

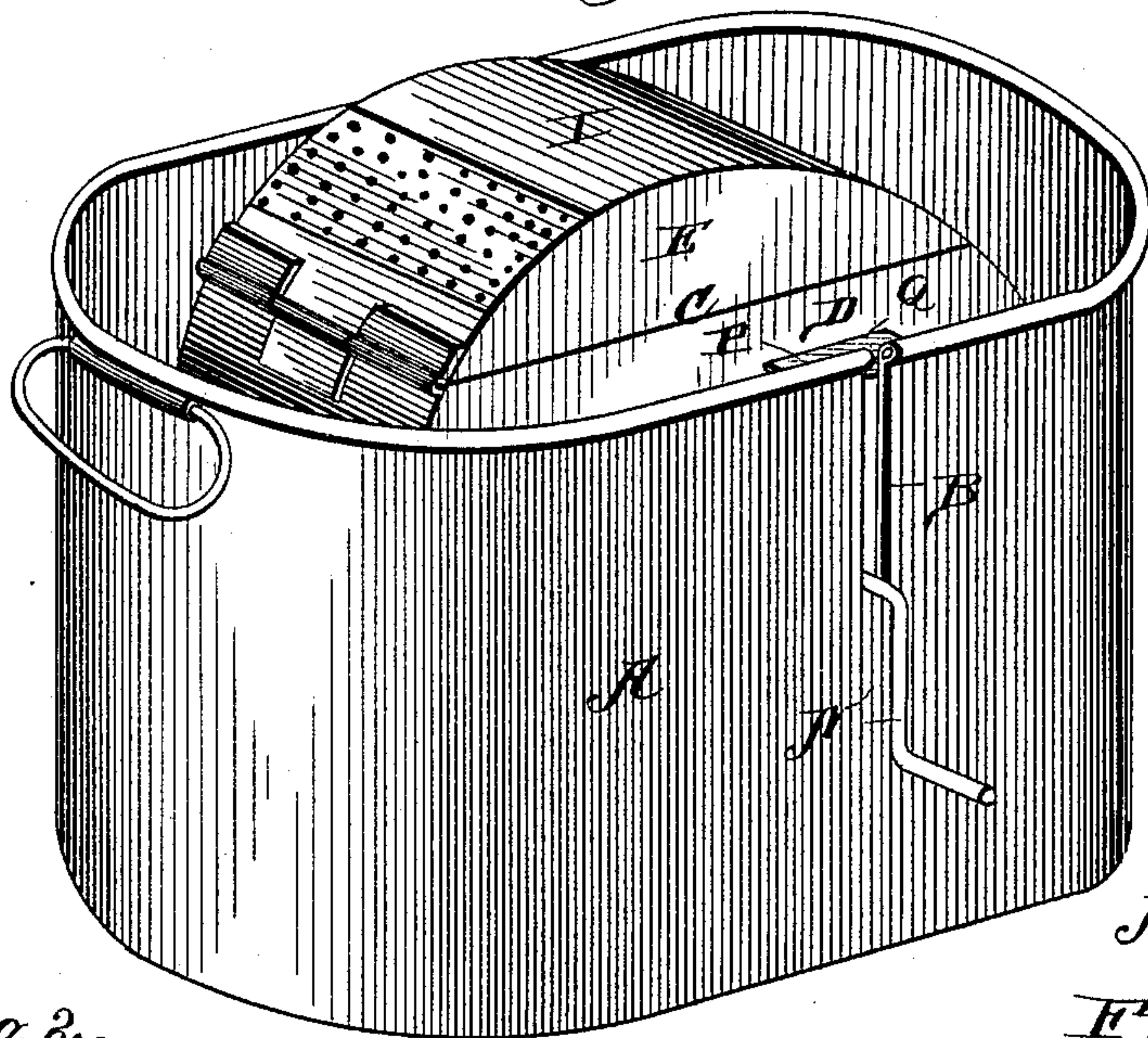
(No Model.)

J. KNOBLE.  
WASHING MACHINE.

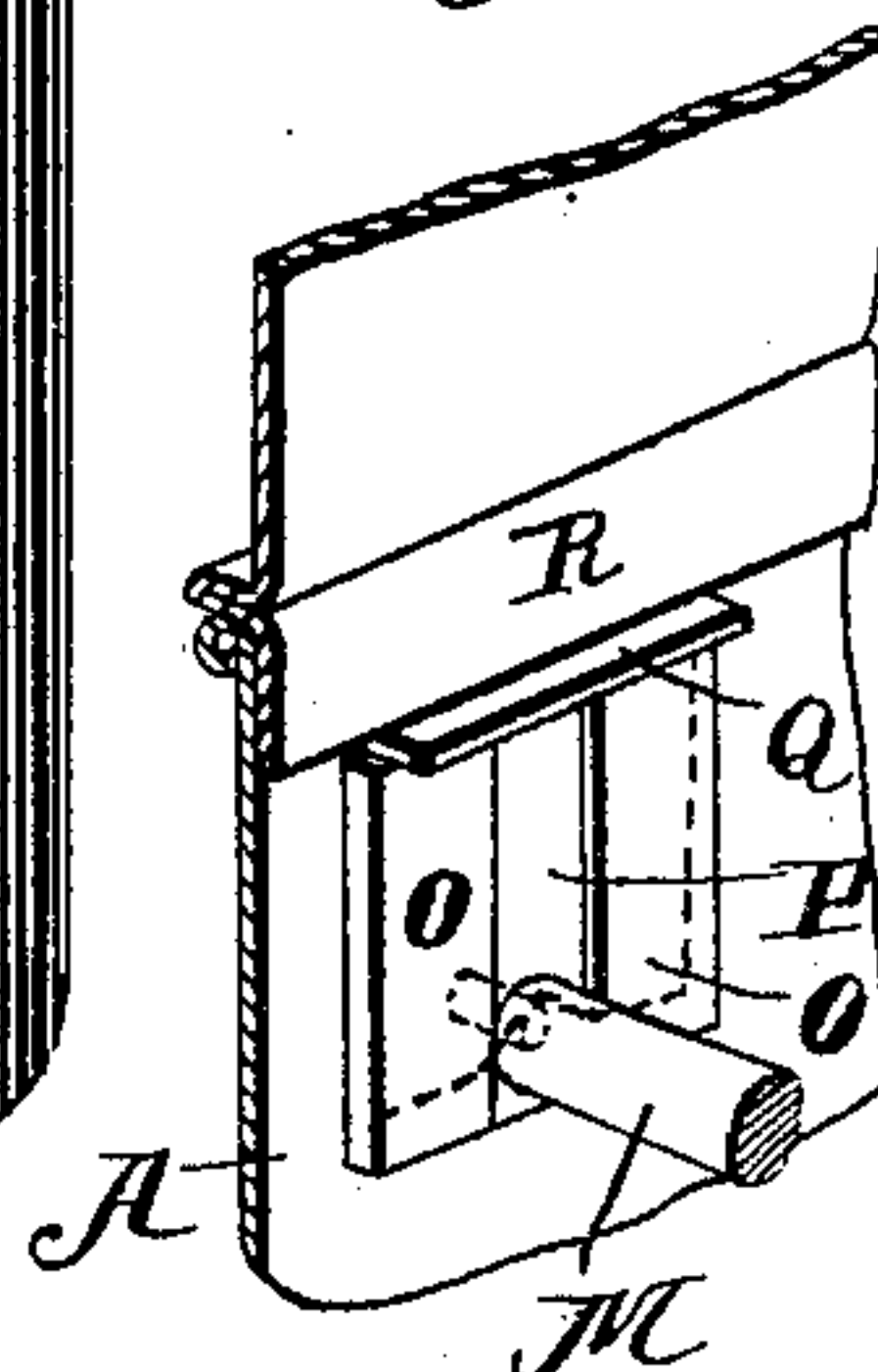
No. 410,902.

Patented Sept. 10, 1889.

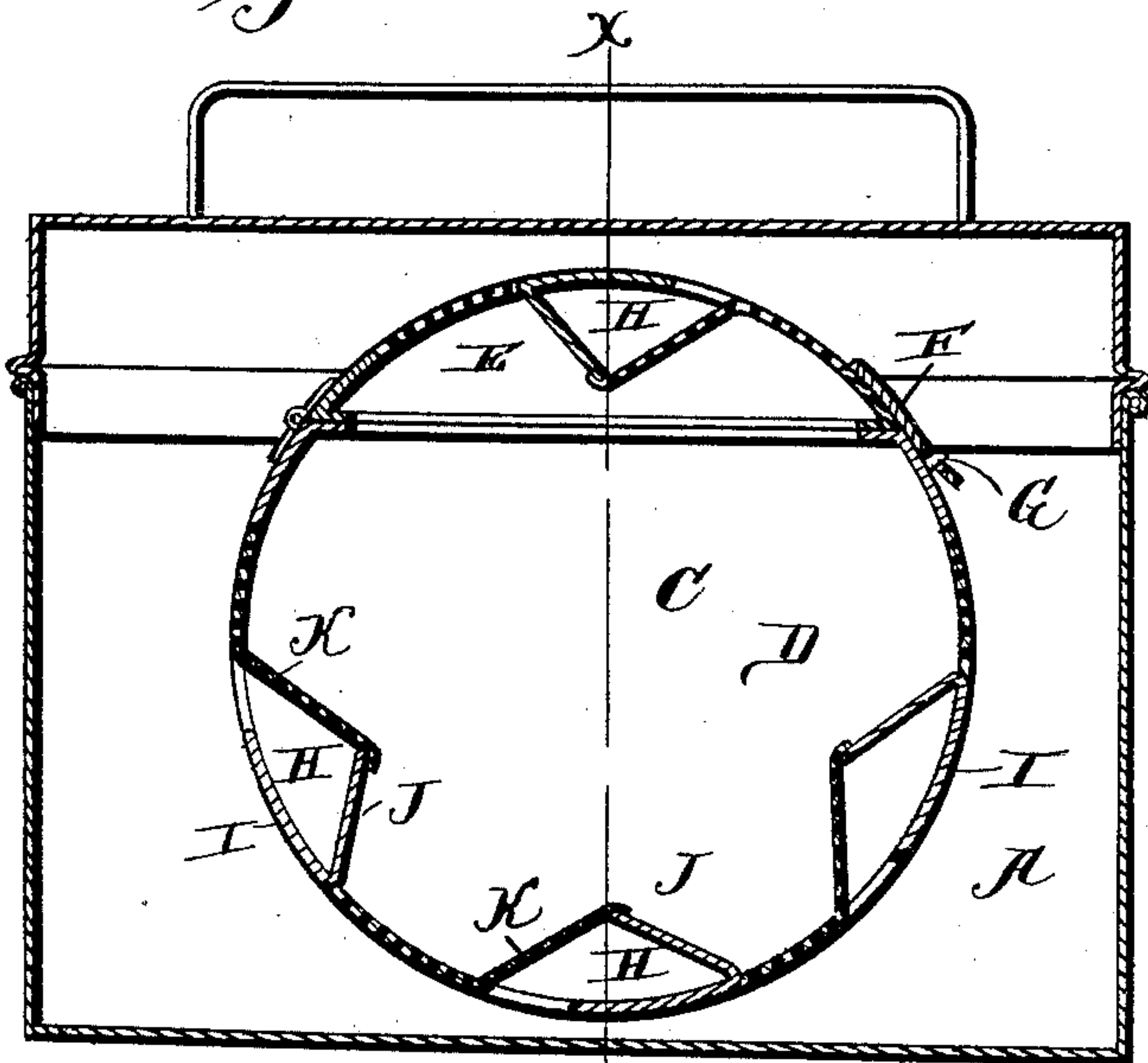
*Fig. 1.*



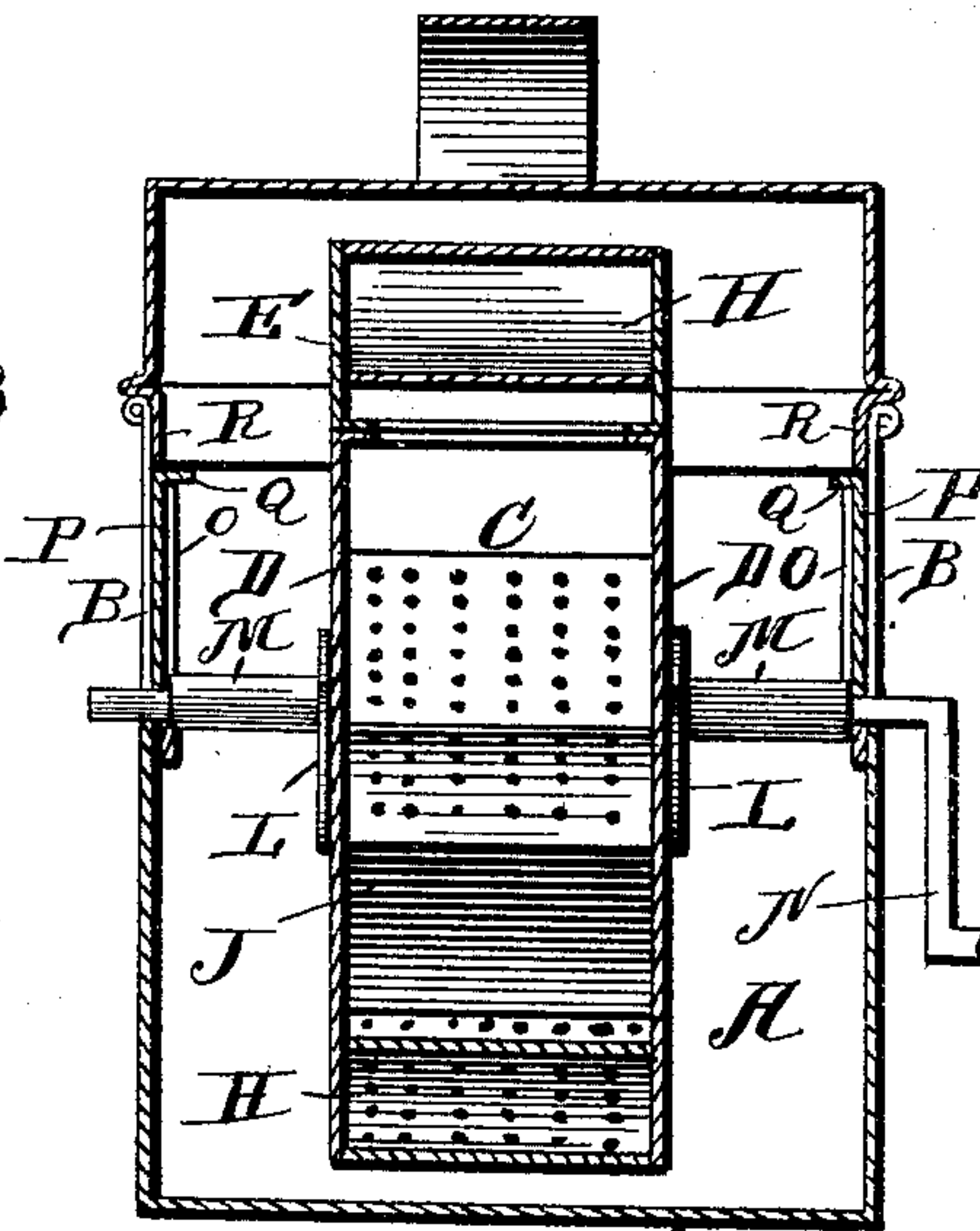
*Fig. 4.*



*Fig. 2.*



*Fig. 3.*



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN KNOBLE, OF WILMOT, OHIO.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 410,902, dated September 10, 1889.

Application filed April 8, 1889. Serial No. 306,385. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN KNOBLE, a citizen of the United States, residing at Wilmot, in the county of Stark and State of Ohio, have  
5 invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to that class of washing-machines which comprise a rotary drum or cylinder mounted in a suds box or boiler;  
10 and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective  
15 view of my improved washing-machine with the cover of the boiler removed. Fig. 2 is a longitudinal vertical sectional view of the same with the cover in position. Fig. 3 is a transverse vertical sectional view taken on the  
20 line  $x x$  of Fig. 2. Fig. 4 is a detail view showing the inner side of one side of the boiler, with the slide P, cover R, and the spindle or trunnion of the rotary drum in position.

The same letters refer to the same parts in  
25 all the figures.

A designates a wash-boiler of ordinary construction, the sides of which are provided with vertical notches B, forming bearings for the journals of the revolving drum or cylinder C.  
30 The latter is composed of the sides D D, made, preferably, of sheet metal and connected in the manner to be hereinafter described, so as to form a cylindrical vessel of the proper size. The drum or cylinder is made in two parts or  
35 sections, one of which forms the body of the cylinder and the other a cover E, which is suitably hinged to the said body, and provided with a spring catch or fastening F, adapted to engage a stud or pin G, which extends from  
40 the periphery of said body.

H H designate a series of V-shaped buckets, of sheet metal, secured between the sides or ends D D of the drum or cylinder and serving to connect the same. The outer sides I  
45 of said V-shaped buckets are slightly curved to correspond with the periphery of the drum or cylinder, and the inner sides J of said buckets extend obliquely in an inward direction into the drum or cylinder.

50 To the upper edges of the inner sides J of the V-shaped buckets H are attached perforated

sheet-metal plates K, extending from thence obliquely to the periphery of the cylinder, and from thence to the bottom of the next adjoining bucket, to which it is likewise attached. It will thus be seen that the individual  
55 buckets are connected by V-shaped plates of perforated sheet metal, which complete the peripheral casing of the drum or cylinder, while they do not obstruct the mouths of the  
60 V-shaped buckets.

To the outer sides of the ends of the cylinder are secured plates or castings L L, having the laterally-extending spindles M, adapted to be journaled in the sides of the boiler. One  
65 of said spindles is provided with a crank or handle N, by which the drum or cylinder may be rotated. The inner sides of the boiler are provided adjacent to the notches B with vertical flanges O, to accommodate the slides P,  
70 by means of which the spindles or journals of the drum or cylinder will be retained securely in their bearings. The upper edges of the slides P have inturned flanges Q, against which the lower edge of the cover R will bear  
75 when the said cover is placed in position, as will be seen in Fig. 3 of the drawings. The cover thus serves to retain the slides P and the latter the rotary cylinder during operation.  
80

In operation the garments which are to be washed are placed in the drum or cylinder, which is adjusted in the boiler, which latter is partly filled with hot suds. When the drum or cylinder is rotated, the V-shaped buckets will  
85 serve to elevate the suds and discharge them through the perforated sheet-metal plates onto the garments contained in the cylinder, which are thus subjected to the continual action of the suds and steam, which are forcibly discharged upon them through the said perforated plates. The latter prevent the garments from entering the V-shaped buckets or obstructing them in any way. By the rotary  
90 motion of the drum or cylinder the garments are, moreover, continually rubbed and agitated and all their parts exposed to the cleansing influences of the suds-spray.

Having thus described my invention, I  
claim—  
100

1. In a washing-machine, the combination, with a drum or cylinder having a series of cir-

cumferentially-arranged V-shaped buckets, of  
metallic straining-plates connecting the inner  
edges of said buckets with the periphery of  
the drum or cylinder, substantially as and  
5 for the purpose set forth.

2. The combination, with a boiler the sides  
of which are provided with suitable notches  
or bearings, of the herein-described revolving  
drum or cylinder, the sides of which are con-  
10 nected by V-shaped buckets, and metallic  
straining-plates extending from the inner  
edge of each of said buckets to the bottom of

the next adjoining bucket, said drum or cyl-  
inder being provided with a suitable hinged  
cover, pintles or journals, and a crank or han- 15  
dle, substantially as set forth.

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

JOHN KNOBLE.

Witnesses:

JOHN SPIDLE,

ABRAHAM VON RÄNNEL.