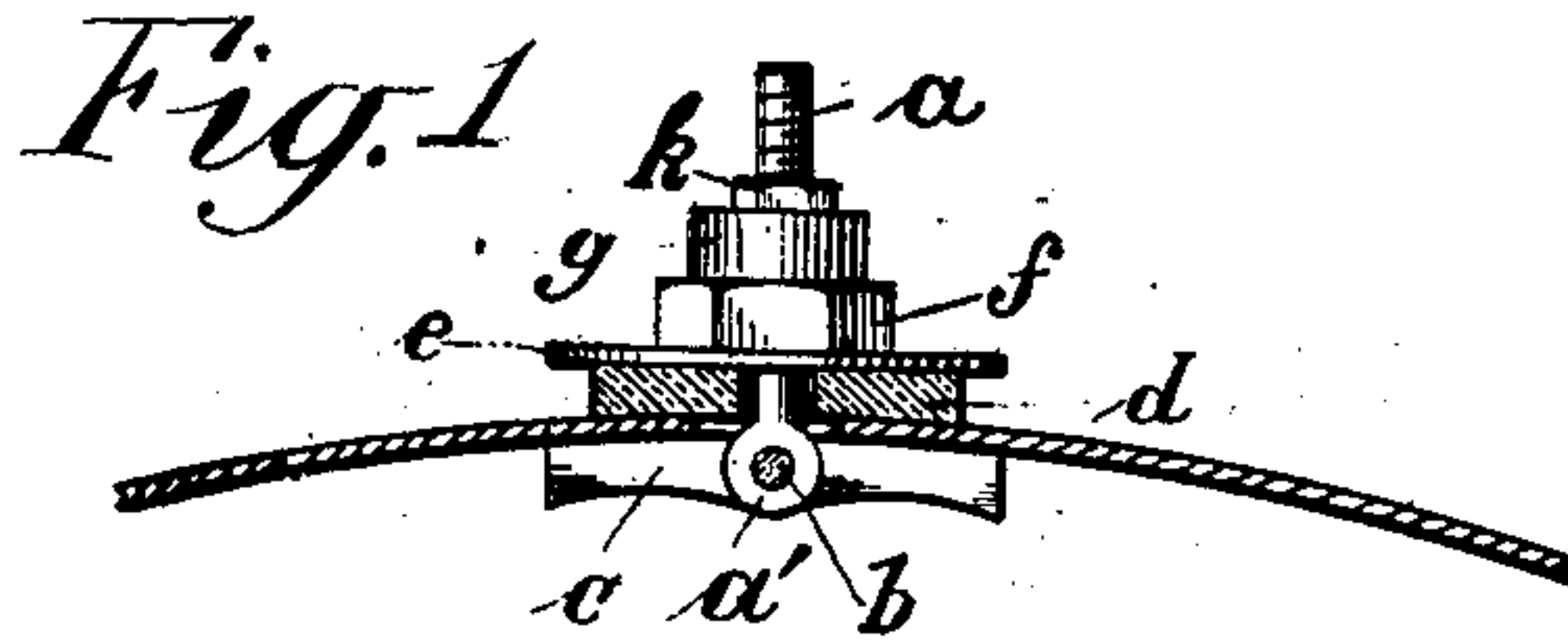
No. 701,691.

Patented June 3, 1902.

C. ENGELHARDT.  
REPAIR PLUG FOR BOILERS.

(Application filed Feb. 24, 1902.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES ENGELHARDT, OF RIDGEFIELD, NEW JERSEY.

## REPAIR-PLUG FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 701,691, dated June 3, 1902.

Application filed February 24, 1902. Serial No. 95,205. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES ENGELHARDT, a citizen of the United States of America, and a resident of Ridgefield, in the county of Bergen, State of New Jersey, have invented certain new and useful Improvements in Repair-Plugs for Boilers, of which the following is a specification.

My invention has reference to a novel repair-plug for boilers, and pertains particularly to a repair-plug for boilers made of iron—as, for instance, range or hot-water boilers and similar vessels and tanks—when same by general wear and tear or deficiencies in the material get a small hole.

It is a well-known fact that a small hole is formed in the course of time on the curved top portion or head of iron range or hot-water boilers, such as are used in private residences and flats for supplying hot water. The boiler is then lost and has to be thrown away if this hole be not effectively plugged up.

It is the object of this invention to provide a repair-plug for this purpose which is easily applicable and perfectly reliable, whereby the boiler is saved and its life prolonged.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents the plug in side elevation, showing its lower parts in section. Fig. 2 is a central section of Fig. 1 at right angles, and Fig. 3 shows in detail the central bolt with one wing in vertical and the other in horizontal position.

Similar letters of reference denote like parts in all the figures.

In the drawings, *a* is the threaded central bolt, having at its lower end a nearly-circular enlargement *a'*, which is provided with an opening through which passes a rivet *b*. At the enlargement *a'* there are two wings or swinging members *c*, connected loosely to same, one on each side, by means of the rivet *b*. The rivet passes through the central portion of the wings, which is slightly enlarged. The top surface *c'* of the wings *c* is slightly curved, so as to conform to the curve of the curved top portion or head of the boiler. The wings *c* swing around the rivet *b*, so that they may occupy both positions shown in Fig. 3.

A washer *d*, of rubber or other suitable wa-

ter-repellent and steam-resisting material, is provided on the bolt *a*, as shown in Figs. 1 and 2. Above this washer *d* there is a thin metal plate *e*, made, preferably, of iron, copper, or brass. This plate *e* is provided with a central opening, so that it may be let down on the bolt *a*. Next to the plate *e* and on the bolt *a* there is a nut *f* of relatively substantial size.

On top of the nut *f* and on the bolt there is a sleeve *g* integral with the nut, which is provided with a hemispherical incision *g'*. (See Fig. 2.) A washer *h*, curved on its periphery like the hemispherical incision in the sleeve *g*, is fit therein. It is provided for the purpose of pressing down a flexible washer *i*, which constitutes a second seal. A threaded nut *k*, which fits accurately the thread on bolt *a*, is above the washer *h*. It serves for securing permanently all the parts composing the plug.

The repair-plug is applied in the following manner: The wings *c* are swung around until they form a vertical line with the bolt *a*. Then the bolt and wings are let down through the hole in the head of the boiler, and the wings are adjusted so that they rest horizontally or at right angles to the central line of the bolt *a*. Now the washer *d* is let down on the bolt. It is then located on top of the curved head of the boiler and closes the hole in same completely. Then the plate *e*, nut *f*, sleeve *g*, flexible washer *i*, washer *h*, and finally nut *k* are applied in the successive order in which they are named. By means of the nut *k* the device is permanently and effectively secured.

It is understood that a hole in the boiler not sufficiently large to admit of passing through the bolt and wings may be readily enlarged.

The sleeve *g*, with its hemispherical incision, and the flexible washer *i* and the washer *h*, located in the incision of *g* when the plug has been applied, are provided for the purpose of serving as a second or double seal, thus guarding against any leakage even in case the washer *d* should have become slightly loose in the course of time.

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



1. A repair-plug for boilers and tanks comprising a threaded central bolt forming an enlargement with opening at its bottom, a rivet in the opening, two swinging members  
5 secured loosely on the rivet and arranged one on each side of the bolt, a washer of water and steam resisting material, a metal plate above the washer, a nut above the plate and a sleeve with hemispherical incision integral  
10 with the nut, a flexible washer, a solid washer conforming to the shape of the incision, and a tightening top screw-nut.

2. In a repair-plug for boilers a threaded central bolt forming an enlargement with  
15 opening at its bottom, a rivet in the opening, two swinging members secured loosely on the rivet one on each side of the bolt, and means for securing the swinging members when in position.

3. In a repair-plug for boilers a threaded 20 central bolt and nut, a sleeve integral therewith, a hemispherical incision therein, a flexible washer, a solid washer conforming to the shape of the incision, and a top screw-nut.

4. In a repair-plug for boilers a central bolt, 25 a rivet in its bottom portion, two wings loosely connected to the rivets one on each side of the bolt, a nut and sleeve, a hemispherical incision therein, a flexible washer, a solid washer conforming to the shape of the inci- 30 sion and a tightening top screw-nut.

Signed at New York, N. Y., this 21st day of February, 1902.

CHARLES ENGELHARDT.

Witnesses:

JAMES J. ASTARITA,  
BLANCHE PIRANI.