

F. W. HENSON.
Washing-Machines.

No. 135,805.

Patented Feb. 11, 1873.

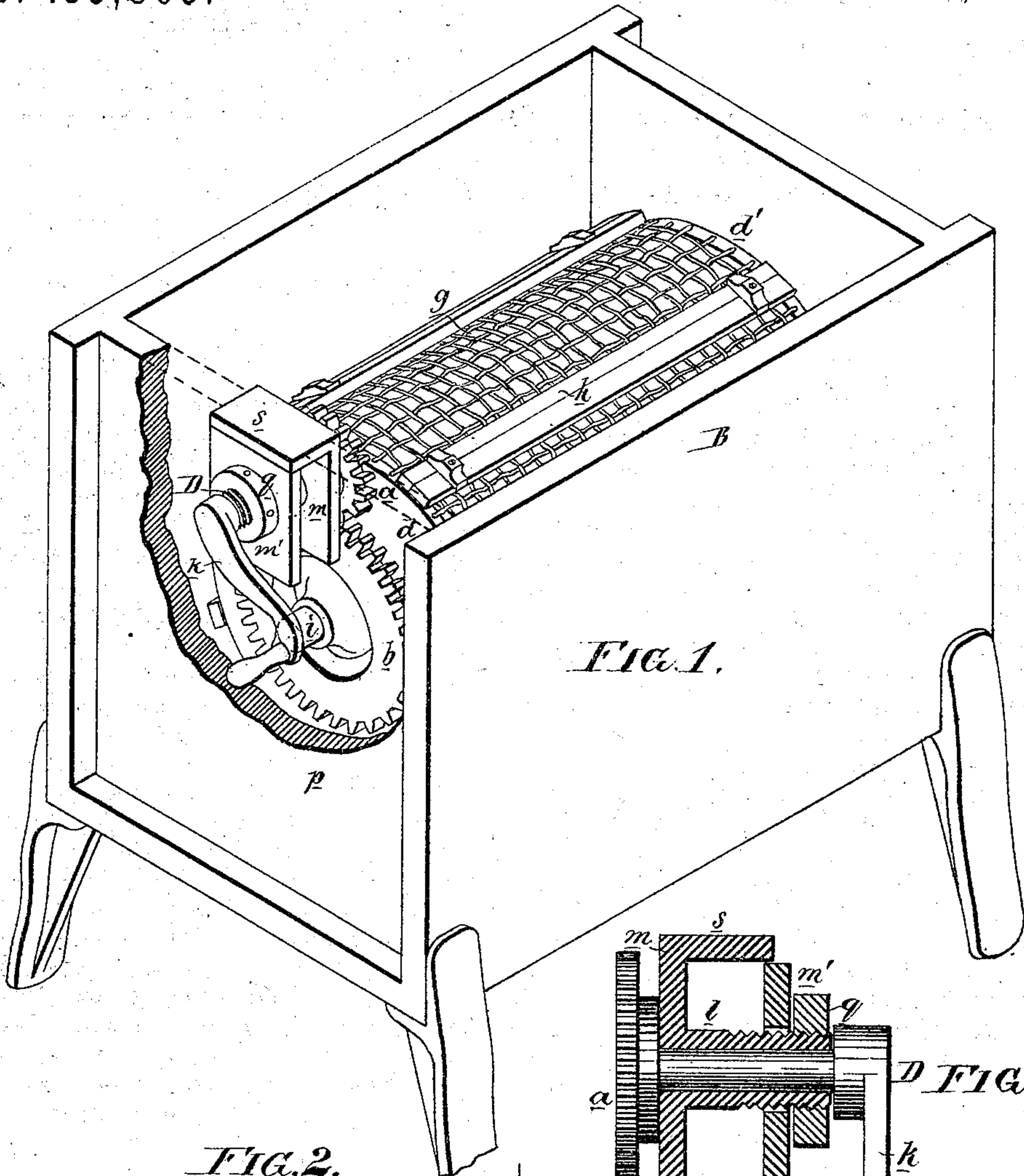
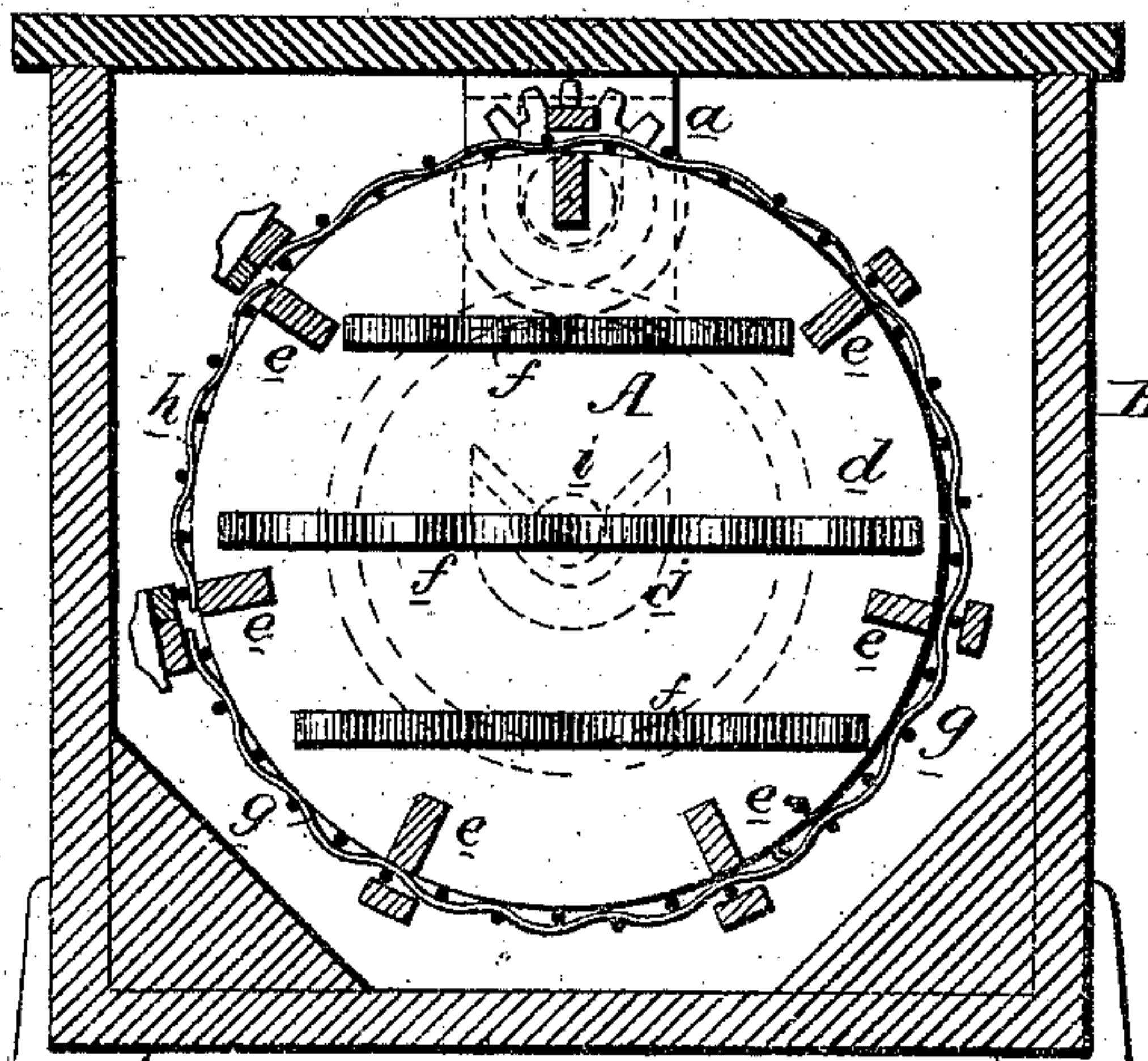


FIG. 2.



WITNESSES } John R. Rupert
Harry Smith

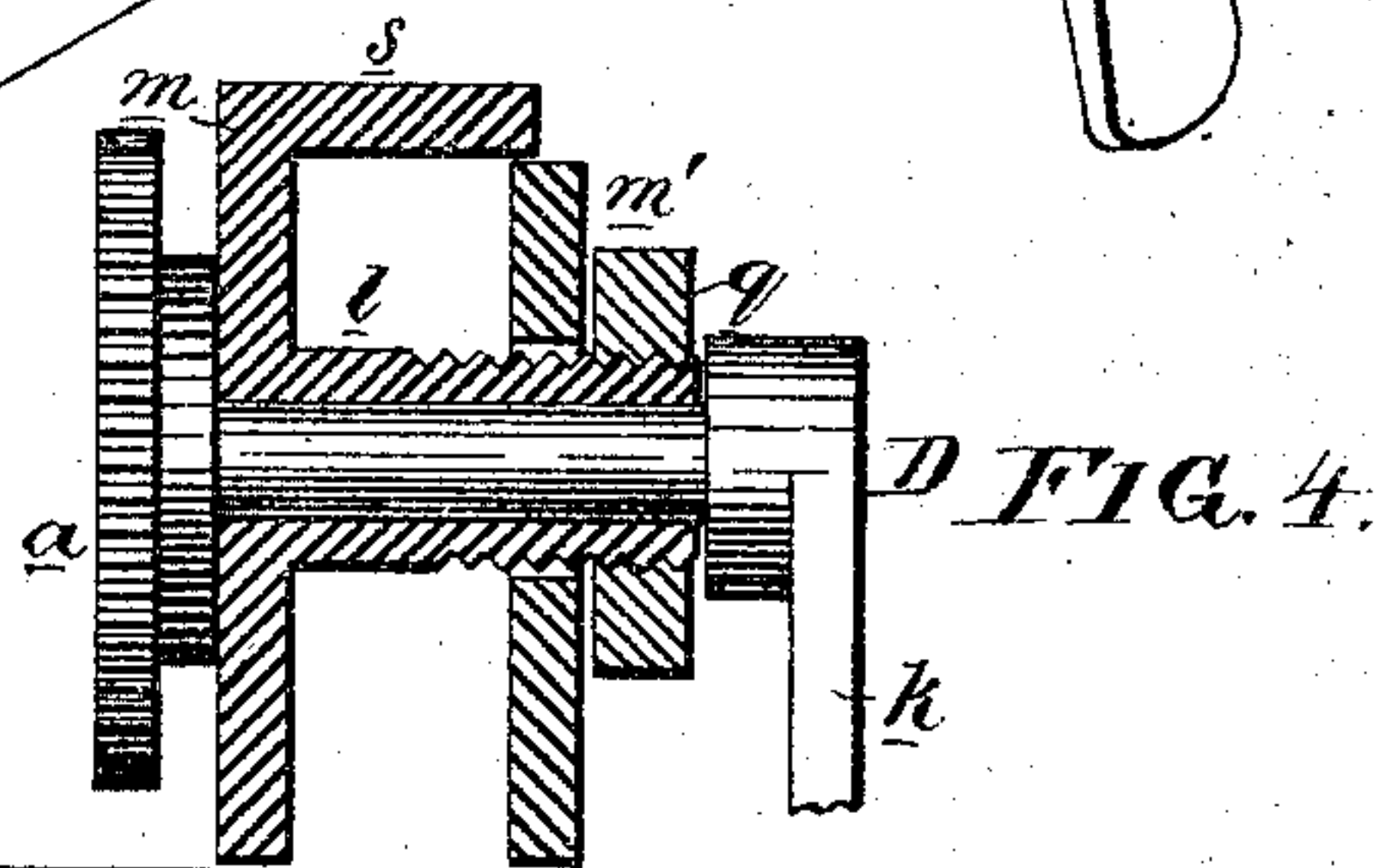
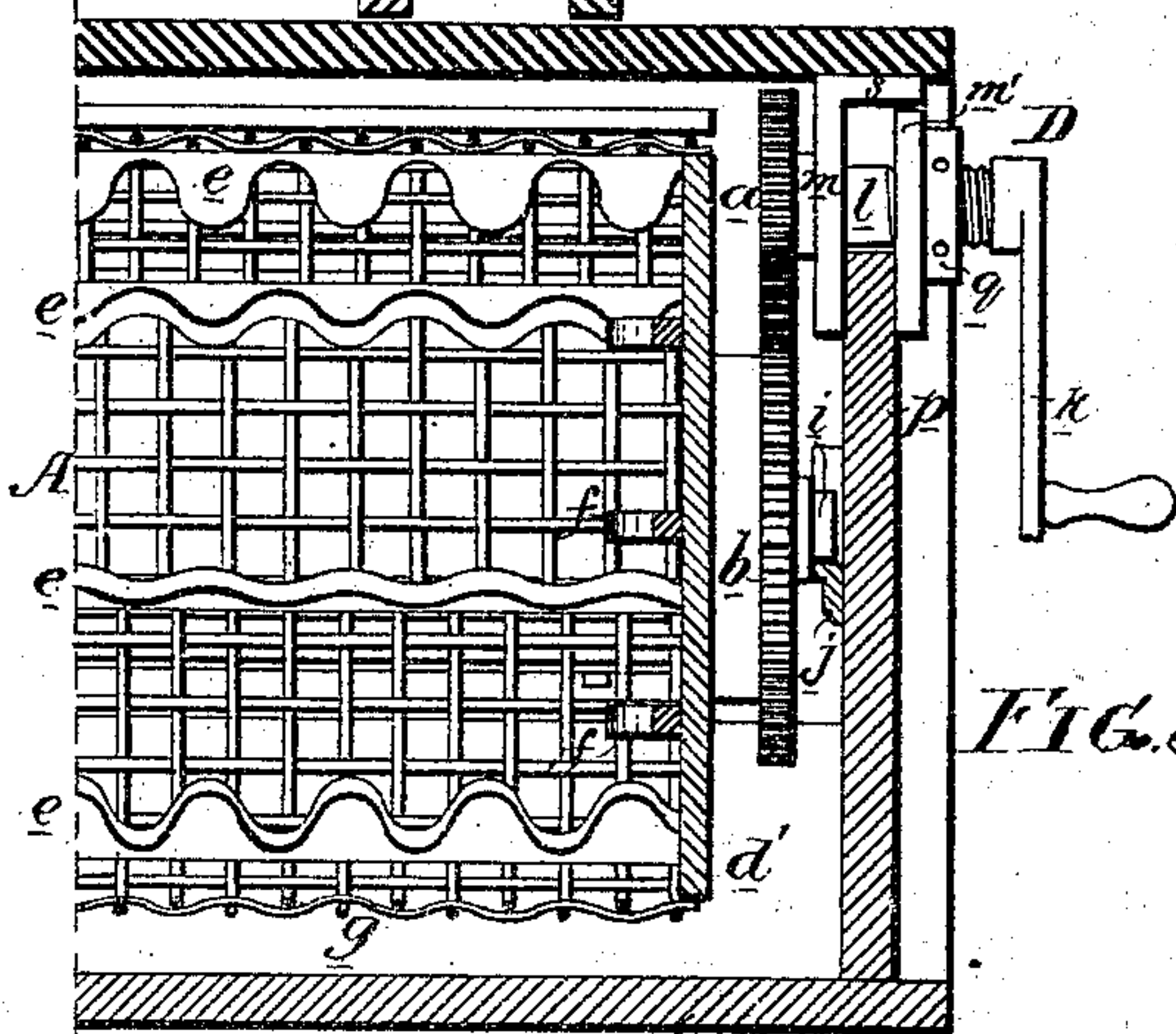


FIG. 3.



F. W. Henson
by his Attys
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UNITED STATES PATENT OFFICE.

FRANCIS W. HENSON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 135,805, dated February 11, 1873.

To all whom it may concern:

Be it known that I, FRANCIS W. HENSON, of Philadelphia, Pennsylvania, have invented an Improved Washing-Machine, of which the following is a specification:

The object of my invention is a machine of simple and economical construction for washing clothes, &c., having working parts so arranged that they can be readily removed from their casing in order to convert the latter into a tub for the thorough cleaning by hand of such articles as cannot be readily washed in a machine.

This object I accomplish by constructing the machine in the manner best observed in the perspective view, Figure 1, of the accompanying drawing, the clothes or other articles being placed within a wire-gauze cylinder, A, provided with internal rubbers, and to which a rotary movement within a box or casing, B, partially filled with soap-suds, is imparted by a crank-shaft, D, provided at its inner end with a cog-wheel, *a*, gearing into a larger wheel, *b*, at one end of the cylinder, the latter and the crank-shaft, which is clamped to one end of the casing, as hereafter described, being detachable from the said casing so as to enable the same to be used as an ordinary wash-tub.

The construction of the cylinder A will be best observed on reference to the sectional views, Figs. 2 and 3. The frame consists of heads *d* and *d'*, connected by strips *e*, corrugated on their inner edges, as shown, so as to form internal rubbers; transverse rubbers *f* being also secured to the inner-sides of the heads, and the walls of the cylinder consist wholly of galvanized wire-gauze or cloth *g* secured to the frame thus constructed, a portion, *h*, of one side of the cylinder being removable for the introduction and removal of the clothes. The cylinder has journals *i i* at its opposite ends, adapted to bracket-bearings *j* within the casing B, from which the said journals can be lifted in order to remove the cylinder; and secured to the head *d* of the latter is a cog-wheel, *b*, gearing into a wheel, *a*, of about half the number of teeth on a shaft, D, provided at its outer end with a hand-crank, *k*, and turning in a long bearing, *l*, projecting

from a plate, *m*, which, with a loose plate, *m'*, adapted to the bearing, forms a clamp for securing the crank-shaft to the slotted end *p* of the casing, the clamping-plates being forced together and held against the latter by a nut, *q*, adapted to the threaded portion of the bearing *l*, as best observed in the enlarged section, Fig. 4. A flange, *s*, of the clamping-plate *m* rests upon the upper edge of the end of the casing, and thus determines the proper height of the crank-shaft, in respect to the cylinder, in fitting the parts together.

In using the machine the casing is partially filled with soap-suds, and the clothes or other articles are then placed in the wire-gauze cylinder, to which a rotating movement is imparted by means of the crank-shaft. In thus rotating the cylinder the clothes are thrown against the beaters and the exterior of the cylinder, and the water, which flows unobstructedly through the gauze sides of the latter, passes freely among and through the said clothes, which soon become cleansed.

The suds are drawn off through a cock at the bottom of the casing, (not shown in the drawing,) and the washed clothes may be rinsed with clean water before removing them from the cylinder.

It will be observed that there are no projecting journals or openings through the casing beneath the water-line, as in other washing-machines, and it will be evident, therefore, that there will be no leakage.

By simply loosening the nut *q* the pressure of the clamps *m* and *m'* against the opposite sides of the end of the casing will be relieved, and the said parts, and with them the crank-shaft and its cog-wheel, may then be lifted bodily and removed from the machine, after which the cylinder can also be removed by simply lifting it from its bearings, the casing being then available for use as an ordinary wash-tub.

I claim as my invention—

1. A washing-machine, in which are combined a casing, B, to contain soap-suds, and a rotating wire-gauze cylinder or cage, A, constructed with internal rubbers to contain the clothes or other articles to be washed.

2. The combination, substantially as de-

scribed, of the casing B, cylinder or cage A, gear-wheel *b*, and the detachable crank D and its pinion *a*.

3. The combination, with the crank-shaft D and slotted end of the casing, of the clamping-plates *m* and *m'*, bolt or bearing *l*, and nut *q*, all substantially as and for the purpose specified.

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

FRANCIS W. HENSON.

Witnesses:

WM. A. STEEL,
HUBERT HOWSON.