

No. 630,770.

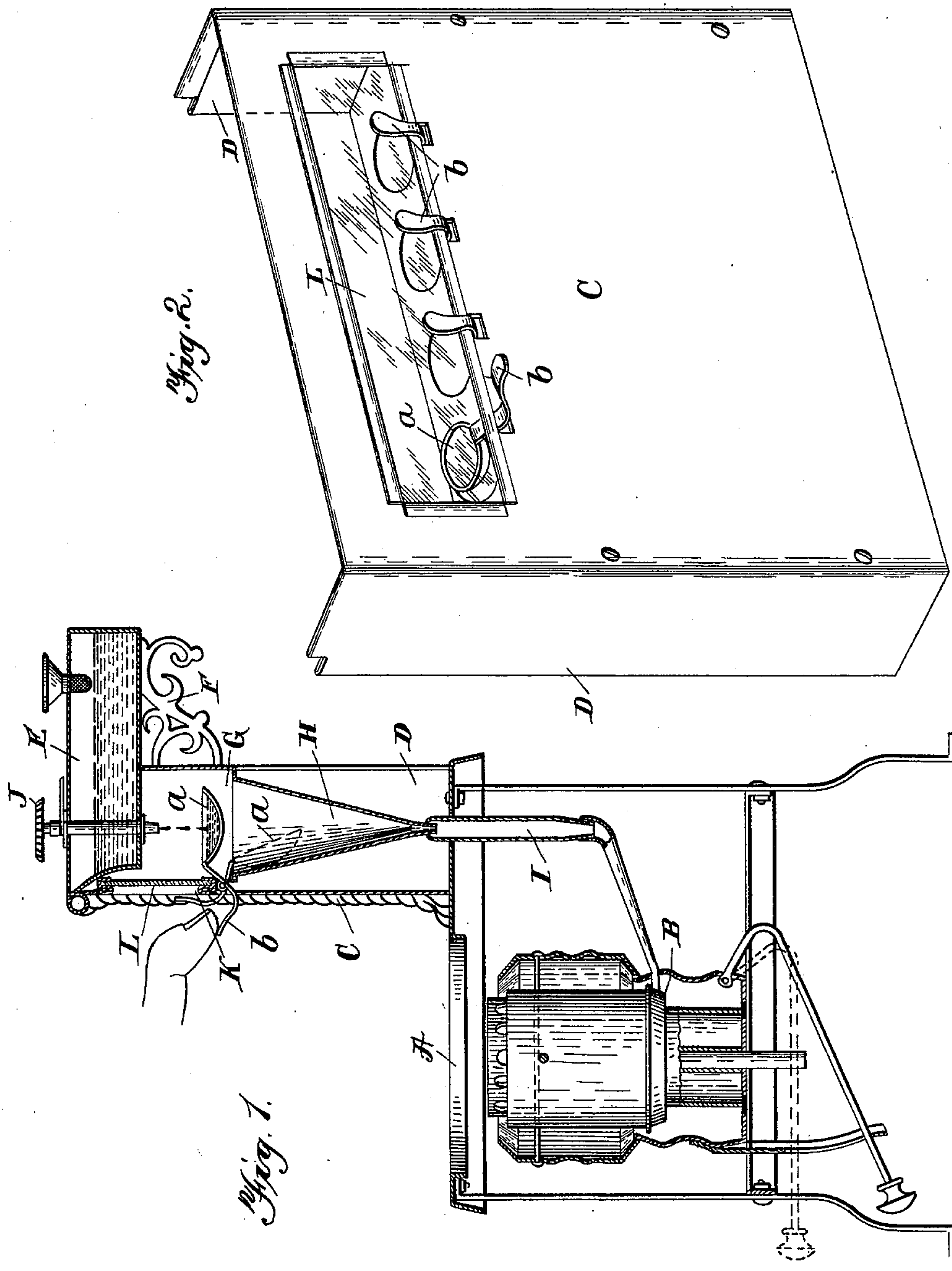
Patented Aug. 8, 1899.

A. J. BLACKFORD.  
OIL BURNER.

(Application filed Jan. 19, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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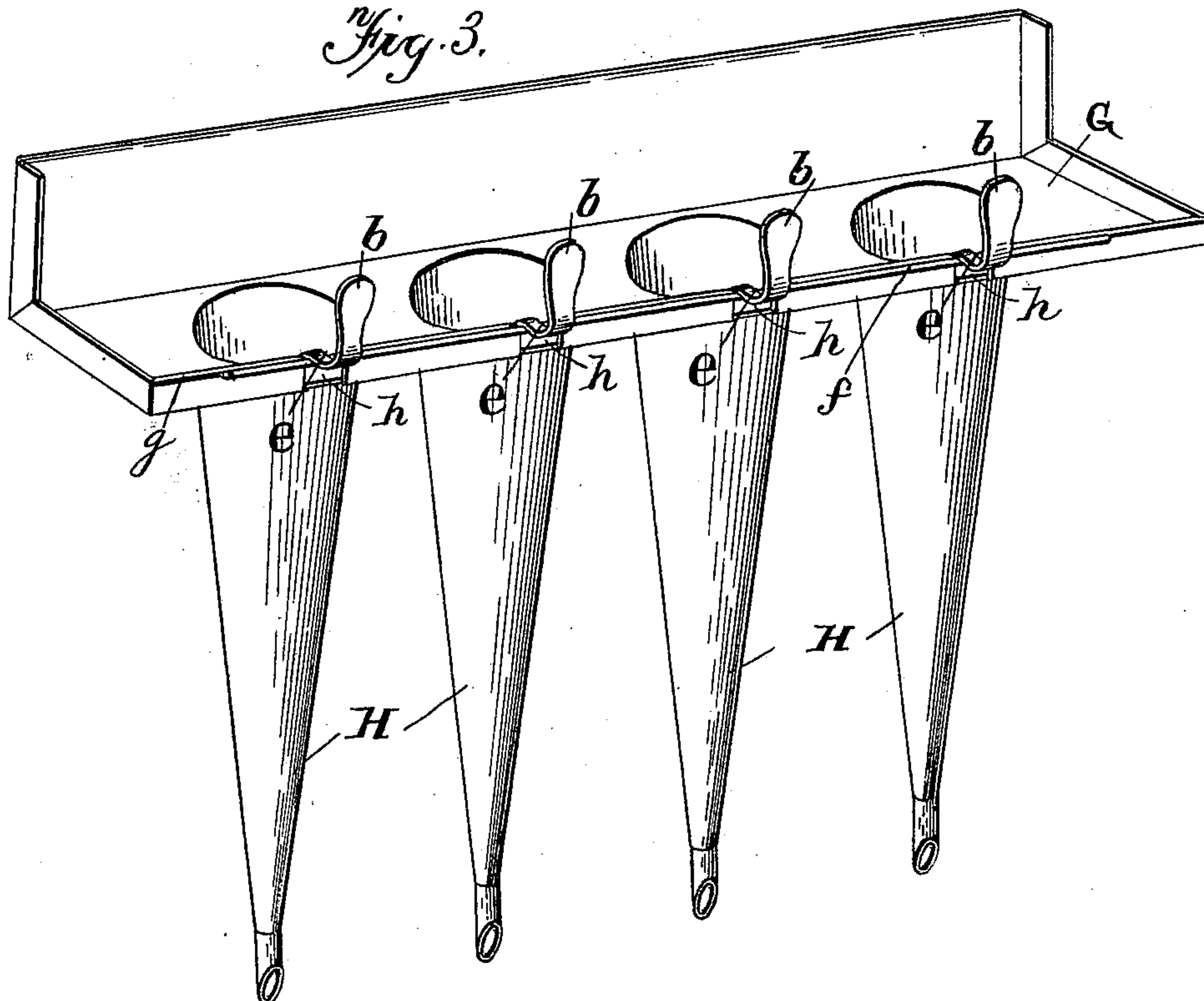
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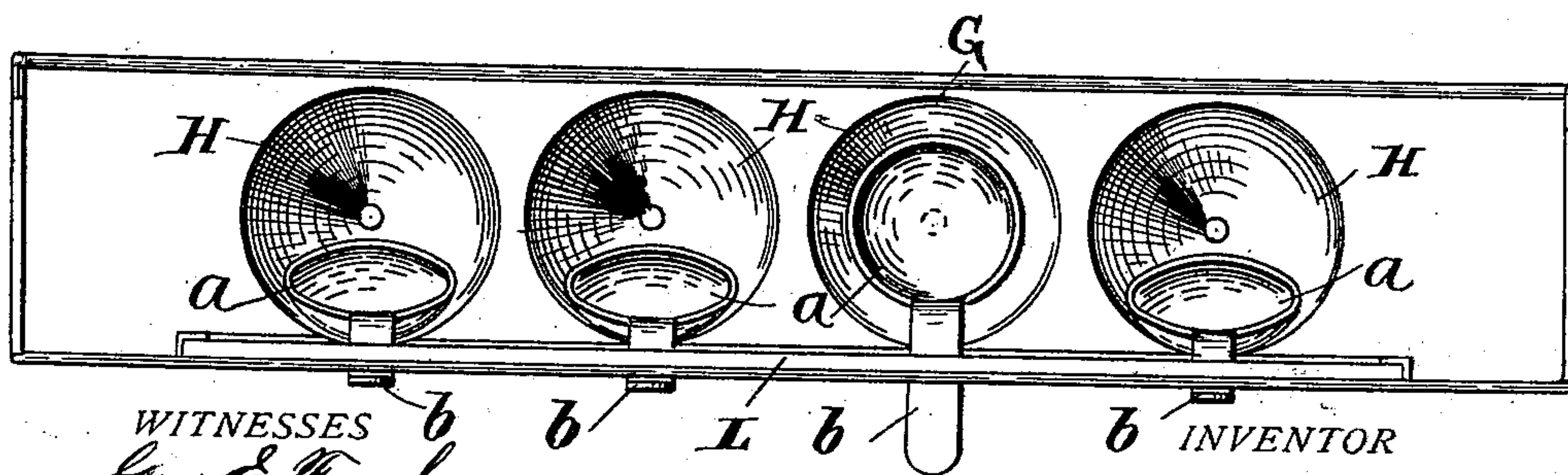
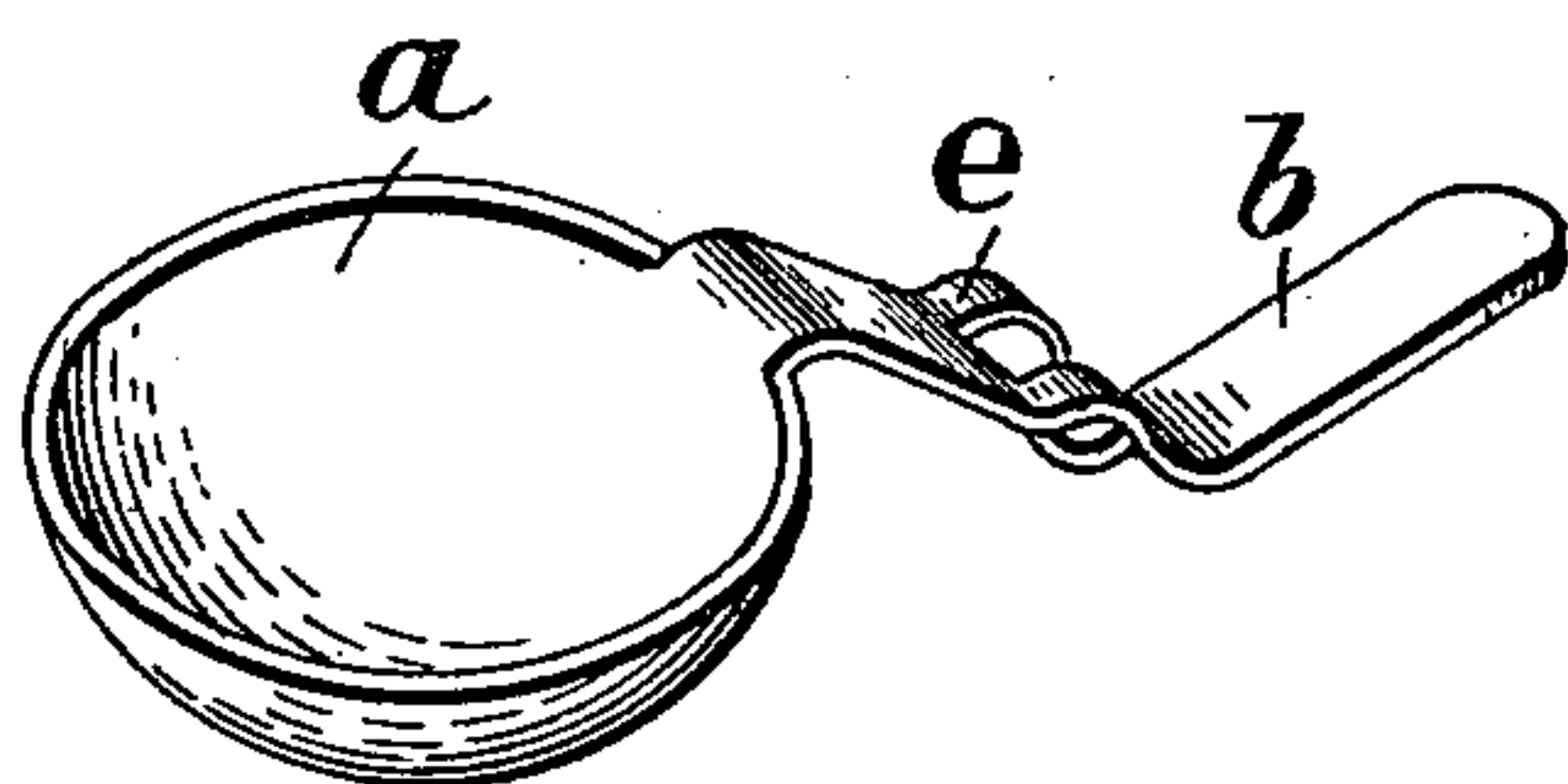
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*Fig. 3.*



*Fig. 4.*



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*Fig. 5.*

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# UNITED STATES PATENT OFFICE.

ATWELL J. BLACKFORD, OF CLEVELAND, OHIO.

## OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 630,770, dated August 8, 1899.

Application filed January 19, 1899. Serial No. 702,703. (No model.)

*To all whom it may concern:*

Be it known that I, ATWELL J. BLACKFORD, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

My invention relates to improvements in oil-burners, and pertains to that class of burners which use a trough to which the oil is fed and from which it is burned, and relates to a means for insuring the proper quantity of oil delivered to the trough for the starting of the burner.

In oil-burners of that type which use a trough to which the oil is fed and from which it is burned it is desirable to feed a predetermined quantity of oil to the trough sufficient to start the burner, and thus prevent an oversupply of oil to the trough when the burner is started.

The object of my present invention is to provide a means which will enable the operator to determine the proper quantity of oil to be delivered to the trough before starting the burner, and thus prevent an oversupply to the trough in the starting of the burner, which is likely to occur where no means is provided which will enable the operator to positively determine the proper quantity of oil to be supplied to the trough before lighting it.

In the accompanying drawings, Figure 1 is a vertical sectional view of an oil-stove to which my invention is applied. Fig. 2 is a front perspective view of the support or standard which carries my invention, one of the measuring devices being shown in its operative position. Fig. 3 is a detached perspective view of the funnel-carrying trough, looking at it from the front side. Fig. 4 is a detached perspective view of one of the measuring-spoons. Fig. 5 is a top plan view of the funnel-trough and its support or standard, with the reservoir removed.

Referring now to the drawings, A indicates the stove-frame, B the burner-trough, and C a standard extending upward from near the rear side of the stove and having rearwardly-extending sides or flanges D.

E is the reservoir, which is removable from

the upper end of the standard C and rests upon the upper end of the standard and the rearwardly-projecting brackets F at the upper end thereof.

G is a funnel-trough which is attached to the upper portion of the standard or support C at a point beneath the front end of the reservoir E. This funnel-trough G is provided with one or more depending funnels H, which have their upper ends opening into the trough and their lower smaller ends resting loosely in the upper end of a pipe I, the lower end of the pipe I being in communication with the burner-trough B.

The reservoir is provided with an exit-opening, situated directly above the funnel H, and with a valve J, controlling the said opening. It will be understood that when a stove is provided with a plurality of burners there will be a funnel, a pipe I, and an exit-opening and valve in the reservoir for each burner, whereby they are independently operated. The oil passes through the exit-opening of the reservoir in the form of a drop, as illustrated in Fig. 1, and if unimpeded in its movement the oil falls to the lower tapered end of the funnel and from thence to the pipe I and through the pipe I to the burner-trough B.

In this form of stoves when the burner is started it is necessary to first let a certain amount of oil flow into the trough before it is ignited. In order to provide against the feeding of too much oil to the burner-trough in starting the burner, (in which event a smoky flame is the result until the oil is burned down to its normal supply,) it is necessary to either very carefully manipulate the valve for letting the proper quantity of oil for lighting the stove or to provide a means for furnishing the proper amount of oil for the starting of the burner. It is found that the ordinary user (the servant) does not use judgment in the starting of the burner, and consequently the trough is often oversupplied with oil for the starting of the burner, which results in a smoky flame until the oil is sufficiently consumed to reach its normal amount in the burner-trough. One part of my present invention pertains to a preliminary measuring device whereby the operator can let the proper quantity of oil run into the device either rap-



idly or slowly until it is full and then empty the measuring device into the funnel H. This arrangement enables the burner to be immediately lighted after the measuring device is emptied into the trough and insures the proper amount of oil for the starting of the burner, and consequently the proper-sized flame is always secured.

The measuring device which I here show consists of a spoon *a*, which has its handle portion *b* intermediately pivoted to the front edge of the funnel-trough G, with the outer end of its handle projecting through the standard or support C ready for the manipulation of the spoon. The spoon is made of a size to contain the proper quantity of oil for the starting of the burner, and immediately above the spoon is an opening K in the standard or support C, which opening is preferably closed by a glass L, through which the spoon may be seen by the operator and thus determine with the eye when it is full and ready to be emptied into the funnel H. The spoon is pivotally connected at a point so that it will swing in the line of feed from the exit-opening of the reservoir, as shown in solid lines in Fig. 1, and when it is full and is allowed to drop by releasing the handle thereof it will fall to the position shown in dotted lines, out of the line of feed, and thus permit a free and uninterrupted flow of the dropping oil to the lower tapered end of the funnel.

It is not absolutely necessary to have the spoon drop out of the line of the feed, for it will be readily understood that when the spoon is in its downward position the oil could strike the spoon and fall from the spoon within the funnel, though I prefer to have the spoon drop out of the line of feed of the oil to the funnel H.

By reference to Fig. 3, which shows the funnel-trough detached from its support, the funnels are connected with the trough and the spoon or spoons are pivotally connected with the front edge of the trough, which extends upward above the upper level of the funnels, whereby the funnel-trough, the funnels, and the spoons are connected together and are readily arranged in their connected relation, as illustrated in Fig. 3, and then applied to the standard or support C by riveting, bolting, or screwing the trough to the standard in any desired manner. In the operation of this device the user depresses the handle of the spoon which communicates with the burner to be used, thus lifting the spoon in the line of feed, filling the spoon by opening the valve; turning the valve to the proper point for a normal feed of the oil, and then permitting the spoon to drop. The burner-trough has then received the proper quantity of oil to be immediately lighted and the operator may at once light the stove. This arrangement leaves nothing to the judgment of the operator, so far as the quantity of oil to be fed in the starting of the burner is

concerned, and will insure the proper amount, which in consequence insures a flame of the proper size at all times.

Another part of my present invention pertains to the funnel-trough and the funnels, which form separate vertical chambers at the rear side of the standard C for the several burners of the stove and without any inclosing rear side for the standard C, as contradistinguished from the construction shown in my application Serial No. 684,485, pending concurrently herewith.

The rear wall of the funnel-trough is made bright, preferably, thus forming a reflector which enables the dropping oil to be seen and the operator to regulate the rapidity with which the oil is being fed to the burner independent of any dial which may be used in connection with the valve J.

As illustrated in Fig. 4, the spoons *a* have their handles *b* provided with a deflected lip *e*, which forms a journal for the pivotal wire *f*. Where a plurality of spoons are provided, as here illustrated, a single pivotal wire *f* is used, and this extends along the upper front edge of the funnel-trough and is soldered or otherwise connected thereto, and thus serves to pivot all of the spoons, and the upturned edge *g* of the front of the trough is provided with notches *h* for the handles of the spoons, which serve to hold the spoons in the proper relative position in respect to the funnels H.

While I here show a spoon for feeding an initial predetermined quantity of oil sufficient for the starting of the burner, I do not limit myself to that construction, for other mechanism and constructions could be devised for accomplishing this purpose without departing from the spirit and scope of my present invention, which is the furnishing of the supply to the burner with an initial feeding mechanism or device adapted to feed a predetermined quantity of oil to the burner sufficient for the starting thereof and which quantity is greater than that required for the normal operation of the burner.

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

1. An oil-stove comprising a main burner, an oil-supply, a conduit in communication with said main burner and said supply, a movably-mounted initial feeding device, and means for moving the initial feeding device into the line of feed from said main burner-supply for filling it, and to empty its contents in said conduit leading to said main burner and adapted when emptied to unobstruct the feed to the burner when the latter is in operation.

2. An oil-stove comprising a main burner, an oil-supply, a conduit in communication with the supply and main burner, a movably-connected initial feeding device in communication with the conduit at a point between the burner and supply, and means for moving the



initial feeding device into the line of supply when filling and into an emptying position in communication with said main burner and out of the line of feed to unobstruct the supply to the burner when the latter is in operation.

3. An oil-stove comprising a main burner, an oil-supply therefor, a movably-connected gravity-emptying initial feeding device, and means for moving the feeding device in filling communication with said oil-supply, the feeding device arranged when emptying by gravity to unobstruct the supply to said main burner when it is in operation, substantially as described.

4. An oil-stove comprising a main burner, an oil-reservoir, a connecting-conduit, an initial feeding device movably supported at a point between the supply and the burner, and means for moving the initial feeding device into communication with the reservoir through one portion of the conduit, and into an emptying position in communication with said main burner without interrupting the communication from the reservoir to the burner when in its emptying position and when said burner is in operation.

5. An oil-stove comprising a main burner, an oil-reservoir, a connecting-conduit, a valve regulating the flow of the oil from the reservoir to the conduit, and an initial feeding device movably supported at a point between the supply and burner, and means for moving the initial feeding device into communication with the supply and said valve when filling through one part of the conduit and in communication with said main burner when emptying through another portion of the conduit feeding to said burner, and without interrupting the supply to said burner when the latter is in operation.

6. An oil-stove comprising a burner, an oil-supply situated thereabove, a burner-supply pipe having an enlarged upper end, and a tilting measuring device situated at the upper enlarged end of the oil-supply pipe and movable to a filling and an emptying position, substantially as described.

7. An oil-stove comprising a frame, a burner, a standard projecting from the frame, an oil-supply supported by the upper portion of the standard, and a measuring device having an operating member passing through the standard, the measuring device situated between the oil-supply and the burner, substantially as described.

8. An oil-stove comprising a burner, an oil-supply, an oil-supply pipe having communication at one end with the oil-supply and at the opposite end with the burner, of a spoon pivoted and adapted to swing in an upright and a tilting position in the line of feed of oil, and a member for operating the spoon, substantially as described.

9. An oil-stove comprising a burner, an oil-supply a spoon intermediately pivoted at a point between the oil-supply and the burner, the bowl of the spoon adapted to be held in

its upright position by the medium of its handle and permitted to drop and to empty its contents by releasing the handle, substantially as described.

10. An oil-stove comprising a main burner, an oil-supply, a movably-mounted initial feeding device situated between the oil-supply and said burner, and means for moving the initial feeding device in filling communication with the supply and permitting it to normally rest in an emptying position without obstructing the supply to said burner when said burner is in operation, substantially as described.

11. A burner-feeding device comprising an oil-supply, a burner, a funnel-trough having a depending funnel, and an initial feeding device carried by the funnel-trough, substantially as described.

12. An oil-burner comprising a frame, a burner, a standard projecting from the frame, a reservoir situated at the upper portion of the standard, a funnel-trough supported by the standard below the reservoir and carrying a funnel which has its open upper end in communication with the oil-supply and its lower end in communication with the oil-pipe, substantially as described.

13. An oil-stove comprising a main burner, a constant oil-supply for said burner when it is in operation, an initial feeding device movably supported between the constant supply and said burner, and means for moving the initial feeding device in position to receive the constant supply, and into position to feed its contents to said burner without interrupting the constant supply when in its feeding or emptying position after said burner is in operation.

14. An oil-stove comprising a burner, an oil-supply, a conduit in communication with the burner and the said supply, a movably-mounted initial feeding device having an inclosed communication with said supply and conduit, and movable into the line of feed from said supply for filling and movable to an emptying position in communication with the conduit leading to the burner, and adapted when emptied to unobstruct the feed to the burner when the latter is in operation.

15. An oil-stove comprising a main burner, an oil-supply, a conduit establishing communication between said burner and supply, an initial feeding device situated between said burner and supply, said initial feeding device mounted to move in a plane which intersects the line of feed for filling and out of the line of feed to empty its contents into the conduit leading to the burner and when emptied to unobstruct the feed to the burner when the latter is in operation.

16. An oil-stove comprising a main burner, an oil-supply, a movably-mounted initial feeding device situated at a point between the supply and said burner, said initial feeding device movable in a plane intersecting the line of feed for the purpose of filling and



emptying its contents and adapted when emptied to unobstruct the feed to the burner when the latter is in operation.

17. An oil-stove comprising a main burner,  
5 an oil-supply, a conduit in communication with said main burner and said supply, and a movably-mounted initial feeding device situated at a point between said supply and burner and adapted to be moved in filling  
10 communication with said supply and into an emptying communication with the conduit

leading to the burner and without obstructing the feed to the latter when it is in operation.

In testimony whereof I have hereunto set 15 my hand in the presence of two subscribing witnesses.

ATWELL J. BLACKFORD.

Witnesses:

G. F. HIGH,

J. W. SEYMOUR.