

(No Model.)

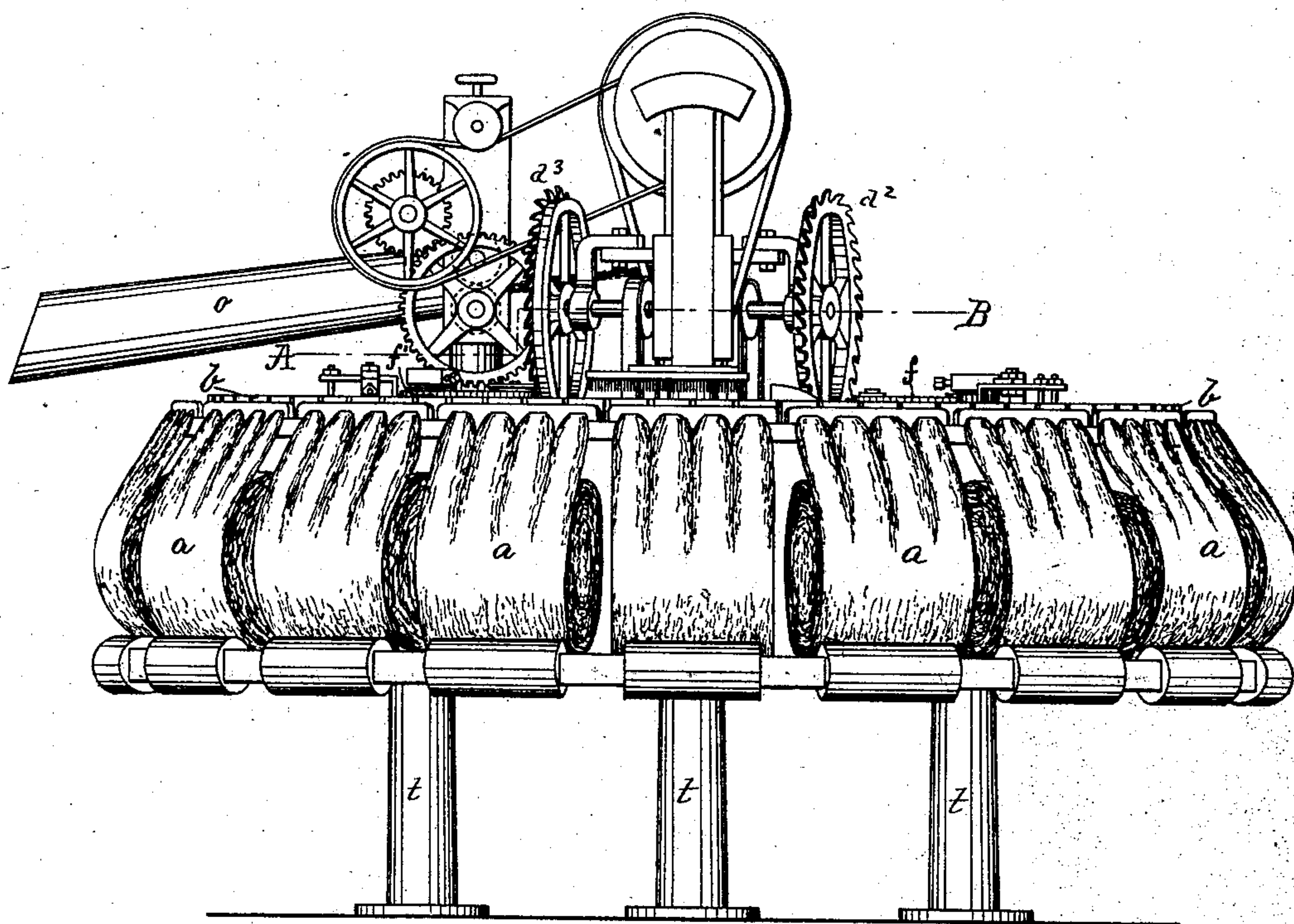
3 Sheets—Sheet 1.

J. AUSTIN.
WOOL COMBING MACHINE.

No. 259,790.

Patented June 20, 1882.

Fig 1.



Witnesses.

Henry Chadbourn.

J. Allen

Inventor.

Joseph Austin
by *Alban Andren*
his atty.

(No Model.)

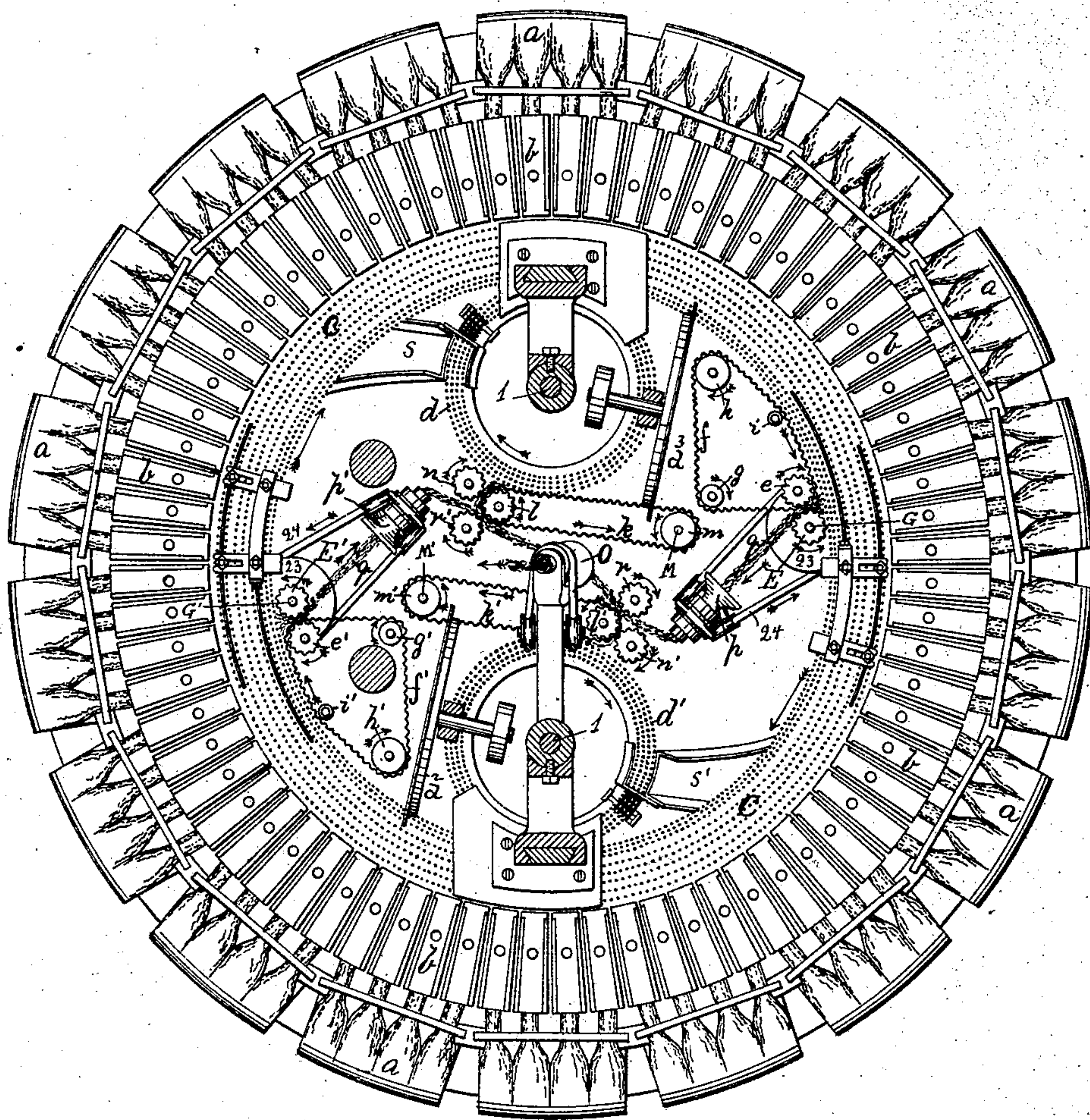
3 Sheets—Sheet 2.

J. AUSTIN.
WOOL COMBING MACHINE.

No. 259,790.

Patented June 20, 1882.

Fig. 2.



Witnesses.

Henry Chadbourne.
J. Allen

Inventor

Joseph Austin
by William Andrew
his atty.

(No Model.)

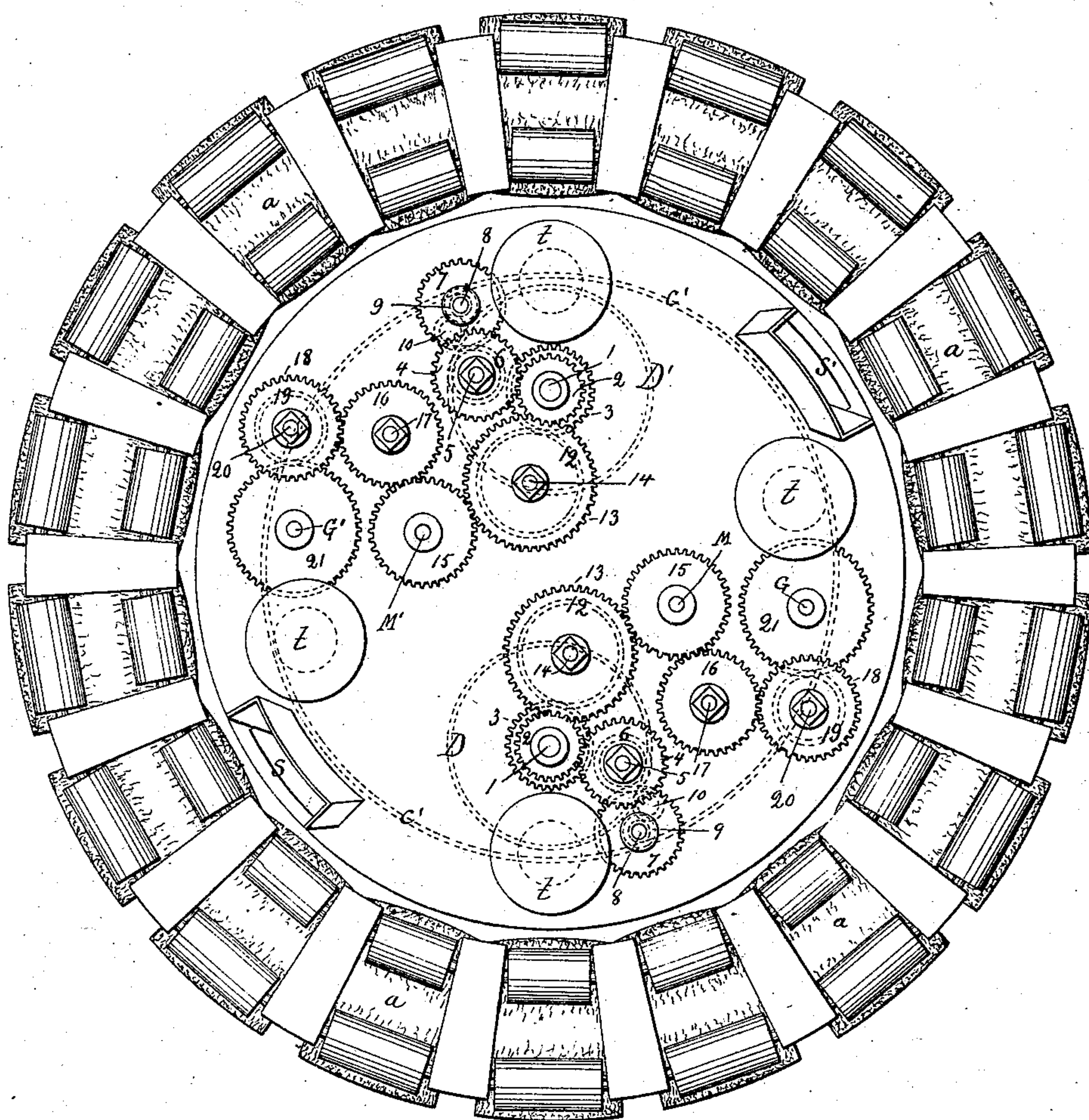
3 Sheets—Sheet 3.

J. AUSTIN.
WOOL COMBING MACHINE.

No. 259,790.

Patented June 20, 1882.

Fig. 3.



Witnesses.

Henry Chadbourne.
J. Allen.

Inventor.

Joseph Austin
by *Alvan, Andrein*
his atty.

UNITED STATES PATENT OFFICE.

JOSEPH AUSTIN, OF NEWTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO THE NONANTUM WORSTED COMPANY, OF SAME PLACE.

WOOL-COMBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 259,790, dated June 20, 1882.

Application filed October 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH AUSTIN, a citizen of Great Britain, now residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Wool-Combing Machines; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention relates to improvements in wool-combing machines, and it is carried out as follows, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a wool-combing machine; and Fig. 2 represents the machine in part plan and in part section taken on the line A B, Fig. 1. Fig. 3 represents a bottom view of the wool-combing machine.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a a a represent the rolls of uncombed wool. *b b b* represent the boxes or blocks, having passages for the wool, and *c* represents the large circular comb for combing the long wool, as usual. The rolls *a a a*, the boxes *b b b*, and circular comb *c* all rotate together in the direction of the arrow shown in Fig. 2.

d d represent the small circular combs, as usual, for taking the short wool from the large circular comb *c*. The small combs *d d* are rotated in the direction shown by arrows in Fig. 2, in the usual manner.

e and *E* are grooved rollers for taking the long wool from the large circular comb *c*, and *f* is a grooved carrying-apron for conveying the long wool to the grooved rollers *e* and *E*. The apron *f* is guided over the rollers *g h i* and grooved roller *e*, as usual.

k is a grooved carrying-apron carried around the rotary corrugated roller *l* and guide-roller *m*, which apron serves, in combination with the rotary corrugated roller *n*, to draw any remaining long wool from the small circular comb *d*, and to convey it with the other combed long wool to the usual rotary delivery-tunnel, *O*, and its delivery-chute *o*.

Heretofore in some instances the long wool drawn by the rollers *e* and *E* and from the large

circular comb *c* has been conducted to the endless traveling apron *k*, and between it and the periphery of the small comb *d* and its grooved roller *n*, and from the latter to the rotary delivery-tunnel *O*, and in other cases it has been conducted from the large circular comb directly to the main tunnel, whence it left the machine. In such cases, however, the wool dropped down and sagged in its travel on the apron, or from the large circular comb to the main tunnel, and thereby caused the grooves of the rollers *l* and *n* to be clogged up by the wool, by which the lower part of the apron *k* was very much injured, or else the breaking of the sliver necessitated the frequent stoppage of the machine to clear the rollers *l* and *n* from the overlapping wool or piecing of the sliver. To avoid such difficulties the long wool from the rollers *e* and *E* in my machine is not conducted to the endless apron *k* or directly to the main tunnel, but instead to an intermediate rotary tunnel, *p*, located in a stationary bearing, and rotated by means of a cord or belt from a rotary pulley located in a suitable manner to convey the desired motion to the rotary tunnel *p*, and after receiving a twist in passing through said rotary tunnel *p* the wool *g* is conducted to pass between the traveling apron *k'* on the roller *l'* and an additional corrugated roller, *r*, from which it passes to the usual rotary delivery-tunnel, *O*, and delivery-chute *o*, and thence into the ordinary receptacle for the lap. It will thus be seen that the long wool from the large circular comb *c*, after passing between carrying-apron *f* and rollers *e* *E*, is not conducted to the carrying-apron *k*, as of old, but instead through the intermediate rotary tunnel, *p*, and between rollers *l' r* to the delivery-tunnel *O*, by which the wool is prevented from clogging on the apron *k*, the latter is saved from injury, and no stoppage of the machine is necessary to clear its rollers *l n*; besides, a saving in the waste of the long wool is accomplished as compared with the old manner of conducting the long wool from the large circular comb to the delivery-tunnel *O*.

k', *l'*, *m'*, and *n'* are duplicate parts of the means *k*, *l*, *m*, and *n* for carrying the long wool from the second small circular comb, *d'*, to the common delivery-tunnel *O*.

e', *E'*, *f*, *g'*, *h'*, *i'*, *p'*, and *r'* are duplicate parts of the means *e*, *E*, *f*, *g*, *h*, *i*, *p*, and *r* for taking the long wool from a diametrically-opposite side of the large circular comb *c*, as shown in Fig. 2, and delivering it to the common delivery-tunnel *O*. The belts *k k' f f'* are preferably made of leather and grooved or corrugated, so as to make the wool adhere thereon when conducted from the combs to the delivery-tunnel.

S and *S'* represent spouts into which the short wool is carried from the respective small circular combs *d* and *d'*, to be delivered in suitable baskets located below the machine or on the floor, as usual.

The actuating mechanism of the operative parts of the machine is as usual, and is carried out as follows:

c' is a toothed ring, (shown in dotted lines in Fig. 3,) and is secured to the lower part of the large circular comb *c*, which latter rotates with its feeding-boxes *b b* and carriage for carrying the wool *a*, as usual.

1 is a vertical revolving shaft, set in motion as usual. On shaft 1 are secured pinions 2 and 3, the former gearing into pinion 4, which is loose on the stud 5. On the stud 5 is another loose pinion, 6, (shown in dotted lines in Fig. 3,) which gears into pinion 7, secured to shaft 8, which shaft is also provided with pinion 9, gearing into the toothed ring *c'* for turning the large circular comb *c*, feed-boxes *b b*, and carriage for the wool *a*. Said pinion 9 also gears into a similar pinion, 10, (shown in dotted lines in Fig. 3,) which latter gears into the toothed ring *D'*, secured to the underside of the small circular comb *d'*. The pinion 3 gears into the gear-wheel 12, (shown in dotted lines in Fig. 3,) which gear is attached to the larger gear 13, both being loose on the stationary stud 14. The gear 13 gears into pinion 15, secured to shaft *M'*, to the upper end of which the roll *m'* is secured for carrying the corrugated belt *k'* and conveying a rotary motion to the corrugated rolls *l'*, *n'*, and *r*. The pin-

ion 15 also gears into pinion 16, loose on stud 17, for conveying the motion to pinion 18, which has secured to it the pinion 19, (shown in dotted lines in Fig. 3,) both of said pinions being loose on the stationary stud 20. The pinion 19 gears into gear-wheel 21, secured to the shaft *G'*, to the upper end of which is secured the corrugated roller *E'*, and by which motion is conveyed to the belt *f'* and its rollers *e'*, *g'*, *h'*, and *i'*. On the shaft *G'* is secured a pulley, 23, by means of which and a belt or cord, 24, a rotary motion is imparted to the tunnel *p'*. By similar duplicate parts the motion is conveyed to second small circular comb-gear, *D*, and its comb *d*, to the roller-shaft *M* for the roller *m*, its corrugated belt *k*, and rolls *l n r'*, as well as to the shaft *G*, with its roller *E*, and thence to belt *f* and its rolls *e, g, h*, and *i*, and the rotary motion is also conveyed to the tunnel *p* by means of the cord or belt 24 and pulley 23.

t t t t are the supports of the machine, as usual.

What I claim, and desire to secure by Letters Patent, is—

1. In a wool-combing machine, the rotary circular comb *c*, its rollers *e E*, and carrying-apron *f*, in combination with the intermediate rotary tunnel, *p*, the rotary rollers *l' r*, and delivery-tunnel *O*, and suitable means for operating said members, as and for the purpose set forth.

2. In a wool-combing machine, the rotary circular comb *c* and internal rotary comb, *d'*, rollers *e E*, carrying-apron *f*, rotary tunnel *p*, apron *k'*, rollers *l', m', n', and r*, and the delivery-tunnel *O*, and suitable means for operating said members, all combined and arranged as and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSEPH AUSTIN.

Witnesses:

EDWIN A. YALE,

RICHD. W. SARGENT.