

(No Model.)

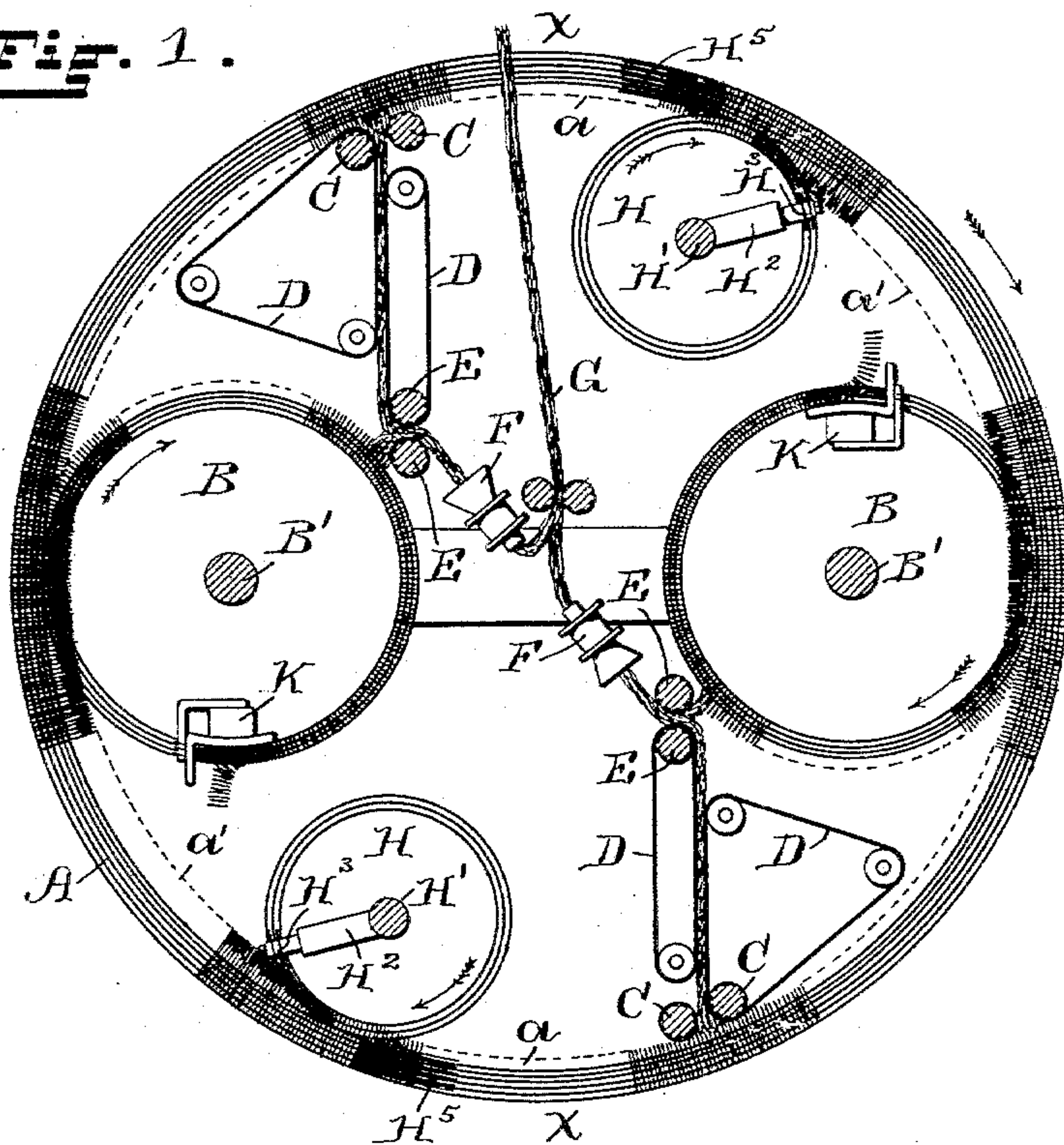
2 Sheets—Sheet 1.

E. LODGE.  
WOOL COMBING MACHINE.

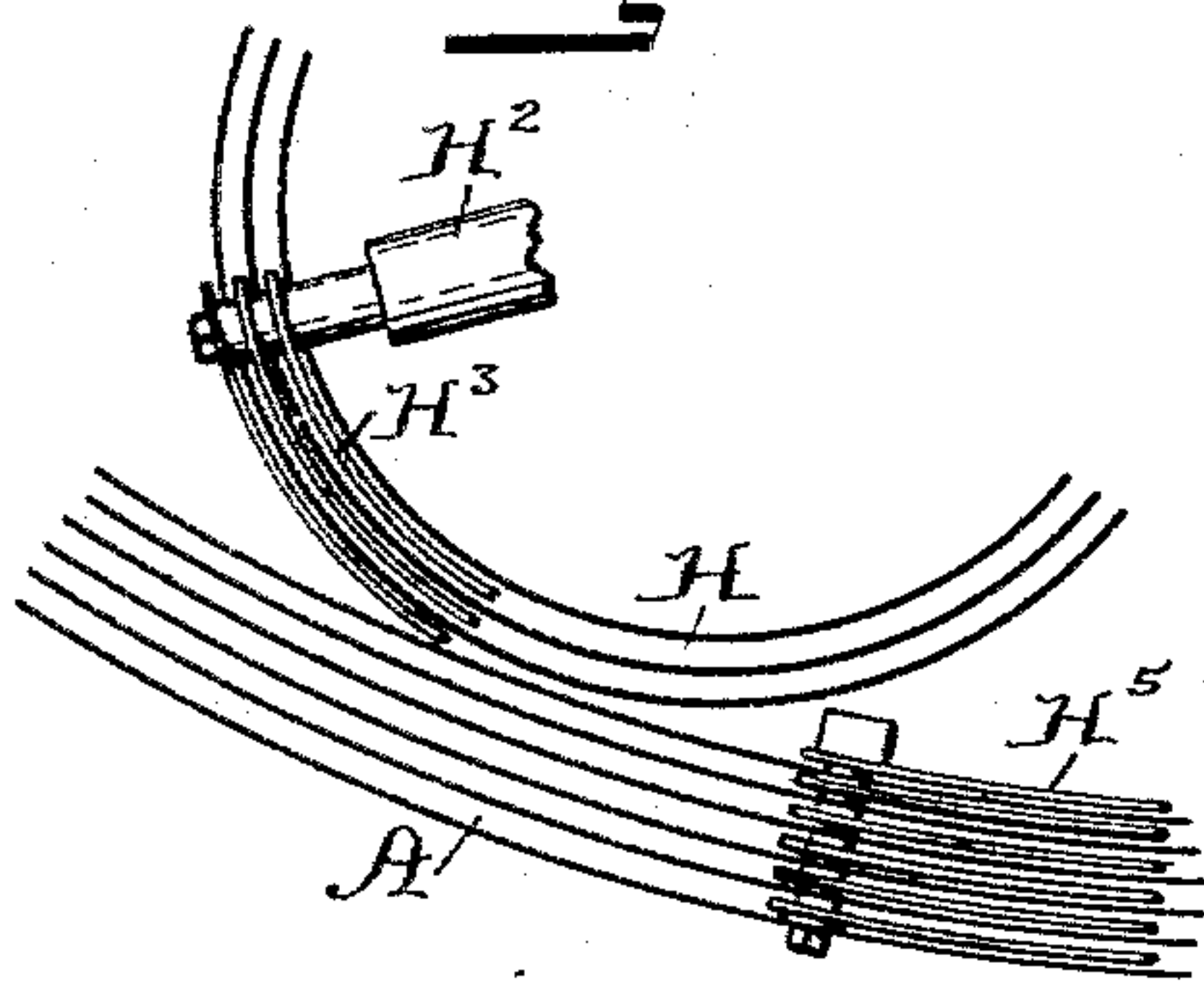
No. 597,361.

Patented Jan. 11, 1898.

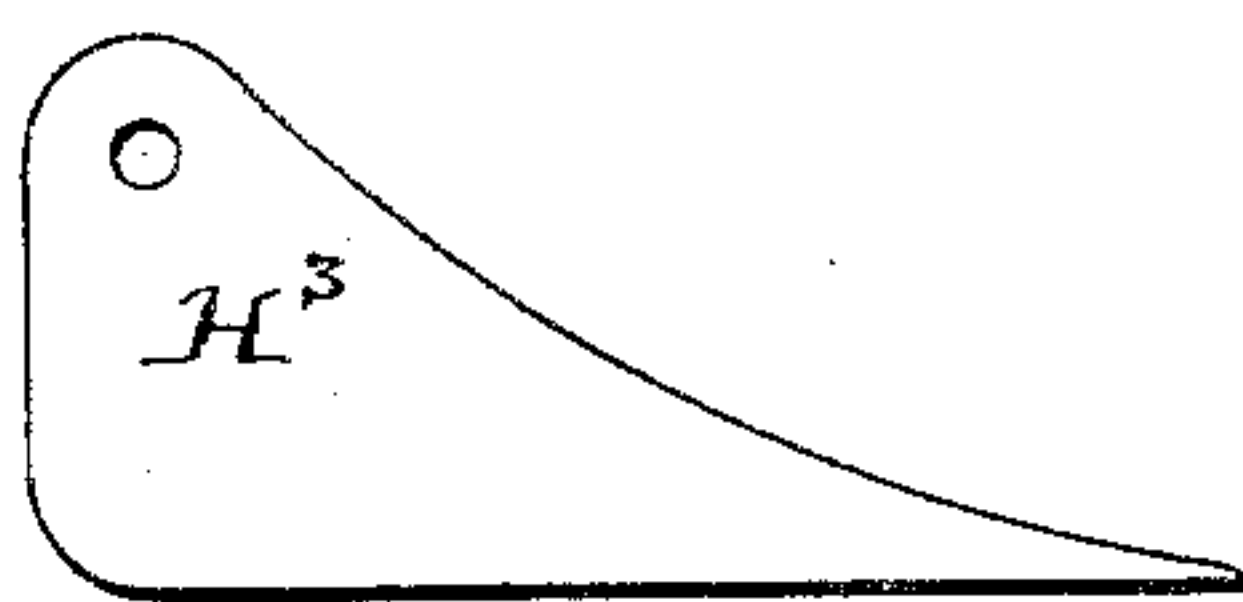
**Fig. 1.**



**Fig. 2.**



**Fig. 3.**



**WITNESSES:**

Chas. H. Luther Jr.  
M. F. Bligh

**INVENTOR:**

Edward Lodge,  
Joseph A. Miller & Co.,  
Atty.

(No Model.)

2 Sheets—Sheet 2.

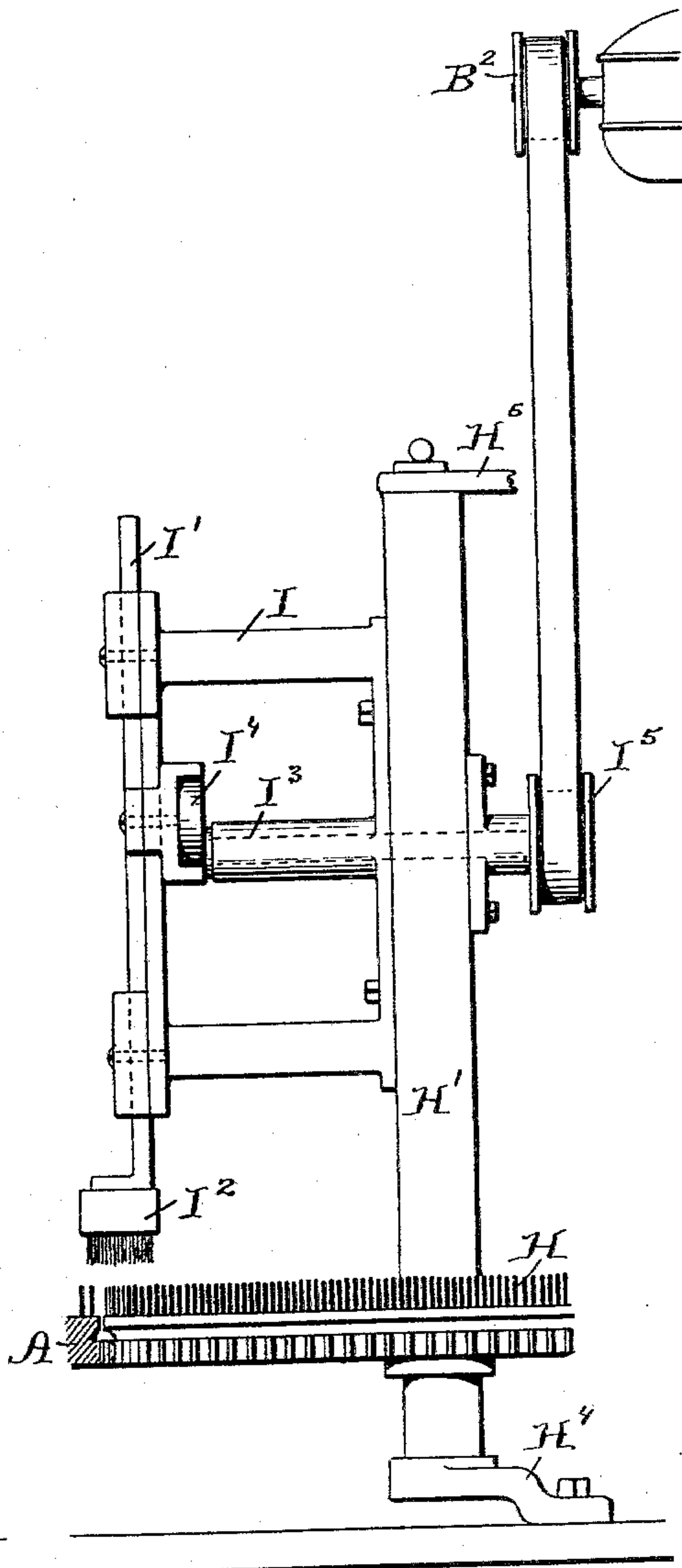
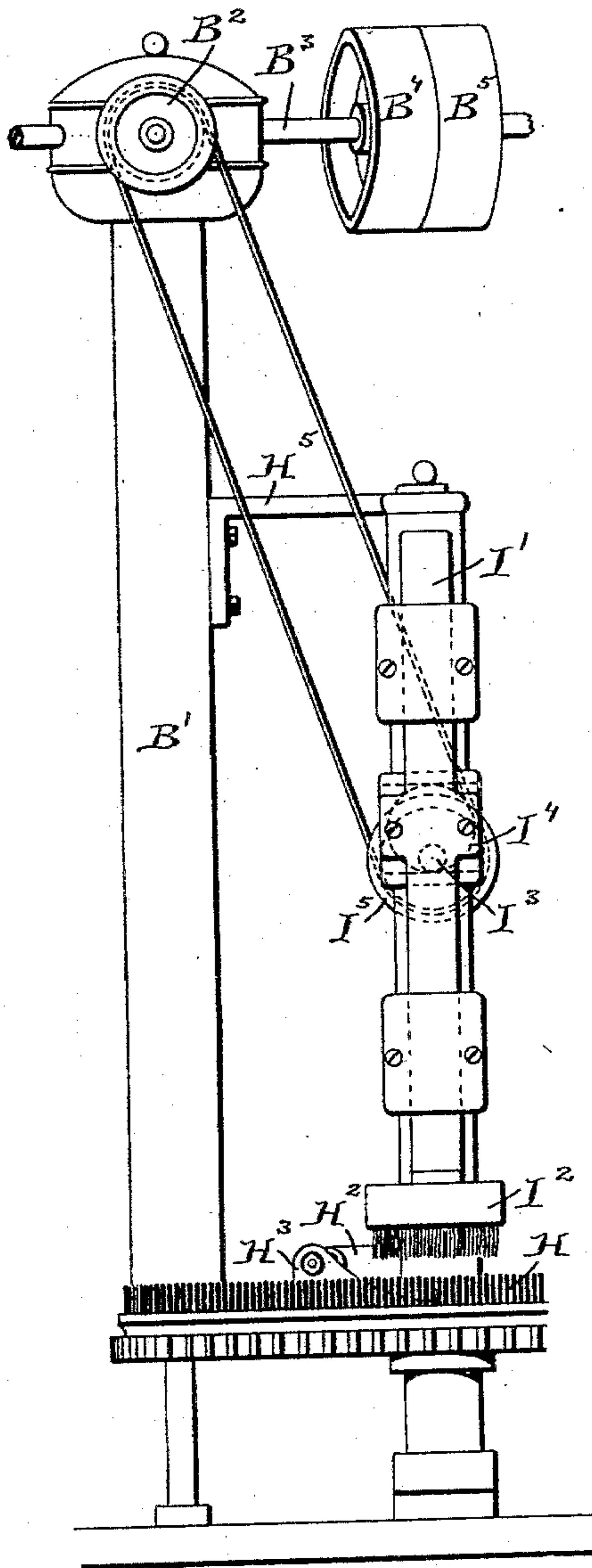
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**Fig. 4.**

**Fig. 5.**



**WITNESSES:**

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**INVENTOR:**

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# UNITED STATES PATENT OFFICE.

EDWARD LODGE, OF LYMANSVILLE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO WALTER H. HERSEY, OF PROVIDENCE, RHODE ISLAND.

## WOOL-COMBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 597,361, dated January 11, 1898.

Application filed June 2, 1897. Serial No. 639,088. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD LODGE, of Lyman-  
sville, in the county of Providence and  
State of Rhode Island, have invented a new  
5 and useful Improvement in Wool-Combing  
Machines; and I hereby declare that the fol-  
lowing is a full, clear, and exact description  
of the same, reference being had to the accom-  
panying drawings, forming part of this speci-  
10 fication.

This invention has reference to an improve-  
ment on circular wool-combing machines in  
which the fiber is supported on an annular  
revolving comb-ring and is combed out, usu-  
15 ally by two smaller revolving annular work-  
ing combs placed at opposite sides of the ma-  
chine within the larger annular comb, to be  
formed into a continuous uniform sliver.

In this kind of wool-combing machines the  
20 short fiber or noil is not as perfectly separated  
from the longer fiber as is desirable and the  
wool is usually submitted to a second comb-  
ing in the same or similar machine.

The object of this invention is to secure a  
25 more perfect combing out of the fiber and a  
more complete separation of the noil from the  
longer fiber at one operation; and to this end  
the invention consists in the application to  
the usual circular wool-combing machines of  
30 preferably two auxiliary annular rotating  
combs by which the fiber is combed and  
drawn out, so that the noil or entangled short  
fiber will extend within the usual annular  
working combs rotating inside of the large  
35 outer annular comb, so that in drawing off  
the beard or long fiber to form the fleece the  
noil will be retained, as will be more fully set  
forth hereinafter.

Figure 1 is a top view of a sufficient part of  
40 a circular wool-combing machine provided  
with two of my auxiliary annular combs;  
Fig. 2, a top view of part of the outer annu-  
lar comb and part of the auxiliary comb, show-  
ing the position of the plow-plates for raising  
45 the combed-out fiber. Fig. 3 is a side view  
of one of the plow lifting-plates. Fig. 4 is a  
front view, and Fig. 5 a side view, of the dab-  
bing motion of the auxiliary annular comb.

In the drawings, A indicates the outer and  
50 larger annular comb; B B, the usual smaller  
annular working combs; C C, the pinching-

rolls that draw the fiber from the large outer  
annular comb; D D, the carrier-belts; E E,  
the pinching-rollers that draw or strip the  
fiber from the annular working combs B B; 55  
F F, the twister-heads through which the  
sliver passes, and G the combed sliver.

The parts so far described are the parts  
used in the circular wool-combing machines  
in common use. The annular combs turn in 60  
the directions indicated by the arrows, and  
the machine is driven and operated in the  
usual manner by imparting rotary motion  
to the outer annular comb A, which is pro-  
vided with a gear-rim on its inner face with 65  
which the gears on the outer edge of the  
working combs B B engage and are thus ro-  
tated at the same speed as is the outer comb A.

To this machine I add the annular combs  
H H, preferably of less diameter than the 70  
annular working combs B B, and connect  
the same with the gear of the outer comb A.  
From the central column H' of the comb H  
the arm H<sup>2</sup> projects radially, and on a pin  
projecting from the end of the arm H<sup>2</sup>, just 75  
above the wires of the annular comb, the  
curved plow-plates H<sup>3</sup> are pivotally secured,  
extending between the rows of the wires or  
pins of the comb. The lower end of the col-  
umn H' is supported on the step H<sup>4</sup>, and the 80  
upper end is secured by the bracket H<sup>6</sup> to the  
column B' in the center of the annular comb  
B on each side of the machine. The bracket  
I, secured to the column H', forms the sup-  
port and way for the reciprocating slide I' of 85  
the dabbing-brush I<sup>2</sup> and its operating mech-  
anism, consisting of the shaft I<sup>3</sup>, the eccen-  
tric I<sup>4</sup>, secured to one end of the shaft I<sup>3</sup> and  
turning in a cup secured to the slide I'. A  
pulley I<sup>5</sup> on the other end of the shaft I<sup>3</sup> is 90  
connected by a belt with the pulley B<sup>2</sup> on the  
head of the column B'. This pulley is driven  
by suitable gearing from the main driving-  
shaft B<sup>3</sup>, on which the loose and tight pul-  
leys B<sup>4</sup> and B<sup>5</sup> are carried. 95

The dabbing motion herein described I  
find to work satisfactory, but any form of  
dabbing motion may be used in connection  
with the auxiliary annular combs H H.

The auxiliary annular combs H H may be 100  
driven, in any suitable manner found practi-  
cable, in the same manner as the annular



working combs B B are driven. In Fig. 5 the auxiliary comb H is shown provided with a gear engaging with the gear on the inside of the large annular comb A.

5 To enable others skilled in the art to use my invention, I will now describe the same in connection with the combs of the ordinary circular wool-combing machine.

At or about the points marked X X on the  
10 opposite sides of Fig. 1 the wool is fed on the outer annular comb A and is carried toward the auxiliary annular combs H H. Plates H<sup>5</sup>, placed between the annular rows of pins forming the comb A, like the plates H<sup>3</sup>, raise  
15 the fiber up above the pins of the outer annular comb A and above the pins of the auxiliary annular combs H H. At or near the point of nearest contact between the annular combs A and H the dabbing-brush I<sup>2</sup> pushes  
20 the fiber which projects inward beyond the annular comb A, as shown in the drawings, into and between the pins of the comb A and the auxiliary combs H H, which, on turning with the comb A, separate and draw out the  
25 fiber from the comb A, and at the same time the plow-plates H<sup>3</sup> raise the fiber again above the pins of the auxiliary annular combs H H. On examining Fig. 1 it will be seen that the broken line marked *a* before it reaches the  
30 auxiliary combs H H projects inward to the broken line marked *a'* after it has passed the auxiliary combs H H, and that when the fiber reaches the usual annular working combs B B the inner line of the fiber extends over and  
35 inside of the annular rows of pins of the combs B, and that as these combs separate from the outer annular comb A the overhanging fiber is drawn into the annular working combs B B, and it is found in practice that  
40 the noil is drawn against and is held by the inner annular row of pins of the combs B B, and that when the fiber is drawn by the nipping-rolls E E from the outer sides of the annular combs B B the noil or entangled short fiber is  
45 retained and is carried to the lifting-plates K K to be discharged, so that by the use of the auxiliary annular combs H H the wool is combed out and prepared for the usual annular working combs B B, and the operation of  
50 these is made far more effective than was heretofore possible and the combing performed by one operation of the machine far more complete. By the use of the auxiliary annular combs about fifty per cent. more  
55 combing of the fiber is secured at one operation, and the effect on the cleaning of the fiber is much improved by thus drawing out the fiber and placing the edge of the fiber always containing more of the noil on the inner  
60 side of the annular working combs B B and pushing it into the annular rings or pins of the combs by the dabbing-brushes. To secure the best result, the inner of the annular rows of pins should be set closer together than  
65 the other rows of the annular working combs B B, so as to retain the noil more effectually.

I am aware that prior to my invention cir-

cular wool-combing machines have been provided with boxes and a reciprocating drawing-comb operated by complex mechanism to  
70 draw out the fiber and partially separate the noil before the fiber reached the rotating annular working comb. I do not claim such mechanism or, broadly, mechanism producing this result. I find in practice that by my  
75 construction the auxiliary rotating annular comb secures all the benefits the complex mechanism failed to secure.

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

1. In a circular wool-combing machine, the combination with the outer annular comb and the smaller, inner, annular working comb by  
85 which the fiber is drawn inward from the outer comb, of a rotating, auxiliary, inner, annular comb placed in advance of the working comb, and means for rotating the combs to draw the fiber inward from the outer comb before it is  
90 acted on by the working comb, whereby the noil of the fiber is placed on the inside of the working comb, as described.

2. In a fiber-combing machine, in combination, the outer annular comb on which the  
95 fiber is fed, the smaller, inner, annular working combs by which fiber is drawn off from the outer comb, the nipping-rolls and carrier by which the fiber is collected, the inner rotating auxiliary annular combs, placed in advance of the working combs and actuating  
100 mechanism for rotating the combs by which the fiber is drawn out before it reaches the annular working combs, whereby the fiber is more thoroughly combed and the noil more effectively separated, as described. 105

3. In combination with a circular wool-combing machine having an outer annular comb, smaller, inner, annular working combs  
110 coöperating with the outer comb and the usual nipping-rolls, of a series of lifting-plates in the outer annular comb in advance of an auxiliary comb, auxiliary rotating inner annular combs placed in advance of the working combs, lifter-plates in the auxiliary annular combs, and actuating mechanism, where-  
115 by the fiber is drawn inward from the outer annular comb and delivered to the annular working combs with the edge of the fiber overlapping the inner edges of the annular working combs, as described. 120

4. In a circular wool-combing machine, the combination with the outer annular comb A, the inner annular working combs B B, and the mechanism for stripping the fiber and  
125 forming the sliver, of the rotating, inner, annular combs H H operating on the fiber in advance of the working combs B B, the lifting plow-plates H<sup>3</sup> and H<sup>5</sup>, and actuating mechanism for rotating the combs, whereby the fiber is drawn out from the outer annular  
130 comb before it reaches the working combs, as described.

5. In a circular wool-combing machine, the combination with the usual mechanism for



5 combing out the fiber and forming the sliver,  
of the inner auxiliary annular combs H H,  
the plow-plates H<sup>5</sup> and H<sup>3</sup>, and the auxiliary  
dabbing-brushes I<sup>2</sup> operated substantially in  
the manner described, whereby the fiber is  
combed out from the outer annular comb in  
advance of the working combs, as described.

In witness whereof I have hereunto set my  
hand.

EDWARD LODGE.

Witnesses:

M. F. BLIGH,  
J. A. MILLER, Jr.