

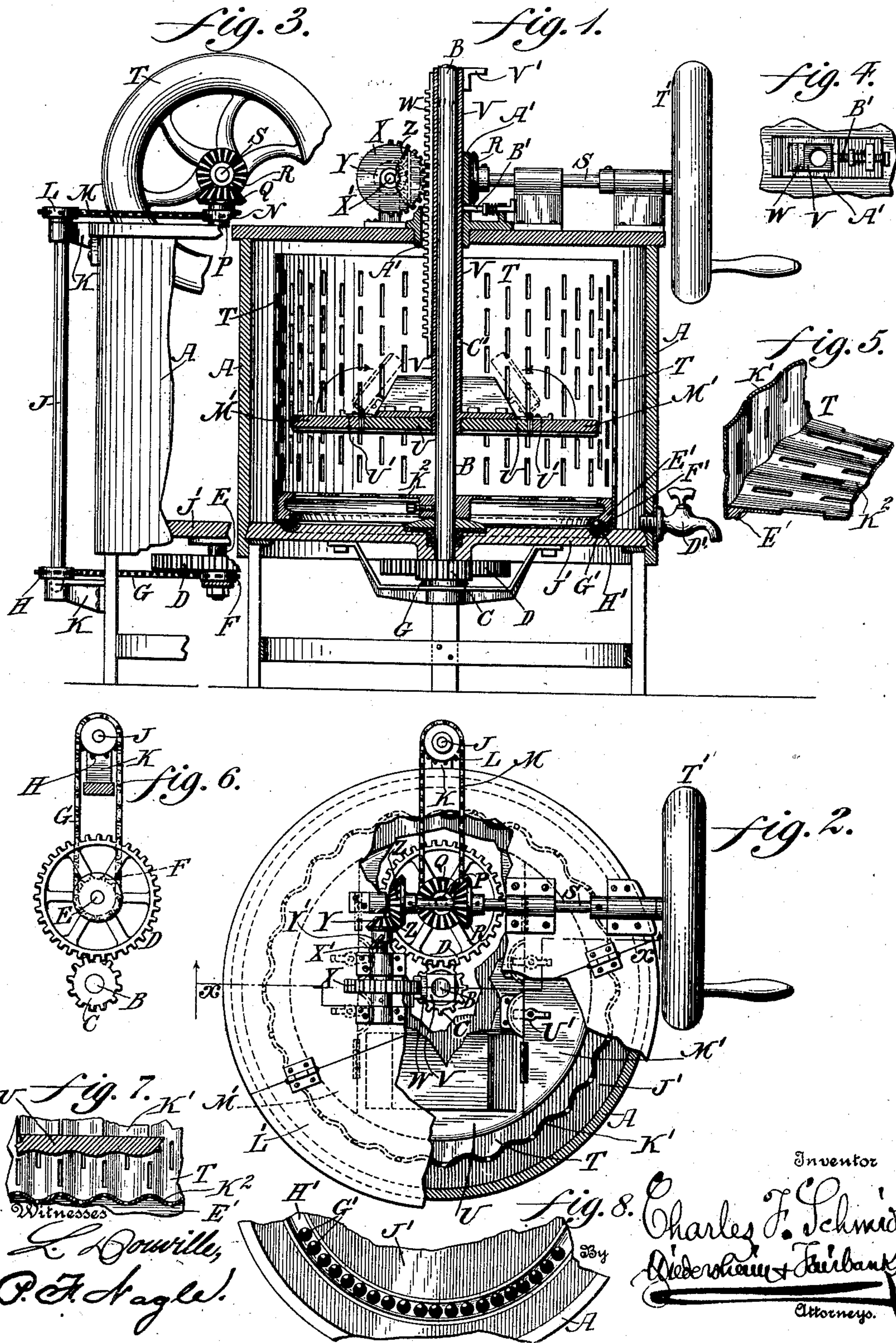
No. 707,867.

Patented Aug. 26, 1902.

C. F. SCHMIDT.
WASHING MACHINE.

(Application filed Mar. 26, 1902.)

(No Model.)



Witnesses
L. Douville,
O. F. Nagle.

Inventor
Charles F. Schmidt
Diederichsen & Fairbank
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES F. SCHMIDT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO CHARLES KLEINKNECHT, OF PHILADELPHIA, PENNSYL-
VANIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 707,867, dated August 26, 1902.

Application filed March 26, 1902. Serial No. 100,000. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. SCHMIDT, a
subject of the Emperor of Germany, (having
resided in the United States over one year last
5 past and having declared my intention of be-
coming a citizen thereof,) residing in the city
and county of Philadelphia, State of Penn-
sylvania, have invented new and useful Im-
provements in Washing-Machines, of which
10 the following is a specification.

My invention consists of improvements in
a washing-machine, as will be hereinafter de-
scribed, the novel features of the same being
pointed out in the claims.

15 It also consists of details of construction,
as will be pointed out in the claims.

Figure 1 represents a vertical section of a
washing-machining embodying my invention.
Fig. 2 represents a partial top or plan view
20 and partial horizontal section. Fig. 3 repre-
sents a partial side elevation and partial ver-
tical section of portion of the machine. Fig.
4 represents a top view of the locking device
employed for rendering the pounding or beat-
25 ing device inoperative. Fig. 5 represents a
perspective view of a portion of the cylinder
or drum within the tub of the machine. Fig.
6 represents a partial plan view and partial
horizontal section of portion of the mechan-
30 ism on the bottom of the machine. Fig. 7 rep-
resents a vertical section of a portion of the
inner drum or cylinder and the beater or
pounder. Fig. 8 represents a top or plan view
of the base of the tub, showing a portion of
35 the ball-bearings of the drum or cylinder.

Similar letters of reference indicate corre-
sponding parts in the figures.

Referring to the drawings, A designates a
tub, and B and E designate vertical shafts
40 mounted thereon. To the lower end of the
shaft B is secured the pinion C. To the lower
end of the shaft E are secured the spur-wheel
D and the sprocket-wheel F.

G designates a sprocket-chain which is
45 passed around the sprocket-wheel F and the
sprocket-wheel H, the latter being connected
with the shaft J, which is mounted on the
brackets K at the side of the tub A. On the
upper end of said shaft J is the sprocket-wheel
50 L, around which passes the sprocket-chain M,

which also passes around the sprocket-wheel
N, whose shaft P is mounted on a portion of
the lid of the tub and carries the beveled
pinion Q, which meshes with the beveled pin-
ion R. The horizontal shaft S, which carries 55
said pinion R and constitutes the driving-
shaft of the machine, has connected with it
a suitable crank or power wheel T'. It will
be seen that as said shaft S is driven motion
is communicated to the beveled gears R and 60
Q, the sprocket-wheel N, the chain M, the
sprocket-wheel L, the shaft J, the sprocket-
wheel H, the chain G, the sprocket-wheel F,
the spur-wheel D, and the pinion C, whereby
motion is imparted to the shaft B. Connected 65
with said shaft is the drum or cylinder or aux-
iliary tub T, which constitutes a draining-
basket and rotates with said shaft and has
its wall perforated or slitted, so that water
may pass freely through the same and circu- 70
late in the tub A and said cylinder, it being
evident that as the cylinder rotates the clothes
or articles to be washed placed within the
same are carried around and forcibly driven
against the inner side of the cylinder, and the 75
water is subjected to great agitation, in which
condition it is driven into and through the
articles to be washed and ejected therefrom.
During the operation I also subject the arti-
cles to be washed to a pounding or beating 80
action by means of the rising-and-falling
head U, which is connected with the lower
end of the sleeve or hollow shaft V, through
which the shaft B freely passes, so that the
rotary motions of said shaft B and that of 85
the cylinder T are in no wise interfered
with. On the exterior of said sleeve is the
rack W, with which meshes the mutilated
wheel X, which is mounted on the shaft X',
the latter carrying the beveled pinion Y, with 90
which meshes the beveled pinion Z, the latter
being connected with the adjacent end of the
shaft S. The sleeve V is exteriorly of angu-
lar form and is guided in a correspondingly-
shaped opening through the boss A', which 95
is centrally secured to the top of the tub A,
by which provision, while said sleeve is per-
mitted to rise and fall, it is prevented from
rotating. It will be seen that as the shaft S
communicates its motion to the cylinder T to 100

rotate the same, as has been stated, it also imparts motion through the medium of the beveled gears Z and Y to the mutilated wheel, whereby, owing to the rack W, the sleeve V is raised and with it the head U. When the plain portion of the wheel reaches said rack W, the latter is released and so drops, whereby the head U strikes the articles to be washed and pounds or beats the same, thus effectually washing said articles. When the washing is accomplished, the shaft S is rotated to raise the sleeve V, and consequently the head U, and when the teeth of said wheel fully clear the lower tooth of the rack W the sleeve is held by hand in elevated position by means of the piece V' on the upper end of said sleeve and then retained in its elevated position by means of the bolt B', which is mounted on the top of the tub A, the same entering an opening C' in said sleeve. The mutilated wheel now continues its motion without engaging upon the rack W, whereby the head U remains at rest, but the rotation of the cylinder T continues. A cock D' on the tub A is now opened, and the water in the tub and cylinder escapes therefrom, and as the cylinder continues its rotation the water in the articles washed is forcibly ejected from the clothes and driven therefrom by centrifugal action through the openings in the cylinder, this action continuing until the garments are practically drained of all water, after which the articles may be hung out for complete drying, as usual in such cases. In order to ease the rotation of the cylinder, the under side of the bottom thereof is formed with a rim E', in which is a circular groove F', the same receiving the balls G', which are also seated in the circular groove H' on the upper face of the bottom J' of the tub A, thus providing ball-bearings for the cylinder T, the effect of which is evident. To render the action of the cylinder T more effectual as the articles to be washed are forced against the inner wall thereof, said wall is made corrugated, as at K', thus increasing the rubbing action to which the articles are subjected, the bottom wall K² being similarly constituted. In order to admit of access to the interior of the tub and cylinder, a portion L' of the lid is hinged to remaining portion, as shown in Fig. 2, so that said portion L' may be raised when so required. In order to admit of access to the cylinder below the head U, portions M' of said head are hinged to the remaining portion, so that the former may be raised, as shown in dotted lines in Fig. 1. When said portions M' are in operative position, they are locked to the remaining portions by means of the turnbuckles or other devices U', as plainly shown in Figs. 1 and 2. When the beater or pounder is in inoperative position, the mutilated wheel X may be prevented from rotating by loosening the screw

Y', which holds the pinion Y on the shaft X', and then running back said pinion from the adjacent pinion Z on the driving-shaft S, thus throwing said wheel X out of gear.

Various changes may be made in the details of construction without departing from the general spirit of my invention, and I do not, therefore, desire to be limited in each case to the same.

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

1. In a washing-machine, a drum, a tub containing the same, a rising-and-falling head in said drum, a shaft connected with said drum, means for rotating said shaft, a sleeve connected with said head, and means for raising said sleeve and permitting the same to drop, said rotary shaft passing freely through said sleeve.

2. In a washing-machine, a drum, a head therein, a sleeve connected with said head, and carrying a rack, a mutilated gear-wheel adapted to gear with said rack, and means for rotating said wheel, whereby said head is raised and permitted to drop, in combination with a shaft which is connected with said drum, and means for rotating said shaft, the latter passing freely through said sleeve.

3. In a washing-machine, a tub, a drum in said tub, a shaft connected with the drum, gearing for operating said shaft, a rising-and-falling head, a sleeve connected with said head, said shaft freely entering said sleeve, means for raising said sleeve and permitting the same to drop, and a lock on the tub adapted to engage with said sleeve.

4. In a washing-machine, a drum, a shaft connected therewith, a rising-and-falling head in said drum, a sleeve connected with said head, means for raising and lowering said head, a boss on the top of the tub, said sleeve being exteriorly of angular form, and said boss having an angular opening receiving said sleeve, and a bolt on the top of the tub, the same being adapted to enter an opening in said sleeve when the latter is in elevated position.

5. In a washing-machine, a tub, a rotary drum therein, a shaft connected with said drum, means for rotating said shaft, a rising-and-falling head in said drum, a sleeve connected with said head, said sleeve freely receiving said shaft, a rack secured to said sleeve, a mutilated wheel engaging said rack, means for rotating said wheel, and a guide on the top of the stationary tub through which said sleeve is vertically passed without capability of rotation.

CHAS. F. SCHMIDT.

Witnesses:

JOHN A. WIEDERSHEIM,
C. D. MCVAY.