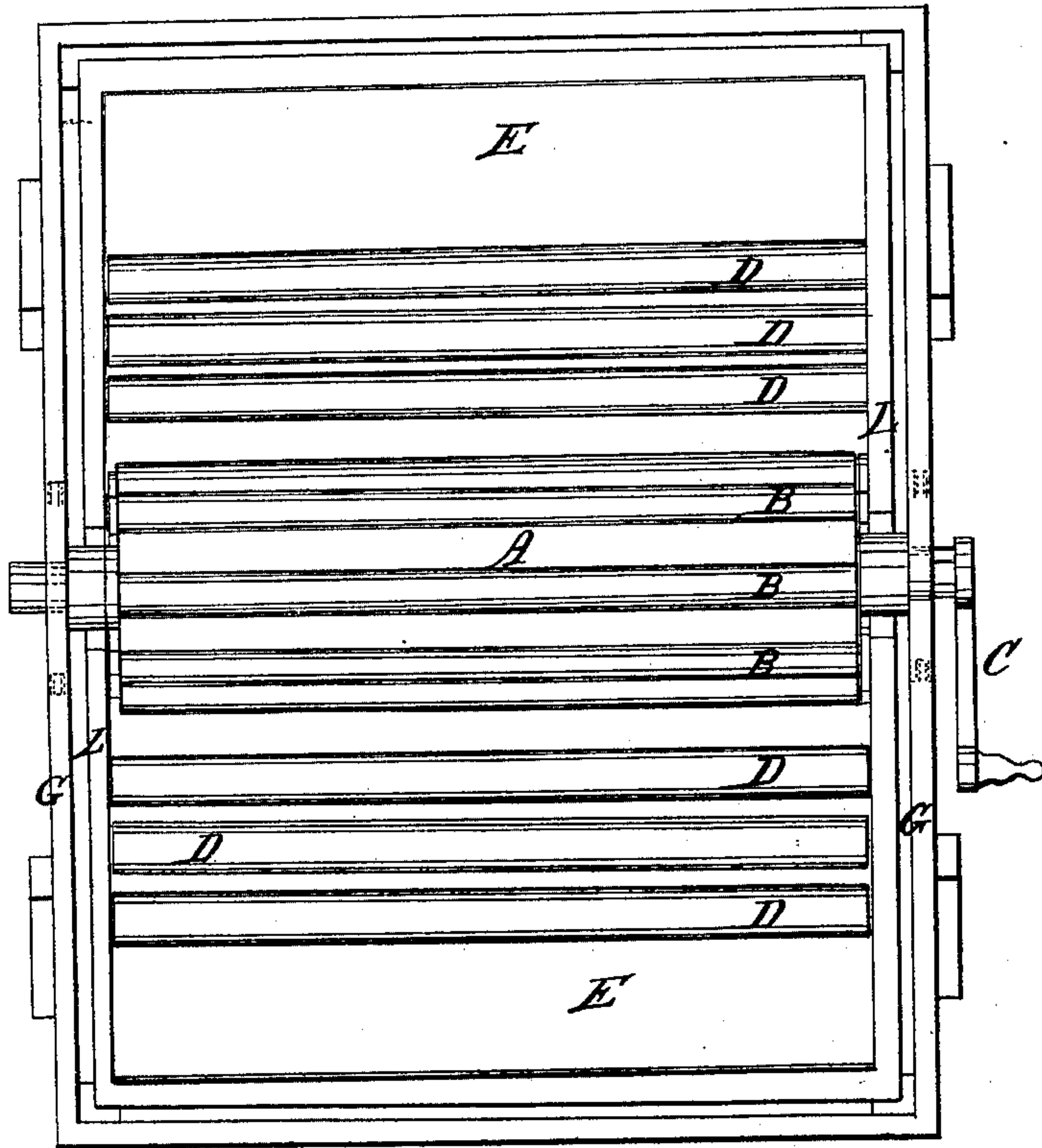


*A. Huffer,*  
*Washing Machine,*

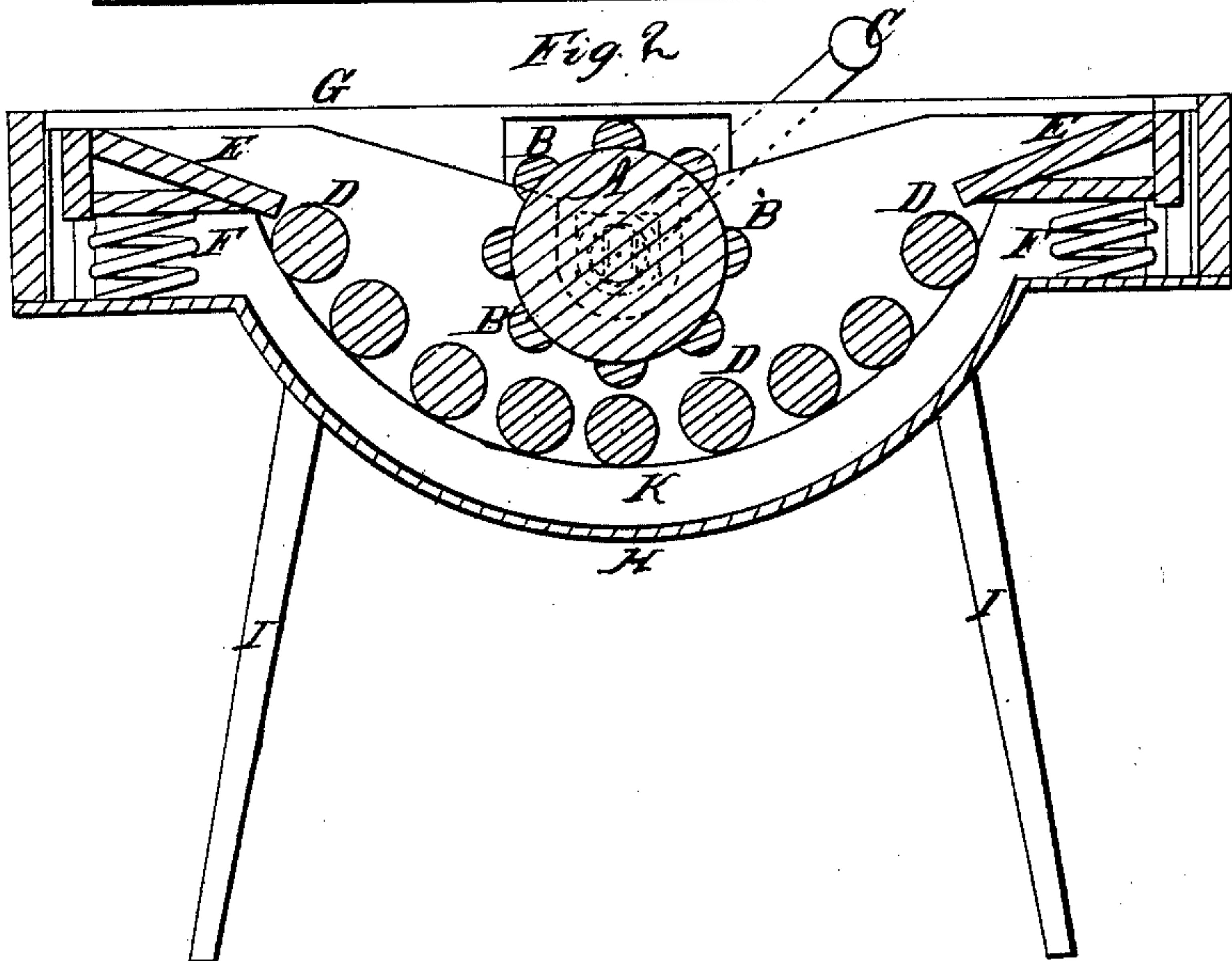
*N<sup>o</sup> 18,642.*

*Patented Nov. 17, 1857.*

*Fig. 1.*



*Fig. 2.*





# UNITED STATES PATENT OFFICE.

ABRAHAM HUFFER, OF HAGERSTOWN, MARYLAND.

## WASHING-MACHINE.

Specification of Letters Patent No. 18,642, dated November 17, 1857.

*To all whom it may concern:*

Be it known that I, ABRAHAM HUFFER, of Hagerstown, in the county of Washington and State of Maryland, have invented a new and Improved Washing-Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

10 A long experience in the manufacture of washing machines, and a thorough knowledge of the practical working of all those now in use, have made me familiar with their defects and led me to invent a new  
15 machine which should be free from these defects, being enabled to do what all others have failed to accomplish.

My invention belongs to that class of washers in which a fluted cylinder is placed  
20 about a concave bed.

As hitherto constructed, these machines act by rubbing the clothes, tearing off buttons, hooks, etc. and rapidly wearing the fabrics, so that only coarse articles can be  
25 submitted to their action. Nor can a carpet or other long web of cloth be washed in them, there being no self-feeding apparatus in any of them. As the clothes must pass to the bottom of the machine, where also the  
30 dirt constantly settles when washed from the clothes, (especially when carpets, &c., are washed) the same dirt is again mopped up by the fabrics, and must again be removed by a second or even third suds.  
35 These machines always require a large quantity of water and consequently a large amount of soap. Although various forms of cylinders, concaves and boxes or tubs have been tried with a view of obviating these  
40 difficulties, no one has succeeded in so doing until the invention of my machine which has now been in operation eighteen months, is extensively used and found to be completely successful.

45 My invention consists of a shallow concave formed by a series of small rollers and two feeding boards, in combination with a ribbed cylinder, the whole being so arranged that large articles, such as carpets  
50 will feed smoothly through the machine, successive portions of them being washed by being carried alternately into the water and the air, bleaching as well as washing them, and passing them only into the upper strata

of water, thus preventing their reabsorbing 55 the dirt from the bottom.

In the accompanying drawings, Figure 1, gives a top view of my machine, with two of the rollers D, D, removed to give a clearer view of the ribbed cylinder, A. B. Fig. 2 is 60 a cross section through the middle of the machine, it gives also an interior view of one end of the machine.

The legs I, I, support a shallow box, the bottom of which is shown at H, and the end 65 at G. The ends of this box have bearings for the ribbed cylinder A, B, and also for the axle rollers D, D, which are so arranged as to form a concave bed, as shown in Fig. 2. This concave bed of rollers D, D, is extended 70 by the boards E, E. It is supported by coiled springs F, F, and plays freely up and down in the box or tub H, G. The ribbed cylinder is turned by a crank C, and is capable of a reciprocating action, or a constant 75 revolution in one direction. The trough is to be filled with water so far as to cover most of the rollers, or about one third of the cylinder A, B. Then the clothes to be washed are placed upon the feeding 80 board E, and pass along the concave of rollers D, D, and are pressed into the water so as to be caught between the rollers D, D, and the cylinder A, B, as the latter is put in motion by the crank C. 85

If the articles to be washed are small, the cylinder A, B, is turned in one direction far enough to carry them completely under it, when by a reverse motion of the cylinder they are brought back again. Thus by a reciprocating action of the cylinder A, B, the 90 clothes are soon cleansed.

When the article to be washed is large one end is fed into the machine from one of the boards E, E, and washed by the reciprocating action of the cylinder A, B. In the 95 same manner successive portions may be washed until the whole carpet or other long web of cloth passes through the machine. In this operation the ends of the fabric rest 100 upon the feeding boards, which may be varied in width and inclination according to the character of the articles to be washed.

The operation of my washer upon the clothes is rather by a pressing than a rubbing 105 action, and hence delicate fabrics, woolen goods and wool itself, all of which rubbing injures, may be safely washed in it.



The safety with which such articles are washed is due not only to the gentle pressing action of the cylinder and concave rollers upon the fabrics but also to the particular effect of the feeding boards E, E, which never allow the clothes to double back upon themselves, but return them smooth to the cylinder in its reverse stroke.

The form of my box or tub is such as to require but little water which is not necessarily all made into a suds. As the washing is done near the top of the water it is generally sufficient to soap the clothes before they enter the washer, and then as they pass to and fro a suds is formed above the clothes which is not readily diffused through the whole water, as is the case with other machines, hence less soap is employed.

Having thus fully described my machine,

what I claim as my invention and desire to secure by Letters Patent of the United States is:

The combination of the shallow concave formed of rollers D D and feeding boards E, E, with the ribbed cylinder A, B, for the purpose of making the washing machine self feeding and self clearing, so as to pass the clothes alternately into the water and the air, thus bleaching as well as cleansing them; and keeping the clothes in the upper strata of water, away from the dirt which is precipitated to the bottom of the tub.

In testimony whereof I hereunto set my hand.

ABRAHAM HUFFER.

Witnesses:

DANIEL BREED,  
EDW. F. BROWN.