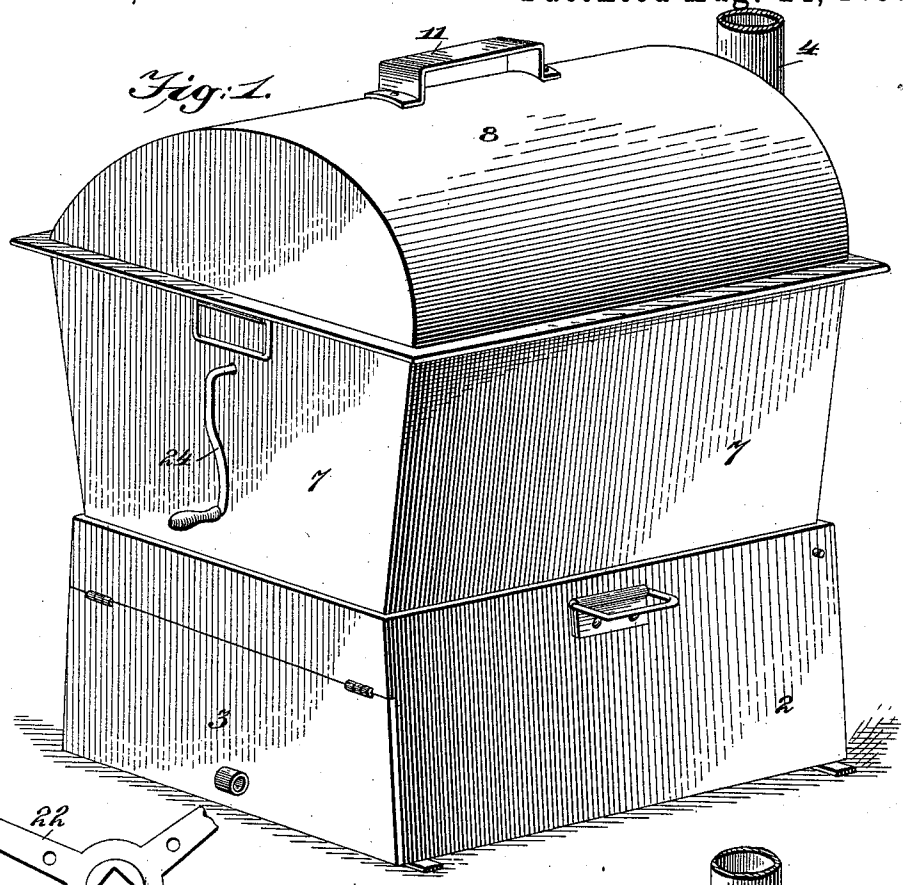
(No Model.) 2 Sheets—Sheet 1.

H. B. ROACH.

WASHING MACHINE.

No. 588,604. Patented Aug. 24, 1897.

Fig. 1.



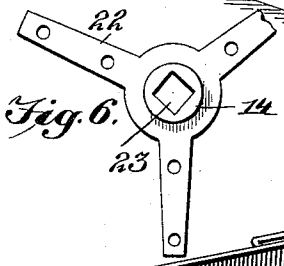


Fig. 6.

Fig. 2.

Witnesses

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

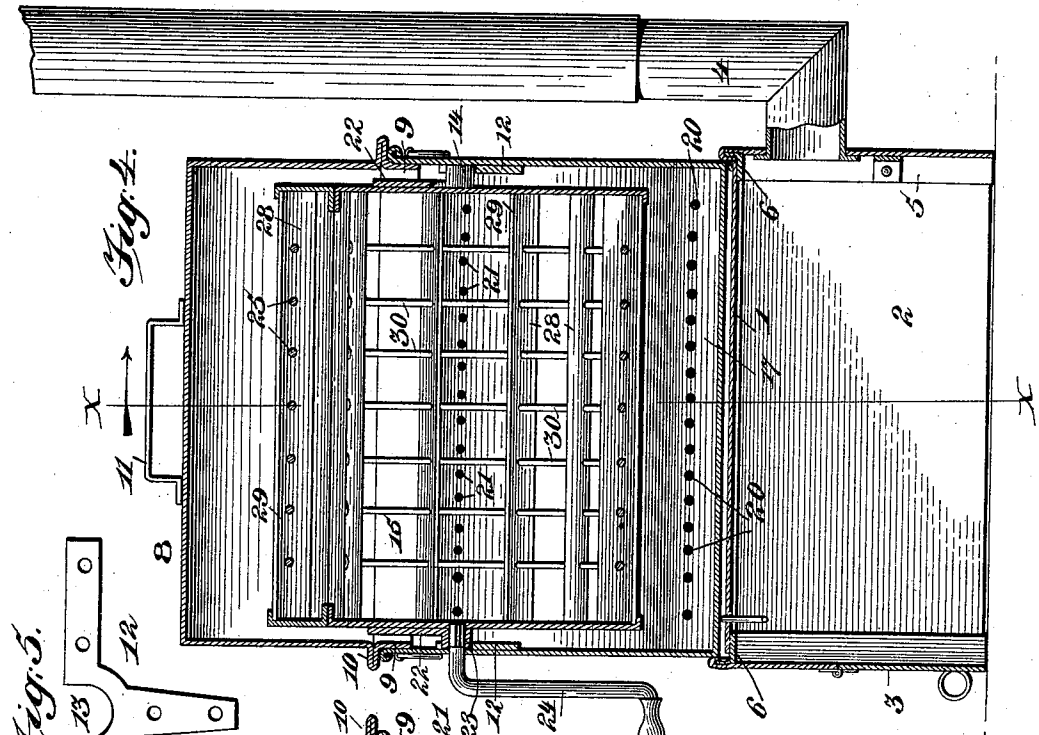
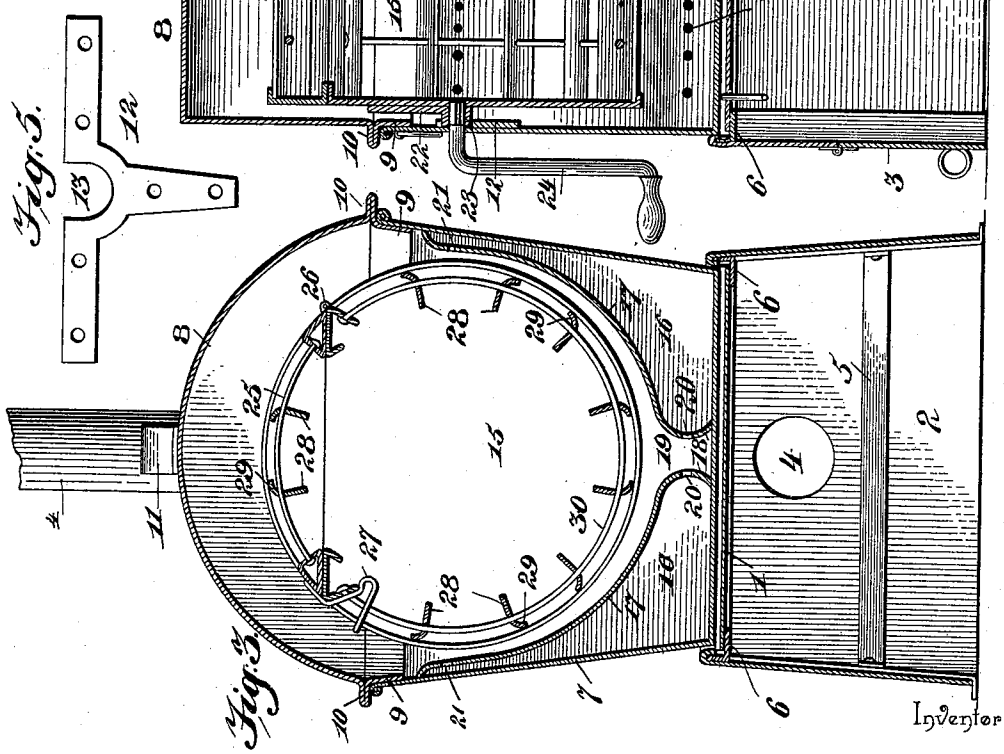


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY B. ROACH, OF PARIS, TEXAS, ASSIGNOR OF ONE-HALF TO GEORGE F. HICKS, FRANK O. HICKS, AND JOHNSON HALE, OF LAMAR COUNTY, TEXAS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 588,604, dated August 24, 1897.

Application filed February 17, 1897. Serial No. 623,855. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. ROACH, a citizen of the United States, residing at Paris, in the county of Lamar and State of Texas, have invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to washing-machines which combine in one structure means for heating the suds-water and maintaining the same at the required temperature, a suds-box having chambered or hollow bottom and sides to secure a circulation of the suds-water independently of the agitation resulting from turning the drum or clothes-receptacle upon its axis, and a drum removably journaled in the suds-box and comprising longitudinal slats or bars having bent edge portions for scooping up the suds-water and directing the same into the drum and upon the clothes contained therein, whereby the washing process is greatly facilitated.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of the improved washing-machine. Fig. 2 is a perspective view of the furnace. Fig. 3 is a transverse section on the line X X of Fig. 4, looking to the right, as designated by the arrow. Fig. 4 is a central longitudinal section. Fig. 5 is a detail view of the bearing applied to an end of the suds-box. Fig. 6 is a detail view of a journal-bearing applied to an end of the drum.

Corresponding and like parts are referred to in the following description and indicated in the several views of the accompanying drawings by the same reference-characters.

The furnace is a frame of rectangular form open at its bottom and closed at its top by a hinged cover 1, and the front end of this frame 2 is provided with a door 3 for the admission of fuel and the stirring of the fire. A smoke-pipe 4 communicates with the opposite end of the furnace and carries off the smoke to a safe distance. This furnace is especially designed for outdoor use or to be placed upon a hearth, the ground or the hearth forming a support for the fuel, which will be wood, bagasse, or other suitable material.

The furnace is constructed of sheet metal and is strengthened by strips 5 and is provided at its upper end with an angle-bar 6, which forms a support for the suds-box 7, the vertical portion of the angle-bar serving to retain the suds-box in place, as will be readily understood on reference to Figs. 3 and 4.

The suds-box 7 is of rectangular form and flares slightly toward its upper end and is closed by a cover 8, of arched form and having a depending rim 9 to enter the open end of the box 7 and an outer flange 10 to rest upon the top edge of the said box. This cover has a handle 11, by means of which it is conveniently manipulated. Similar bearings 12, of T-form, are secured to the inner faces of the ends of the suds-box and have notches 13 in their top edges to receive the journals 14, provided at the ends of the drum 15. The bottom and sides of the suds-box are chambered or made hollow, as indicated at 16, for a purpose presently to be described. Similar plates 17, extending the entire length of the suds-box, are secured at their upper edges to the sides of the suds-box a short distance from their top edges and curve toward the outer corners of the box between their top and bottom edges and have their lower edges secured to the bottom of the suds-box a short distance from a plane passing vertically between the sides of the suds-box. The lower edge portions of the plates 17 curve away from each other, as shown at 18, and have a pocket or space 19 formed between them, and these bent portions have a series of openings 20 to permit the suds-water to pass from the box into the chambers or spaces 16. A series of openings 21 are provided in the plates 17 near their upper edges. When the machine is in operation, the steam and hot water rise in the spaces or chambers 16 and pass through the openings 21 into the upper portion of the box, and the hot water

discharging upon the clothes in the drum passes through them and materially assists in the washing process and, gravitating to the pocket 19, again passes into the chambers 16 through the openings 20, when the operation just described is repeated.

The drum 15 is of skeleton form and is provided at its ends with journals 14, which obtain bearings in the parts 12, as hereinbefore stated. The journals 14 have arms 22 radiating therefrom, forming a spider-casting, as indicated in Fig. 6, and these spiders are secured to the ends of the drum in any substantial manner. One of the journals has an angular opening 23 to receive an angular portion of a crank 24, which is removably fitted thereto for rotating or turning the drum upon its journals.

Access is had to the interior of the drum by means of a door 25, forming a portion thereof and closing an opening provided in a side of the drum. This door is hinged at one edge, as shown at 26, and is held closed by a catch 27 at its opposite edge and which springs over a bar bordering upon the opening closed by the door 25.

A series of slats or bars 28 are disposed longitudinally in parallel relation and are located at regular intervals apart and are secured in any convenient manner to the ends or heads of the drum and are comparatively thin and wide and placed with their width extending radially. The outer edge portions of these slats or bars project beyond the plane of the wires 30 and are bent approximately at right angles, as shown at 29, so as to scoop up the water when the drum is rotated. The slats or bars are disposed so that one half have their bent edge portions 29 facing in one direction and the other half have their bent edges facing in the opposite direction, thereby providing for the scooping up of the water upon turning the drum in either direction. The bent edge portions facing in one direction are not grouped, but are equally distributed about the circumference of the drum, so as to scoop up the water at regular intervals. A series of wires 30, extending in parallel relation, are passed through openings formed in the slats or bars 28 intermediate of their inner and outer edges and close the spaces formed between the said slats or bars, whereby the clothes are retained within the drum when the machine is in operation. The inner edge portions of the slats or bars form agitators or beaters and the outer edge portions splashers, paddles, or scoops to insure a thorough agitation of the water upon turning the drum. The clothes to be washed are placed in the drum and the suds-box is supplied with a sufficient amount of water, which latter is heated by starting a fire in the furnace, and when the water boils it will rise in the chambers 16, discharge through the openings 21 into the drum and upon the clothes, pass through the latter to the bottom of the suds-box, to be again heated and perform the operation just described. The process of washing is greatly facilitated by operating the drum either by turning it slowly in one or the other direction or by oscillating it upon its journals, as may be desired. By removing the cover 8 and withdrawing the crank 24 the drum may be lifted from the suds-box for any purpose, as will be readily understood.

Having thus described the invention, what is claimed as new is—

In a washing-machine, the combination with a suds-box, of similar plates applied to the interior of the suds-box and extending the full length thereof, and curving in opposite directions between their top and bottom edges, and having their upper edges deflected and secured to the sides of the box a short distance from their top edges and provided with openings, and having their lower edges touching and secured to the bottom of the box a short distance from a vertical longitudinal plane passing centrally through the box, and curving oppositely and spaced apart, forming a pocket, and provided with a series of openings, substantially as set forth for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY B. ROACH.

Witnesses:
W. F. GILL,
J. N. BLAKE.