

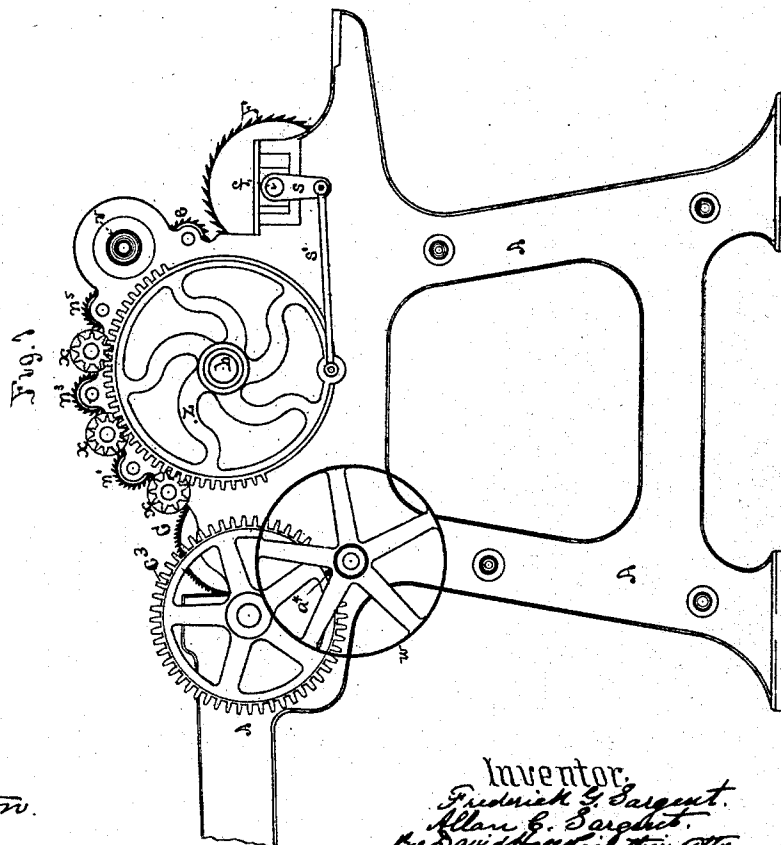
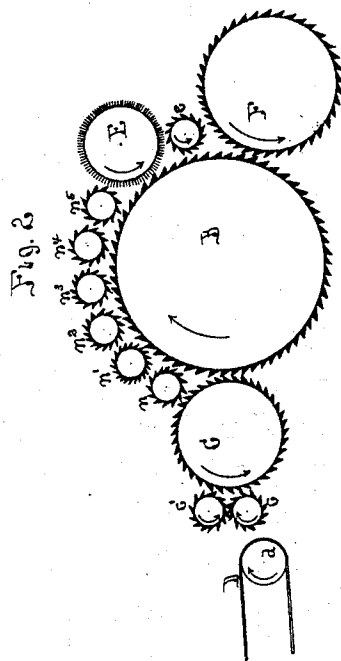
(No Model.)

2 Sheets—Sheet 1.

F. G. & A. C. SARGENT.
MACHINE FOR BURRING WOOL.

No. 393,588.

Patented Nov. 27, 1888.



Witness.
A. P. Ockington.
Jas. H. Brown.

Inventor.
Friedrich G. Sargent.
Allan C. Sargent.
By David H. Keith their atty.

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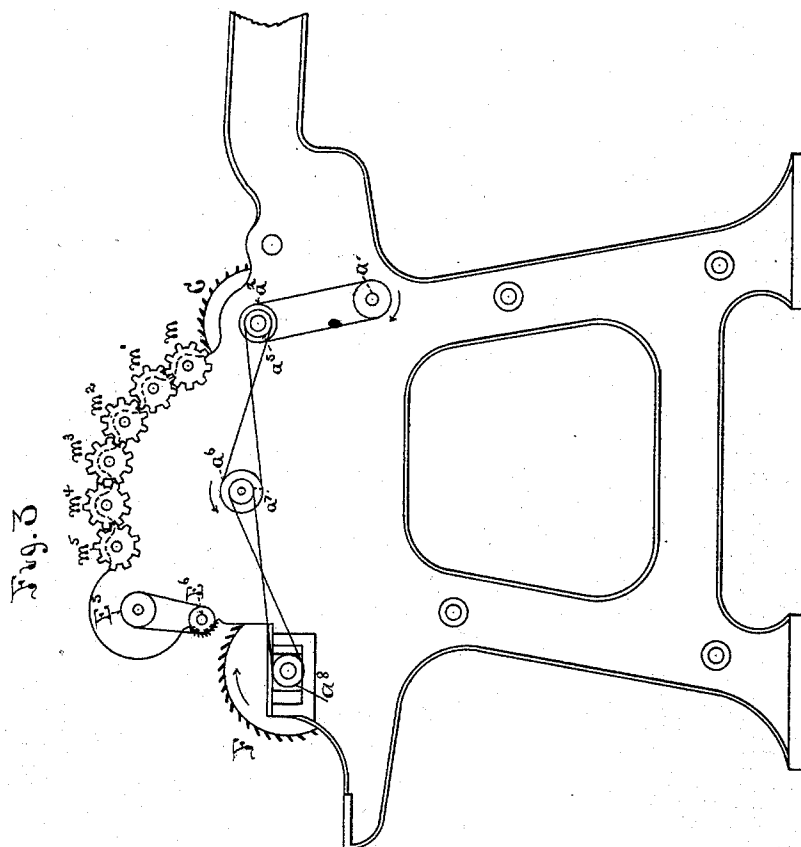
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A. P. Ockington.

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Allan C. Sargent,
By David H. H. H.
Their Attys

UNITED STATES PATENT OFFICE.

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

MACHINE FOR BURRING WOOL.

SPECIFICATION forming part of Letters Patent No. 393,588, dated November 27, 1888.

Application filed December 31, 1883. Serial No. 116,121. (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 Machines for Burring Wool, of which the following is a specification.

Our invention relates to machines for working and preparing wool and other similar fiber; and it consists in the modifications therein, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a machine provided with our improvements. Fig. 2 is a vertical central section through the same. Fig. 3 is a side elevation of the machine on the opposite side from that of Fig. 1.

A is the frame-work of the machine. B is the main cylinder. C is the lick-in cylinder. c' are the feed-rolls. D is the feed-apron, passing around rollers in the usual manner, one of which, d , is shown. E is the "fancy," which runs at a faster surface speed than the main cylinder. e is the doffer-worker roll for the fancy, driven by a belt connecting pulleys $E^5 E^6$. The lower feed-roll is driven by the gear c^3 from the pinion a^4 on the shaft of the belt-pulley w . F is the main-cylinder doffer. All these parts of the machine are well known, are in their usual positions in the machine, and are, excepting the fancy and feed-rolls, geared or belted together and driven in the usual way on the opposite side of the machine from that shown in Fig. 1, from the shaft of belt-wheel w , which takes the power in the ordinary manner from a counter-shaft.

The shaft of belt-wheel w carries on its opposite end pulley a' , which belts onto pulley a^2 on the shaft of the lick-in C. From pulley a^5 on this same shaft a belt is carried to pulley a^6 on the end of the shaft of main cylinder B, and from pulley a^7 on this same shaft a belt is carried to the pulley a^8 on the end of the shaft of doffer F.

The fancy is driven by the pulley v on its axis from a counter-shaft. The arrows show the direction in which these cylinders and rolls respectively revolve. Further description of these several parts and their mode of operation is therefore unnecessary to those skilled in the art.

Around the circumference of the main cylinder B, between the lick-in and the fancy, are arranged in the ordinary manner the toothed workers $n n' n^2 n^3 n^4 n^5$. These workers are in the usual situation with relation to the main cylinder and are of the usual and well-known construction. Heretofore it has been customary to have them revolve in the same direction as the upper feed-roll, c' , so that as the fiber was brought around to each of them by the main cylinder each one would pick or work the fiber and release it from the worker after it had passed between the two cylinders—viz., the main cylinder and such worker-cylinder. Each worker-cylinder therefore performed only a limited amount of work at any given place on the main cylinder, and the purpose of the present invention is to increase its working capacity by the variations which we make in its rotary motions, hereinafter described, and thus increase the total picking which the fiber receives in a single passage through the machine.

As shown in Fig. 1, we mount the gear-wheel z loosely on the shaft b of the main cylinder B, which shaft is made to project sufficiently on this side of the machine where the gear-wheel is mounted to allow it. On the end of every other one of the worker-cylinder shafts—viz., those of $n n^2 n^4$, which project outward on this said side of the machine—we attach a gear-wheel, x , which meshes into the gear z , as shown. All of the shafts of the workers $n n' n^2 n^3 n^4 n^5$ project on the opposite side of the machine from that shown in Fig. 1 sufficiently to allow gears $m m'$ and $m^2 m^3$ and $m^4 m^5$ to be attached to them and to mesh into each other as follows, viz: the gears of n and n' , the gears of n^2 and n^3 , and the gears of n^4 and n^5 . Each pair of these last-named gears is of the ordinary construction, and they mesh into each other in the ordinary way well known to mechanics—i. e., by causing the shafts of gears $m^2 m^3$ to extend outward from the casing of the machine far enough to bring their gear-wheels outside and clear of gears m' and m^4 , nearest to them, and their construction and application are well understood by mechanics and do not require further illustration or description. The effect of this method of gearing the said workers together is that when one of each pair

is revolving in one direction the other is revolving in the opposite direction.

The shaft *f* of the doffer *F* is made to project beyond the side of the machine, as shown in Fig. 1, and the crank *s* is attached to it. This crank is connected to the gear-wheel *z* by the link *s'* by pivots attached to the crank and gear-wheel in the usual manner. The crank *s* being shorter than the radial line of wheel *z* from its axis to the pivot of link *s'*, near its circumference, it follows that at each revolution of doffer *F* a reciprocal rotary motion will be given to gear-wheel *z* and workers *n* and *n'*, *n*² and *n*³, and *n*⁴ and *n*⁵, each cylinder of said pairs moving in the opposite direction from the other one. The effect of this reciprocal movement of the workers in combination with the main cylinder is not only that each one does more picking than before, but also that when one is being stripped by the main cylinder by its running in the proper direction for stripping, the worker immediately following it is running in the proper direction to seize and pick up the fiber as fast as it is so stripped in the most effective manner, and none of the fiber passing one roll can escape this action of the succeeding one.

It will be observed that the teeth of the main cylinder *B* project from its surface in the direction of its surface motion, while the teeth of the workers project in a contrary direction to the main-cylinder teeth where they pass by each other. The machine therefore picks up a given quantity of fiber more effectively.

What we claim as new and of our invention is—

1. The combination of the main toothed cylinder *B*, capable of constant rotation in one direction, and a pair of toothed workers, *n n'*, capable of simultaneous reciprocal rotation in opposite directions to each other and each capable of stripping the fiber directly from the other and from the main cylinder during their rotation, all being provided with the mechanism necessary to impart the described motions to the several cylinders, substantially as and for the purpose specified.

2. The combination of the main toothed cylinder *B*, capable of rotation in one direction, and a pair of toothed workers, *n n'*, capable of simultaneous reciprocal rotation in opposite directions to each other and each capable of stripping the fiber directly from the other and from the main cylinder during their rotation, and said main cylinder and workers having their teeth projecting in contrary directions where they pass by each other, all being provided with the mechanism necessary to impart the described motions to the several cylinders, substantially as and for the purpose specified.

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

Witnesses:

ARTHUR B. PLIMPTON,
H. W. CHURCH.