(No Model.)

2 Sheets—Sheet 1.

J. BARR.

WASHING MACHINE.

No. 336,281. Patented Feb. 16, 1886.

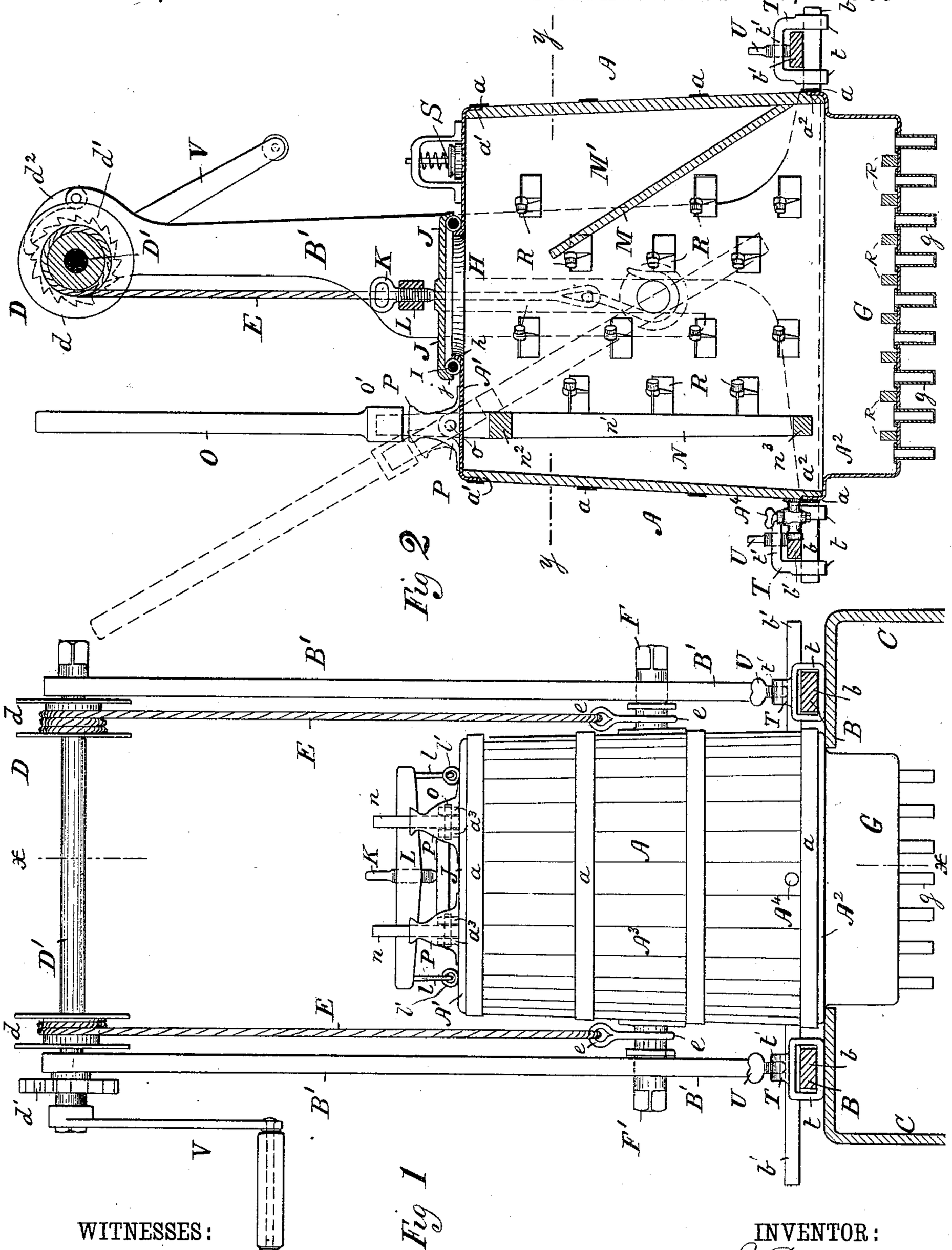

Fig 2

Fig 1

WITNESSES:

John Cook.

C. Sedgwick

INVENTOR:

J. Barr

BY Munn & Co

ATTORNEYS.

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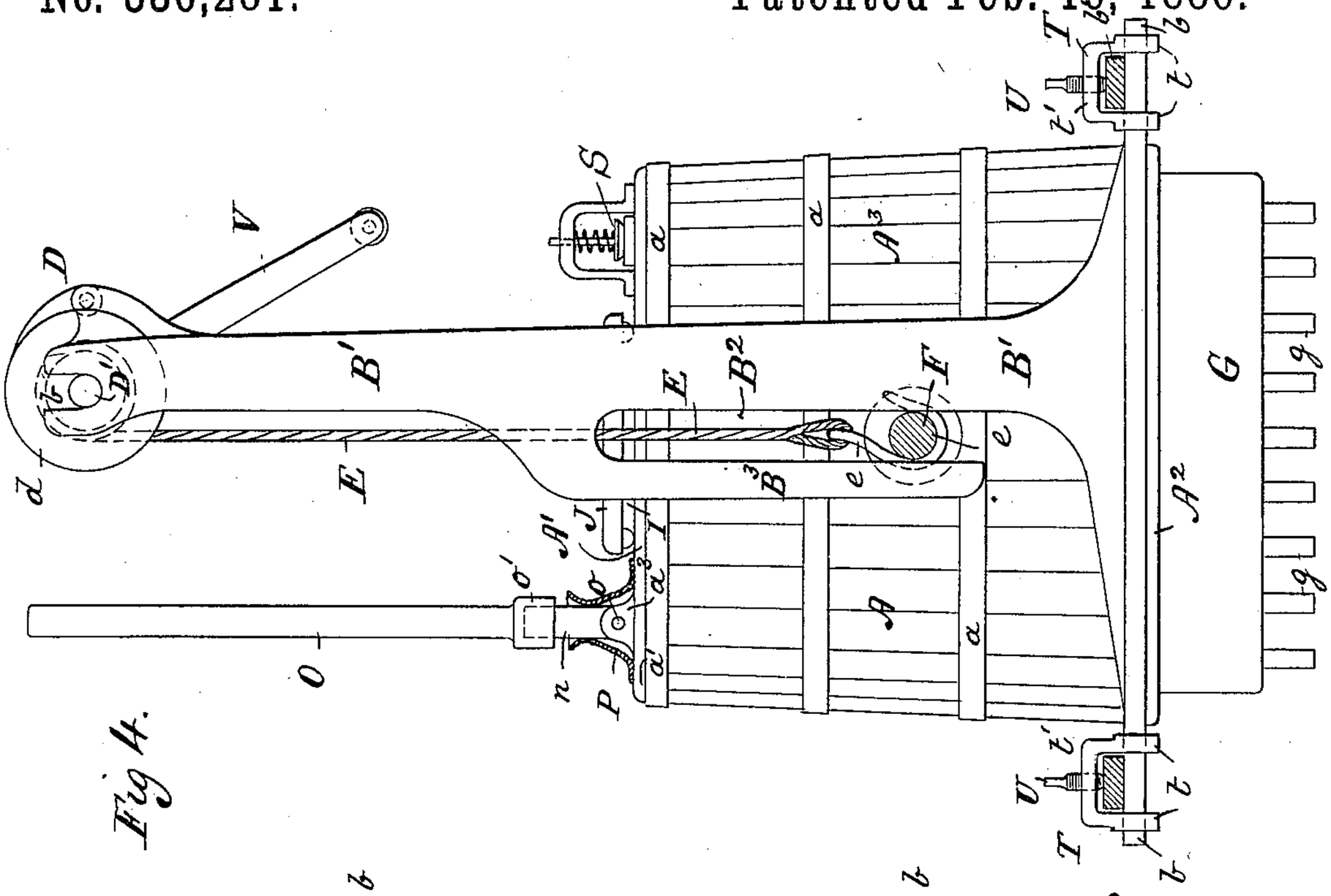

Fig 4.

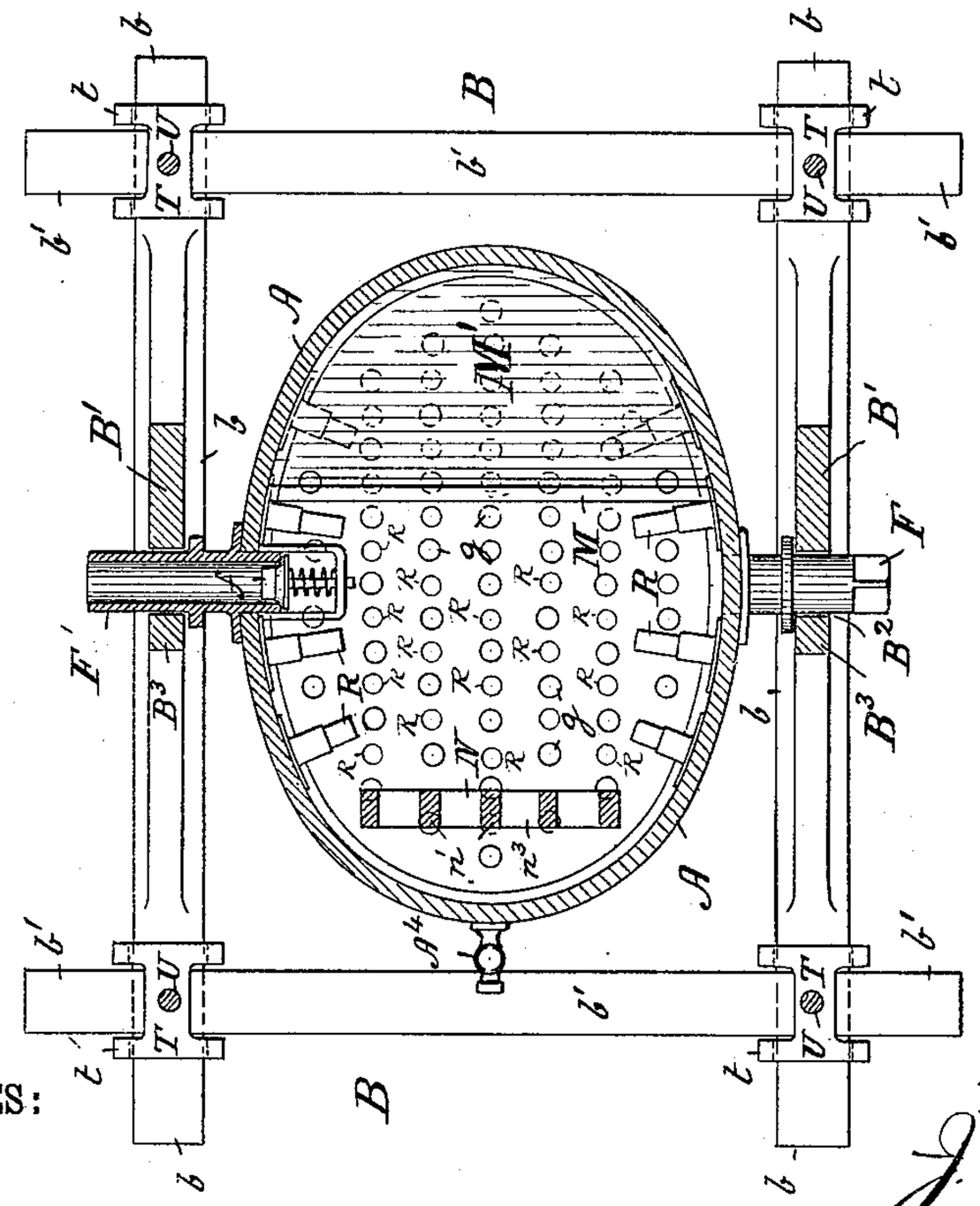

Fig 3.

WITNESSES:

John Cook
C. Sedgwick

INVENTOR:

J. Barr

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN BARR, OF ST. LOUIS, MISSOURI.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 336,281, dated February 16, 1886.

Application filed July 23, 1884. Serial No. 138,549. (No model.)

To all whom it may concern:

Be it known that I, JOHN BARR, of St. Louis, in the State of Missouri, have invented a new and Improved Washing-Machine, of which the following is a full, clear, and exact description.

My invention relates to machines for washing clothes, and the object of the invention is to provide a machine of this class which may be operated with economy of time and labor in thoroughly cleansing the clothes.

The invention consists, essentially, in a revoluble wash-boiler constructed to rest on a stove and having trunnions supported by a hoisting apparatus, so that the boiler may be readily raised from a stove and revolved on its hoisting apparatus, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved washing-machine, with the stove-top on which the boiler rests shown in section. Fig. 2 is a vertical sectional elevation taken on the line *x x*, Fig. 1. Fig. 3 is a sectional plan view taken on the line *y y*, Fig. 2; and Fig. 4 is a front elevation of the machine with parts in section.

The letter A indicates the boiler or clothes-receptacle of my improved washing-machine. B is an extensible frame or base adapted to rest on the stove-top C, and having standards B′, in which the windlass D is supported. The windlass has winding-drums *d d* for receiving ropes or chains E E, which have hooks *e e* at their lower ends adapted to engage the trunnions F F′ of the boiler A, so that in winding the ropes E on the drums *d* the boiler may be lifted from the stove to be rotated, as hereinafter explained. The shaft of the windlass has a ratchet-wheel, *d′*, with the teeth of which the pawl d^2, pivoted to the adjacent standard B′, may be engaged for holding the boiler raised, and as the boiler is lifted by the windlass the opposite trunnions F F′ pass up into slots or openings B^2, formed by the bars B^3, which branch off from and extend downward parallel with the main standards B′. (See Fig. 4.) I support the ends of the windlass-shaft D′ in open slots *b* at the top of the standards B′, so that the entire windlass with its ropes E and hooks *e* may easily be shifted from the standards for better access to the contents of the wash-boiler. I prefer to make the boiler A in oval general form in horizontal section, and somewhat larger at the bottom than at the top; but the boiler may be made round, or square with rounded corners, or of any other desired shape in cross-section. The boiler may also be made entirely of metal by any approved methods; but I show it made of separate metal top and bottom sections, A′ A^2, respectively, and connected by wooden staves A^3, suitably banded, as at *a*, the upper and lower bands *a* passing over the joints between the ends of the staves and the metal sections to strengthen these joints, which may be made by passing rivets or screws through the turned-over flanges *a′* a^2 of the metal sections A′ A^2 into the ends of the staves or in any other suitable manner. I make the bottom of the boiler with a downward extension, G, adapted to pass below the stove-top near the fire, and this extension G has a series of tubes, *g*, fixed to it, said tubes extending down into the fire-pot of the stove next to or into the fire. The tubes *g* are closed at the bottom and open at the top, so as to fill with water and by their greatly extended heating-surface cause the entire body of water in the boiler to boil much more quickly than if the boiler had a plain flat bottom, as will readily be understood. The tubes *g* serve also as legs or feet on which to support the boiler on top of the stove when desired. The top A′ of the boiler has an opening, H, of suitable size, through which the clothes are passed, and around this opening I form an upturned rim or flange, *h*, outside of which I place a gasket or packing, I, which consists of a hollow tube of rubber or other suitable elastic or compressible material, rubber being preferred and the tubular packing I may be partly filled with water or oil or other liquid to cause it to more certainly seal the removable cover J of the boiler, over which cover I arrange a cross-bar, L, which has a fixed hook, *l*, at each end, and the horizontally-bent end of said hooks project in opposite directions, so that by turning the bar L the ends of both hooks will engage the eyes *l′*, fixed to the boiler top. The cover J has a pendent flange, *j*, coming outside of the packing I, and a screw, K, is

threaded into the cross-bar L, so that when the hooks *l* are in the eyes *l'* and the screw K is turned down hard upon the top of the cover J the packing I will be compressed to close the joint of the cover J with the boiler to prevent escape of water from the boiler when it is revolved during the washing operation. The cover J may of course be held to the boiler-top and pressed on the packing by any other suitable devices. At the inside of the boiler A, I fix the inclined partition M, which fits closely at its lower end against the end of the boiler near its bottom and rises to about two-thirds the height of the boiler, so as to form with the end of the boiler a bucket, M', to receive water from the body of the boiler and discharge the water upon the clothes as the boiler is rotated, and thereby facilitate the cleansing of the clothes. At the end of the boiler opposite the bucket-partition M, I arrange a swinging frame, N, which is hung by pivots *o* passing through arms *n* of the frame and through lugs a^3, fixed to the top of the boiler-top A', through which the arms *n* pass. The frame N may of course have a solid or ribbed and convex construction, but I prefer to make it, as shown, in the form of a rack, consisting of vertical bars *n'*, held fixedly and at suitable distances apart by the top and bottom cross-bars, n^2 n^3, respectively; but the rack-bars may be arranged in any suitable manner, and so that when the frame N is swung over and back toward and from the partition M, as in dotted and in full lines in Fig. 2, the clothes in the boiler will be pressed or squeezed between the frame and the partition to remove the dirt from the clothes.

For swinging the frame N, as above described, I employ levers O, which may have sockets *o'* to fit over the arms *n* of the frame, and so that the levers may be removed from the arms, so as not to strike the windlass D when the boiler is raised from the stove and revolved. The levers O may of course be hinged to the arms *n* to fold down on top of the boiler when it is to be revolved, and to be braced stiffly by a ferrule crossing the joint when the frame N is to be swung to press the clothes, as will readily be understood. At the joints of the frame-arms *n* with the boiler top, I fix to said top any suitable rubber or other elastic necks or packings, P, which allow the arms *n* of the frame to rock, and prevent escape of water from around the arms when the boiler is rotated. The frame N may have but one arm *n* to receive one lever O; but I prefer to use the two arms and levers, as shown. At two opposite sides of the boiler I fix in any way the series of interior pins or pegs, R, which, as the boiler rotates, assist in turning the clothes over and over and loosen the clothes in the boiler for the better cleansing action of the water discharged upon them from the end bucket, and the opposite series of pins R assist in the squeezing action on the clothes by the frame N as the frame swings back and forth between the pins. A series of pins, R, may also be arranged on the bottom of the boiler between the water-tubes *g*, if desired.

In laundries it may be desirable to quicken the boiling of the contents of the boiler A, which I provide for by making the trunnion F' hollow, so that steam from any approved pipe-connection may be passed through the trunnion into the boiler for that purpose, and I fit an inwardly-opening check-valve, *f*, into the trunnion, to prevent escape therethrough of the liquid contents of the boiler, and I place any suitable safety-valve, S, on the boiler for controlling the steam-pressure in the boiler within safe limit. I show the safety-valve fitted at the top of the boiler; but it may be placed at any other suitable point on the boiler. The boiler has a cock or plug, as at A^4, through which the liquid contents of the boiler may be withdrawn.

The clamp frame or base B of the boiler consists of opposite bars *b b*, which carry the opposite standards B' B' and opposite bars *b' b'*, arranged at right angles to the bars *b b* and laid across their ends. A clamp or yoke iron, T, is passed upon each end of each bar *b* by passing the lower loops or eyes, *t t*, of each clamp around the bar, and the bars *b' b'* are slipped between the side arms of the yoke, which carry the eyes *t t* over the bars *b b* and beneath the head-bars or cross-pieces *t'* of the yokes, through which screws U are threaded, so as to be set down on the tops of the bars *b' b'* at each end. It is evident that when the screws U are loosened the yokes T may be shifted along the bars *b*, and that the bars *b* may be brought closer together or spread farther apart, to allow the base-frame B to be enlarged or contracted for the support on the stove-top of boilers A of different sizes.

The operation of my improved boiler is as follows: The frame B is adjusted around the boiler, which is placed by its bottom portion, G, into an opening of the stove, and the boiler is charged with water and soap or other washing liquid through the top opening, H, the clothes to be washed being placed in the boiler between the frame N and partition M. The cover J now is clamped fast on the packing I, and the contents of the boiler allowed to boil by the heat of the fire in the stove, aided, it may be, by the steam admitted at the trunnion F', and during the boiling operation the frame N will be worked occasionally to squeeze the clothes. When the clothes have boiled sufficiently, the hooks *e e* of the windlass-ropes will be engaged with the trunnions of the boiler, which then will be lifted by turning the crank V of the windlass, and the stove hole or opening in which the boiler had rested will be closed by the stove-covers, or, preferably, by a suitable plate by having a handle, which I propose to provide for the purpose, and which may be handled more quickly than the stove-covers. The handles O being removed, the raised boiler will now be rotated

by turning the crank V, now removed to one of the trunnions for this purpose, and as the boiler is revolved the bucket M′ will alternately fill with water and empty the water on the clothes, which, together with the agitation of the clothes in turning, will act to give the final cleansing to the clothes. The boiler will now be lowered to the stove-top, and the windlass may be removed from the standards to allow the clothes to more easily be removed from the boiler by a wooden or metal tongs or fork, or other device, and the dirty water then is drawn off at the cock A^4. The boiler may be rinsed out after the washing is finished by charging it with water, sealing its top by the packed cover, and raising and revolving it substantially as above described; and the boiler may be held bottom upward to dry its interior by the heat rising through the opening H from the stove. If desired, the washed clothes may be rinsed out in the boiler by first drawing off the dirty water at A^4 and putting in rinsing-water—with or without bluing—through the opening H, then closing the opening by the cover J, and revolving the boiler, and when the clothes are rinsed sufficiently they may be wrung out directly from the boiler by a wringing-machine of any approved kind attached to the flange *h* of the boiler-top after the gasket I is removed from the flange, as will readily be understood.

The boiler may be made of any desired size, with the other fixtures to correspond; and I find it in practice to be especially serviceable in washing large heavy pieces—such as blankets and other bed-clothes and carpets—and with considerable economy in time and labor.

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

1. The combination, in a washing-machine, of a frame and a hoisting apparatus mounted thereon, with a revoluble wash-boiler supported by the said hoisting apparatus, whereby, when the frame rests over the stove, the boiler may be lowered to rest on the stove or raised therefrom by said apparatus and revolved in its bearing on said apparatus, substantially as set forth.

2. The combination, in a washing-machine, of the frame comprising a base and standards, the windlass D, journaled in the upper ends of said standards, the ropes E, having hooks *e e*, and the boiler having trunnions mounted in the hooks, whereby, when raised by the drum and ropes, the boiler may be revolved on said hooks, substantially as set forth.

3. In a washing-machine, the boiler having lugs on its top part, a frame within the boiler having arms pivoted to the said lugs and extending through the top of the boiler, and the elastic necks P, surrounding said arms, to allow them to rock freely and prevent the escape of water, substantially as set forth.

4. The combination, in a washing-machine, of a frame comprising a base, two standards having vertical slots B^2, open at their lower ends, the windlass D, ropes E, and hooks *e e*, with the revoluble boiler A, having side trunnions guided within the vertical slots, and supported by the hooks, substantially as set forth.

5. The combination, with the boiler A, provided with the swinging frame N, and partition M, of the pins R, substantially as shown and described.

6. The combination, in a washing-machine, and with the windlass-supporting standards, of the clamp-frame B, constructed with crossed bars *b b′*, yokes T, having loops *t t* and cross-bar *t′*, and the set-screws U, substantially as shown and described.

JOHN BARR.

Witnesses:
WM. GOESSLING,
G. M. STELZLEIN.