

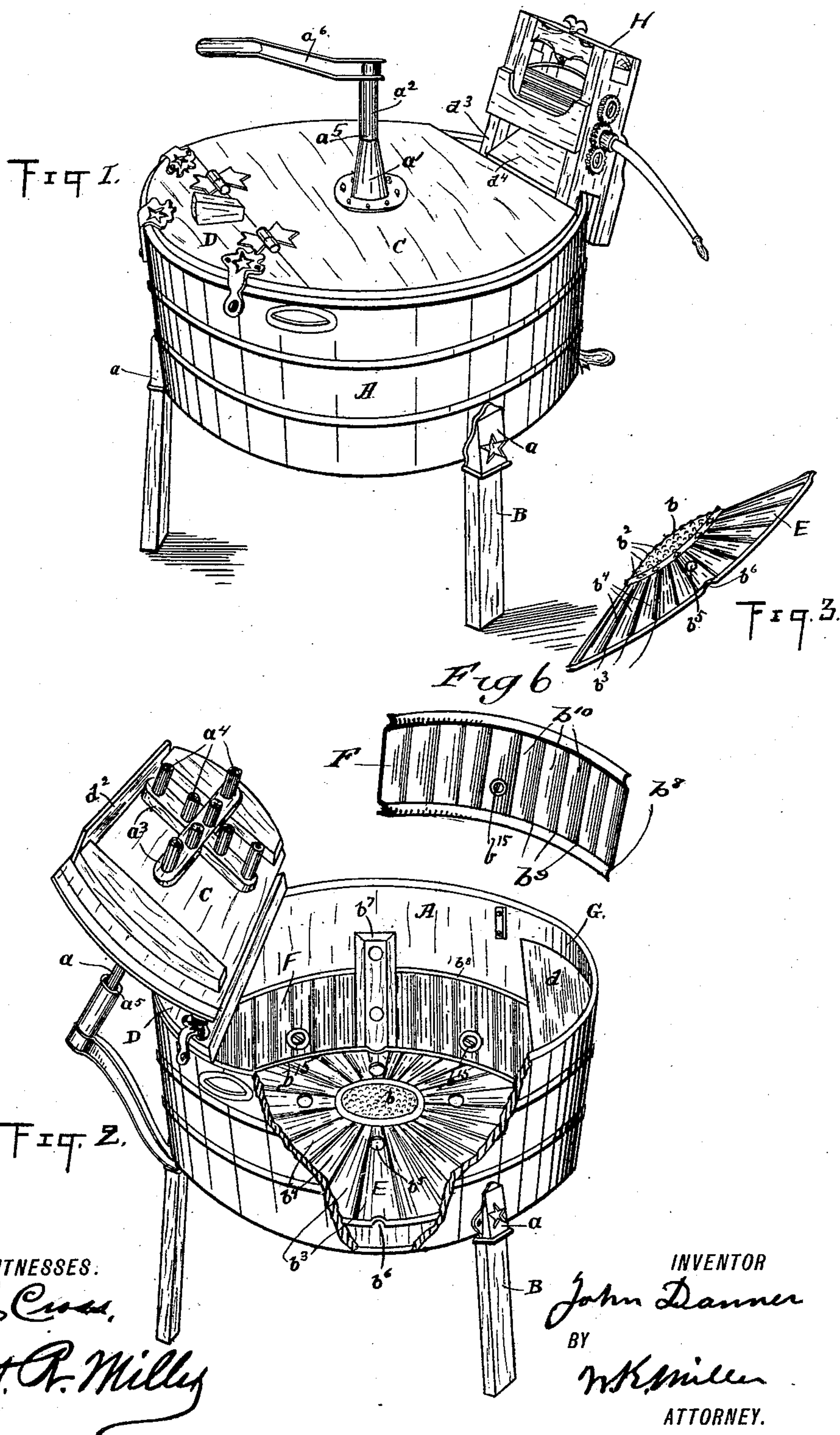
(No Model.)

2 Sheets—Sheet 1.

J. DANNER.  
WASHING MACHINE.

No. 453,336.

Patented June 2, 1891.



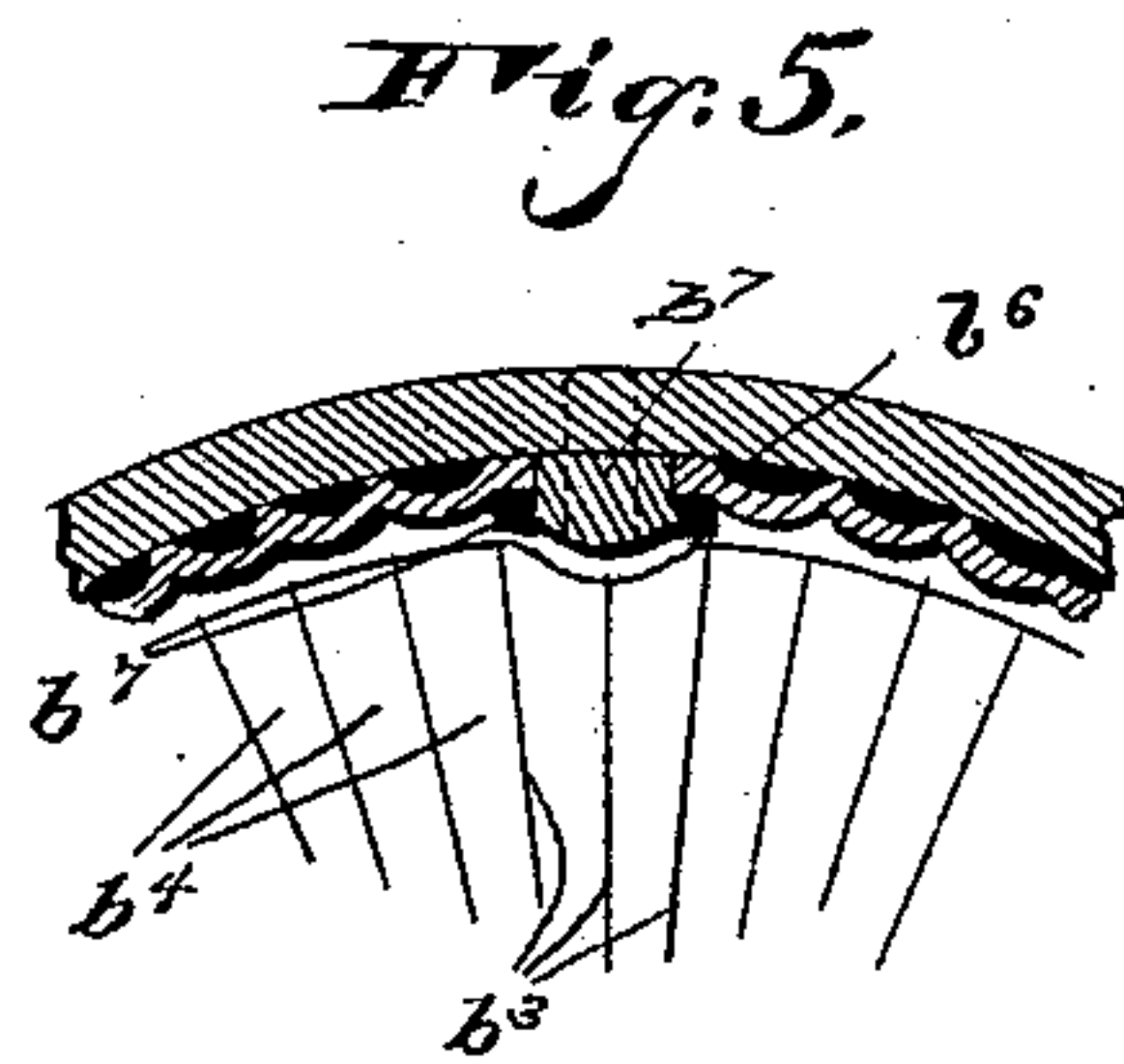
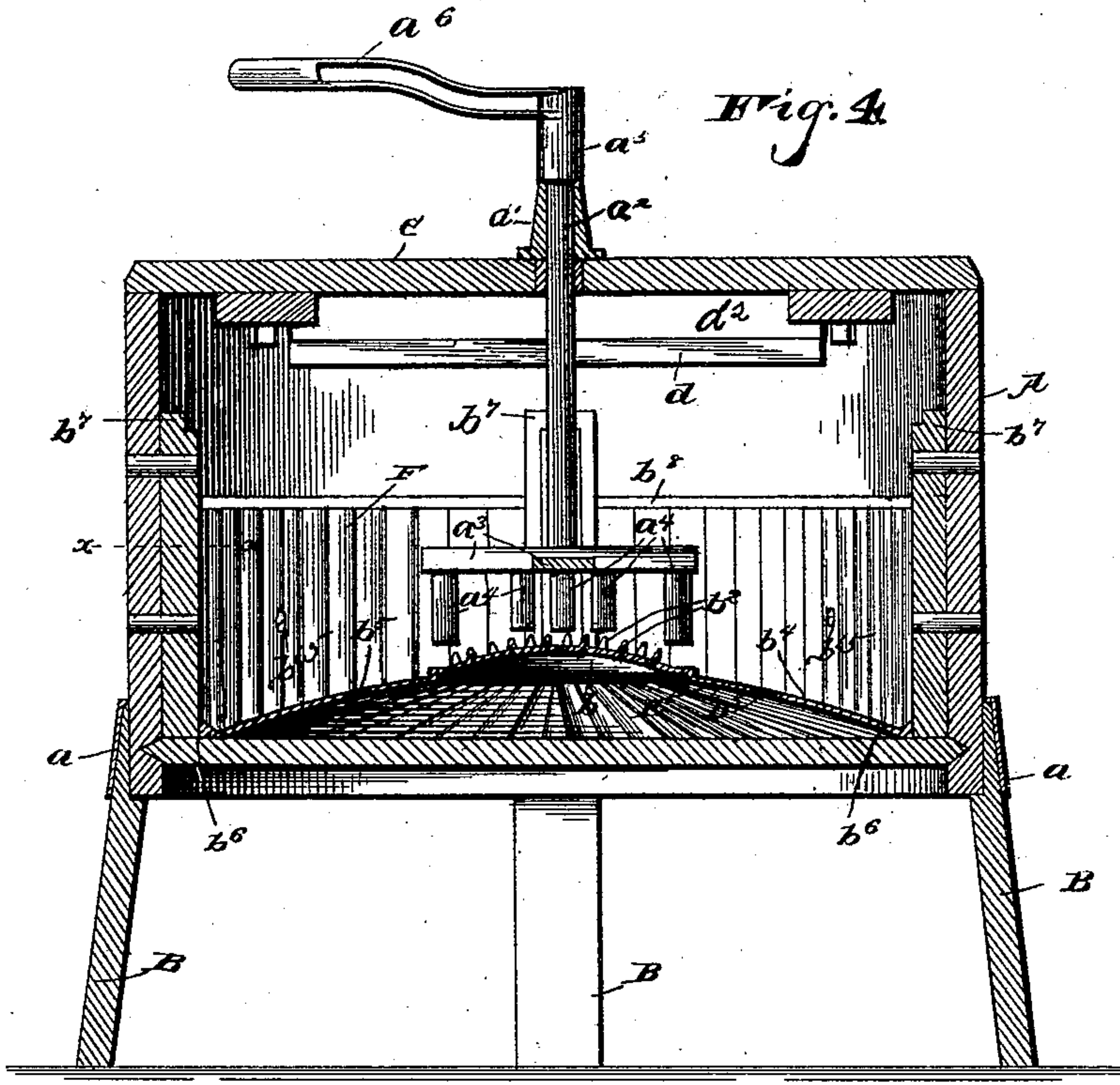
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WITNESSES:

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# UNITED STATES PATENT OFFICE,

JOHN DANNER, OF CANTON, OHIO.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 453,336, dated June 2, 1891.

Application filed June 25, 1890. Serial No. 356,611. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN DANNER, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Washing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in washing-machines; and it consists in certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claims.

Figure 1 is a perspective of a washing-machine, illustrating my invention. Fig. 2 is a similar view showing the lid raised up and over the edge of the tub, showing the rotative rubber, a portion of the side of the tub cut away, disclosing a non-rotatable corrugated-metal rubber, and sectional corrugated side rubbers; Fig. 3, a similar view of a corrugated and crowned metal rubber; and Fig. 4 is a vertical sectional view through the machine. Fig. 5 is a sectional detail. Fig. 6 is a perspective view of one of the side rubbers.

Similar letters of reference indicate corresponding parts in all of the figures of the drawings.

A represents the tub or body portion of the machine, which is of the usual form and of such dimensions as may be preferred, which is supported on legs, as B, secured in metal sockets *a*.

The movable portion C of the lid is hinged to a fixed portion D. To the portion C is secured centrally thereto a vertical journal-box *a'*, in which is placed the rotative shaft *a<sup>2</sup>*, on the lower end of which is provided a cross-head *a<sup>3</sup>*, having downwardly-projected pins *a<sup>4</sup>*, graded to the center—that is to say, the pins increase in length from the center of the cross-head to its ends. At the upper end portion of the shaft *a<sup>2</sup>* is provided a shoulder *a<sup>5</sup>* to rest upon the top of the journal-box *a'*, by which the head *a<sup>3</sup>* is held in proper relation with respect to the tub-bottom. To the upper end of said shaft is secured an actuating-lever *a<sup>6</sup>*.

That part of the machine to which I will call particular attention consists in providing

at the bottom of the tub a peculiarly-constructed false bottom or rubber E, which for the purposes of the application I have made of sheet-zinc; but, if preferred, other suitable material may be used. The rubber is of the form shown in the drawings, having its central portion *b* raised or crowned, as shown. The center portion *b* is provided with small raised portions, as *b<sup>2</sup>*, raised or pressed up from the metal. From about this central portion is provided a series of radial corrugations, as *b<sup>3</sup>*, by which is formed a series of radial ribs *b<sup>4</sup>*. There is also in said rubber a series of perforations *b<sup>5</sup>*, through which dirt may pass to the bottom of the tub. About the periphery of said stationary rubber is provided a series of notches *b<sup>6</sup>*, and about the inside of the tub a corresponding number of vertical cleats *b<sup>7</sup>*, having an outwardly-projected portion adapted to engage the notch *b<sup>6</sup>* to hold said rubber against rotation. A groove is provided at the edge of the cleats *b<sup>7</sup>*, in which is placed a side rubber F, said rubber to extend from one cleat to another to cover a portion of the side of the tub, as shown in Fig. 2. To prevent the side rubbers bulging out intermediate their ends, they may be secured to the tub by screws *b<sup>15</sup>*. Said side rubber is formed substantially as shown, having a stiffening-rib *b<sup>8</sup>* at the upper and lower edges and vertical corrugations *b<sup>9</sup>*, forming rubbing-ribs *b<sup>10</sup>*.

At the front of the tub is formed a recess G, having a bottom portion *d*, bounded by the front of the tub, and an apron *d<sup>2</sup>*, projected downwardly from the lid C. A wringer, as H, may be secured to the tub, as shown, the frame *d<sup>3</sup>* and return-board *d<sup>4</sup>* projected downwardly into recess G. The water from the wringer will pass down over the return-board into the recess and between the apron and the bottom into the tub.

In operation the proper quantity of hot water is placed in the tub, the articles to be washed placed therein, and the lid C placed over and down, as shown in Fig. 1, bringing the rotative rubbing-head *a<sup>3</sup>* with the pins *a<sup>4</sup>* down upon and between the articles. The hand-lever *a<sup>6</sup>* may be vibrated about to rotate the shaft *a<sup>2</sup>* and the head *a<sup>3</sup>* to carry the articles to be washed over and against the rubbers E and F.

It will be noticed that the length of the pins  $a^4$  is graded from the outside of the head toward the center to conform to the crowning of the rubber E.

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

1. In a washing-machine, the combination, with a tub having upright cleats secured  
10 thereto and recessed on their under sides at their edges, of a false bottom located within said tub and provided with notches in its edges to engage said cleats, whereby said false bottom is prevented from rotating, and side  
15 rubbers having their ends fitted in said re-

cesses, substantially as described, and for the purpose set forth.

2. In a washing-machine, as herein described, the metal rubber having its central portion raised or crowned and provided with 20 upwardly-projected points  $b^2$ , radial corrugations  $b^3$ , and perforations  $b^5$ , substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 13th day of June, A. D. 1890.

JOHN DANNER.

Witnesses:

W. K. MILLER,

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