

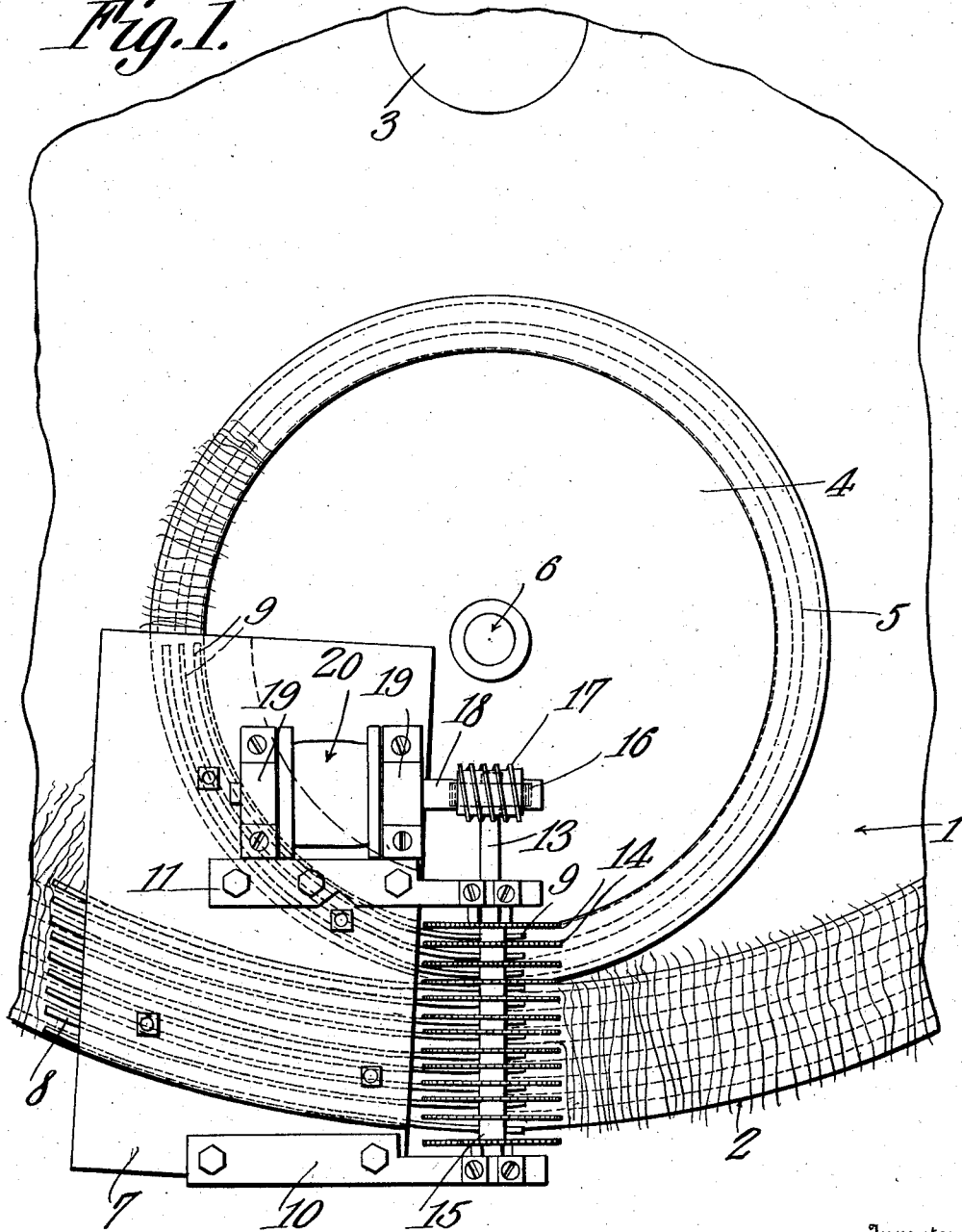
A. ASHWORTH.
WOOL COMBING MACHINE.
APPLICATION FILED SEPT. 28, 1908.

1,010,840.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

E. J. Howard
R. M. Elliott

Inventor,
Asa Ashworth.

By *C. Snow & Co.*
Attorneys.

A. ASHWORTH.
WOOL COMBING MACHINE.
APPLICATION FILED SEPT. 28, 1908.

1,010,840.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 2.

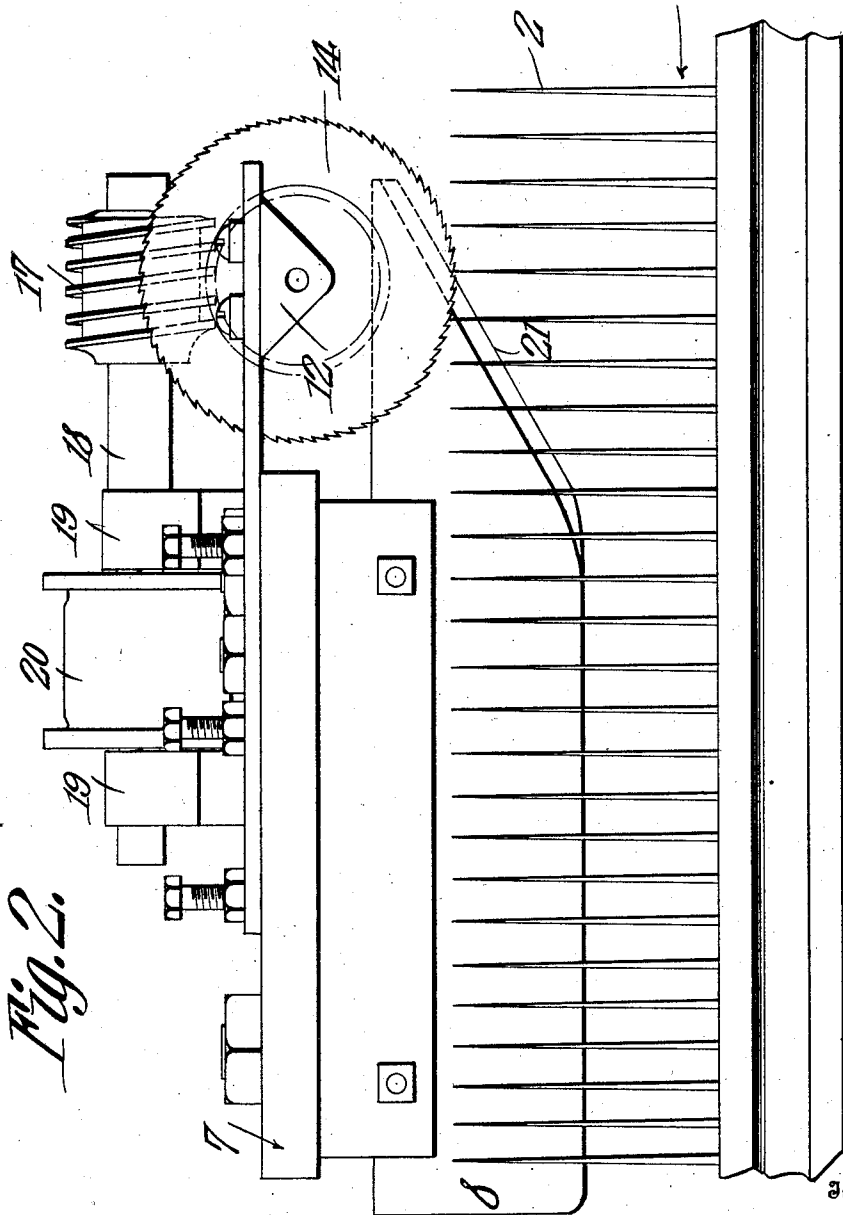


Fig. 2.

Witnesses:

R. M. Elliott
R. M. Elliott

Asa Ashworth

By *Cashow & Co.*
Attorneys.

UNITED STATES PATENT OFFICE.

ASA ASHWORTH, OF JAMESTOWN, NEW YORK.

WOOL-COMBING MACHINE.

1,010,840.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed September 28, 1908. Serial No. 454,967.

To all whom it may concern:

Be it known that I, ASA ASHWORTH, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented a new and useful Wool-Combing Machine, of which the following is a specification.

This invention has relation to wool-combing machines and it consists in the novel construction and arrangement of its parts, as hereinafter shown and described.

The object of the invention is to provide a machine on the pattern of a Noble comb; that is to say, a machine especially adapted to operate upon shorter wool fiber, and in which the wool-combing operations are primarily effected by one circular comb rotating in tangential contact with another circular comb, and in which the wool is pressed. In the Noble combs heretofore employed vertically reciprocating dabbling brushes have been used for the purpose of pressing the wool into the combs. This means of attaching or positioning the wool with relation to the combs is ideal in some respects, but possesses disadvantages in others. An advantage gained by the vertically reciprocating brushes is that the dabbling brushes operate upon the wool in true radial lines to both combs, and thus the wool is pressed into the combs at that point where the combs are nearest together. Consequently, there is no space or room between the two sets of combs to permit noils to enter between the two sets of combs, and consequently follow the wool fiber at one or the other set of combs without being torn asunder or properly combed. The reciprocating dabbling brush is objectionable however inasmuch as it rapidly wears away, and thereby causes imperfections in the combed wool, which results in sources of annoyance and expense.

It is the object of the present invention to dispense with the use of the vertically reciprocating dabbling brush, and, at the same time, to all intents and purposes place the wool upon the combs in the same manner as that effected by the said dabbling brushes.

In the accompanying drawings:—Figure 1 is a top plan view of a wool-combing machine embodying the features of the present invention. Fig. 2 is a view in side elevation of the machine.

In the drawings 1 designates a table which carries an outer circular row of pins 2 and which is supported by a center pillar 3 of

the machine, and reference numeral 4 indicates a second table that supports an inner circular row of pins 5 and is mounted upon a standard 6, arranged concentrically with relation to the second table 4, but eccentrically with relation to the table 1. A table 7 is positioned over the paths of movement of the pins 2 and 5 and upon the under side of the table 7 is secured, in the usual or any preferred manner, two series of blades or knives 8 and 9, the former of which are arranged between the rows of pins 2 and the latter between the rows of pins 5.

Secured to the table 7 are two brackets 10 and 11, the outer ends of which project beyond the table and each carries on its under side a bearing 12, only being shown in Fig. 2 and in the bearing 12 is journaled a shaft 13 carrying a series of saws 14 corresponding in number to the rows of pins in the two circles and held properly spaced apart by collars or sleeves 15, to prevent contact either with the knives or blades 8 and 9 or with the pins. The shaft 13 carries on its inner end a worm-wheel 16 which meshes with a worm 17 mounted on a counter shaft 18 that works in bearings 19 carried by the table 7 and has rigidly secured to it a pulley 20 which is driven from a suitable source of power, not necessary to be shown.

As will be seen by reference to Fig. 1, the saws are placed with their centers directly above the tangent of the two circles, and project to the top of the pins, but do not contact with them.

It will be seen, by reference to Fig. 2, that the blades project upward between the saws and in such positions that as the circles revolve the wool fed to the pins by the saws will be forced down by the inclined lower edges 21 of the blades and will thus be positively held against working out. The edges 21 of the blades cross the horizontal planes with the peripheries of the saws at their lowest points in the vertical plane of the centers of the saws, as shown in Fig. 2. The saws are run at the same speed as the circles, and all wool coming forward is caught and partially pressed down into the circles, and, after leaving the saws, is completely depressed by the blades.

It will be seen, from the foregoing description, that by the employment of the saws and the blades with their specific relations as stated, the wool will be effectually fed to the two circles of pins, so that the em-

ployment of vertically reciprocating dabbing brushes will be entirely dispensed with, and, at the same time, the wool is operated upon to the same advantage as though the structure employed vertically reciprocating dabbing brushes. It will also be seen that the wool is not depressed between the pins of the two sets until the said pins are in their closest relations, and even then the gang of saws have a common center or axis, and the said axis is radially disposed with relation to both circles of pins, and both of the said circles of pins are tangentially disposed one with the other, and the axis of the saws crosses the tangent in the same vertical plane therewith. Thus it is impossible for noils to form or pass between the pins of the two sets as the wool is not depressed until the two sets of pins are in their closest relation. Therefore, if noils should be in the wool they will be engaged by the pins of the two sets, and as the said pins of the two sets move away from each other the said noils will be torn or rent asunder. By this arrangement it is also impossible for the saws to form noils in the wool between the two sets of pins, as would be the case if the saws engaged the wool at a line or plane in advance of that vertically above the radius of the two circles of pins at the points where their tangents meet. Furthermore, it will be seen that inasmuch as the lower edges 21 of the knives or blades are inclined and cross the lower peripheries of the saws in the vertical plane of their axis, as soon as the wool is engaged with the pins of the two sets, it immediately begins to be depressed between the same, and as the pins of the two sets move away from each other the wool is combed and the combed ends thereof are left projecting beyond the sides of the two sets of pins in the usual manner.

By reason of the fact that the pointed ends of the pins 2 and 5 lie in a common horizontal plane which is tangent to the peripheries of the saws 14 and the inclined forward edges 21 of the blades 8 cross the said plane at its point of tangency with the peripheries of the saws 14; after the wool has been engaged by the saws and forced down between the pointed end of the pins 2 and 5, the said saws can have no effect in lifting the wool away from the pointed ends of the said pins inasmuch as the wool is forced down by the inclined edges 21 of the blades 8 as it is carried along by the pins 2 and 5. Thus the possibility of forming noils in the wool at the saws is reduced to a mini-

mum. If the peripheries of said saws were above the plane of the pointed ends of the pins 2 and 5, the said pins would have a tendency to carry the lower strata of wool along while the upper strata of wool engaged by the saws would have a tendency to follow the peripheries of the said saws in an upward direction as it moves toward the blade 8 and thus there would be a tendency to roll the upper strata of wool whereby noils would be formed therein. It therefore appears that in the present invention it is extremely essential that the pointed ends of the pins shall be tangent to the peripheries of the saws and the inclined edges of the blades shall cross the horizontal plane of the pointed ends of the pins at the point of tangency thereof with the peripheries of the saws.

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

In a wool combing machine the combination with a main table, and a small table disposed above and supported by the main table to one side of the diametrical center of the main table, of two circles of pins having their pointed ends in a common horizontal plane, of a shaft journaled to said small table above the pins radially disposed with relation to both circles of pins, and lying transversely across both circles of pins at that point where they approach the nearest, said shaft having a fixed axis of rotation, an operating worm shaft journaled upon the small table and operably connected to said shaft, a plurality of circular saws carried by the first shaft and disposed directly above the two circles of pins, the plane in which the pointed ends of the pins lie being tangent to the peripheries of the saws, two series of blades carried by and depending from said small table and lying between the pins of both sets and having their under edges adjacent the saws downwardly inclined and crossing the plane of the pointed ends of the pins at the points of tangency with the saws and crossing the radii of the saws which are at right angles to the plane of the pointed ends of the pins at the peripheries of the saws.

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

ASA ASHWORTH.

Witnesses:

J. DELEVAN CURTISS,
L. FRANCES SMITH.