No. 890,505. PATENTED JUNE 9, 1908.

E. EISEMANN.

WASHING MACHINE.

APPLICATION FILED NOV. 8, 1907.

3 SHEETS—SHEET 1.

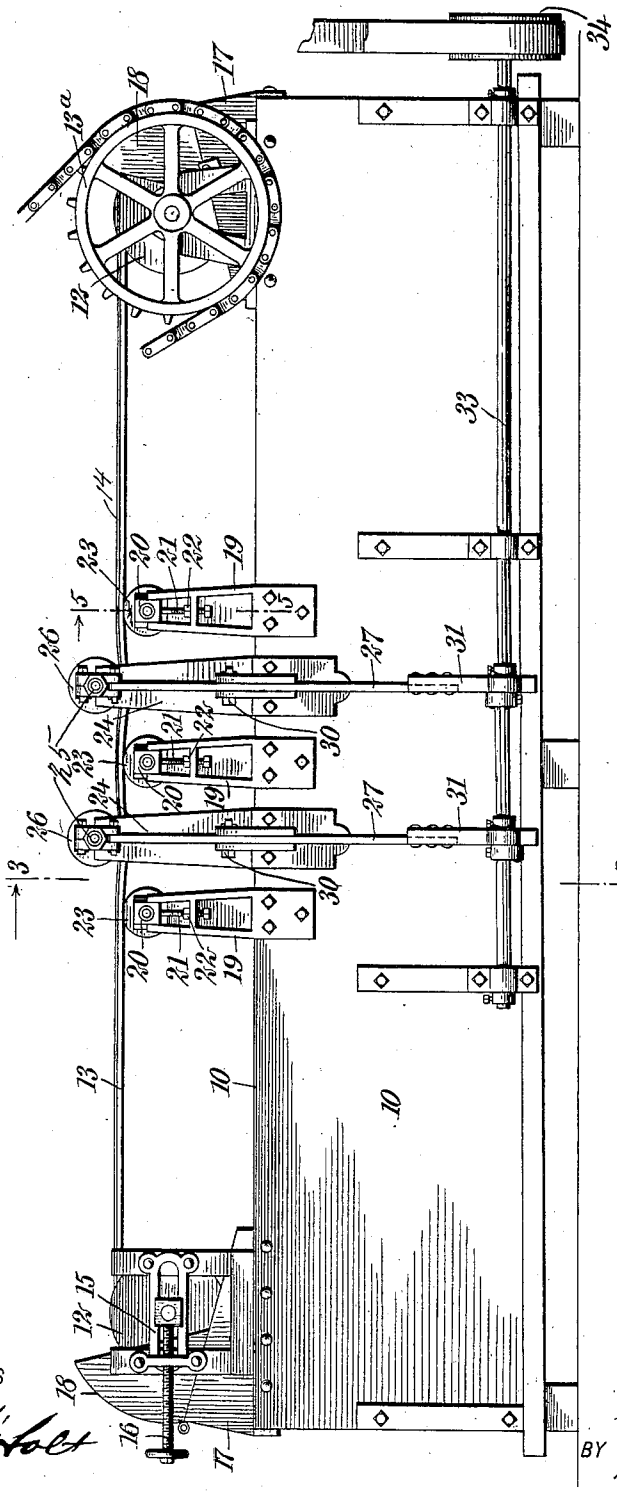

Fig. 1

WITNESSES

E. G. Bromley,

Wm. C. Holt

INVENTOR

Emil Eisemann

BY Munn & Co.

ATTORNEYS.

No. 890,505. PATENTED JUNE 9, 1908.

E. EISEMANN.

WASHING MACHINE.

APPLICATION FILED NOV. 8, 1907.

3 SHEETS—SHEET 2.

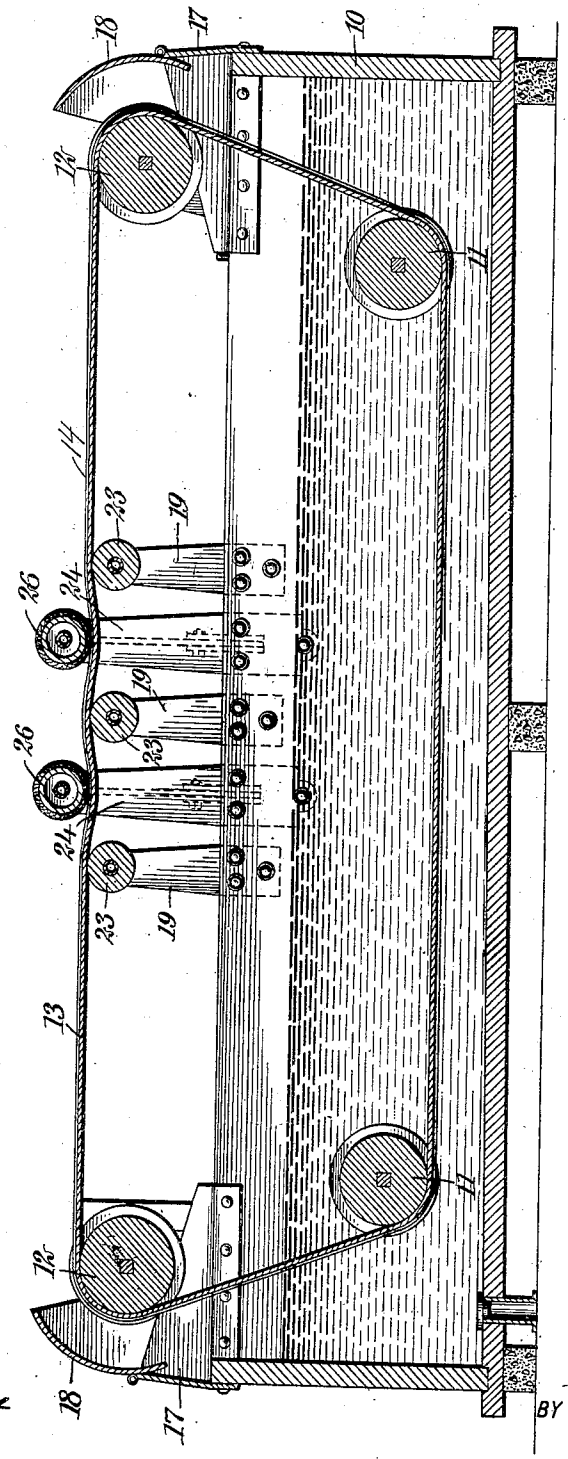

Fig. 2

WITNESSES

E. G. Bromley.

INVENTOR

Emil Eisemann

BY Munn & Co.

ATTORNEYS.

No. 890,505. PATENTED JUNE 9, 1908.

E. EISEMANN.

WASHING MACHINE.

APPLICATION FILED NOV. 8, 1907.

3 SHEETS—SHEET 3.

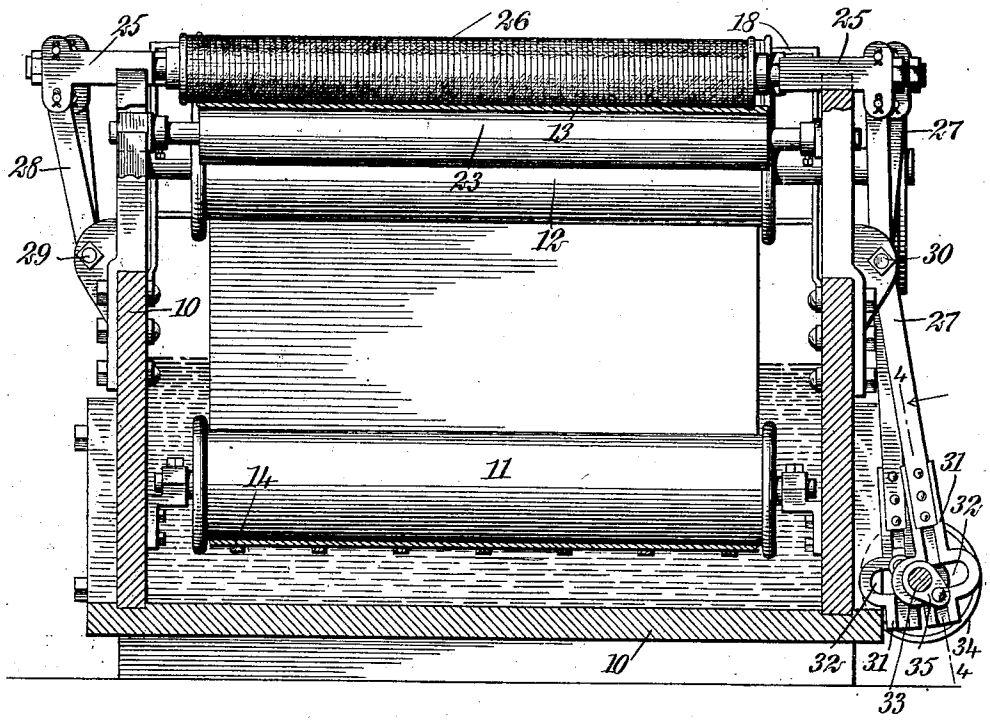

Fig. 3

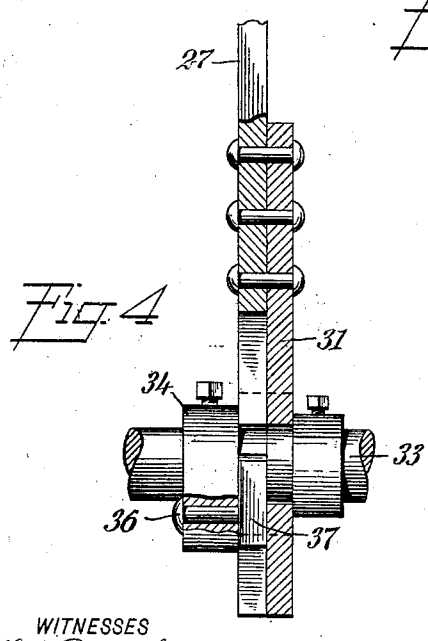

Fig. 4

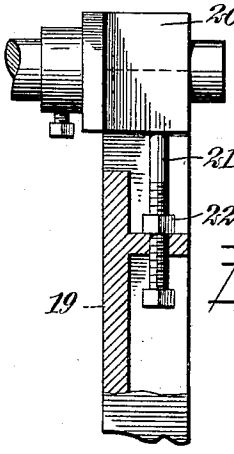

Fig. 5

WITNESSES

E. G. Bromley

INVENTOR

Emil Eisemann

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EMIL EISEMANN, OF NEW YORK, N. Y.

WASHING-MACHINE.

No. 890,505. Specification of Letters Patent. Patented June 9, 1908.

Application filed November 8, 1907. Serial No. 401,203.

To all whom it may concern:

Be it known that I, EMIL EISEMANN, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented new and useful Improvements in Washing-Machines, of which the following is a full, clear, and exact description.

This invention is an improved washing machine primarily designed for washing ostrich and other ornamental feathers in their preparation as articles of apparel.

The invention contemplates a machine of this nature embodying an endless belt movable within a tank containing the wash water, and having means for squeezing out the feathers applied to the belt as they repeatedly pass through the tank, together with means for rubbing the feathers transversely to the movement of the belt.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a washing machine embodying my improvements; Fig. 2 is a central vertical longitudinal section of the same; Fig. 3 is a cross-section on the line 3—3 of Fig. 1; Fig. 4 is a section on the line 4—4 of Fig. 3, on an enlarged scale; and Fig. 5 is a section on the line 5—5 of Fig. 1, also on an enlarged scale.

In the construction of a feather or other like washing machine in accordance with my invention, I employ a suitable tank 10, preferably of rectangular form and provided with the usual discharge pipe and plug, as shown in Fig. 2. Near the opposite ends of the tank, and adjacent to the bottom thereof, rolls 11 are journaled in bearings and extended substantially the full width of the tank. Like rolls 12 are also journaled in bearings supported from the tank, preferably above the top thereof, and positioned nearer the ends of the tank than the rolls 11. These rolls receive an endless belt 13, and in view of their relative location, direct the under portions of said belt outwardly in an upward direction, and extend the bottom horizontal length thereof in the tank below the water line, whereby the articles to be washed carried by the belt will be compelled to travel substantially the full length of the tank under water, when the belt is driven; the driving of the belt being preferably accomplished by a sprocket-wheel 13^a attached to the axis of one of the rolls.

For attaching the feathers to the belt, the latter is provided on its outer face with a series of suitably spaced and longitudinally-arranged flexible strips 14, which are sewed or otherwise secured to the belt at intervals, forming loops in which the feathers may be inserted in a transverse direction. Provision is made for regulating the tension on the endless belt at one end of the tank, by slidably mounting the bearings of one of the rolls 12 in substantially horizontally-disposed slotted guides 15, and connecting the bearings with adjusting screws 16, the latter being threaded through fixed nuts or openings arranged at one end of the guides. The elevation of the upper rolls 12 above the top of the tank makes the belt accessible for applying and removing the feathers, but also makes it possible for the water to be thrown from the feathers over the ends of the tank when the belt is in motion. To avoid this, the walls of the tank at the opposite ends, and for a short distance at the sides, are elevated by sheet metal casings 17, the said casings being further heightened by hinged hoods 18, which conform to and partially extend around the rolls 12. These hoods may be thrown down when access to the belt or feathers is to be had.

Intermediate the rolls 12, and substantially centrally of the tank 10, are rigidly attached to the opposite sides thereof, a number of upright arms 19, three being shown, and having guide-ways in their upper ends in which bearing-blocks 20 are slidably mounted and adjustably supported by adjusting screws 21, the latter being threaded through cross-ribs of the arms and locked in place by lock-nuts 22. In the bearing-blocks 20 are journaled rollers 23 contacting with the under face of the upper horizontal length of the endless belt 13.

In the intervals between the arms 19, the sides of the tank support upright arms 24, in the upper ends of which are crosswise slidable bearing-blocks 25, each set of bearing blocks having journaled therein a roller 26 which contacts with the upper face of the belt, and the contacting portion thereof, when the roller is properly adjusted, is arranged slightly below a plane tangential to the rollers 23, as clearly shown in Fig. 2, whereby the belt and feathers carried thereby will be firmly pressed and squeezed during

the washing operation. Each roller 26, it will be observed from Fig. 3, is spirally wrapped, preferably with a cotton or hemp rope, giving the roller a transversely corrugated washing perimeter.

The outer ends of the bearing-blocks 25 are pivotally connected at one side of the tank to operating-levers 27, and at the opposite side of the tank to links 28 which are fulcrumed at their opposite and lower ends on the bolts or pins 29. The operating-levers 27 are likewise fulcrumed intermediate their length on bolts or pins 30, at which point they have a slight angular bend and are extended to near the bottom of the tank where they are provided with attached heads 31, each head being constructed with a longitudinal groove and an arc-shaped slot 32 concentric to the pin 30. Through the slots 32 of the heads 31 passes a driving-shaft 33, journaled in suitable bearings carried by the tank, and having a driving pulley or other equivalent device 34.

Attached to the shaft 33, adjacent to the heads 31, are crank-arms 35 which are substantially oppositely-disposed and have crank-pins 36, best shown in detail in Fig. 4, journaled therein and connected with bearing-blocks 37 slidable in the longitudinal grooves in the operating-lever heads. This construction it will be seen operates to axially slide the rollers 26 back and forth across the belt as they revolve, thus subjecting the feathers carried by the belt to a combined scrubbing and squeezing action, which operates to free them of dirt, etc. without injury.

The invention as shown and described while being the preferred practical embodiment of my improved washing machine, may nevertheless be changed in particulars within the scope of the claims annexed.

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

1. In a washing machine, a tank, rolls journaled near the opposite ends of the tank, an endless belt passing over the rolls having means for holding the articles to be washed, rollers contacting with the opposite faces of the upper length of the belt and arranged intermediate said rolls, and means for axially reciprocating the rollers contacting with that face of the belt to which the articles to be washed are applied.

2. In a washing machine, a tank, an endless belt in said tank to which the articles to be washed are applied, means for driving the belt, a roller in contact with that face of the belt which carries said articles, an operating lever fulcrumed intermediate its length having a connection with the roller at one end and a slotted and grooved head at its opposite end, a driving shaft passing through the slot of said head, a crank-arm fixed to the driving shaft, and a block slidable in the groove of the head and connected with the crank-arm.

3. In a washing machine, an endless belt having means for holding the articles to be washed, means for driving the belt rollers between which said belt passes, slidable bearings in which certain of said rollers are journaled, a driving-shaft, and an operating-lever for actuating said slidable bearings from the driving-shaft.

4. In a washing machine, a tank, rolls journaled near the opposite ends of the tank, an endless belt carried by the rolls, rollers contacting with the under face of the upper length of the belt, a corrugated roller contacting with the upper face of the belt and arranged in the interval between said rollers, slidable bearings in which the corrugated roller is journaled, an operating-lever having a grooved head and connected with one of said bearings, a driving-shaft, and a crank-arm carried by the driving-shaft having a bearing-block slidable in the groove of said head.

5. In a washing machine, a tank, rolls journaled near the opposite ends of the tank, an endless belt passing over the rolls having means for applying the articles to be washed thereto, rollers contacting with the under face of the upper length of the belt, a roll arranged in the interval between said rollers and contacting with the upper face of the belt, bearings slidably mounted, in which the said roller is journaled and longitudinally immovable with respect thereto, a link fulcrumed to a fixed point and connected to one of said bearings, an operating-lever fulcrumed at a fixed point and connected with the other bearing, a driving-shaft, and means for actuating the operating-lever from the driving-shaft.

6. In a washing machine, a belt for carrying the articles to be washed, means for moving the belt a revoluble washing roller contacting with that face of the belt to which the articles are applied, and means for reciprocating the roller transversely to the movement of the belt.

7. In a washing machine, a belt having means for holding the articles to be washed, arranged on one face thereof, means for moving the belt rollers contacting with the opposite face of the belt, a roller contacting with the face of the belt to which the articles are applied, and arranged between the interval of the said rollers, and means for reciprocating the roller transversely to the movement of the belt.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

EMIL EISEMANN.

Witnesses:
CHAS. HOYER,
GUSTER LACHMANN.