(No Model.)

F. G. & A. C. SARGENT.

WOOL WASHING MACHINE.

No. 327,199. Patented Sept. 29, 1885.

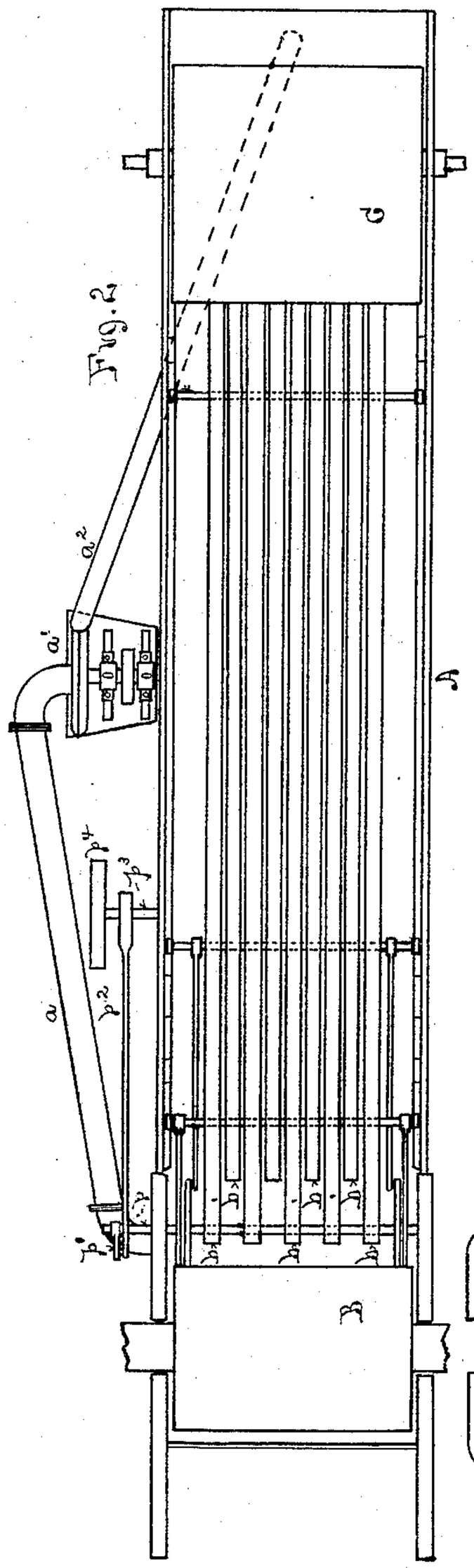

Fig. 2.

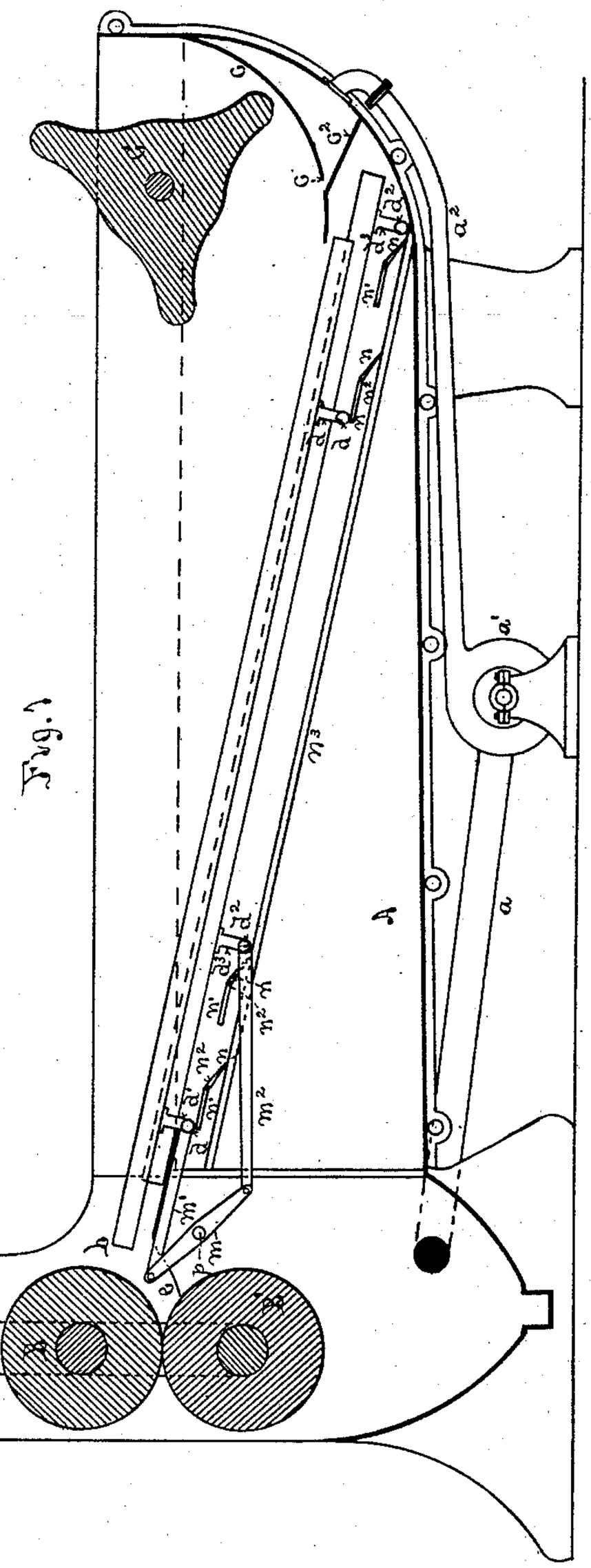

Fig. 1.

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UNITED STATES PATENT OFFICE.

FREDERICK G. SARGENT AND ALLAN C. SARGENT, OF GRANITEVILLE, MASS.

WOOL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,199, dated September 29, 1885.

Application filed January 17, 1884. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK G. SARGENT and ALLAN C. SARGENT, of Graniteville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Wool-Washing Machines, of which the following is a specification.

Our invention relates to machines for washing wool and other similar fibrous substances; and it consists of a novel arrangement and construction of the devices for carrying the wool through the machine, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a vertical longitudinal section of a wool-washing machine provided with our improvements. Fig. 2 is a top plan view of the same.

A is the bowl of the machine. B B' are the squeeze-rolls. C is the feed-in roller, which carries the wool downward over the surface of the curved chute *c*. A pipe, *a*, is made to constantly conduct the washing-liquor from the feed-out end of the machine to the rotary pump *a'*, and thence it is forced by the pump through the pipe a^2 to a point just beneath the chute *c*. Across the breadth of the machine a slot, *c'*, is made through this chute, and a partition, c^2, is attached at one edge to this chute below the slot, and at its ends and other edge to the bowl of the machine, and by the liquid striking on the surface of this partition and the lower side of the chute *c* it is made to flow in a constant stream through the slot *c'* toward the squeeze-roll end of the machine and carry the wool along with it onto the carrier.

The carrier consists of a series of bars, *b b*, all connected together by cross-slats suitably placed, and a second series of bars, *b' b'*, all connected together and being between the bars *b b*, as shown in Fig. 2. The bars *b b* are all connected to their cross slats or rods *d d* by studs *d' d'*, which elevate them at some distance above the cross-slats to allow them to rise and fall during their reciprocal motion, as hereinafter described, and the bars *b' b'* are in like manner connected to their cross slats or rods d^2 d^2 by studs d^3 d^3. The bars *b b* and *b' b'* have no spikes or pins on their upper surfaces, but are left smooth to prevent any tearing or cutting action on the fiber, and they are made to carry the wool along to the squeeze-rolls by an alternate rising and falling and reciprocal motion combined, which is given to them in the following manner:

A rock-shaft, *p*, passes through and across the bowl, and is made to rock back and forth by the crank *p'* and link p^2, connected to an eccentric on the shaft p^3, which is revolved by the pulley p^4. On this rock-shaft is rigidly secured the arm *m*, and to the opposite ends of this arm are attached on pivots the links *m'* m^2, the opposite end of link *m'* being connected to cross-bar *d*, and the opposite end of link m^2 to cross-bar d^2. As the rock-shaft *p* works the bar *m* to and fro, the set of bars *b b* will accordingly move longitudinally in one direction, while the bars *b' b'* are moved in the other. Each set of bars is made to rise, as it moves toward the squeeze-rolls, by having the opposite ends of its cross-bars travel upon the latches *n n* and projecting tracks *n' n'*, attached on each side of the bowl to its inside face directly opposite to each other. The latches *n n* are pivoted at n^2 n^2 to the tracks *n' n'*, and their free ends rest upon the track n^3, likewise attached on the inside of the bowl directly opposite a like one on the other side. As the bars *b b* move toward the squeeze-rolls, the ends of the cross-bars *d d*, riding over the latches *n n* and tracks *n' n'*, raise up the bars until the cross-bars have arrived at the upper ends of the tracks *n' n'*, when they drop down upon the tracks n^3 at the moment when the bars *b b* have arrived at the extreme of their motion toward the squeeze-rolls. As the bars *b b* move in the opposite direction, the cross-bars *d d* travel on the tracks n^3, passing under the latches *n n*, which yield to allow the bars to pass under them and drop onto the tracks n^3 after they have passed ready for their opposite motion. In the meantime the bars *b' b'* have been traversing in the opposite direction to bars *b b*, and when the cross-bars of the latter have gone over the latches and tracks *n n'* the cross-bars d^2 of the former have gone under them, and vice versa. Thus by the alternate lifting and forward motion of the two sets of bars and the forwardly-projected stream of water from slot *c'* and the feed-roll C the wool is conveyed through the machine and

soaked and washed without being subjected to the tearing action of toothed rakes or carriers to injure its fiber. *e* is a chute to conduct the wool to the squeeze-rolls.

What we claim as new and of our invention is—

1. The combination of the bars *b b*, their studs *d' d'* and cross-bars *d d* with the bars *b' b'*, their studs d^3 d^3 and cross-bars d^2 d^2, and means for operating the same, substantially as described.

2. In combination with the bars *b b* and *b' b'*, the throat or spout *c' c²*, formed to project a stream of liquid against and carry forward the fiber in the direction of the squeeze-rolls B B', substantially as described.

3. In combination with the set of bars *b b* and their connected cross-bars *d d*, the latches *n n*, tracks *n' n'*, and tracks n^3, substantially as described.

4. In combination with the bowl A, the pipe *a*, leading from the wool-delivery end of the machine, the pump *a'* and the pipe a^2, and throat or mouth piece c^2 *c'*, adapted to create a suction ahead of the fiber, and to project a stream or sheet of liquid behind it over the bed on which it moves, substantially as described.

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