

(No Model.)

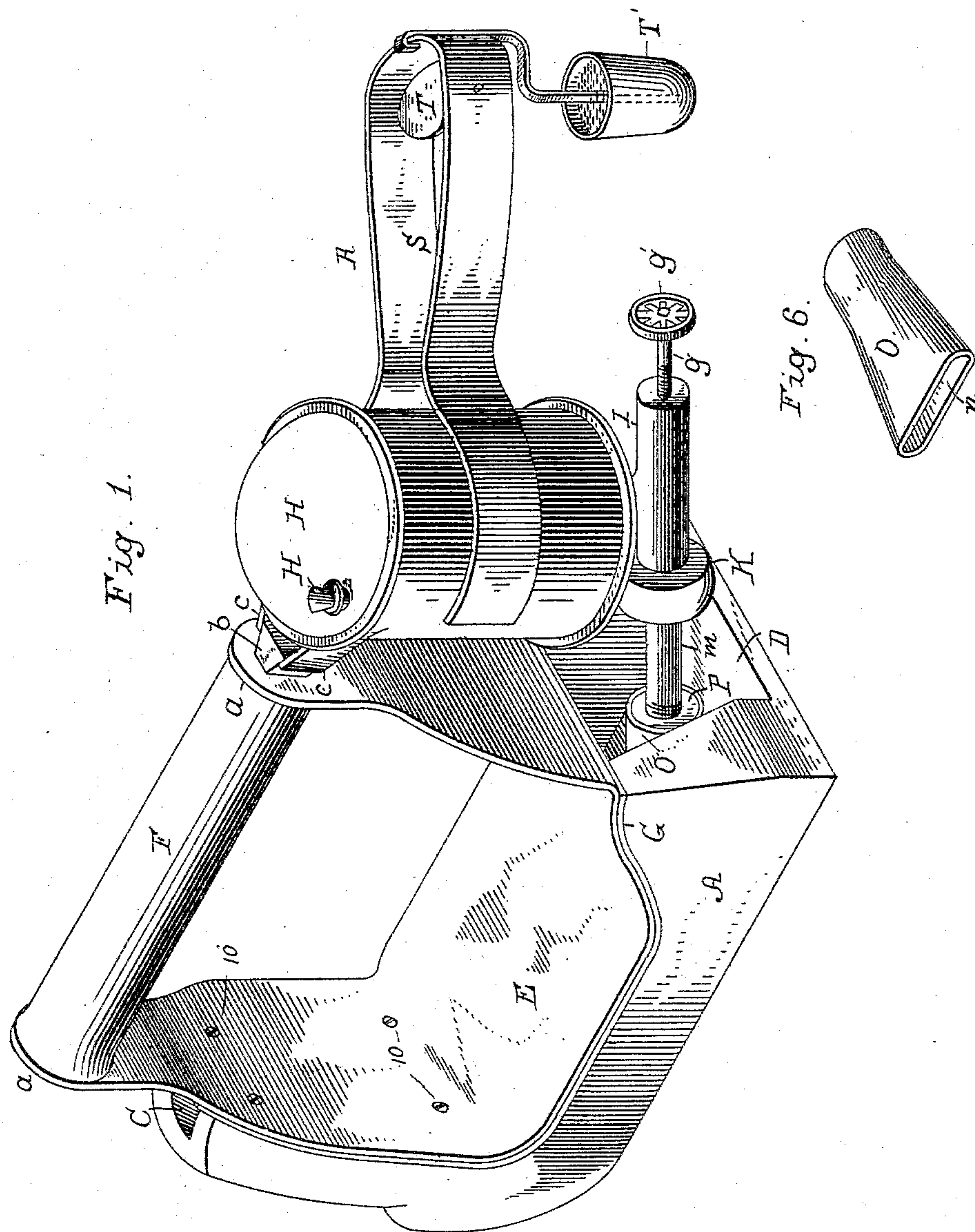
2 Sheets—Sheet 1.

W. H. MULL.

SAD IRON.

No. 381,572.

Patented Apr. 24, 1888.



WITNESSES:

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INVENTOR.

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2 Sheets—Sheet 2.

SAD IRON.

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Fig. 2.

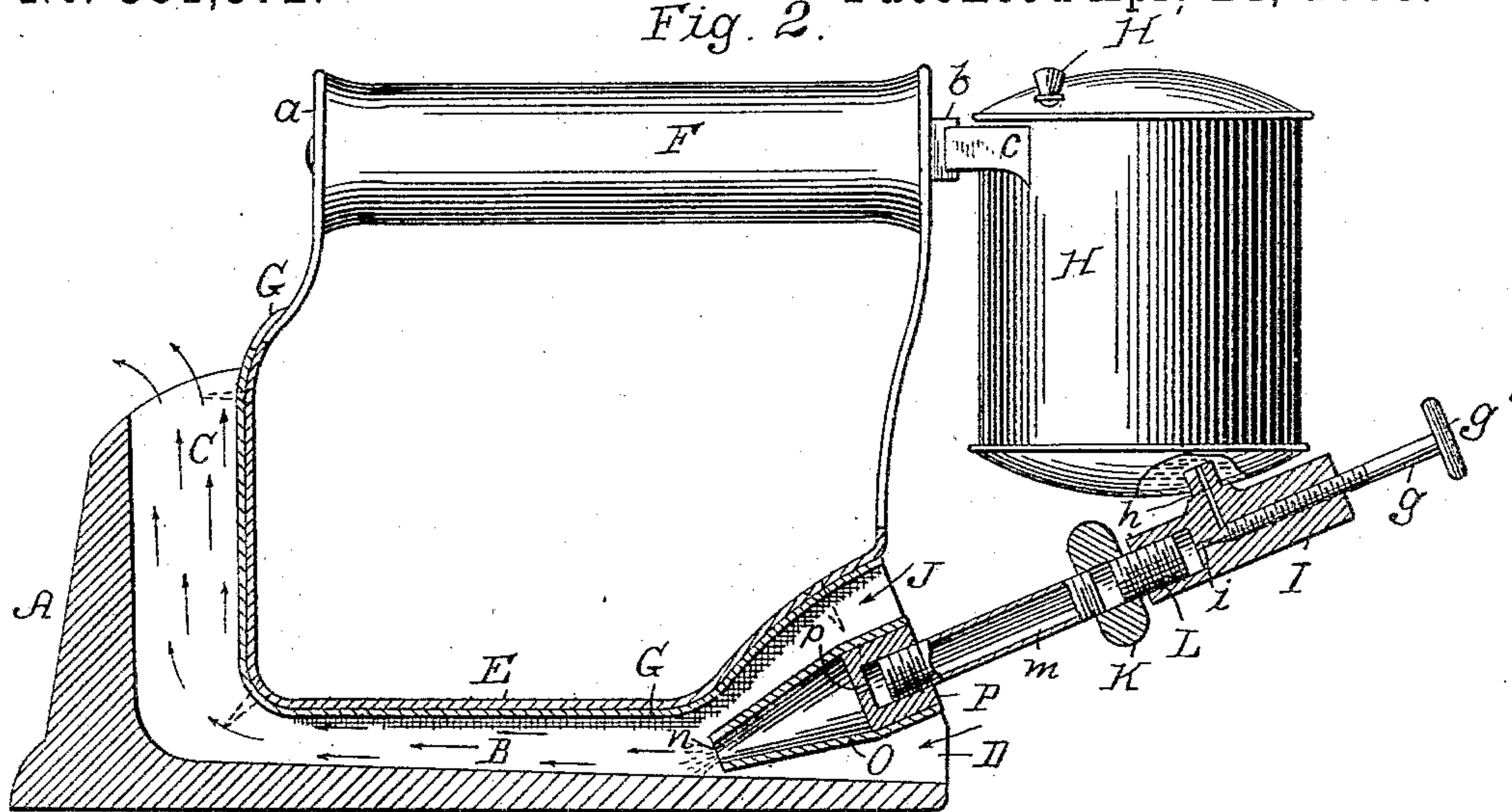


Fig. 4.

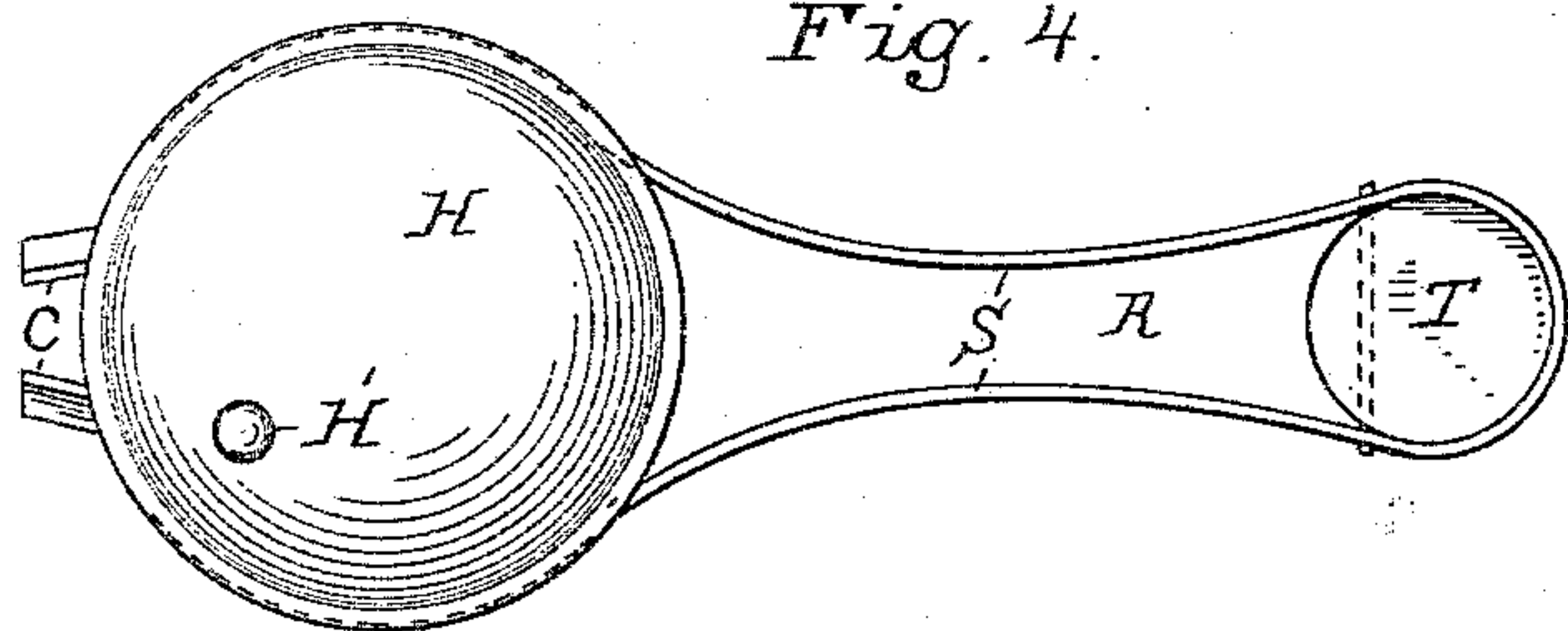


Fig. 3.

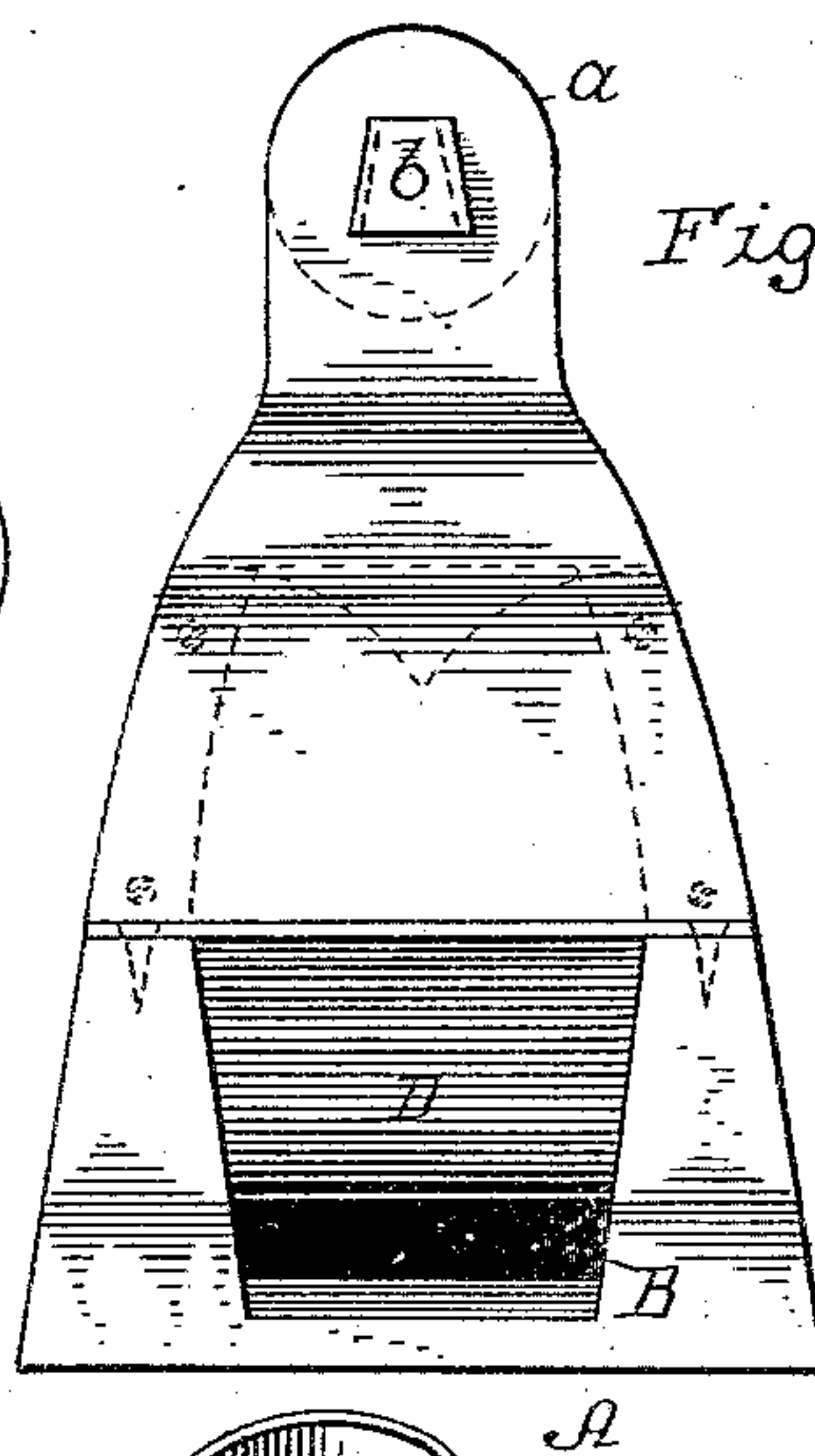
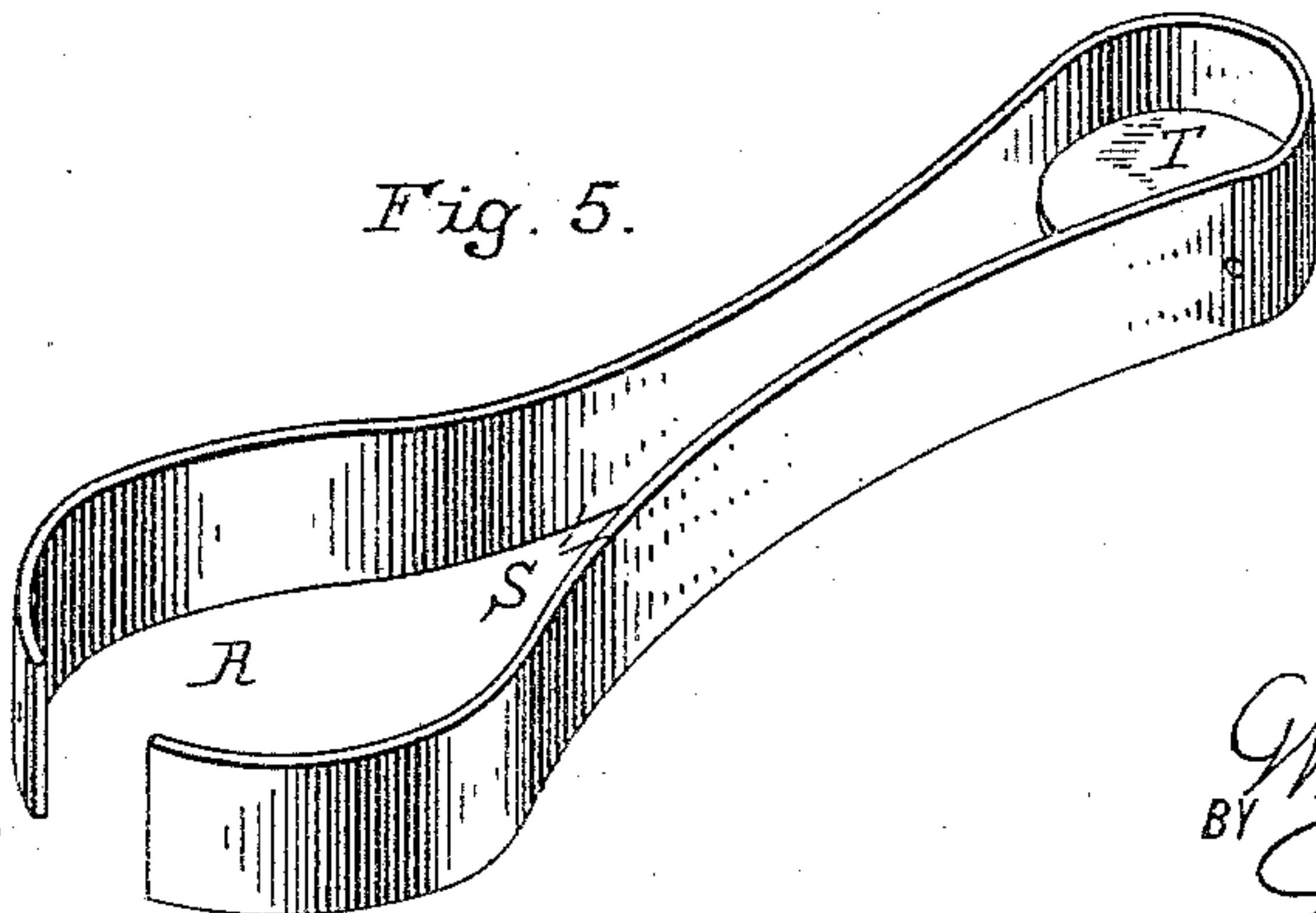


Fig. 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM H. MULL, OF LAWRENCE, KANSAS, ASSIGNOR TO JACOB M. ZOOK,  
OF SAME PLACE.

## SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 381,572, dated April 24, 1888.

Application filed November 17, 1887. Serial No. 255,434. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. MULL, of Lawrence, Douglas county, Kansas, have invented certain new and useful Improvements in Self-Heating Sad-Irons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to self-heating sad-irons which use gasoline for fuel; and it may be said to consist in the devices and the combination and arrangement of devices herein-after set forth, and pointed out in the claims.

In the drawings, which illustrate the manner of carrying out my invention, Figure 1 is a perspective view of my improved sad-iron; Fig. 2, a side elevation, partly in cross-section. Fig. 3 is a rear view of the iron with the tank and burner removed. Fig. 4 is a detail plan view of the tank having the heating-clasp applied thereto. Fig. 5 is a perspective view of said heating clasp detached from the tank, and Fig. 6 is a detail perspective view of a vapor-discharging nozzle used in making up my invention.

The body A of the iron is cast in one piece with a plain under surface, and has a depression, B, which extends throughout its length, as shown more clearly in Figs. 2 and 3. This is done without the use of a core of any kind. In this way I form a heating and commingling chamber, B, which has an enlarged or flaring rear end, D, and from which reaches upwardly the discharge-passage C. Immediately above the passage B, I place a sheet of non-conducting fire-proof material, G, as a sheet of asbestos; and covering the sheet G, to hold it in place I locate the metallic plate E, which is provided with ears a at its upwardly-projecting ends, to which the handle F is secured, and which metallic sheet is secured in place by means of suitable screws, 10, which are passed through said sheet and the sheet of asbestos into the body A, as shown. This construction provides the passage B with an upper surface of fire-proof material, and as such surface is also a non-conductor of heat much of the heat that would thus pass upwardly and raise the temperature of handle F will be reverted downwardly, where it is most needed.

The tank H is of suitable size for the work

required of it and is provided with oppositely-located lugs c on one side, which are adapted to engage a correspondingly shaped lug, b, projecting from the rear end of the handle. Said lug is made in the form of a dovetail, as is shown, so that the tank may be lifted on or off whenever required. Soldered or otherwise secured to the bottom of tank H is the valve for regulating and controlling the flow of gasoline to the burner J. Said burner is connected to valve-casting I, and is therefore also supported by said tank. The casting I is provided with passages h i, through which the gasoline is led from the tank to the burner, and the valve g, having a suitable hand-wheel or handle of any sort located upon its outer end, is adapted to engage the passages h i, as shown.

The burner J is connected to valve-casting I by means of a short brass tube, m, a piece of heat-insulating material, K, and a short metallic thimble, L, said thimble being threaded into the lower end of the valve-casting and also into the coupling K, while the other end of tube m is also screwed into coupling K, and a generator, P, and nozzle O are secured to its lower end, the arrangement being such that said nozzle is located some distance within the flaring rear end, D, of passage B. The generator P is provided with a small aperture, p, through which the vapor and liquid fuel is discharged into nozzle O.

I may say that a portion of the tube m and also nozzle O can be designated by the term "generator," as during use of the iron the temperature of these parts rises quite high.

The discharge end n of nozzle O is flattened and widened, so as to more perfectly distribute the vapor over the surface of the iron. For the purpose of heating the reservoir H before the iron is to be used, so as to generate sufficient pressure therein to operate the burner, I provide a detachable metallic clasp, R, which is provided with oppositely-located spring-arms S. These arms are curved at their outer ends, so as to correspond to the size or diameter of the said tank, and the opposite end of the clasp is provided with a suitable metallic heating-surface, such as T, for contact with the flame of a lamp or candle, as will be presently described. Said clasp is to be held in



place upon the can by means of the pressure exerted by its arms S and without further support. Of course it is detachable from said tank and may be removed at any time. By attaching said clasp to the tank, as shown in Fig. 1, and holding a small flame—such as that of a lamp or candle—directly beneath its outer end, said clasp will conduct a portion of the heat of said flame to the liquid in reservoir H, and said liquid will be expanded and a pressure sufficient to force the gasoline through the generator J will be created.

The operation of the iron with this construction is as follows: The tank is first detached from the iron and filled about two-thirds full of gasoline. Then the spring-clasp R is placed in position on said tank, and a burning candle or lamp should be held to the outer end of said clasp with its flame in contact with plate T until the tank becomes appreciably warm. Then, by means of the valve-handle *g'*, gasoline is admitted to the burner and allowed to flow through until the interior of nozzle O is dampened or wet. Then the valve should be closed, or nearly so, and the burner lighted and allowed to burn until it generates sufficient pressure to be self-operating, after which the clasp R is removed, and the tank and burner are again attached to the iron.

In some cases, instead of employing the flame of a lamp or candle, as before described, I may attach a small cup or receptacle, T', to the outer end of the clasp in some way, pour a small quantity of gasoline or oil therein, light it, and heat the said clasp and tank in that way, the operation being substantially the same as it would be were a lamp or candle employed. This cup can be permanently at-

tached to the clasp, or it may be detachably secured thereto, as shown in Fig 1. After the tank and burner have been replaced upon the iron and said burner lighted, the iron will in a few moments be sufficiently heated for use.

The tank H is constructed of sufficient strength for any ordinary use; but should the pressure therein run up to a dangerous point at any time the stopper H' will be blown out, acting somewhat in the way that an ordinary safety-valve would.

Having thus described my invention, what I claim is—

1. In a self-heating sad-iron arranged with a gasoline-tank, a detachable heating-clasp for said tank, substantially as herein set forth.
2. In a self-heating sad-iron arranged with a gasoline-tank, a metallic clasp having arms which detachably engage opposite sides of said tank, substantially as and for the purpose set forth.
3. In a self-heating sad-iron arranged with a gasoline-tank, the combination of the tank, a detachable heating-clasp, and a lighting cup carried by said clasp, substantially as herein set forth.
4. In a self-heating sad-iron, the combination of the gasoline-tank, a heating-clasp detachably located upon said tank, and a lighting-cup detachably located upon said clasp, substantially as herein set forth.

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

WILLIAM H. MULL.

Witnesses:

W. H. SPALDING,  
GRANT MULL.