(No Model.)

J. BEE.

TILT OR DROP HAMMER.

No. 428,766. Patented May 27, 1890.

Fig. 1.

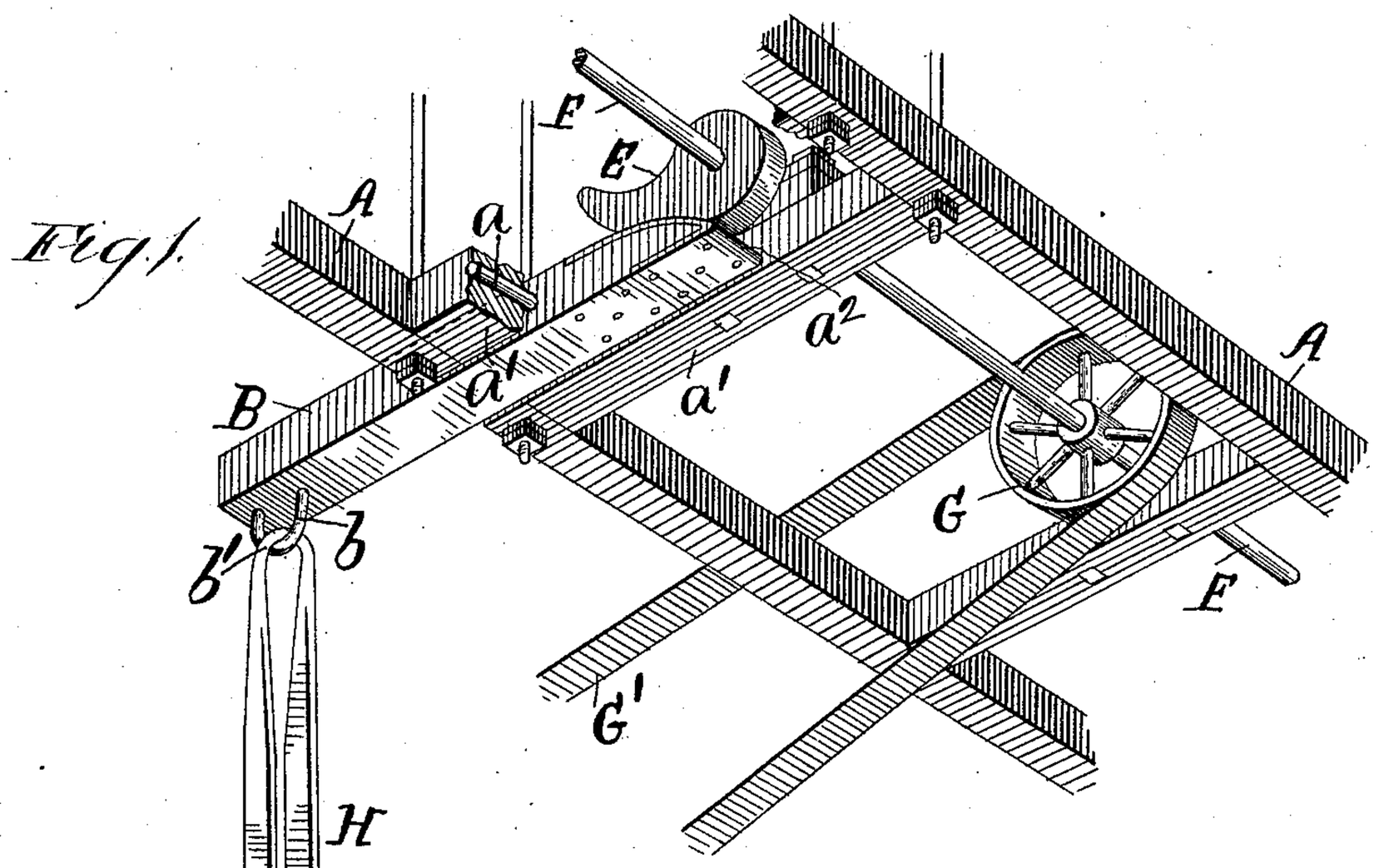
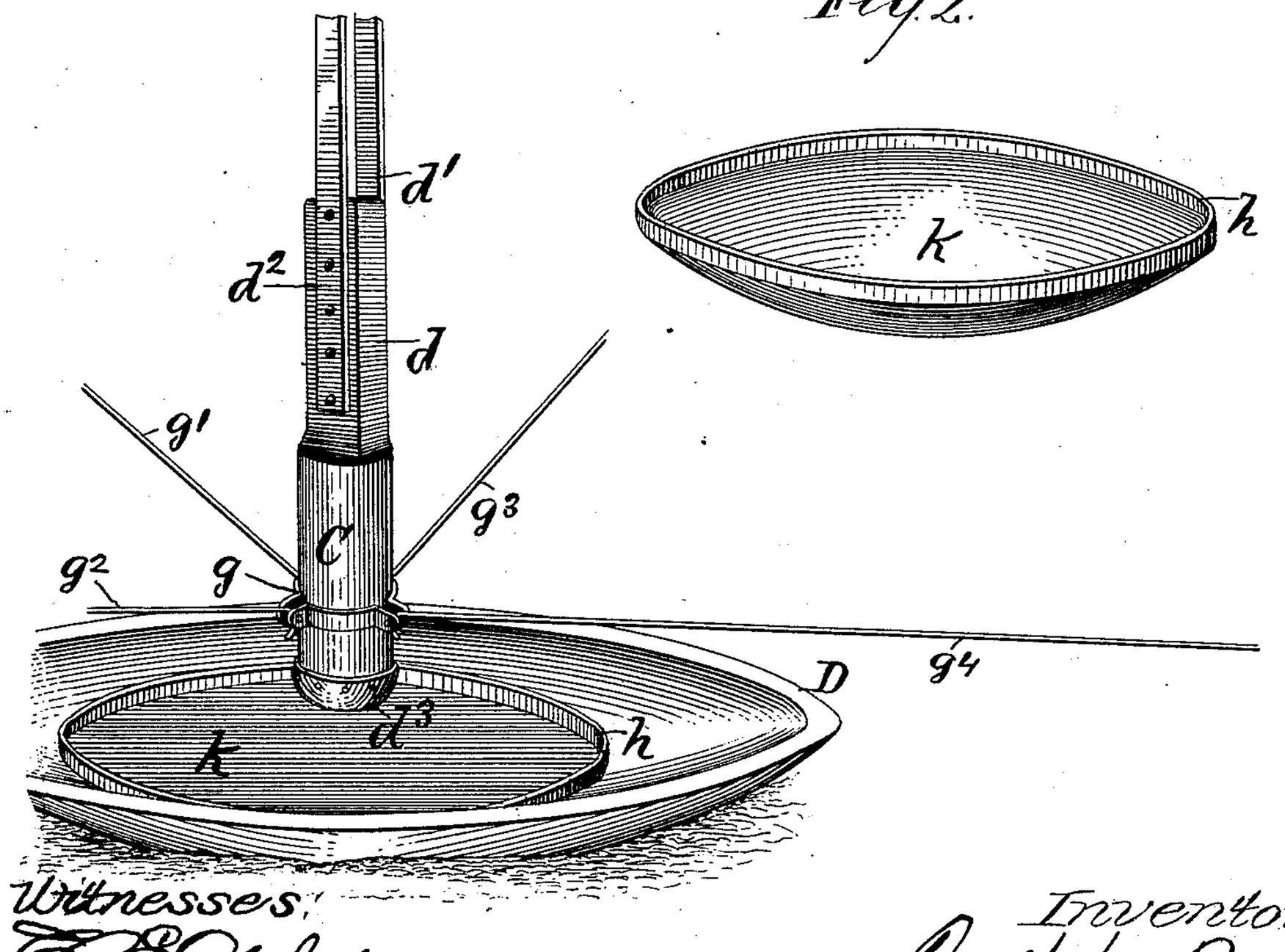


Fig. 2.



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TILT OR DROP HAMMER.

SPECIFICATION forming part of Letters Patent No. 428,766, dated May 27, 1890.

Application filed December 24, 1889. Serial No. 334,860. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BEE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tilt or Drop Hammers, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to an improvement in power-hammers, and has for its object the production of a device of this character that is more especially intended for the purpose of imparting to tank and boiler heads the required concavo-convex shape or form, as will be hereinafter set forth.

Figure 1 is a perspective view of the device embodying my improved features, showing the object in position to be operated upon; and Fig. 2, a view of a tank or boiler head after being swaged into the desired form.

Referring to the drawings, A represents the different parts of the supporting overhead frame-work; B, a rocking lever; C, the hammer, and D the form.

The lever B is mounted on the pivot or fulcrum shaft a, inserted in the timbers a' a' of the frame-work, one of which is broken away, exposing said shaft. The outer end and upper side of the lever B is rounded or beveled, as at a^2, so as to correspond somewhat to the contour of the bearing side of the toe-cam or wiper E, rigidly mounted on the driving-shaft F. This cam is adapted to have an intermittent contact with the end of the lever B for the purpose of imparting a rocking movement thereto.

A pulley G is mounted on the driving-shaft, and the belt G′ connects the same with the source of motive power and serves to transmit the required motion.

A staple b is inserted in the under side of the inner end of the lever B. The upper closed and rounded end b' of the double strap H interlocks and engages loosely with the staple b, as shown.

The hammer or stamp C is provided with the flattened shank d, to which the lower flattened ends d' d^2 of the double strap H are rigidly secured. The lower part of the hammer, which has contact with the object to be swaged, terminates in the spherical face or end d^3. The lugged band or collar g encompasses the body of the hammer and provides holding ground for the removable handles or guide-rods g' g^2 g^3.

The form D is dished, as shown, and is composed of metal of considerable thickness, and is usually set in a depression in the ground corresponding to the convex surface of the form. The tank or boiler head K is first in the form of a disk and is next provided with the annular flange h, and after being heated is dropped into the form as illustrated in Fig. 1, and swaged until it assumes the shape shown in Fig. 2, which is the exact concavo-convex shape of the form. Different forms having more or less "dish" will be used in accordance with the amount of dish to be given to the object.

In operation the object to be swaged is first placed in the heating-furnace, and when heated to the required degree is dropped into the form, and two or three workmen grasp the outer ends of the long handles or guide-rods and move the hammer to strike the blow on any desired spot. The universal connection with the operating-lever permits of the hammer having a wide horizontal range and is easily brought to any desired point within the circumference of the form. The long handles also enable the workmen to stand off, so that they do not suffer from and are not blinded by the heat, and are thus better enabled to direct and deliver the blows to the best advantage as the work progresses. Heretofore this work has been done by means of hand-sledges and required from six to eight men, or as many as could stand around the form. This method was necessarily slow and laborious. The workmen were obliged to stand very near and suffered from the reflected heat, and each head usually required from three to four heats before being swaged to the desired form, thus making the process slow and expensive. Take, by way of illustration, a head having a diameter of six feet and weighing about eight hundred and fifty pounds. This weight would have to be lifted into and out of the heating-furnace at least three different times (some thirty minutes being necessary each heat) to heat the head to the required degree, and the process of

swaging by hand would consume about twenty minutes each heat, thus taking about two and one-half hours to dish one large head.

By the use of this improved device not more than forty-five minutes of time are required, as one heat is sufficient and the swaging is completed inside of fifteen minutes, the work being done in a much better manner, leaving the surface of the metal in a smoother condition than is possible by hand-swaging, and saving a great deal of time and severe labor.

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

In a device of the character described, the combination of the overhead frame, the rocking lever fulcrumed thereon, the cam or wiper adapted to have an intermittent contact with one end of said lever, the driving-shaft upon which the cam is rigidly mounted, the staple inserted in the opposite end from that where the cam is located, the double strap closed and rounded at the upper end and engaging loosely with said staple, the hammer having its upper shank end inserted between the lower open ends of said strap and rigidly secured thereto, and the guide-rods attached to said hammer, substantially as and for the purpose set forth.

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