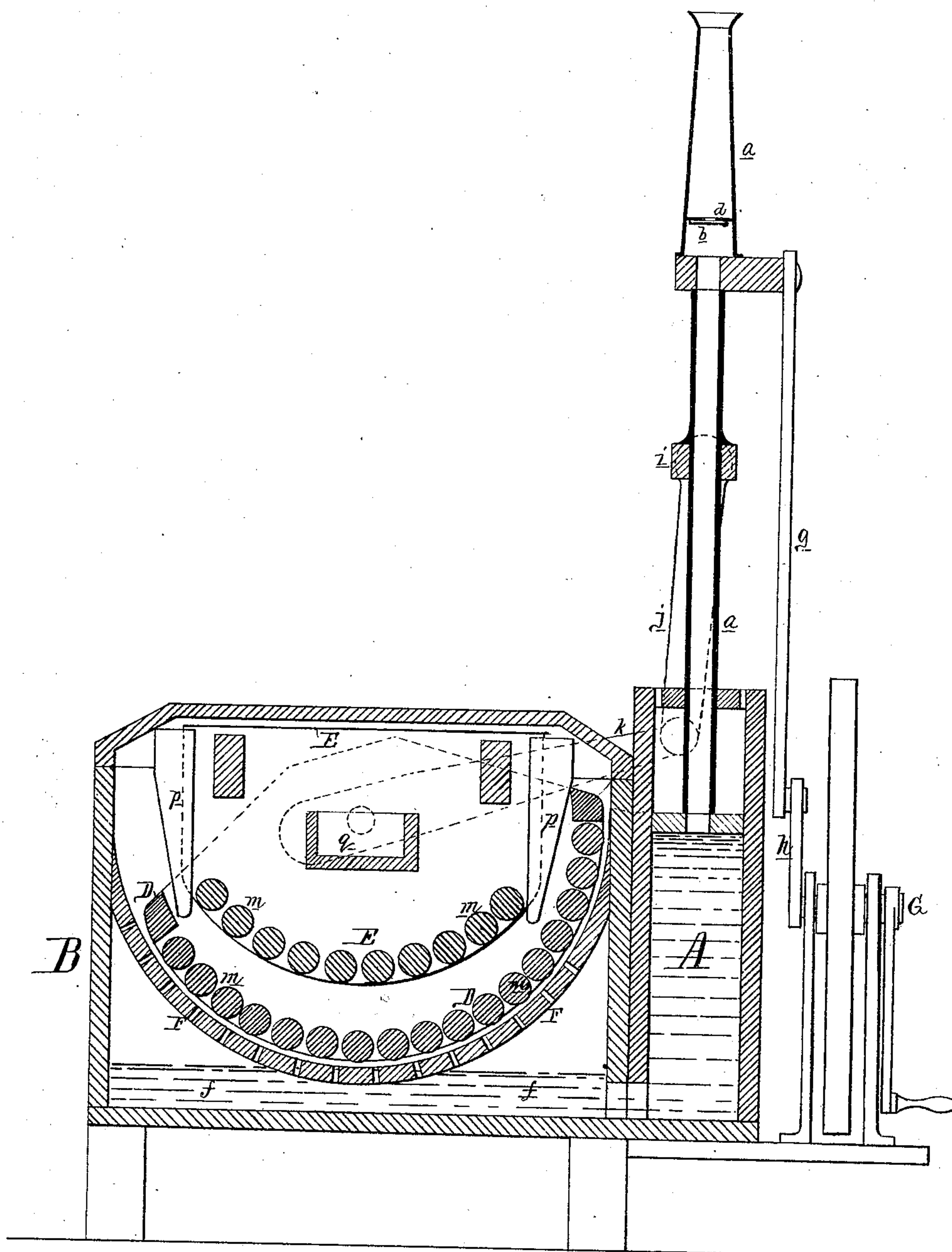


J. B. READ.

## Improvement in Washing-Machines.

No. 132,105.

Patented Oct. 8, 1872.



**Witnesses.**

**Witnesses.** John K. Rupert  
Harry Smith

James B. Read  
by his attorneys  
Hewson & Low

# UNITED STATES PATENT OFFICE.

JAMES B. READ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JAMES B. READ AND AMOS J. MICHENER, OF SAME PLACE.

## IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 132,105, dated October 8, 1872.

*To all whom it may concern:*

Be it known that I, JAMES B. READ, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improved Washing-Machine, of which the following is a specification:

The object of my invention is mainly to insure the thorough and rapid cleansing of clothing, &c., by simultaneously rubbing and forcing currents of water, or of water and air, through the same; and I accomplish this object by combining a pump, A, with a washing-machine, B, in the manner plainly shown by the vertical section in the accompanying drawing, the pump being operated simultaneously with the reciprocation of a segmental rubbing bed, D, against which the clothing is held with any required degree of pressure by a vertically-yielding rubber, E, currents of water, or of water and air, being forced through the perforated false bottom F of the machine, and into and through the mass of clothing on the downward stroke of the pump, and water being drawn from the body of the machine and through the clothing in a reverse direction on the upward stroke of the said pump.

I have found that this forcible ejection of currents upward and downward through the mass of clothing rapidly removes the particles of dirt which have been loosened by the rubbing operation.

If it is desired to pump water only to and from the machine and through the mass of clothing an ordinary pump will suffice; but the labor of working the pump is much reduced and as good results are obtained by constructing it, as shown in the drawing, so as to pump both water and air.

The pump has a hollow piston-rod, *a*, open at both ends, and furnished with a valve, *b*, opening downward, and closing a small aperture, *d*. When the piston is elevated the valve *b* will be opened, and air will pass down through the hollow piston-rod and enter the pump-barrel simultaneously with the water, which enters the bottom of the latter from the washing-machine. On the downward stroke of the pump the valve *b* will be closed,

and both the water and air will be forced into the chamber *f*, and through the perforated false bottom F of the machine into and through the mass of clothing, the water being thus caused to pass through the clothes first in one direction and then in the other, and being put in motion by both movements of the pump.

The pump is operated in the present instance by a connecting-rod, *g*, attached to the cranked end *h* of the driving-shaft G of the machine, and the reciprocating rubbing-bed D receives its motion from the cross-head *i* of the pump through the medium of connecting-rods *j* and arms *k*.

In large apparatus to be driven by power, and intended for hotel or laundry use, two or more pumps may be combined with one machine.

Both rubbers, D and E, are furnished with rollers or rounded slats *m*, which may be either movable or stationary, and the upper rubber E is arranged to slide in vertical guides *p*, so that it may be self-accommodating to the thickness of the mass of clothes; and it is furnished with a trough or receptacle, *q*, in which weights may be placed, in order to obtain the required pressure upon the clothes.

I claim as my invention—

1. The combination of a washing-machine, having rubbing apparatus constructed and operating substantially as described, with a pump or pumps, for the purpose of impelling the water both upward and downward through the clothes, substantially as described.

2. The combination, with a washing-machine, of a pump and valve, or equivalent devices, arranged and operating so as to force both air and water through the clothes, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES B. READ.

Witnesses:

WM. A. STEEL,  
HARRY W. DOUTY.