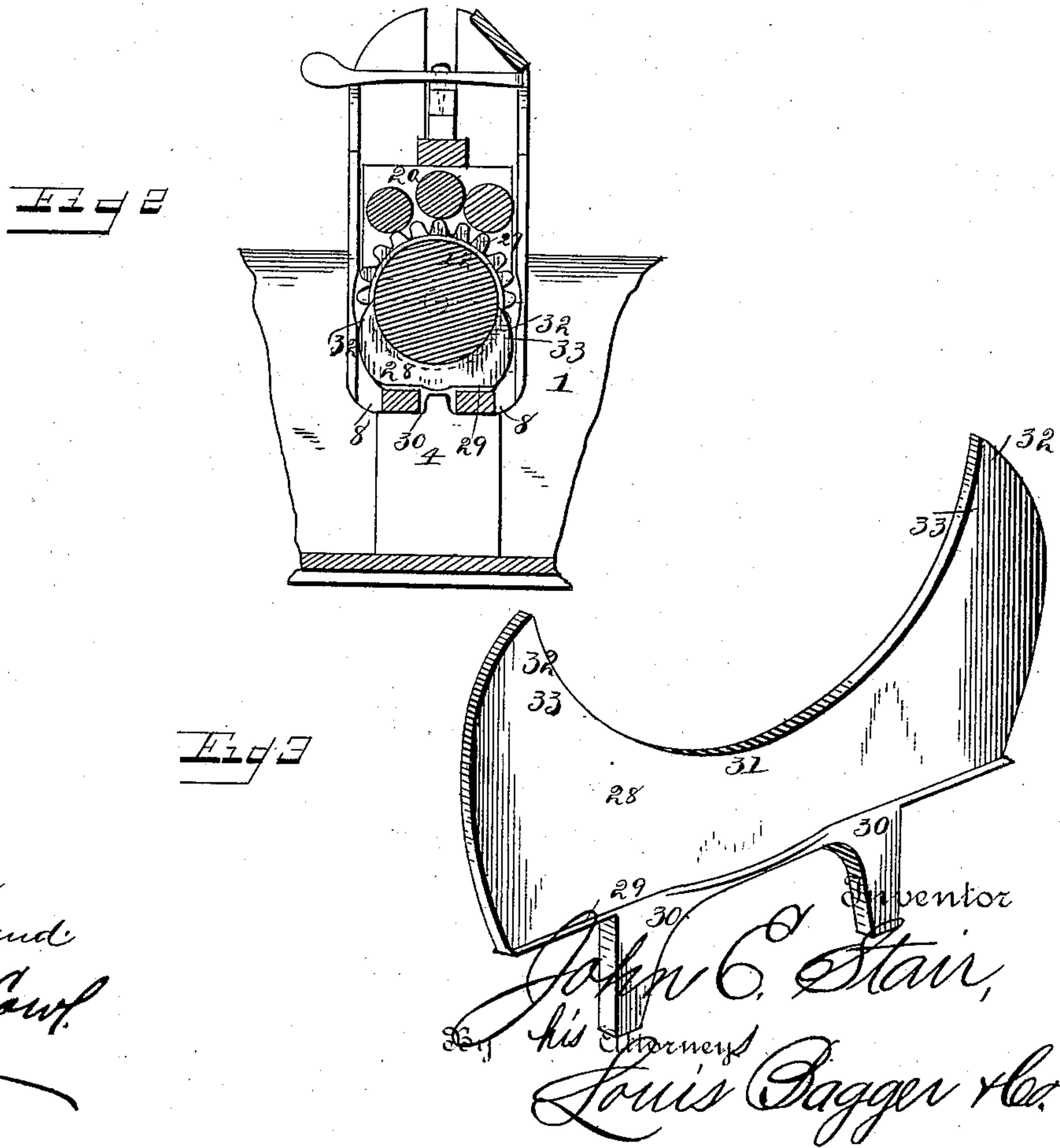
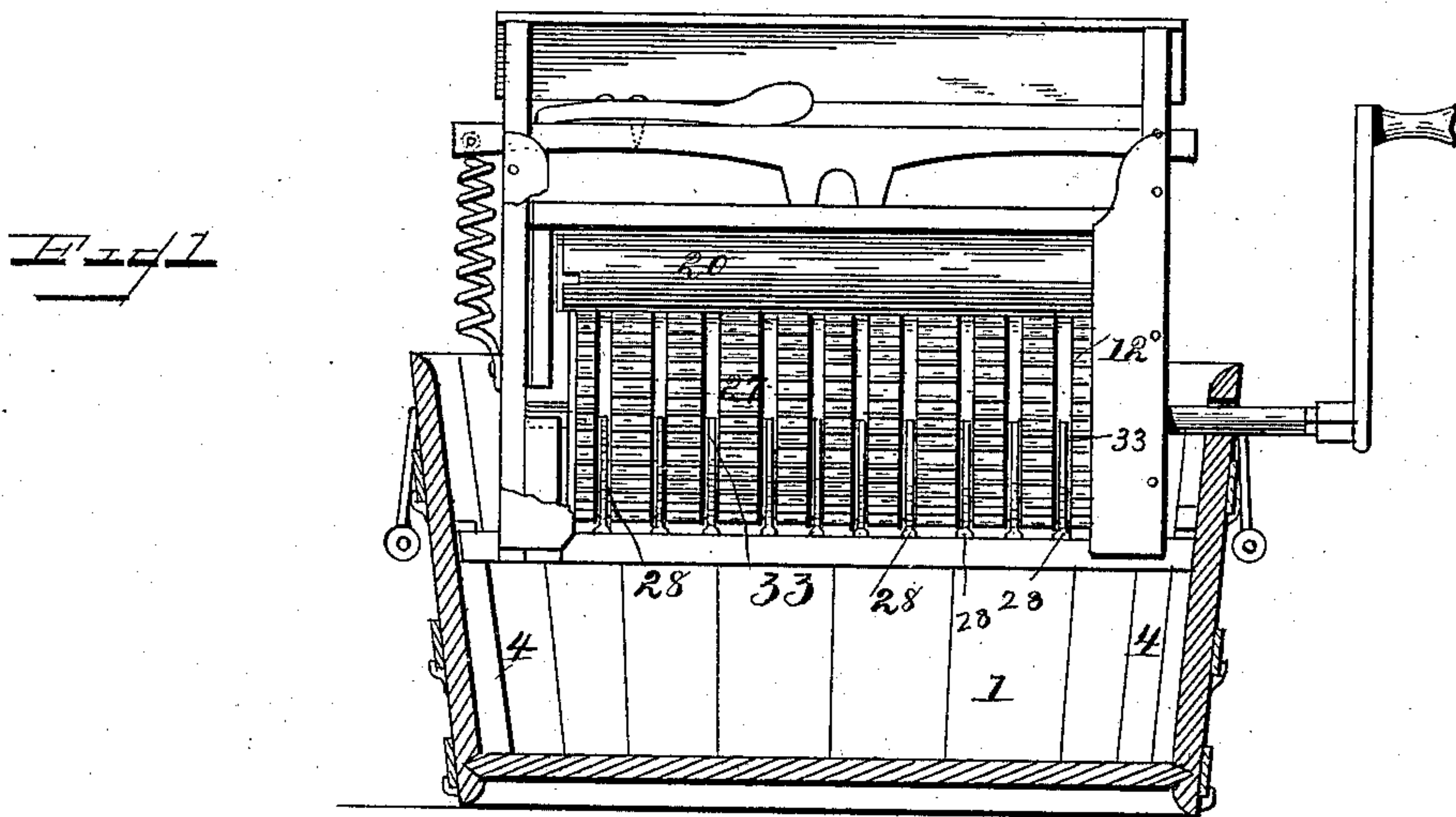


(No Model.)

J. E. STAIR.  
WASHING MACHINE.

No. 372,241.

Patented Oct. 25, 1887.





# UNITED STATES PATENT OFFICE.

JOHN E. STAIR, OF EASTON, PENNSYLVANIA.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 372,241, dated October 25, 1887.

Application filed June 25, 1887. Serial No. 242,464. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. STAIR, a citizen of the United States, and a resident of Easton, in the county of Northampton 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 of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical sectional view of a wash-tub, showing the washing-machine provided with my improvement in side view. Fig. 2 is a transverse vertical sectional view of the machine, and Fig. 3 is a perspective view of the guard.

Similar numerals of reference indicate corresponding parts in all the figures.

My invention has relation to that class of washing-machines in which a fluted roller is brought into engagement with one or more pressure-rollers, and in which the fluted roller is provided with a number of peripheral grooves, in which guards fit, which prevent the clothes from being carried around with the roller; and it contemplates, principally, certain improvements upon the washing-machine for which Letters Patent No. 321,782 were granted to John S. Beazell on the 7th day of July, 1885; and it consists in the improved construction and combination of parts of a guard, as hereinafter more fully described and claimed.

In the accompanying drawings, the numeral 1 indicates the tub, having the supporting-posts 4, upon which the strips 8 are supported, the said strips forming the bottom of the washing mechanism, similar to the strips similarly numbered in the patent above referred to.

The fluted roller 12 is formed with the circumferential grooves 27, similar to the roller in the above patent, and the upper rollers, 20, are of the same construction and arranged in the same manner as the rollers in the patent, being numbered similar in the drawings.

In the place of the guards or strips em-

ployed in the machine referred to, which strips are secured to the bottom strips and carried over the fluted roller in the circumferential grooves, I employ guard-plates 28, having a straight flanged lower edge, 29, with which they may rest upon the bottom strips, and having downwardly-projecting lugs 30, which bear against the inner faces of the bottom strips.

The upper edge of the guard-plate is cut out segmentally, as shown at 31, fitting into the circumferential groove in the roller with which it is brought to register, the entire curved edge projecting into the lower portion of the groove, so that the curved edges 32 of the upwardly-projecting horns 33 of the plate will extend from within the groove and may guide the clothes off from the roller after having passed between it and the upper rollers.

By having the guards projecting from below into the grooves of the roller all possibility of any strings, fringes, or other loose portions of the clothes being caught by the guards will be obviated, as the clothes will strike the curved edges of the horns of the guards and be slid off from the roller, the said horns projecting sufficiently far into the grooves to prevent any portions of the clothes from being caught by the horns and forced between them and the grooves in the roller.

The guard-plates are placed loosely upon the bottom strips, and may therefore play in the grooves of the roller, so that there will be no possibility for the guards binding against the grooves, and they will at all times be held perfectly in place by the downwardly-projecting lugs bearing with their straight edges against the inner edges of the bottom strips and by the upper concavely-curved edges projecting into the grooves.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In a washing-machine having a fluted lower roller and smaller upper rollers, the combination of the said fluted lower roller having a number of circumferential grooves, parallel bottom strips below the roller, and guard-plates having flanged and straight lower edges

provided with downwardly-projecting lugs bearing with their straight outer edges against the inner sides of the strips, and having concavely cut-out segmental upper edges fitting  
5 into the grooves of the roller and forming horns projecting at both sides of the roller in the grooves and formed with curved outer edges, as and for the purpose shown and set forth.

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

JOHN E. STAIR.

Witnesses:

A. EUGENE SMITH,

JOHN S. NOBLE.