

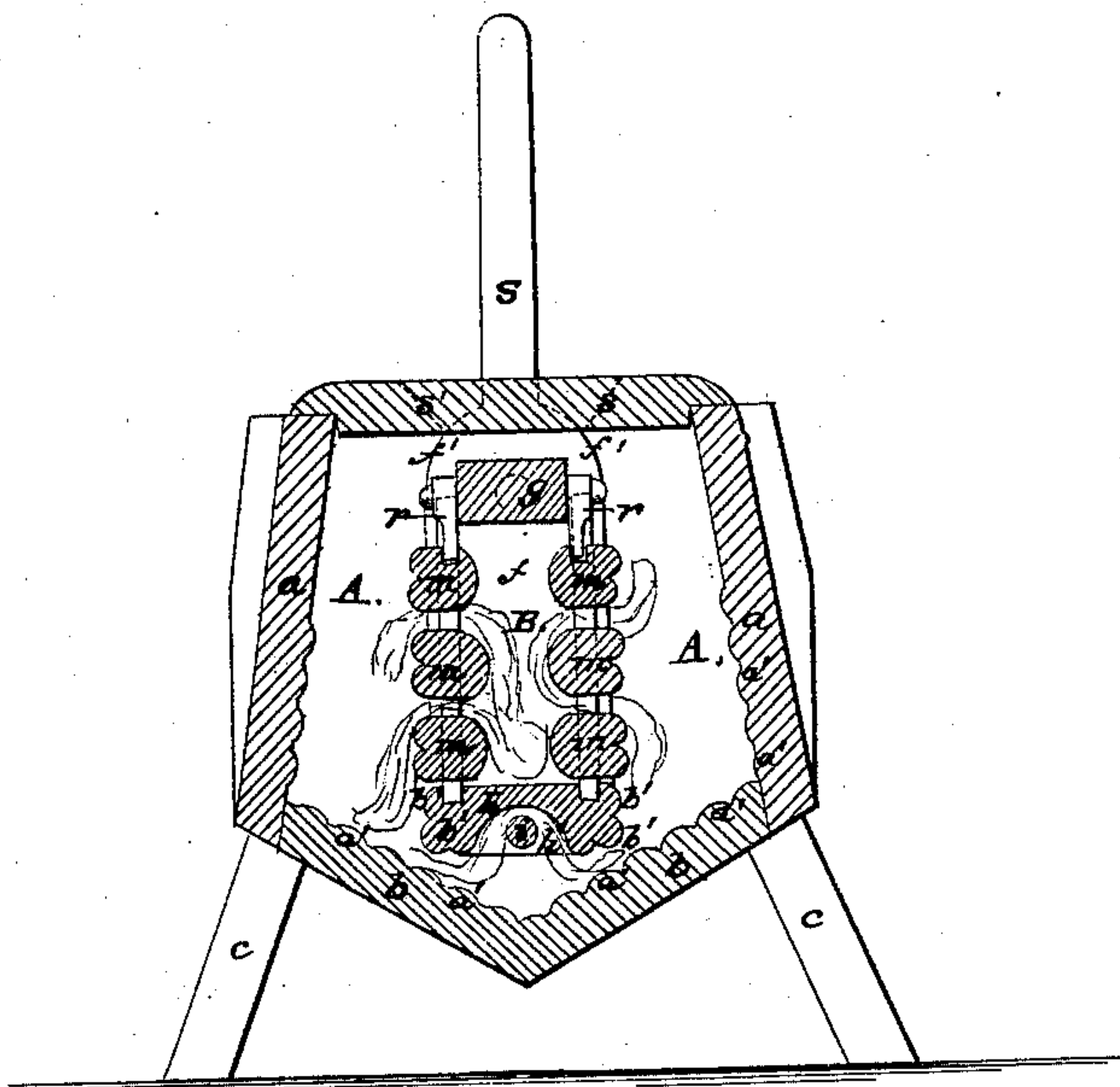
*I. Avery*

*Washing Machine*

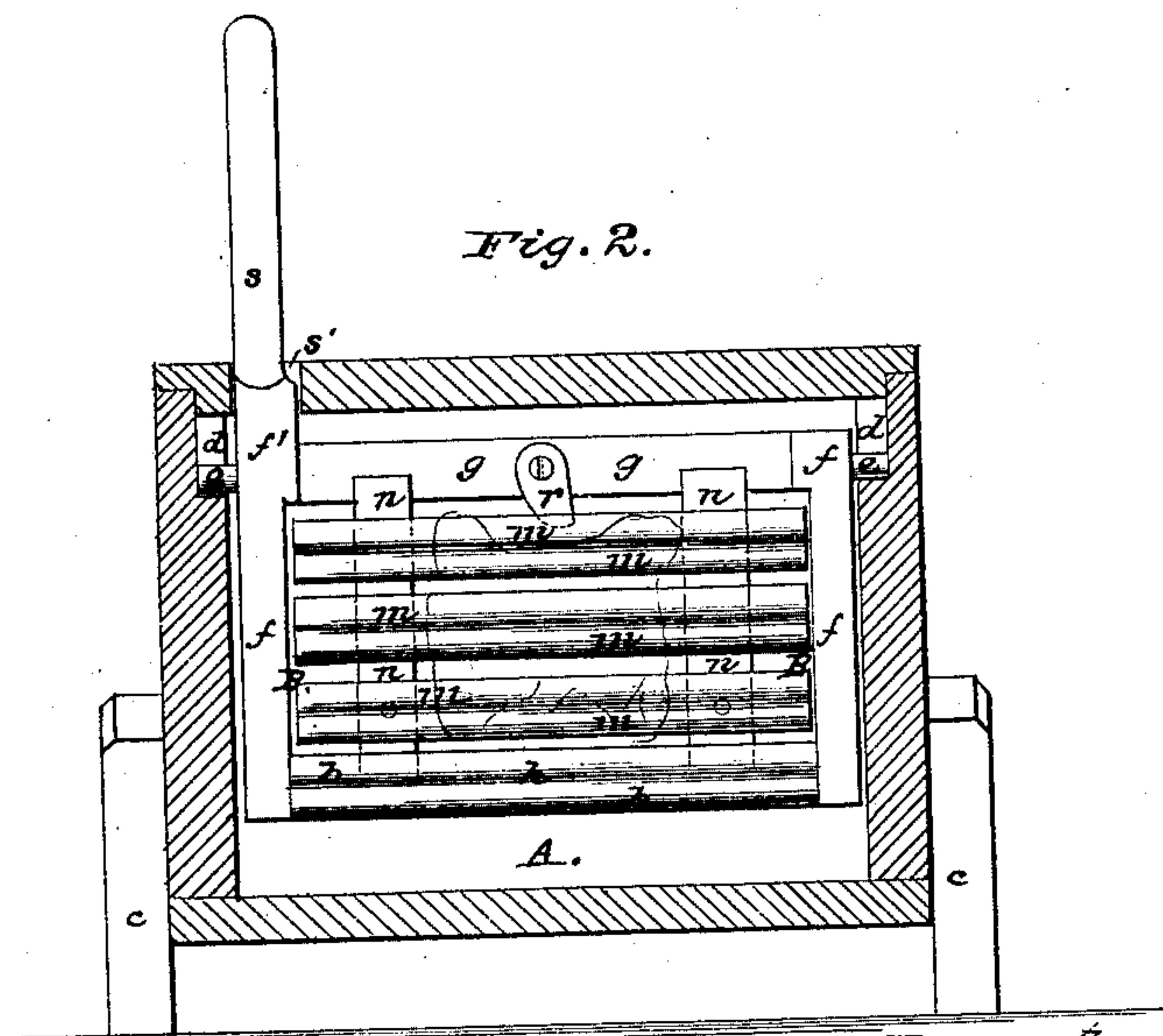
*Patented Mar. 5, 1867.*

*N<sup>o</sup> 62,592.*

*Fig. 1.*



*Fig. 2.*



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# United States Patent Office.

IRA AVERY, OF TUNKHANNOCK, PENNSYLVANIA.

*Letters Patent No. 62,592, dated March 5, 1867.*

## IMPROVED WASHING MACHINE.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, IRA AVERY, of Tunkhannock, in the county of Wyoming, and State of Pennsylvania, have invented certain new and useful improvements in Washing Machines; and I do hereby declare that the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a vertical transverse section of a washing machine constructed according to my invention.

Figure 2 is a longitudinal vertical section of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in a novel construction of the "beater" of a washing machine, whereby such portions of the fabrics which require the least rubbing may be retained within the interior of the "beater," while other parts thereof, which require a greater degree of rubbing, are being subjected to the rubbing action of the said "beater," thus preventing any unnecessary wear or abrasion of the fabrics, and also effecting a material reduction in the labor in washing as compared with those machines in which the fabrics are subjected throughout to an equal degree of rubbing. The invention also consists in a rod, situated underneath the bottom piece of the beater in such a way as to enable small articles or fabrics to be more effectually washed than if acted upon by the main portion of the beater, designed for washing fabrics of greater size. The invention further consists in a novel arrangement of parts, whereby the escape of water or suds around the lever by which the beater is operated is effectually prevented.

To enable others to understand the construction and operation of my invention, I will proceed to describe it, with reference to the drawings.

The box which constitutes the body of the machine is shown at A, and is intended to be made with its sides, *a a*, inclined slightly inward at the top, and with a bottom concave in its cross-section, and formed of two inclined surfaces, as indicated at *b b*. The upper or inner surface of this bottom, together with the lower portions of the inner surfaces of the sides *a a*, are furnished with longitudinal ribs or corrugations, *a'*, which may be constructed either of wooden strips, secured in place by any suitable means, or of corrugated sheet zinc. If desired, rubbing rollers of any suitable construction may be substituted, either wholly or in part, for these ribs *a'*. The body A is furnished with legs, *c*, or other equivalent means of support. Formed centrally in the upper part of each end of the box A, in the inner surface thereof, is a vertical groove, *d*, the lower ends of the said grooves *d* constituting the bearings of the pivots *e*, which are formed upon the ends of the beater B, at the top or upper part thereof. This beater B is constructed as follows; The two end pieces *f* are connected by a strong longitudinal top bar, *g*, and by a bottom bar, *h*, the latter being of greater width than the former, and formed with a semicircular longitudinal groove, *h'*, in its under side, in which is situated a rod, *i*, the ends of which rest in suitable holes or bearings formed in the end pieces *f*. The lateral surfaces of this bottom bar *h* should be provided with longitudinal ribs or corrugations, as shown at *h'*. Each side of the "beater" is formed of detachable bars, *m*, formed with rounded or corrugated outer and inner surfaces, and connected together by upright bars, *n*, which pass through transverse slots in the bars *m*, as shown in dotted lines in the drawings, and which have their lower ends fitted snugly into mortises or recesses, *n'*, formed in the bottom bar *h* near the edges thereof, the lowermost parts of the side portions of the beater being thus retained in place, while the upper parts of the said side portions are held in position by means of cam-shaped buttons, *r*, which are pivoted to the top bar *g*, and fit into suitable grooves or recesses formed in the upper surface of the uppermost bars *m*, as shown more clearly in fig. 1, in such manner as not only to prevent the side portions of the beater from falling laterally from their places, but also to enable the bars *m* to be brought farther from or nearer to each other by simply turning the cam-shaped buttons *r* one way or the other, as will be hereinafter further set forth. It should be understood that the width of the end pieces *f* and the bottom bar *h* is such that a sufficient space will be afforded within the beater for the reception of a portion of the cloth or fabrics to be washed, as will be presently herein set forth. The upper ends of the end pieces *f* are of semicircular form, as indicated more clearly at *f'*, in fig. 1, and extending upward from that of one of the aforesaid end pieces is a lever, *s*, which passes upward through a suitable slot formed in the cover B' of the box B, as shown at *s'*, in fig. 2, and also indicated in dotted lines in fig. 1, the said slot *s'* being of such size as to permit the required movement of the lever *s*, and the lower edges of the ends thereof being in contact with the rounded or semicircular upper end or portion of the end piece *f*, upon



which the aforesaid lever *s* is formed, in such manner that as the lever *s* is vibrated, the said semicircular end will move in contact with the ends of the slot *s'*, and thus prevent the water or suds from being forced upward through the aforesaid slot during the operation of the machine.

In using the machine, the cam-shaped buttons *r* are turned so as to bring them away from the uppermost bars *m*, and the side portions of the beater being removed, have the cloth or fabrics to be washed passed between the bars *m* thereof, and are then replaced and secured in the beater, the bars *m* being pressed downward so as to firmly clamp the fabrics between them, by means of the aforesaid cam-shaped buttons *r*, in the position shown more clearly in red outline in fig. 1, the more cleanly portions of the fabrics being situated within the interior of the beater, while those parts thereof which contain the greatest proportion of impurities are suspended from the outermost sides or surfaces of the beater. The smaller articles or fabrics are passed over the rod *i*, between it and the concave surface of the semicircular groove *h'*, in such manner that the end portions thereof will be brought between and be acted upon by the under surface of the bottom bar *h* and the corrugated bottom *b* of the box *A*. This being done, and a sufficient quantity of water or suds being placed in the box *A*, a vibrating movement is communicated to the beater *B* by means of the lever *s* thereof, and the outermost portions of the fabrics, held between the bars *m*, as just explained, are rubbed and beaten between the sides of the beater and the sides of the box *A*, such parts of the aforesaid outermost portions of the fabrics as may depend below the bottom of the beater being also rubbed upon the corrugated bottom *b*, by which means those portions of the fabrics containing the greatest quantity of dirt or impurities are thoroughly rubbed and beaten, while those portions situated within the beater, and containing the least dirt, are simply agitated and drawn through the suds, so that the rubbing and beating action upon the different portions of the fabrics is proportioned to the amount of dirt contained therein, and consequently the said fabrics are subjected to a much less degree of wear and abrasion than if all the parts thereof were equally acted upon by the beater. The fabrics retained underneath the beater by the roller *i* are cleansed by being rubbed between the bottom bar *h* of the beater and the bottom *b* of the box *A*, as hereinbefore explained.

What I claim as new, and desire to secure by Letters Patent, is—

1. The hollow-chambered beater *B*, with its adjustable rubbers *m* so applied that portions of the fabric may be contained within the beater while the remaining portions thereof are being subjected to the rubbing and beating action thereof, substantially as set forth.
2. The rod *i*, arranged in a semicircular groove formed in the under side of the bottom bar *h* of the beater, in combination with the hollow-chambered beater, substantially as herein set forth, for the purpose specified.

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Witnesses:

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