

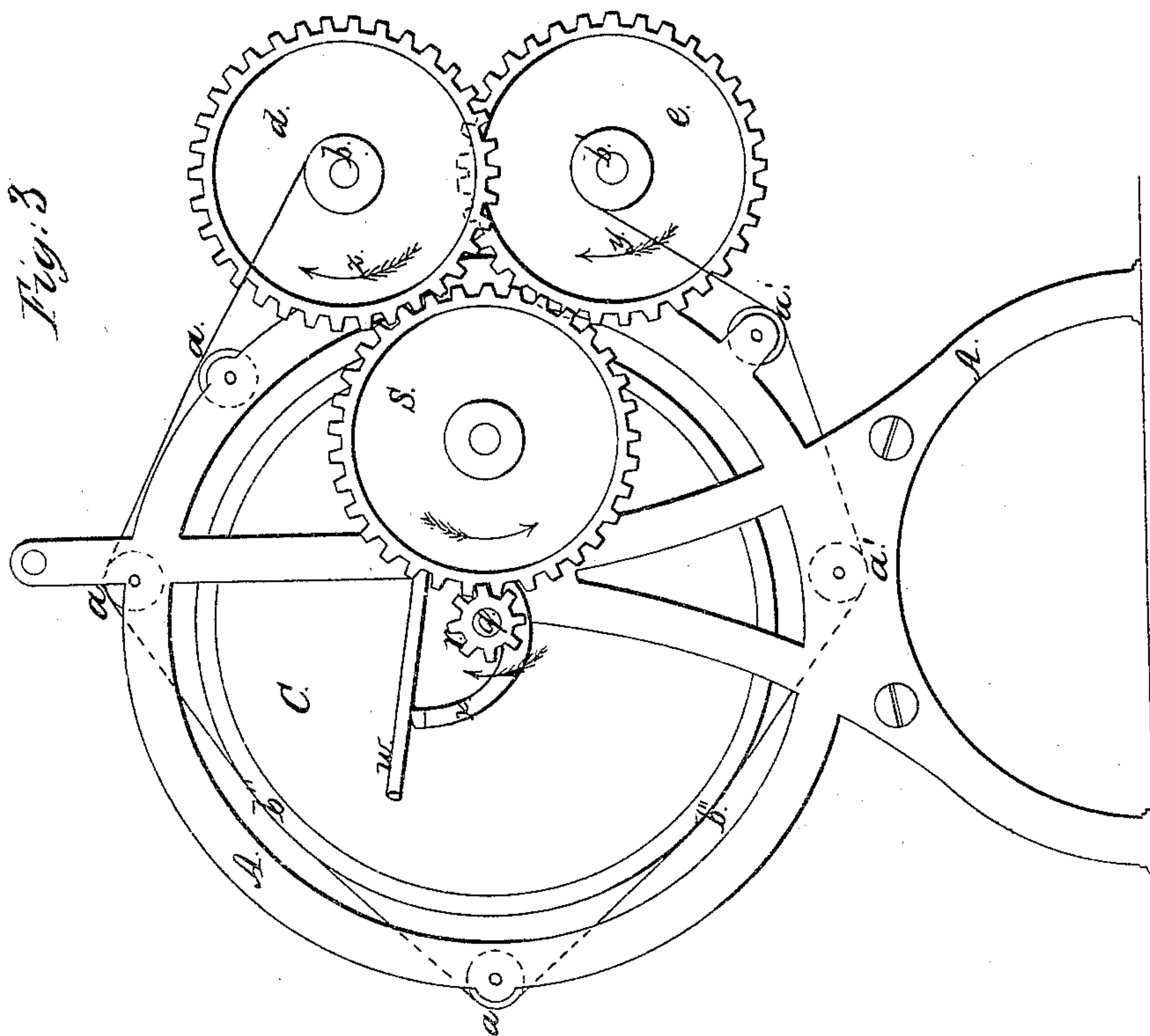
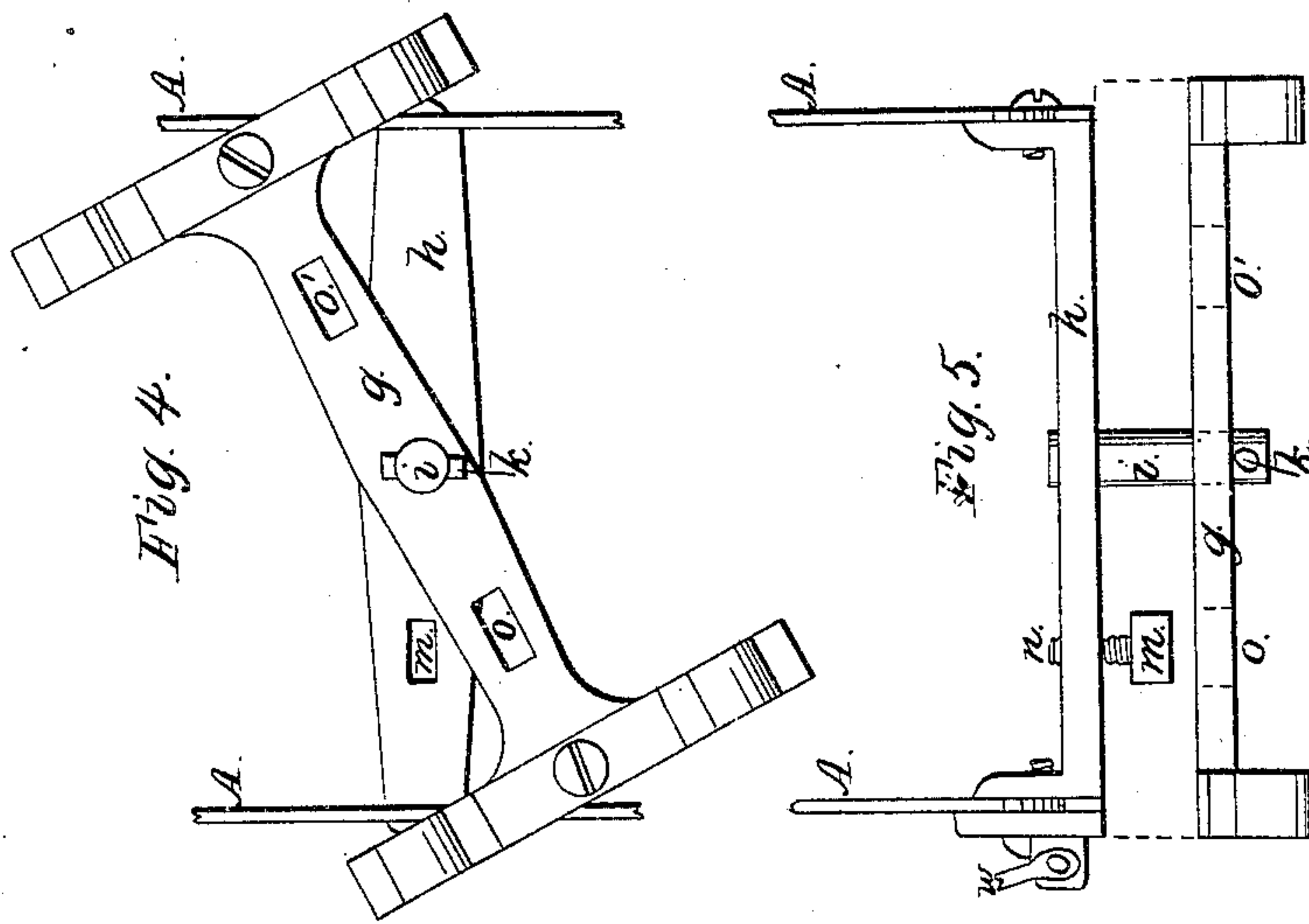
Sheet 2-2 Sheets.

A. Woolson.

Cloth Dressing Mach.

N^o 9,678

Patented Apr. 19, 1853.



UNITED STATES PATENT OFFICE.

AMASA WOOLSON, OF SPRINGFIELD, VERMONT.

GIG-MILL FOR DRESSING CLOTH.

Specification of Letters Patent No. 9,678, dated April 19, 1853.

To all whom it may concern:

Be it known that I, A. WOOLSON, of Springfield, in the county of Windsor and State of Vermont, have made a new and
5 useful Improvement in Gig-Mills, which is also applicable to other machines for dressing cloth; and I hereby declare the following to be an exact description of the same, reference being had to the annexed drawings, making part of this specification.

10 In the process of dressing cloth as formerly practiced the cloth was stretched in a vertical position and the teazel frames were passed over it back and forth in the direction of the warp for the purpose of scratching and tearing out the fibers which were to form the nap of the cloth. In all modern establishments however this operation is performed upon a machine called a gig mill,
15 in which the cloth in passing from one roller to another, is brought in contact with the surface of a revolving drum upon which the teazels are arranged. In this manner the cloth is passed several times back and forth, but as the drum revolves constantly in one direction, the teazeling also takes place only in one direction, and in order to imitate more perfectly the hand operation, in which the teazels are moved back and forth upon the surface of the cloth in gig mills as usually constructed it becomes necessary to detach the cloth from the machine, unwind it from its roller into a heap upon the floor, reverse it end for end, and attach
20 it again to the roller; the cloth is then to be rewound upon the cloth roller before the reverse teazeling can commence. This operation requires about three hours each day of every gig in the factory; as well as of the attendants. Various attempts have been made to avoid this inconvenience, and there are gigs in which the rollers have been so arranged that they could be removed from their bearings and made to change places with each other. By my improvements I am enabled entirely to do away with the delay in question and to make use effectively of the whole time of my machines, as well as of the operatives attending them, without removing the cloth beams from the machine.

25 The nature of my invention consists in hanging the rollers which carry the cloth, and from which it is wound and unwound, one above the other, in a frame or carriage, which is capable of being revolved in a ver-

tical plane, by which means the cloth rollers are made to change places with each other, and the cloth when again traversed in contact with the cylinder, proceeds in the opposite direction with reference to the teazels, and the reverse operation is performed. 60

To enable others skilled in the art, to make and to use my improved machine, I will proceed to describe its construction and operation. 65

Figure 1 is a plan of the machine. Fig. 2 is a front view of the same. Fig. 3 an end view. Figs. 4 and 5 views of detached portions of my improvement, which will be referred to hereafter. 70

A, is the main frame of the machine. B, cross bars or stretchers of the same. C, the main drum upon which are placed the teazels, and which is revolved in contact with the cloth. 75

a, are wooden cylinders or rollers over which the cloth is stretched as seen in Fig. 3.

b and b' are the cloth beams, from one to the other of which the cloth is passed during the operation of teazeling. One of the cloth rollers b, and the cog wheels d and e', are attached to the shaft c, and turn with it; the other roller b', and cog wheels e and d', are in like manner attached to and turn with the shaft f. In the mills heretofore in use these shafts revolve in boxes made stationary in the main frame of the gig; in my machine however the shafts of the cloth beams are boxed into and made to revolve in an auxiliary frame or carriage g, the construction and operation of which will now be described. 80 85 90

h, is a flat metallic bar, making part of the frame-work of the machine, or attached thereto, as seen in Fig. 5, or in any other suitable manner; from the center of this bar projects the pin i, through the end of which passes the key k; upon the bar h, and upon one side of the center is placed a button m, the shank of which works in the bar h with a screw n. In the auxiliary carriage g, are two rectangular holes o, o', either one of which may be passed over the button m, which may then be turned as seen in Fig. 2, and which, by means of the screw n, firmly secures the auxiliary carriage g, to the plate h, and main frame of the machine; when however the button be turned so as to correspond with the rectangular opening of the auxiliary carriage g, Fig. 4, the latter may be slid back upon 100 105 110

the pin *i*, against the key *k*, as seen in Fig. 5. It may then together with the cloth beams and cog wheels, be revolved 180 degrees, which brings the beam *b'* into the position before occupied by *b*, and the cog wheels *d'* and *e'* into the position previously occupied by *d* and *e*; the carriage *g*, is then to be slid up against the plate *h*, the opening *o'* passing over the head of the button *m*, which on being turned half around more or less secures the carriage *g*, to the machine as before.

Motion is communicated to the machine through the pulleys *p* and *p'* upon the shaft *q*. Upon the other end of this shaft is a long pinion *r*.

s, is an intermediate cog wheel fastened to the grooved coupling pulley *v*, and together with it, revolving freely upon the short shaft *t*.

w, is a lever resting upon the arm *x*, by means of which the intermediate wheel *s* is thrown into gear with either one or the other of the cog wheels *d* or *e* upon the auxiliary carriage *g*, the wheel *s*, remaining constantly in gear with the driving pinion *r*. When the wheel *s* is in gear with the wheel *d*, as seen in Figs. 1, 2, and 3 the cloth is wound upon the roller *b*, and unwound from *b'*, sufficient drag being put upon the latter to produce the requisite tension of the cloth. When however the lever *w* is thrown into the position shown in dotted lines in Fig. 1, the wheel *s*, engages with the cog wheel *e*, upon the shaft *f*, of the cloth beam *b'*, and the latter is revolved in the direction of the arrow *y*, of Fig. 3, winding up the cloth, and unwinding it from the roller *b*, which is left free to revolve, being no longer in gear with the intermediate wheel *s*, the drag being now applied to the latter roller.

Operation: At the commencement of the operation one end of the cloth is secured in the customary manner to the roller *b*, it is then passed over the rollers *a* as indicated by the red line in Fig. 3, coming twice in contact with the surface of the main drum *C*, and passing beneath the rollers *a'* is wound upon the other roller *b'*. If now the machine be set in motion, and the lever *w*, be moved so as to bring the wheel *s* into gear

with the wheel *d* the latter is revolved in the direction indicated by the arrow *z* and the cloth is wound upon the beam *b*, and unwound from *b'*, the main drum *C*, in the meantime revolving rapidly comes in contact with the cloth as it passes at the points *b''*, *b''*, and the teasing is effected. In order to the more perfect performance of this operation it is necessary that the surface of the cloth be operated upon by the teazels, as before stated, longitudinally in both directions. For this purpose the cloth is detached from one of the rollers *b* or *b'* and entirely wound upon the other; the auxiliary carriage *g*, is then revolved as before described reversing the positions of the cloth rollers *b* *b'*, and the cog gearing *d*, *e*, *d'*, *e'*. It will now be perceived that the cloth in passing back and forth between the rollers *b* and *b'* is presented to the teasing cylinder in a position the reverse of that which it assumed during the previous operation, and the teasing is thus accomplished as before in both directions. It is estimated that the saving of time effected by this improvement amounts to between two and three hours each day, of both machine and its attendants, but a few seconds being required to unclamp the carriage *g*, revolve it into its new position, pass the cloth again around the cylinder, and set the machine in motion.

It is not my intention to limit myself in the application of this improvement to machines for teasing, but to apply it to other machines used in dressing cloth, wherever the nature of the operation to be performed will admit of such application.

What I claim as my invention and desire to secure by Letters Patent in a gig mill or other machine for dressing cloth is—

Hanging the cloth rollers in a revolving carriage, or its equivalent, by means of which the cloth is run in a reversed direction through the machine without the necessity of unwinding it from, and rewinding it upon the cloth rollers as heretofore practiced.

AMASA WOOLSON.

Witnesses:

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