F. A. TAPPAN & S. A. SHAW.

Washing-Machine.

No. 210,064. Patented Nov. 19, 1878.

FIG. I.

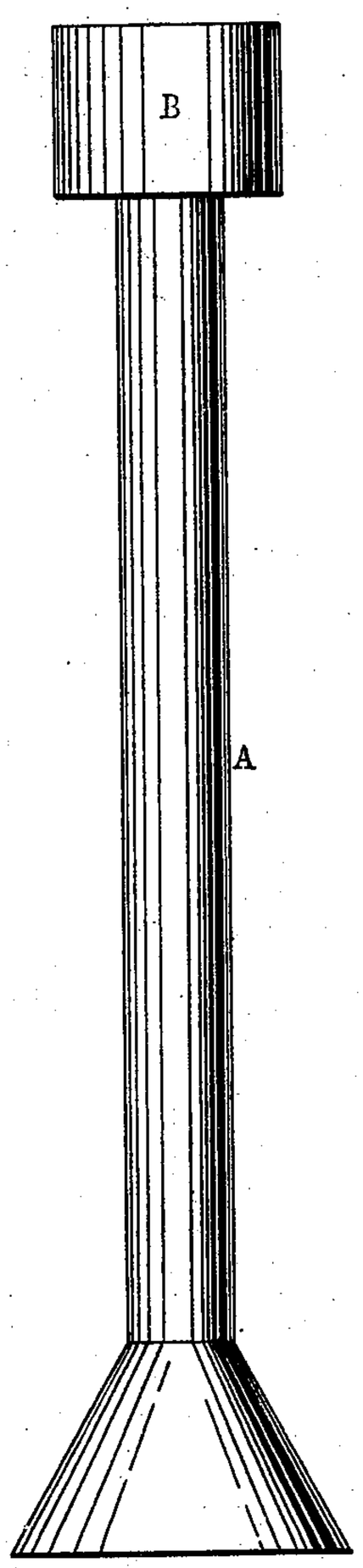
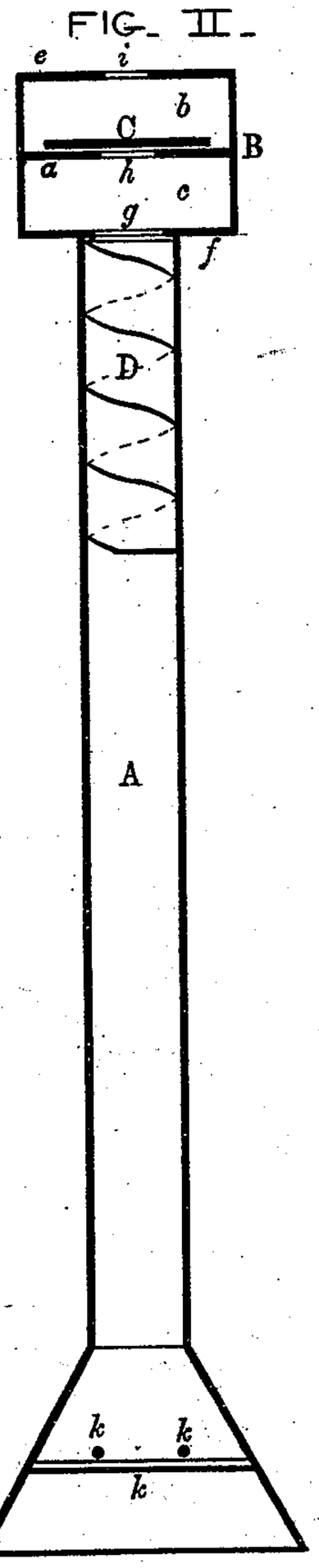


FIG. II.



INVENTORS.

Witnesses:

J. Fred Acker

W. H. Howard.

Frank A. Tappan.

Samuel A. Shaw.

by G. H. & W. H. Howard.

Attys.

UNITED STATES PATENT OFFICE.

FRANK A. TAPPAN AND SAMUEL A. SHAW, OF KANSAS CITY, MISSOURI.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **210,064,** dated November 19, 1878; application filed August 21, 1878.

To all whom it may concern:

Be it known that we, FRANK A. TAPPAN and SAMUEL A. SHAW, both of Kansas City, in the county of Jackson and State of Missouri, have invented certain Improvements in Washing-Machines, of which the following is a specification; and we do hereby declare that in the same is contained a full, clear, and exact description of our said invention, reference being made to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to certain improvements in that class of washing-machines, usually termed "clothes-pounders," which depend for their cleansing action upon the combined effect of water and air forced through the clothes in the operation of the machine; and it consists in a novel construction and arrangement of certain parts of the device, as will hereinafter fully appear.

In the description of our improved washing-machine, which follows, reference is made to the accompanying drawings, forming a part hereof, and in which—

Figures 1 and 2 are, respectively, an exterior and a sectional view of the invention.

Similar letters of reference indicate similar parts in both views.

A is a tube or pipe, the lower end of which is expanded to form a conical or flaring termination. To the upper end of the tube A is secured a cylindrical box, B, divided by means of the partition *a* into the chambers *b* and *c*.

The upper and lower heads of the box are respectively represented by *e* and *f*, and they as well as the partition *a* are provided with central openings *g*, *h*, and *i*, which are graduated in size, the upper one, *i*, being the smallest.

C is a valve, preferably formed of a disk of india-rubber, placed loosely in the chamber *b*. D is a spiral fastened within the upper end of the tube A, immediately below the lower head of the box B.

The expanded end of the pipe A is fitted with bars *k*, which prevent the entrance of clothes to the tube A.

The soiled clothes are placed in an ordinary wash-tub with soap or other detergent, and the expanded end of the machine inserted in the water. The device is then rapidly elevated and depressed, care, however, being taken not to raise the expanded end out of the water. In this movement of the machine the valve C is alternately forced against the upper head, *e*, and the partition *a*, and air compressed, which is discharged through the expanded end of the device in contact with the clothes.

If the flaring mouth and a portion of tube A be immersed in water and the pounder then raised, the air in the tube will be expanded, the pressure of the atmosphere keeping the valve C closed on the partition in the box, and the expanded air in its descent around the spiral will receive a rotary motion which will be imparted to the water in the tub.

In the descent of the tube A the air will be compressed therein and forced upward in a rotary current through the spiral, which current will impart a rotary current in the water, and in order that the rotary current of the air should not be impeded the opening *g* should be made large, comparatively.

Having thus described our invention, what we claim as new, and wish to secure by Letters Patent of the United States, is—

1. The tube or pipe A, having its lower end expanded or flared, as shown, and provided with the bars *k*, and its upper end fitted with the spiral D, in combination with the box B, the same being divided into the chambers *b* and *c*, and the valve C, substantially as and for the purpose herein set forth.

2. In combination with the tube or pipe A, the box B, the said box being divided by the partition *a* into the chambers *b* and *c*, the one *b* containing the valve C and provided with the openings *g*, *h*, and *i*, substantially as and for the purpose herein specified.

In testimony whereof we have hereunto subscribed our names this 28th day of June, in the year of our Lord, 1878.

FRANK A. TAPPAN.
SAMUEL A. SHAW.

Witnesses:
O. W. WHEELER,
C. E. HETRICK.