(No Model.)

2 Sheets—Sheet 1.

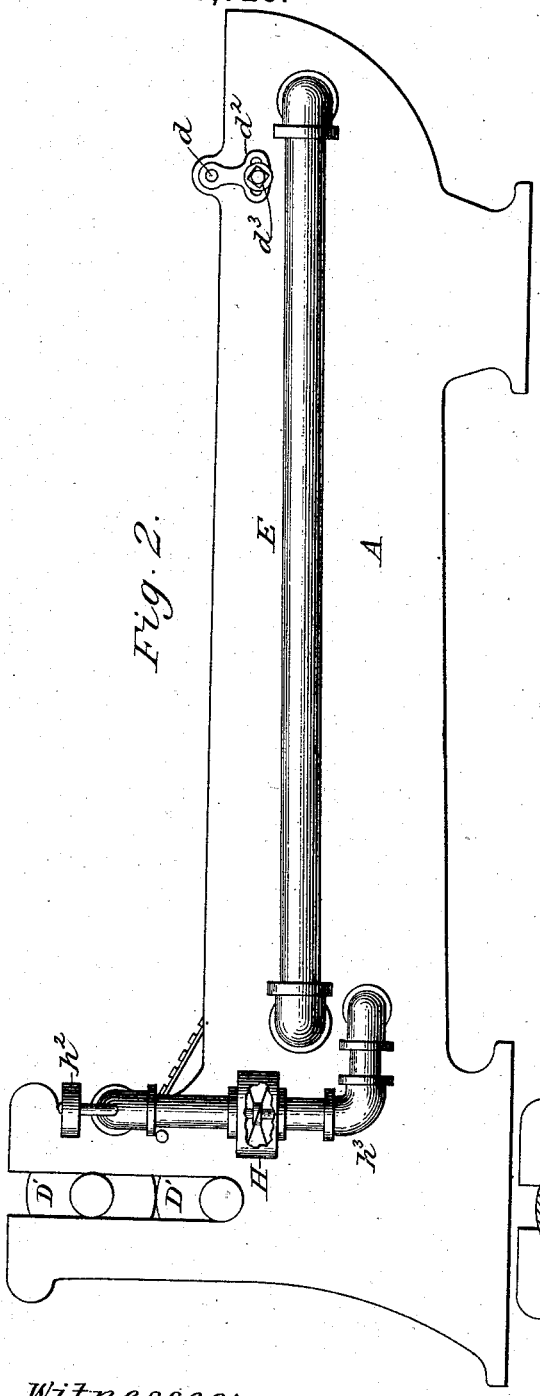
F. G. & A. C. SARGENT.

WOOL WASHING MACHINE.

No. 263,728.

Patented Sept. 5, 1882.

Fig. 2.



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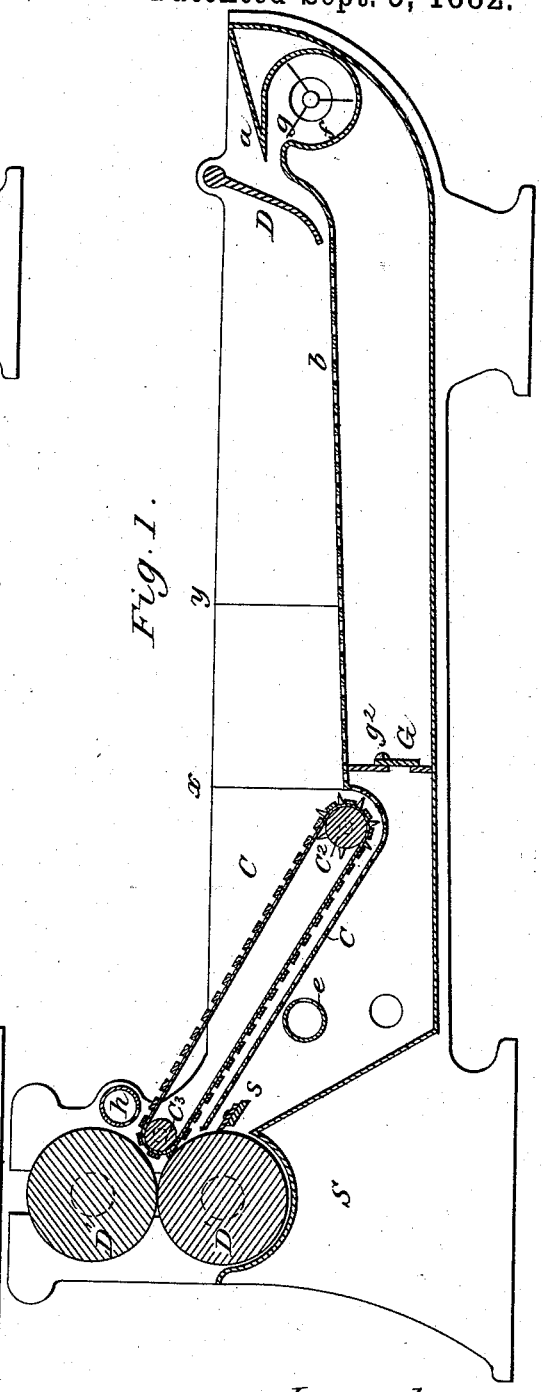

Witnesses:
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Geo. H. White

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Their Atty.

(No Model.)

2 Sheets—Sheet 2.

F. G. & A. C. SARGENT.

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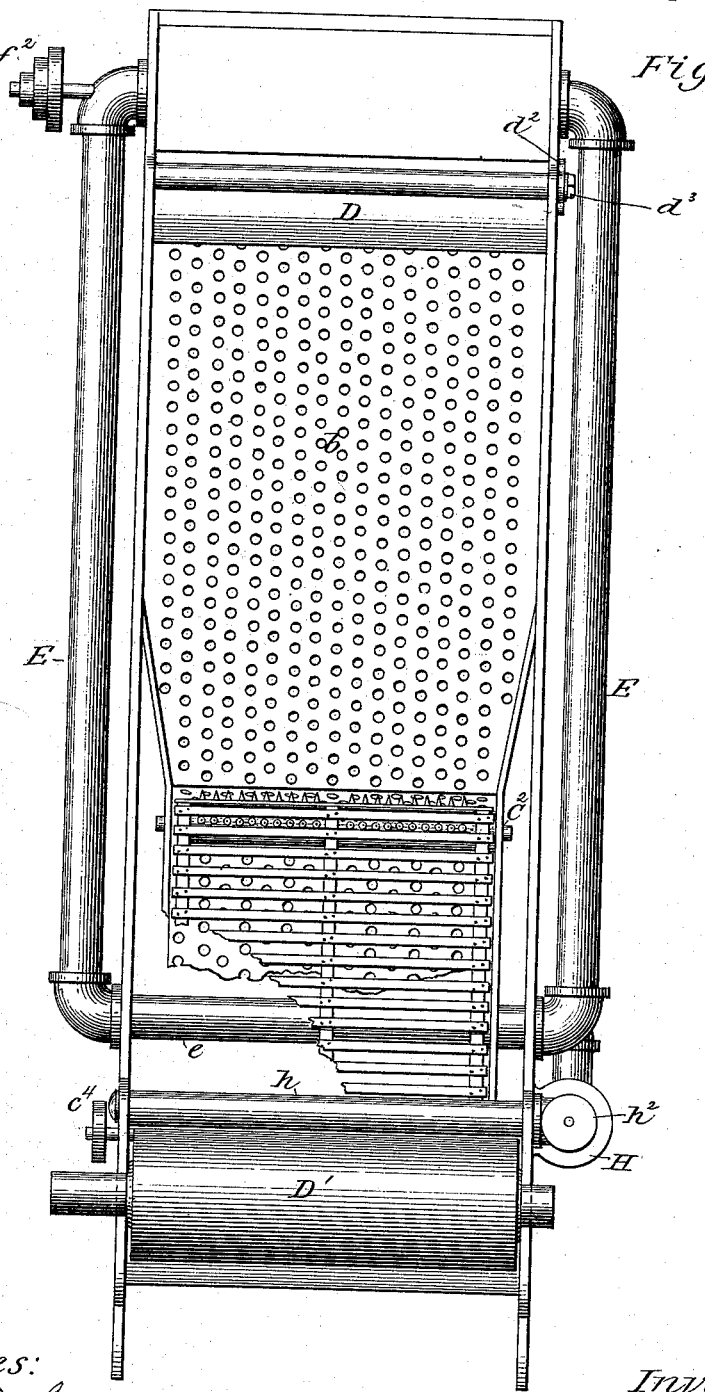
Fig. 3.



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UNITED STATES PATENT OFFICE.

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

WOOL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 263,723, dated September 5, 1882.

Application filed March 27, 1882. (No model.)

To all whom it may concern:

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

Our improvement relates to machines in which the wool is put into one end of a bowl or tank into the scouring-liquid and gradually passed to the other, from which it is taken and passed between squeeze-rolls to express the scouring-liquid; and it consists in providing a bowl in which a current can be maintained in such manner that the fiber fed into the bowl will be submerged and carried forward to the discharge end and deposited upon the carrier without the use of rakes or conveyers. We accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal central section of a wool-washing machine of our construction. Fig. 2 is a side elevation of the same; Fig. 3, a plan.

A is the bowl, provided with the perforated false bottom *b*.

C is the carrier, operating over the perforated inclined apron *c*. This carrier is shown in the drawings as a slat endless apron; but other forms may be used.

D is a deflecting-plate.

E is the exhaust-pipe, carried from behind the perforated inclined apron *c* around outside of the machine to the centrifugal pump *f*. This pipe is perforated on its under surface in the part *e*, which is in the liquid behind the inclined apron. The centrifugal pump *f* is provided with a narrow outlet, *g*, which extends the whole width of the bowl, and is given such a direction as will force the current against the deflector D, so that when the pump is set in operation there will be a strong current forced into the bowl at one end and an equal quantity of liquid sucked out from the other, so that when the wool is fed in at the end *a* of the bowl it will be first sucked down by the current moving under the deflecting-plate D in advance of it, and then, when it gets below the opening *g*, forced forward with the stream driven forward by the pump. While being so forced forward the air among the fibers is driven out and the fluid takes its place, so that after the wool passes under the deflector it will be so surcharged with the fluid that it will have but little tendency to rise to the surface, but will be carried along with the fluid toward the carrier C by the current produced by exhausting the fluid from that end by the pump through the pipe *e*, and as the wool reaches the spiked roll c^2 it will be lifted onto the slat-apron and carried up toward the squeeze-rolls D′ D′. As it rises above the level of the fluid the liquid will flow from it, carrying part of the impurities and foreign matter from among it. Just before the wool passes into the nip of the rolls it is again surcharged with the fluid, which is showered down upon it by the perforated tube *h*, which is kept supplied with liquid by the centrifugal pump H, driven by the pulley h^2. This pump is supplied through the pipe h^3. By this means the largest possible quantity of scouring-fluid is supplied just before the squeeze-rolls act on the wool, which is sometimes found advantageous to carry out the foreign matter with the large outflow of fluid when the rolls nip it as it passes from the class of machines known as "soaking-tanks," to which this device especially belongs. The upper apron-roll, c^3, is driven by the pulley c^4. The centrifugal pump *f* is driven by the cone-belt pulley f^2, which is driven from a reverse cone-pulley placed on some adjacent countershaft. The deflecting-plate swings on a shaft, *d*, provided with a quadrant, d^2, held in any position desired by the binding-screw d^3.

G is a gate, placed under the false bottom *b* to prevent the tube *e* from being supplied by a current from under the bottom *b*, which might flow through the openings in it, and thereby weaken the current above the bottom toward the carrier end of the machine. This gate may be made to slide on the screws g^2 or to open and close in any other well-known manner. This gate can be regulated so as to permit of a downward draft on the fluid above the bottom, if it be desired. As the current flowing over the false bottom will carry the wool forward in it, and as the same current can be produced without regard to the length of the bowl, and as no machinery is necessary to move the wool forward in the bowl, the length and capacity of the bowl can be increased to any extent desired without increasing its cost pro-

portionally or to great amount, and therefore a soaking-machine which will automatically forward the wool, without conveying-rakes or other mechanism, over the body of the bowl can be cheaply and easily produced, so that the wool may be permitted to soak for a great length of time without delaying other machinery, and much better work can be obtained by the washing-machine, into which it next passes, because the dirt and gum will be thoroughly loosened by the preliminary soaking.

s is a scraper or doctor, which is placed above the level of the fluid in the tank and in close contact with the lower roll, D′. This scraper prevents the greasy matter which the scouring-liquid takes from the wool, and which floats on the surface, from adhering to the roll and being carried up by it to the wool, and again deposited by it upon the roll and carried over into the next machine.

We are aware of the existence of machines in which a current is made to feed substances forward in a tank. Such operation we do not claim as our invention.

What we claim as new and of our invention is—

1. The combination of the bowl A, provided with the perforated apron *c*, and the deflecting-plate D, with the pipe E, adapted to convey the fluid from the rear of the apron to the front of the machine, and the pump *f*, adapted to force the scouring-liquid against the wool as it passes into the machine and carry it under the deflecting-plate D, substantially as described.

2. The combination of the bowl A, provided with the perforated bottom *b*, perforated apron *c*, and gate G, with the exhaust-tube E, perforated in the part *e*, and the pump *f*, substantially as and for the purpose described.

F. G. SARGENT.
A. C. SARGENT.

Witnesses:
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ARTHUR WIGHT.