(No Model.) 2 Sheets—Sheet 1.

H. BROADWELL.

WASHING MACHINE.

No. 401,731. Patented Apr. 23, 1889.

Fig. 1.

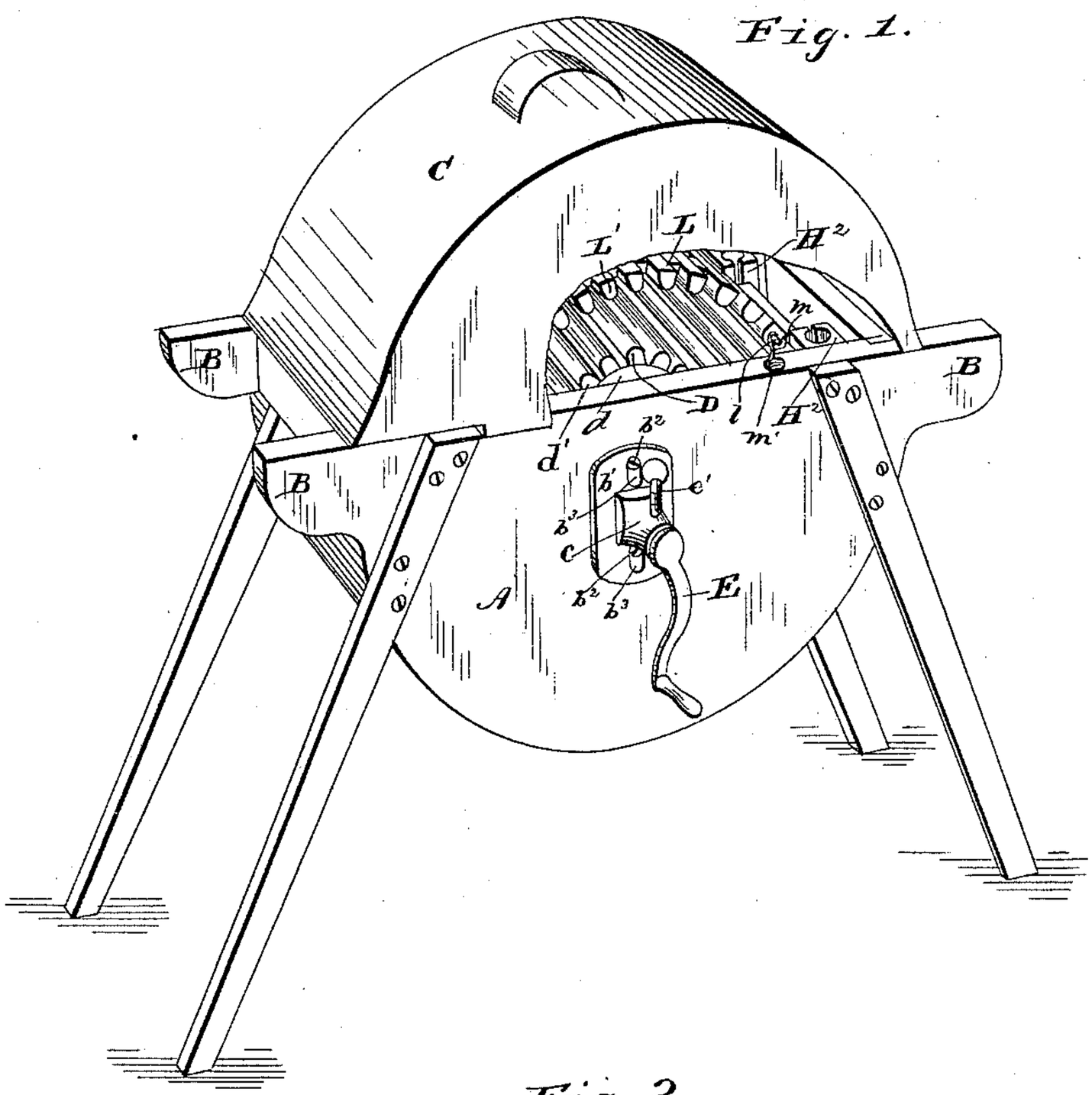
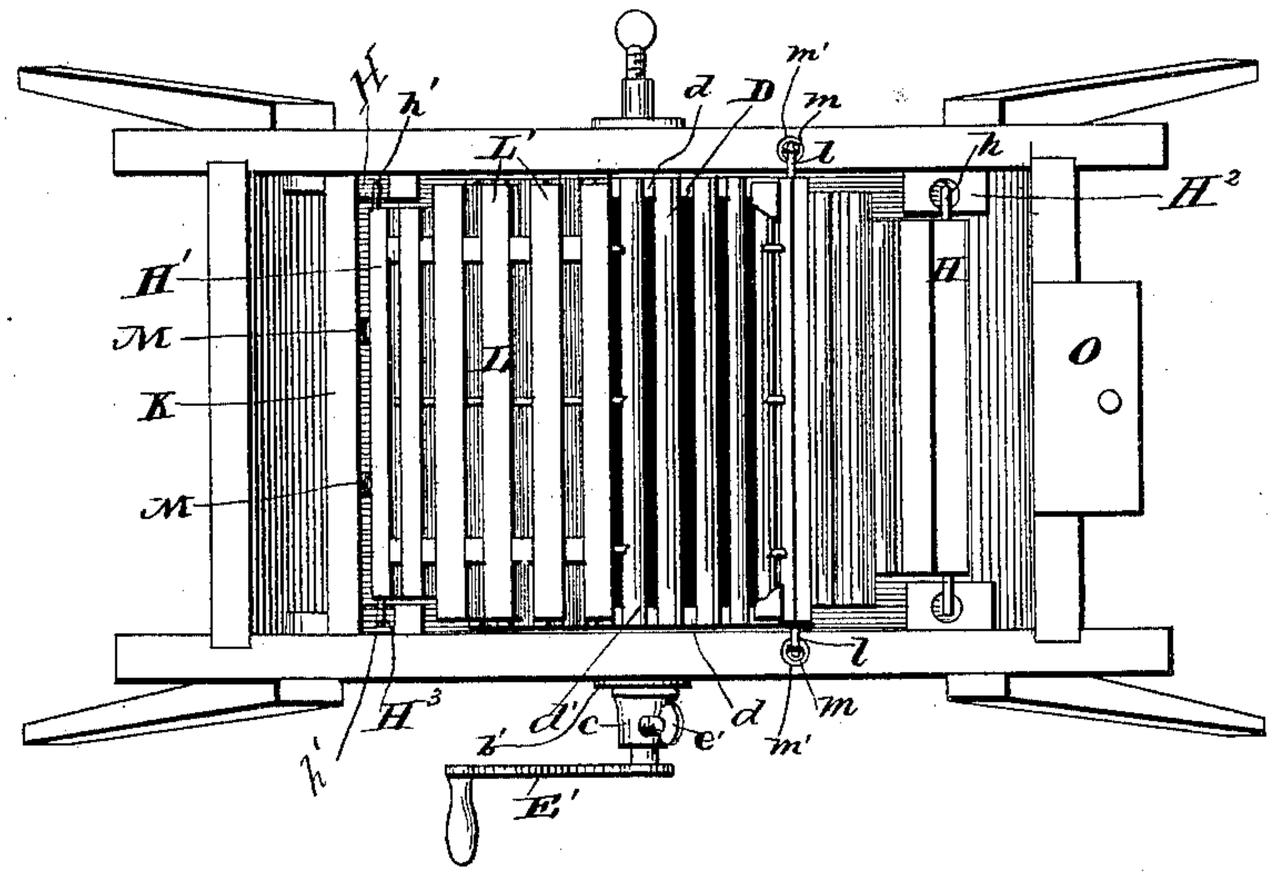


Fig. 2.



Witnesses.
Chas. R. Burr.
H. J. Holcomb

Inventor.
Henry Broadwell
by Charles E. Adamson
his Attorney.

(No Model.) 2 Sheets—Sheet 2.

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WASHING MACHINE.

No. 401,731. Patented Apr. 23, 1889.

Fig. 3.

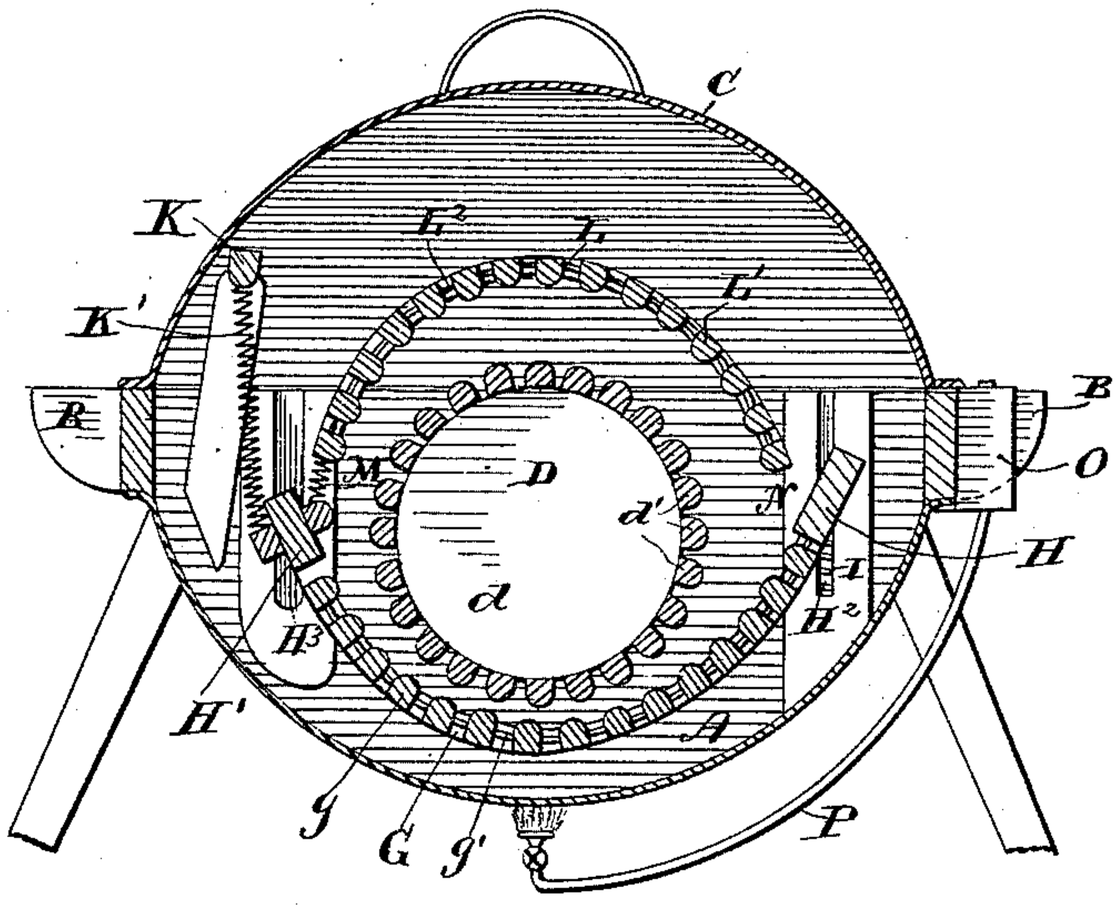


Fig. 4.

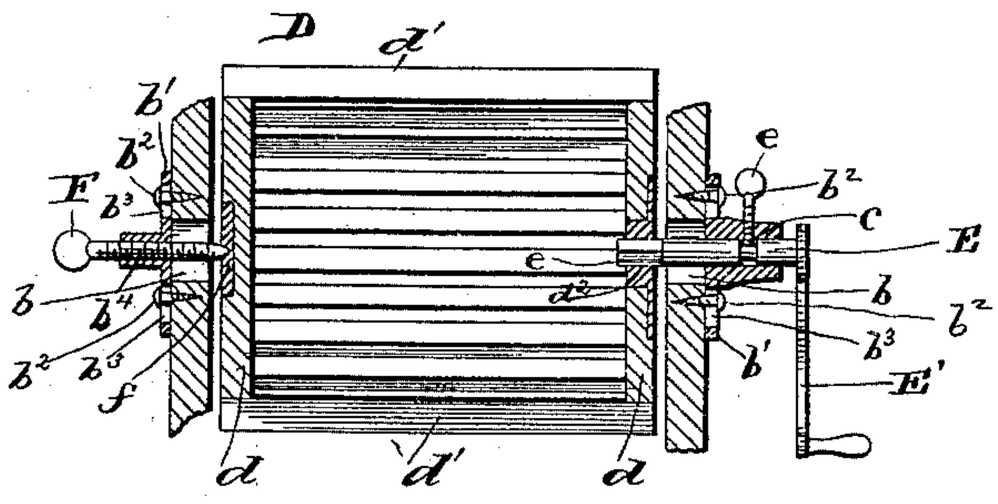
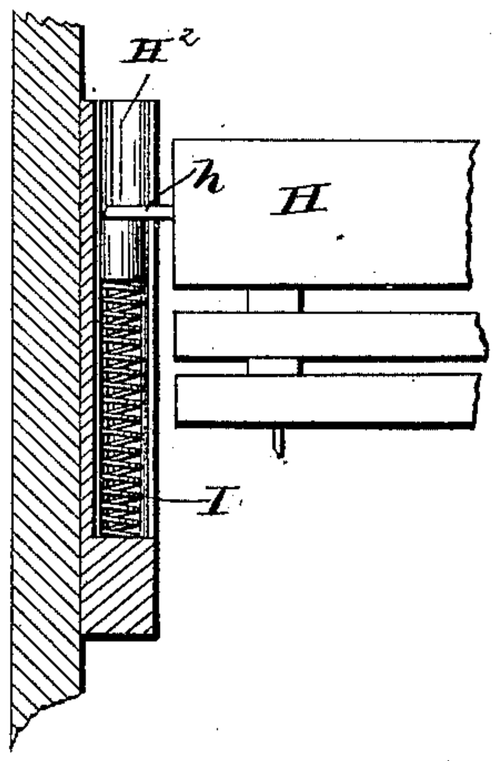


Fig. 5.



WITNESSES,

Chas. R. Burr.

H. Hollingsworth

INVENTOR,

Henry Broadwell

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his Attorney,

UNITED STATES PATENT OFFICE.

HENRY BROADWELL, OF BLUE MOUND, KANSAS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 401,731, dated April 23, 1889.

Application filed September 24, 1888. Serial No. 286,229. (No model.)

To all whom it may concern:

Be it known that I, HENRY BROADWELL, a citizen of the United States, residing at Blue Mound, in the county of Linn and State of Kansas, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in washing-machines; and it consists in certain novelty in the construction, arrangement, and combination of the various parts, all of which I will now proceed to point out and describe, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective of my improved washing-machine having the top partially removed. Fig. 2 is a top plan view with the top removed and parts of the machine broken away. Fig. 3 is a vertical section, and Figs. 4 and 5 are details, of various parts of my said invention.

Referring to said drawings, A represents a substantially semi-cylindrical casing or tub, supported upon suitable legs, and having segmental ends or heads B.

C is a similarly-formed semi-cylindrical top or cover, which fits on top of the said casing or tub, and is so arranged that a tight joint is made between the same.

D is a rotary cylindrical rubber, composed of the ends or heads *d d*, secured to each other by the rigid slats or rubbing-bars *d'*. Said rotary rubber is mounted within the tub or casing in the following manner.

In each end or head of the casing at the center are vertical slots *b*, over which are secured adjustable plates *b'*, held in place by set-screws b^2, passing through slots b^3 in said plates.

c is a bearing formed in one of the plates *b'*.

E is a crank-shaft mounted in said bearing and having its inner end, *e*, keyed and engaging with a key-seat, d^2, in the approximate end of the rotary rubber D, thus forming one of the journals for said rubber.

E' is a crank-handle on the outer end of the crank-shaft. In the other plate *b'* is formed a screw-threaded aperture, b^4, in which is secured a set-screw, F, having its end pointed and engaging with a socket, *f*, in the center of the approximate head of the rubber, and forms the other journal for the same. By adjusting the plates *b'* up or down the rotary rubber may be more or less immersed in the water which the tub contains, and by releasing the set-screw F and withdrawing the crank-shaft, the rotary rubber may be entirely removed from the tub. The crank-shaft is held in place by a set-screw, *e'*, in the bearing *c*.

G is a lower concave wash-board or rubber, which extends under the rotary rubber. Said concave is composed of a series of transverse slats, *g*, which are secured to curved rods *g'*, preferably formed of spring metal.

H H' are cross-bars located at opposite ends of the concave and are provided with projecting pins *h h'*. The pins *h* on the cross-bar H are mounted in vertical guides H^2, in which are located springs I, which engage with said pins *h* and support one end of the concave. The pins *h'* on the cross-bar H' are mounted in vertical guides H^3.

K is a cross-bar secured to the casing.

K' are springs connecting the cross-bar H' with said cross-bar K, thus forming a support for the other end of the concave. Said springs tend to hold the concave wash-board against the rotary rubber.

L is a similarly-formed upper concave wash-board, extending over the top of the rotary rubber, and consists of the transverse slats L', connected by the curved rods L^2, which are also preferably made of spring metal. One end of the concave L is connected with the concave G by springs M. Its other end is provided with hooks *l*, which engage with springs *m*, located in recesses *m'* in the upper edges of the ends of the casing. These springs form the supports for the upper concave. Said concave wash-boards are so arranged that an aperture, N, is left between their ends at one side of the tub, through which the articles to be washed are inserted between the rotary rubber and said concave wash-boards, which it will be seen entirely surround the rotary rubber. The springs which support the upper and lower concaves

tend to hold the same in close proximity to the rubber, but at the same time permit the concaves to give or be forced away when any large article is being washed, thus insuring a thorough and effectual cleansing of the articles, whether large or small, as they are at all times held in contact with the rubber and wash-boards.

It is apparent that the various parts of my invention can readily be removed from the tub or casing when it is desired to clean the same, or in case any repairs are necessary.

In connection with the washing-machine I arrange a device for steaming the articles being washed. This consists of a suitable oil-tank, O, or other fuel-receptacle, attached to one side of the casing and having a pipe, P, extending under the bottom of the casing and provided with one or more burners, which, when lighted, heat the water in the tub and thus produces a very effectual steamer.

The bottom and top of the casing or tub are preferably made of some suitable metal.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with the semi-cylindrical casing or tub A, the top C, the rotary cylindrical rubber D, mounted in the casing, the vertical guides H^2, springs I, secured in said guides, and the vertical guides H^3, of the lower concave wash-board, G, having an end cross-bar, H, provided with projecting pins *h*, mounted in the guides H^2 and engaging with the springs I, and the end cross-bar H′, provided with projecting pins *h*′, mounted in the guides H^3, the spring K′, secured to the casing and connected with the cross-bar H′, and the upper concave wash-board, L, the springs M, connecting one end of the said concave L with the concave G, and the springs *m*, secured to the casing and attached to the other end of the concave L, all constructed, arranged, and operated substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY BROADWELL.

Witnesses:
JACOB HURST,
B. E. JENNINGS.