

No. 635,197.

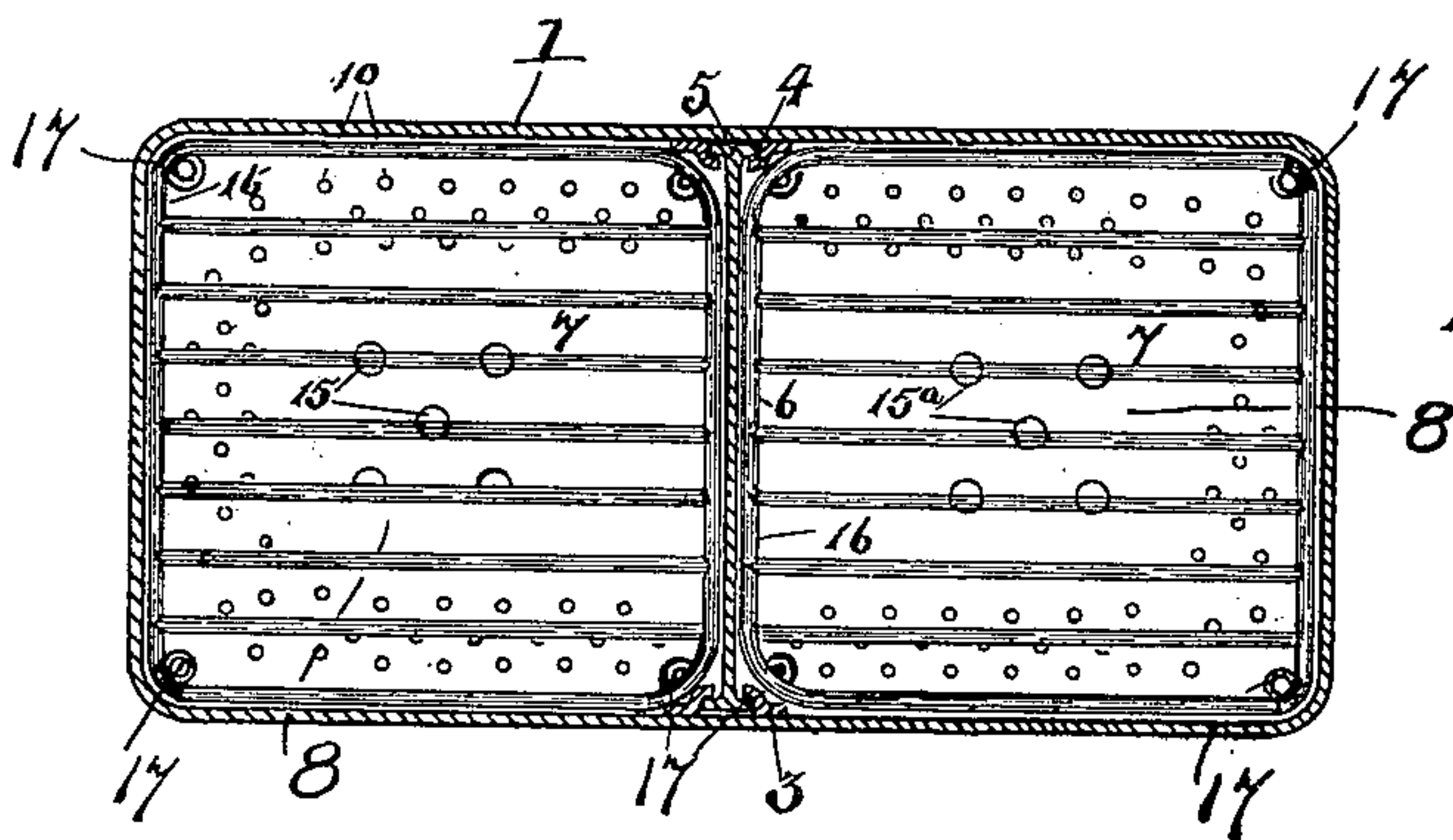
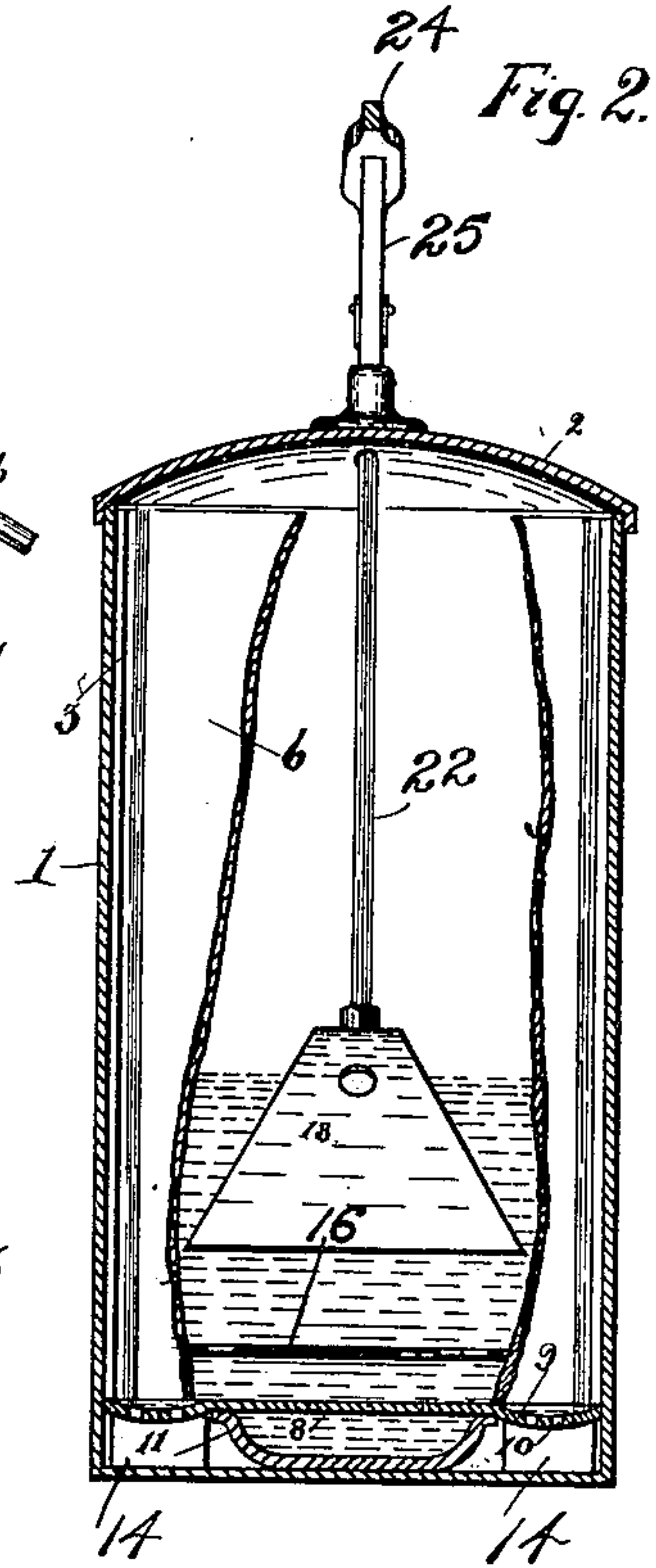
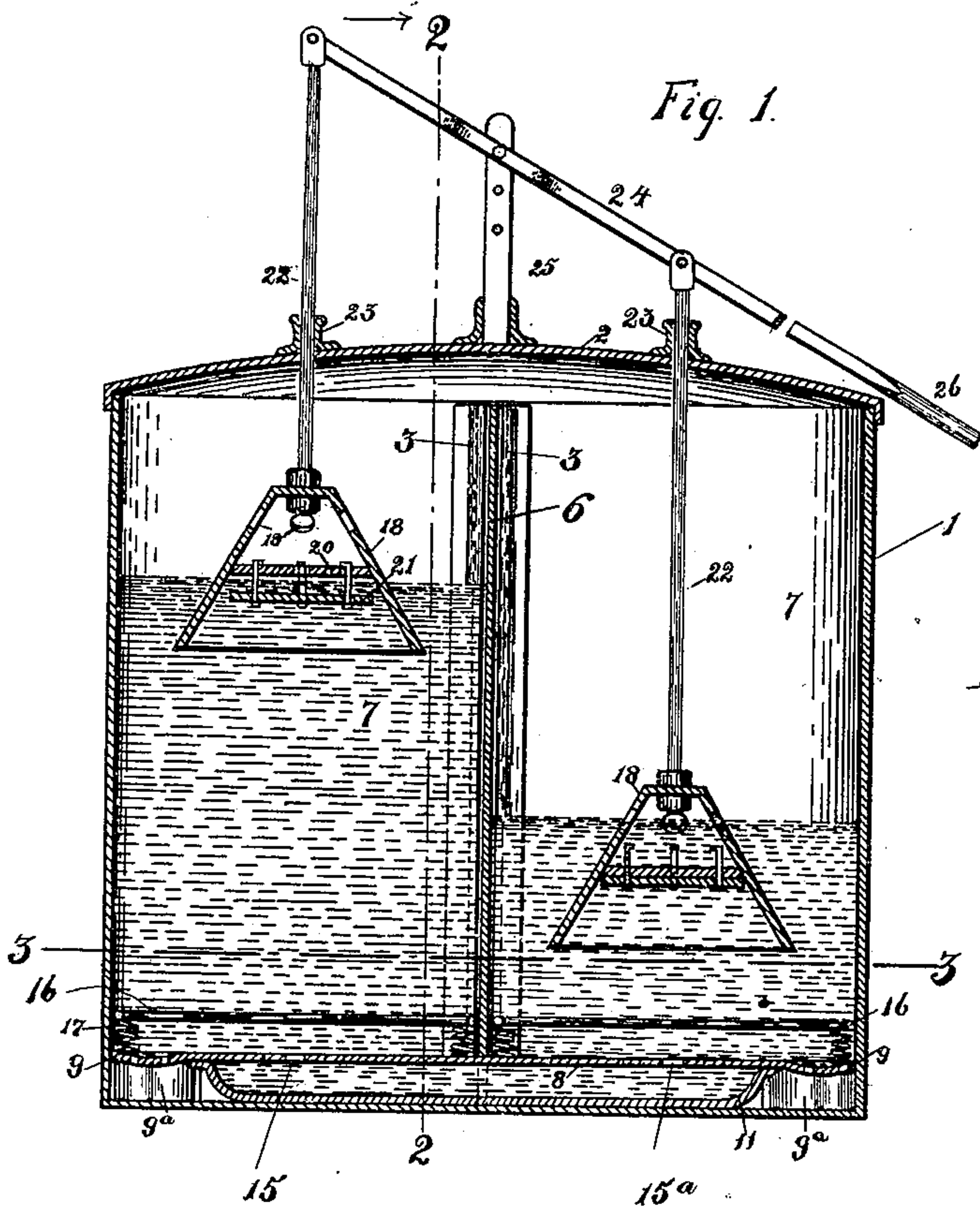
Patented Oct. 17, 1899.

A. J. SMALLEY.
WASHING MACHINE.

(Application filed June 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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Fig. 4.

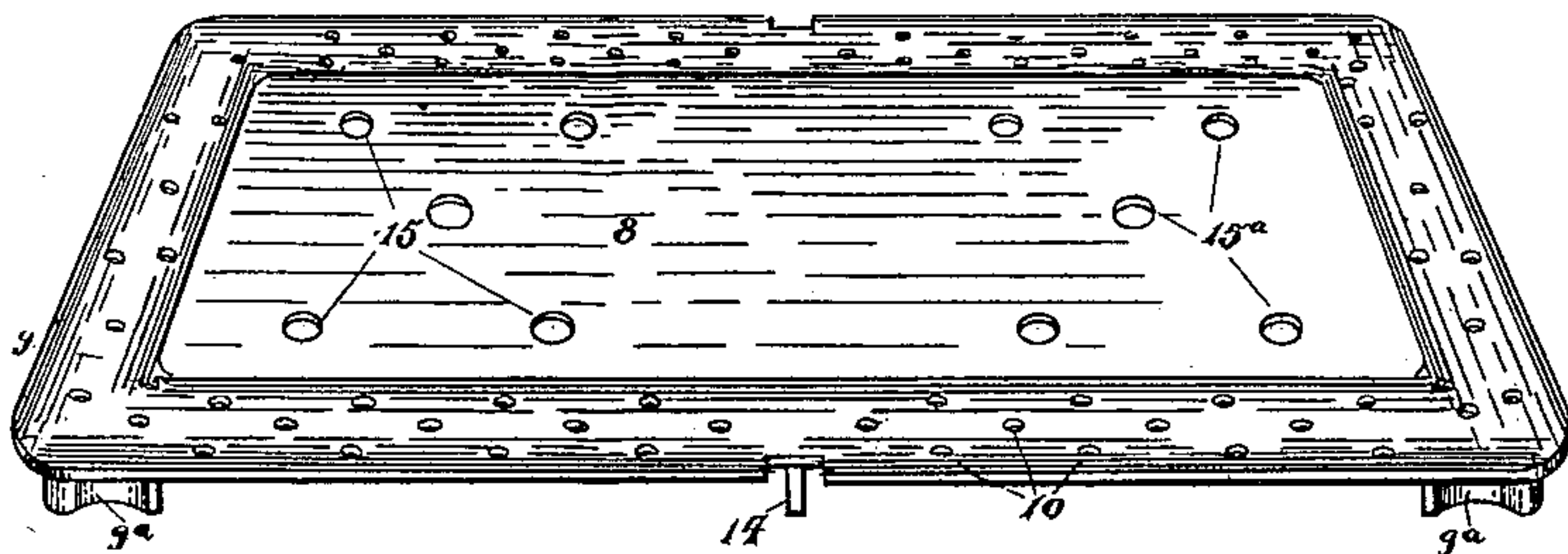


Fig. 5.

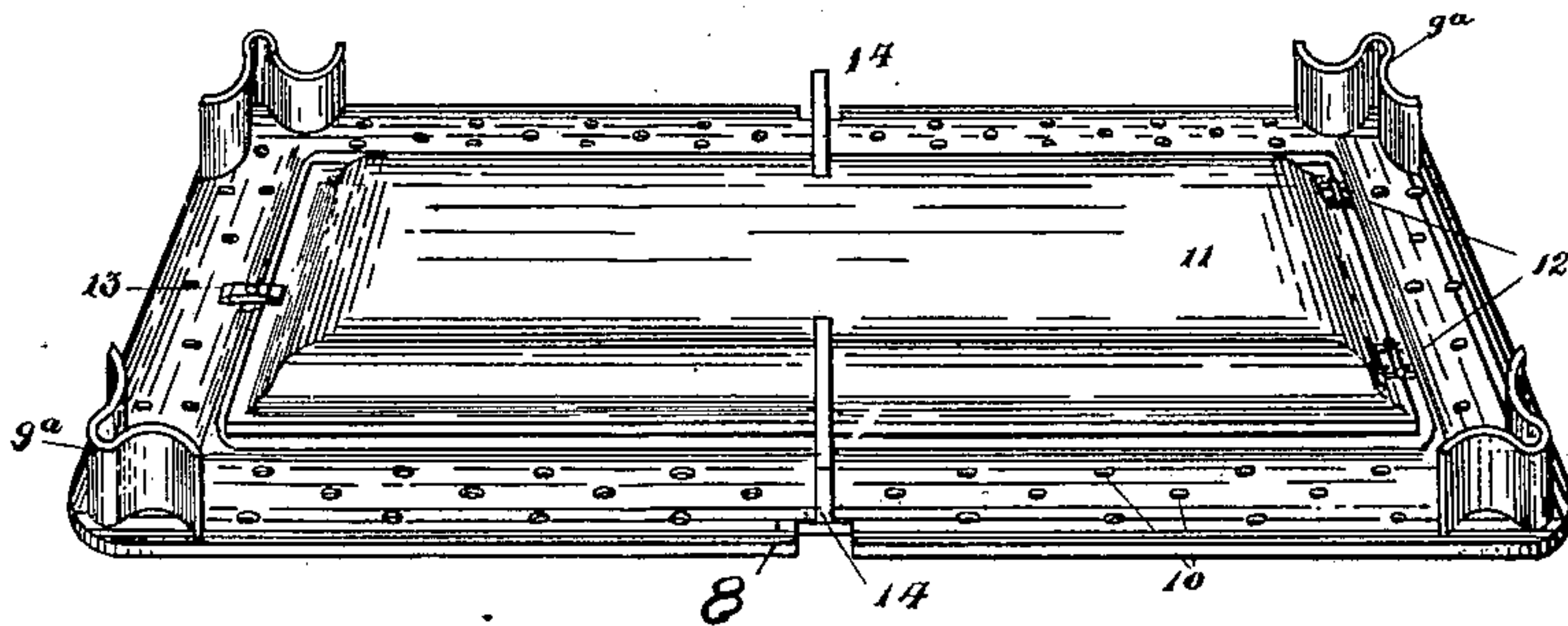


Fig. 6.

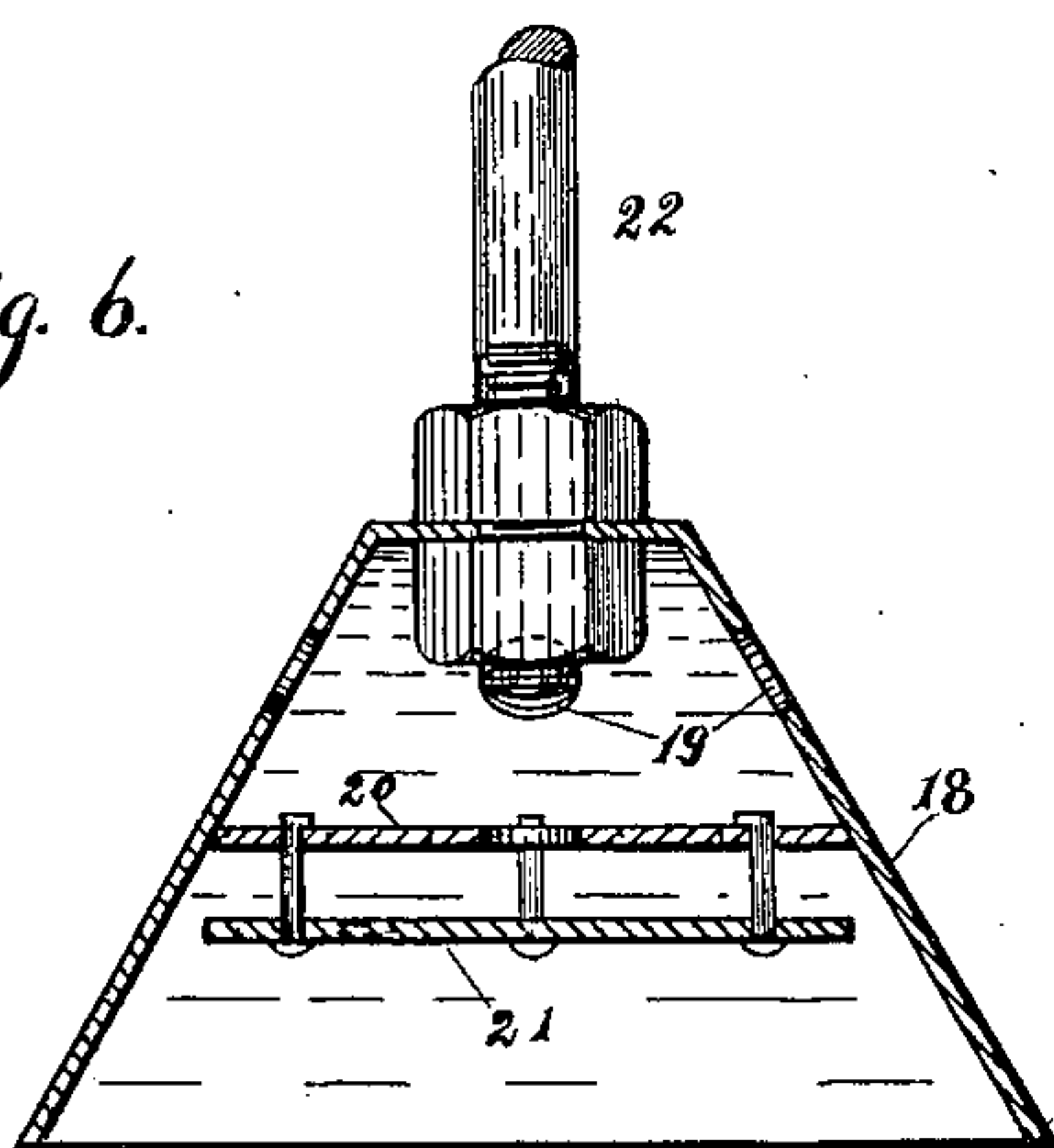
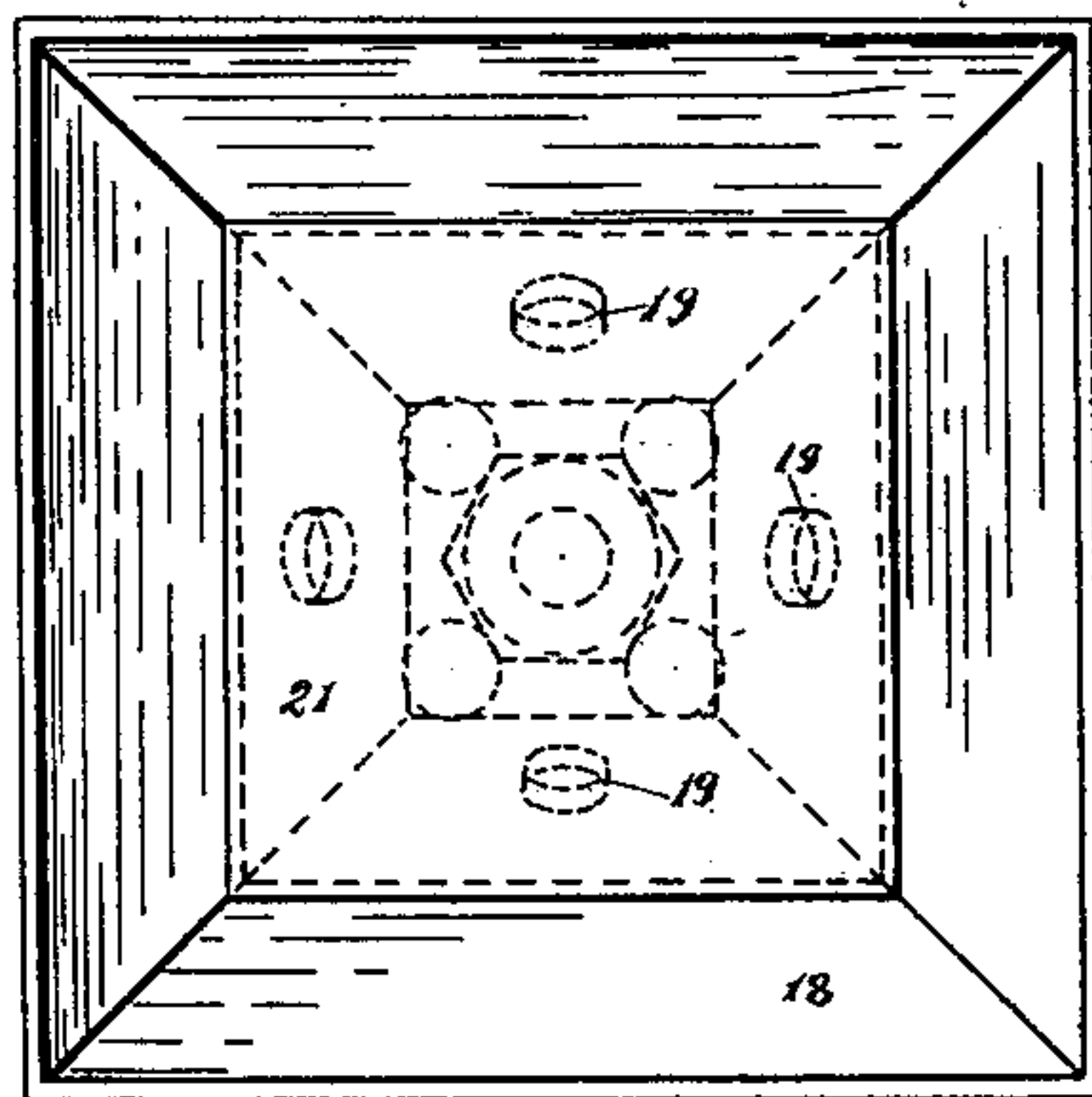


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALBERT J. SMALLEY, OF EL RENO, OKLAHOMA TERRITORY.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 635,197, dated October 17, 1899.

Application filed June 10, 1899. Serial No. 720,077. (No model.)

To all whom it may concern:

Be it known that I, ALBERT J. SMALLEY, a citizen of the United States, residing at El Reno, in the county of Canadian and Territory of Oklahoma, have invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to washing-machines; and it has for its object to effect certain new and useful improvements in machines of this character whereby a more thorough washing of the clothes is effected.

To this end the invention primarily contemplates a boiler washing-machine having means for circulating and agitating the water and steam in such a manner as to produce the same washing effect upon the clothes at the bottom of the boiler or boiler-tank as at the top of the water therein.

With this and other objects in view, which will more readily appear as the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

While the essential features of the machine are necessarily susceptible to modification without departing from the scope or spirit of the invention, still the preferred embodiment of the same is shown in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a washing-machine constructed in accordance with this invention. Fig. 2 is a vertical transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a horizontal sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail in perspective of the detachable false-bottom plate removed from the boiler-tank. Fig. 5 is a bottom perspective view of said bottom plate. Fig. 6 is an enlarged detail sectional view of the preferred form of the plunger-cup employed in connection with the machine. Fig. 7 is a bottom plan view of one of the plunger-cups.

Like numerals of reference designate like parts in the figures of the drawings.

Referring to the accompanying drawings, the numeral 1 designates the boiler-tank of the machine, which is preferably of an oblong rectangular shape, and in the present inven-

tion the said boiler-tank 1 is designed to be closed at the top by a removable slightly-convexed lid or cover 2, which serves to confine the steam within the tank to assist in the cleansing of the clothes.

The boiler-tank 1 has fitted to the opposite inner sides thereof and centrally between its ends the opposite pairs of vertical guide-strips 3, forming therebetween guide-grooves 4, which slidably receive the flanged side edges 5 of a removable imperforate partition-plate 6. The partition-plate 6, which has the flanged edges thereof slidably engaged in the vertical guide-grooves 4, extends transversely across the boiler-tank, so as to divide the interior thereof into separate compartments 7, having no communication at the top and only in communication through the bottom of the tank in the manner to be presently explained.

The transverse removable imperforate plate 6 rests at its lower end directly upon the upper side of a false-bottom plate 8. The false-bottom plate 8 is of the same size and configuration as the interior of the boiler-tank, so as to form a false bottom for both of the compartments 7, and the said false-bottom plate 8 has projected from the under side thereof and preferably at its corners short leg-supports 9^a, which rest upon the main bottom of the boiler-tank and serve to hold the bottom plate elevated a distance thereabove, as will be plainly seen from Fig. 1 of the drawings.

The false-bottom plate 8, which is removably supported upon the main bottom of the boiler-tank by means of the leg-supports 9^a, is provided with a peripheral drain-concavity 9, having therein a continuous series of drain-perforations 10, which provide for straining or filtering the dirt or sediment from the wash-water within both compartments of the tank, so that said dirt and sediment may collect in the space between the main and false bottoms of the tank and will not be constantly circulated through the clothes being washed. The false-bottom plate therefore acts in the capacity of a filter or drain-plate to permit of the separation of the dirt and sediment from the wash-water being agitated with the clothes in the compartments of the tank.

To provide for the alternate circulation of

a portion of the wash-water from one compartment of the tank to another, the removable false-bottom plate 8 is provided at the underside thereof with an oblong circulating-trough 11. The oblong circulating-trough 11 is narrower in width and shorter in length than the plate 8, so as to lie inside the drain-concavity 9 and the drain-perforations 10 therein to leave sufficient space exterior to the trough 11 for the accumulation of dirt and sediment. For convenience in cleansing, the trough 11 is preferably hinged at one end, as at 12, to the under side of the plate 8 and is fastened at the opposite free end of the plate by means of a fastening-button 13 or equivalent fastening device, and on opposite sides of the circulating-trough 11, at a point centrally between the ends thereof, the false-bottom plate 8 has arranged thereunder the transversely-disposed partition-strips 14, which extend to the main bottom of the tank and serve to prevent circulation of the dirty water and sediment which may have passed through the drain-perforations 10.

The circulating-trough 11 is open at its upper side and the opposite ends thereof are in communication, respectively, with the oppositely-located circulating-holes 15 and 15^a. The separate groups of circulating-holes 15 and 15^a are in communication with the separate compartments 7 of the boiler-tank, so that water and steam can only be circulated from one compartment to the other through the said holes in the circulating-trough 11 in communication therewith.

Within the bottom portion of each compartment 7 is arranged the vertically-movable guard-screen 16, supported upon the false-bottom plate 8 by a plurality of supporting-springs 17, which yield to the downward thrust of the clothes while at the same time springing upward when relieved from pressure, so as to assist in loosening up the clothes, and the said guard-screens also serve to guard the circulating-holes in communication with the circulating-trough, so as to prevent the clothes from closing the same.

Within each of the compartments 7 is arranged to reciprocate a vertically-movable plunger 18, preferably of the type shown in the drawings. The plunger 18 (shown in the drawings) essentially consists of a pyramidal cup provided at or near the apex thereof with a plurality of vent-openings 19, and below such openings is a perforate partition-plate 20, which supports a gravity-valve 21, which closes on the downstroke of the plunger and opens upon the upstroke thereof, as may be plainly seen in Fig. 1 of the drawings. Each of the valved plunger-cups 18 is carried at the lower end of a vertical reciprocating plunger-stem 22, working through a guide-bushing 23, fitted to the lid 2 of the tank and pivotally connected at its upper end to an oscillatory lever 24. The oscillatory lever 24 is pivotally supported between the oppositely-located stems 22 on a standard or post 25, ex-

tended from the upper side of the lid 2, and said lever 24 is extended at one end to form an operating-handle 26.

From the foregoing it will be obvious that upon the downstroke of the plunger 18 in one of the compartments 7 the valve 21 thereof will close and compress the clothes within the bottom of such compartment against the yielding guard-screen 16 thereof. At the same time a portion of the water will be forcibly circulated through the trough 11 into the opposite compartment, within which latter compartment the plunger therein is rising. When the plunger which has descended is raised, the yielding guard-screen will spring upward and loosen up the clothes, so that the ascending plunger will cause an agitation of the water, with a consequent thorough cleansing of the clothes. In washing heavy clothes the center partition-plate may be removed, so as not to interfere with the proper agitation thereof in the tank.

From the foregoing it is thought that the construction, operation, and the many advantages of the herein-described washing-machine will be readily apparent to those skilled in the art without further description, and it will be understood that various changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a washing-machine, a boiler-tank, a false-bottom plate removably arranged within a tank and provided with oppositely-located circulating-holes, a circulating conduit or trough supported at the under side of the false-bottom plate and in communication with the oppositely-located circulating-holes, a partition removably fitted within the boiler-tank and resting upon a false-bottom plate, and vertically-reciprocating plungers working in the compartments at opposite sides of the partition-plate, substantially as set forth.

2. In a washing-machine, the boiler-tank having separate compartments, a false bottom having a circulating conduit or trough in communication with the separate compartments, a vertical yielding guard-screen supported upon the false bottom within each compartment, and the vertically-reciprocating plungers, substantially as set forth.

3. In a washing-machine, a boiler-tank having separate compartments, a false bottom provided with a circulating conduit or trough communicating with the separate compartments, and outside of said conduit or trough with a plurality of drain-perforations, and vertically-reciprocating plungers, substantially as set forth.

4. In a washing-machine, the boiler-tank having separate compartments, a false-bottom plate removably supported upon the main

bottom of the tank and provided with a peripheral perforated drain-concavity, oppositely-located circulating-holes, and a circulating conduit or trough arranged at the under side thereof and in communication with said oppositely-located drain-holes, substantially as set forth.

5 In a washing-machine, the boiler-tank, a false-bottom plate removably arranged within the tank and provided with a series of drain-perforations contiguous to the periphery thereof and with oppositely-located circulating-holes, a circulating conduit or trough supported at the under side of the false-bottom plate and in communication with the op-

positely-located circulating-holes, a partition-plate removably fitted within the boiler-tank and resting upon the false-bottom plate, vertically-movable guard-screens supported upon the bottom plate within said compartments, and vertically-reciprocating plungers, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALBERT J. SMALLEY.

Witnesses:

E. L. MARSH,

FRANK CARTER.