

(No Model.)

5 Sheets—Sheet 1.

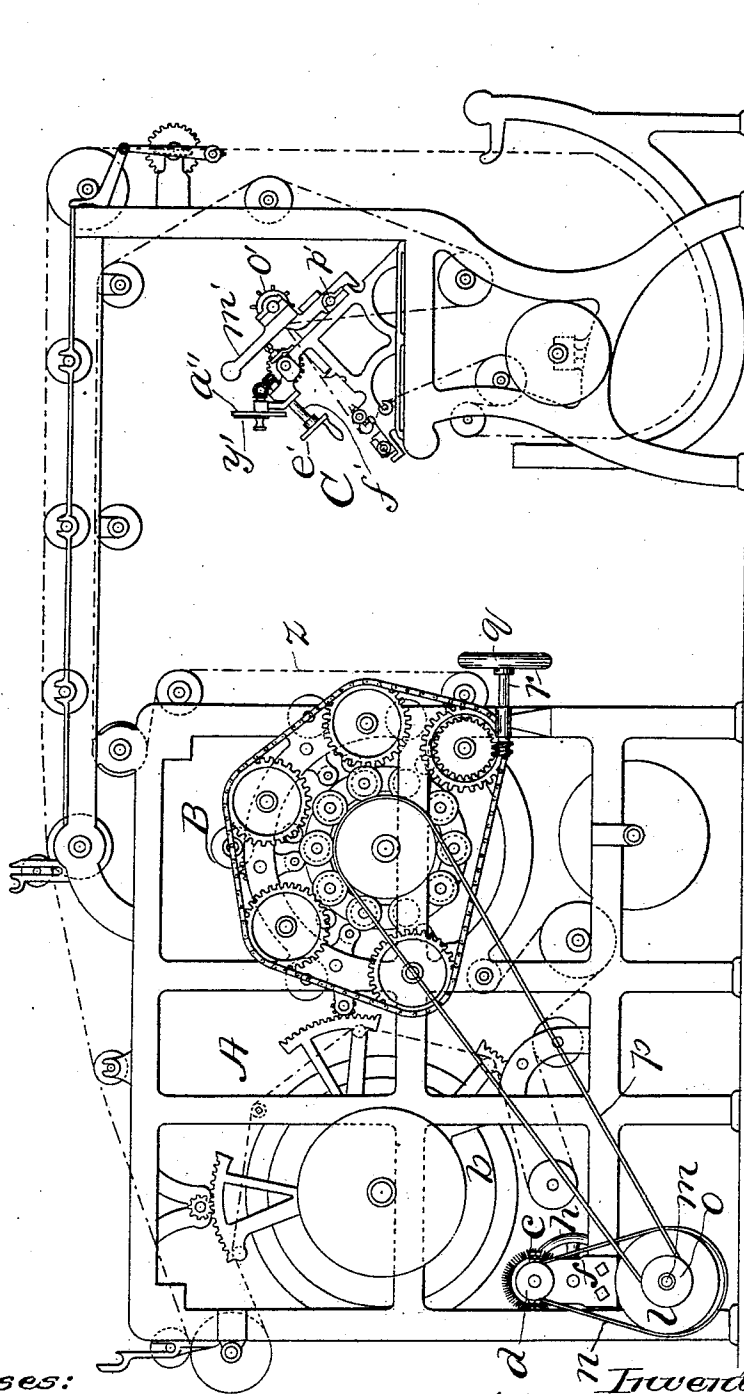
M. LA FOUNTAIN, Jr.

ADJUSTABLE MEANS FOR INSTRUMENTALITIES IN CLOTH
FINISHING MACHINES.

No. 573,669.

Patented Dec. 22, 1896.

Fig. 1.



Witnesses:

Arthur A. Randall,
Mr. Bellamy

Inventor:

M. La Fountain, Jr.
By Arthur W. Crossley,
Att'y.

(No Model.)

5 Sheets—Sheet 2.

M. LA FOUNTAIN, Jr.
ADJUSTABLE MEANS FOR INSTRUMENTALITIES IN CLOTH
FINISHING MACHINES.

No. 573,669.

Patented Dec. 22, 1896

Fig. 3.

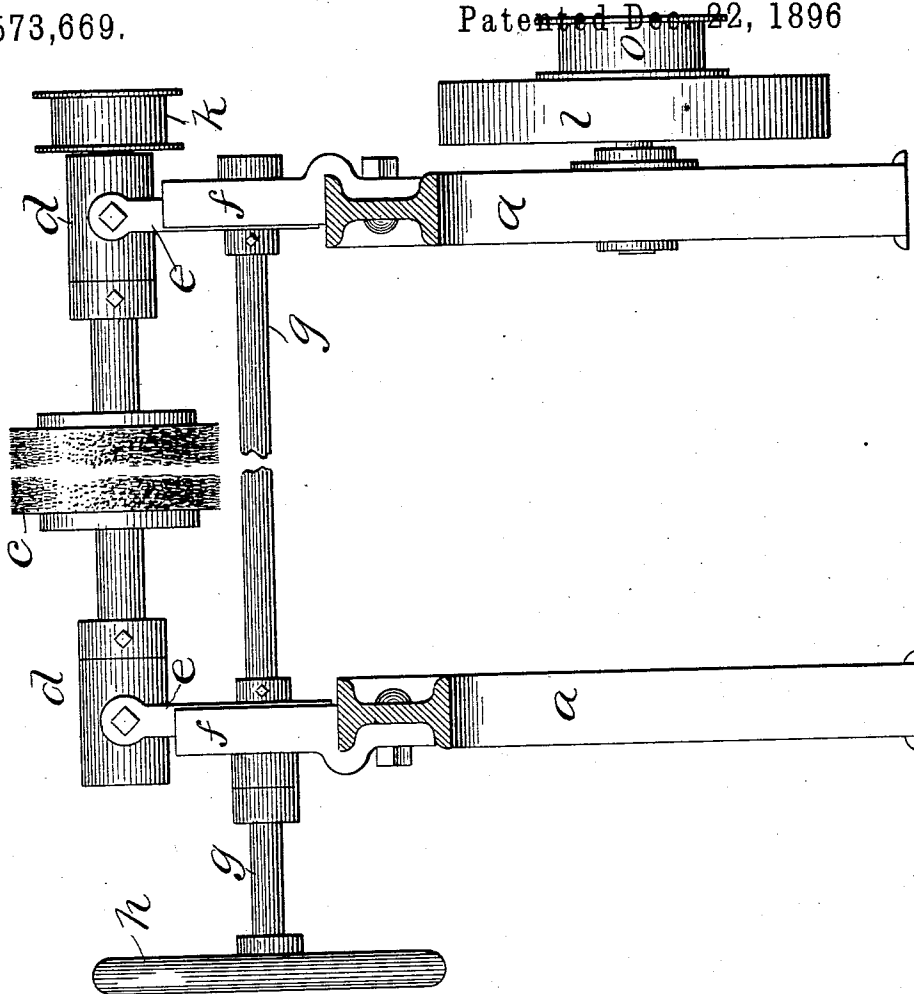
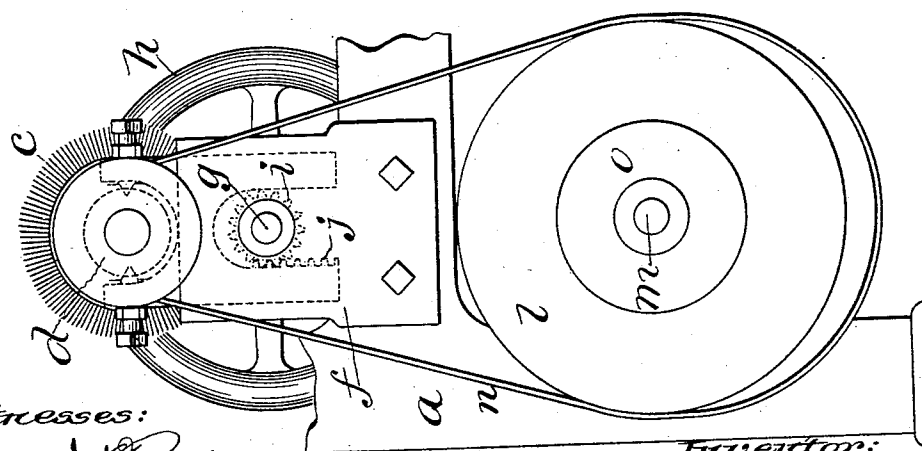


Fig. 2.



Witnesses:

Arthur F. Handall
W. B. May

Inventor:

M. La Fountain, Jr.
Arthur W. Crossley, Atty.

(No Model.)

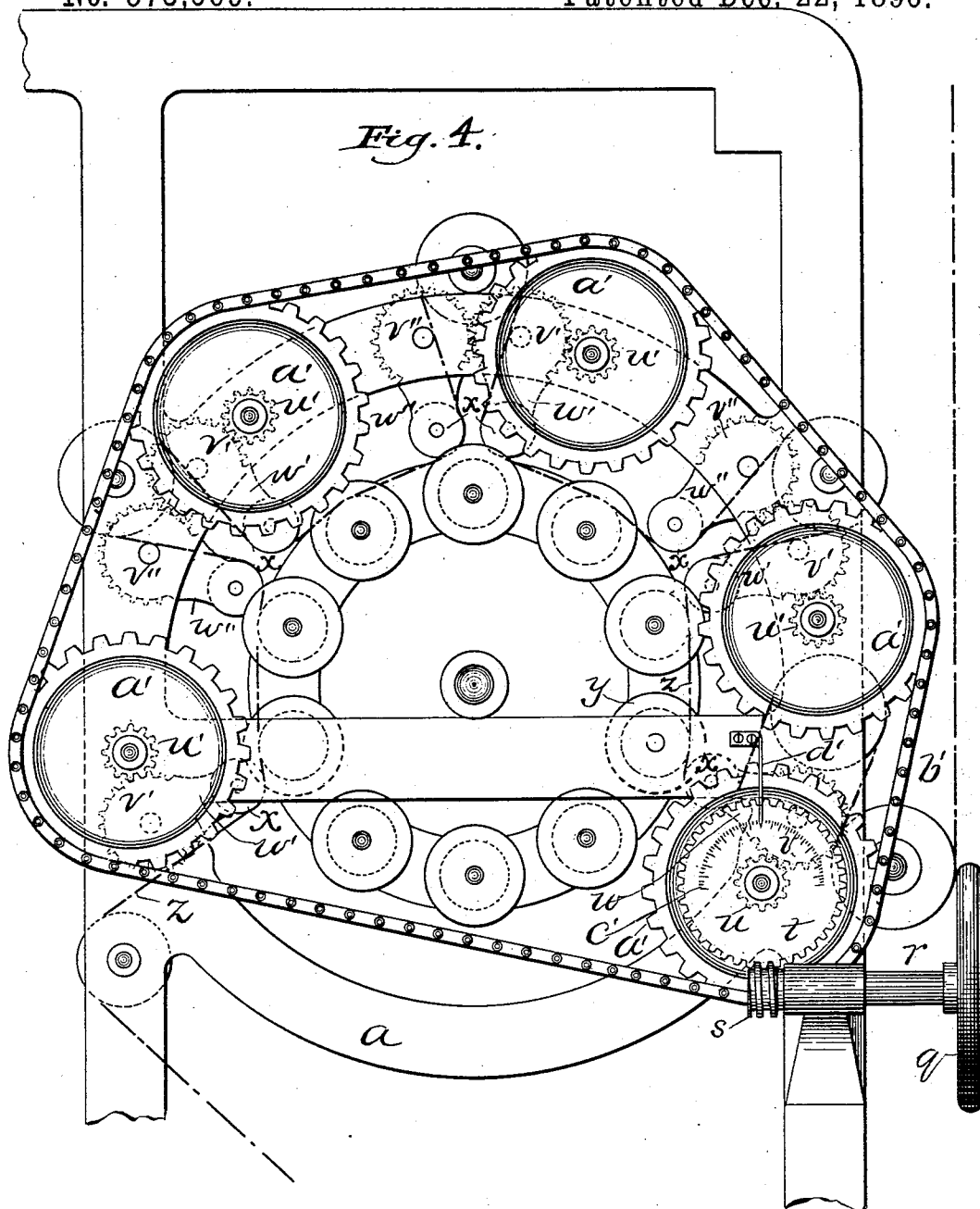
5 Sheets—Sheet 3.

M. LA FOUNTAIN, Jr.

ADJUSTABLE MEANS FOR INSTRUMENTALITIES IN CLOTH
FINISHING MACHINES.

No. 573,669.

Patented Dec. 22, 1896.



Witnesses:

Arthur W. Randall,
W. B. May,

Inventor:

M. La Fountain, Jr.
By Arthur W. Crossley,
Att'y.

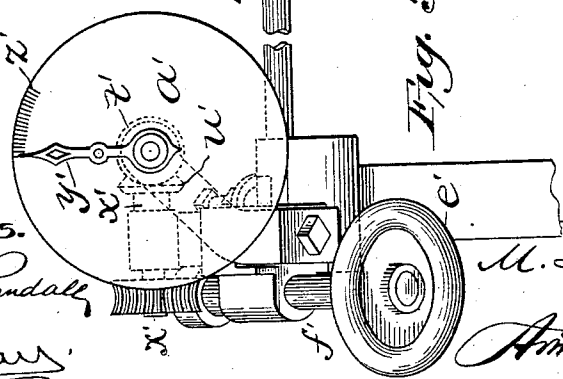
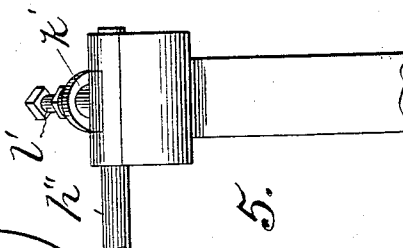
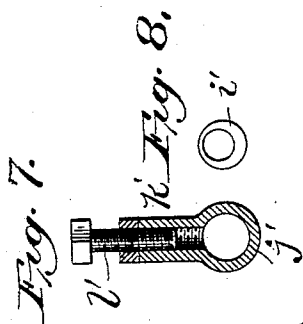
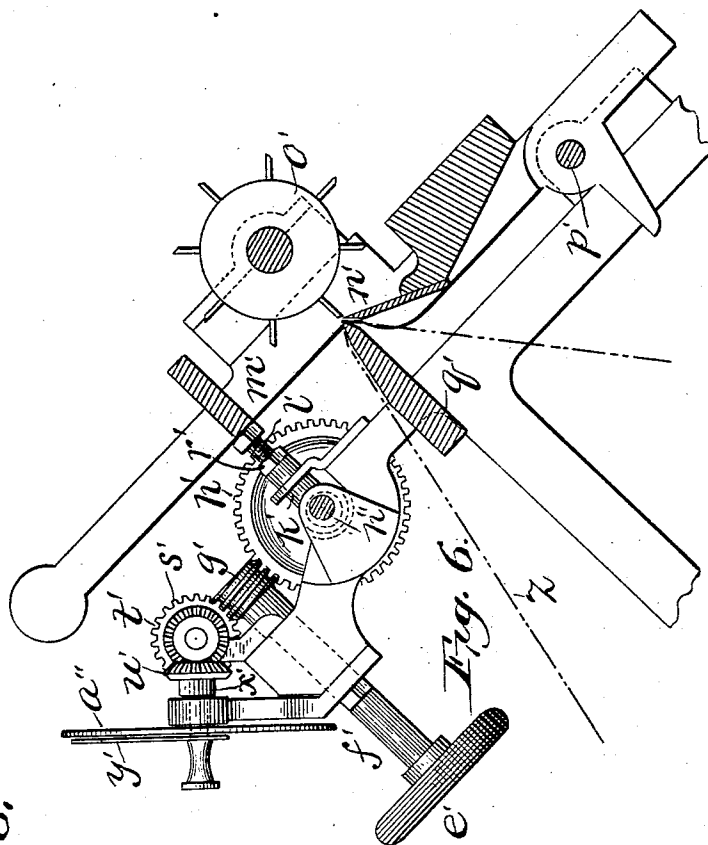
(No Model.)

5 Sheets—Sheet 4.

M. LA FOUNTAIN, Jr.
ADJUSTABLE MEANS FOR INSTRUMENTALITIES IN CLOTH
FINISHING MACHINES.

No. 573,669.

Patented Dec. 22, 1896.



Witnesses.

Arthur T. Randall
W. B. May

Inventor.

M. La Fountain, Jr.
By
Arthur W. Forsley

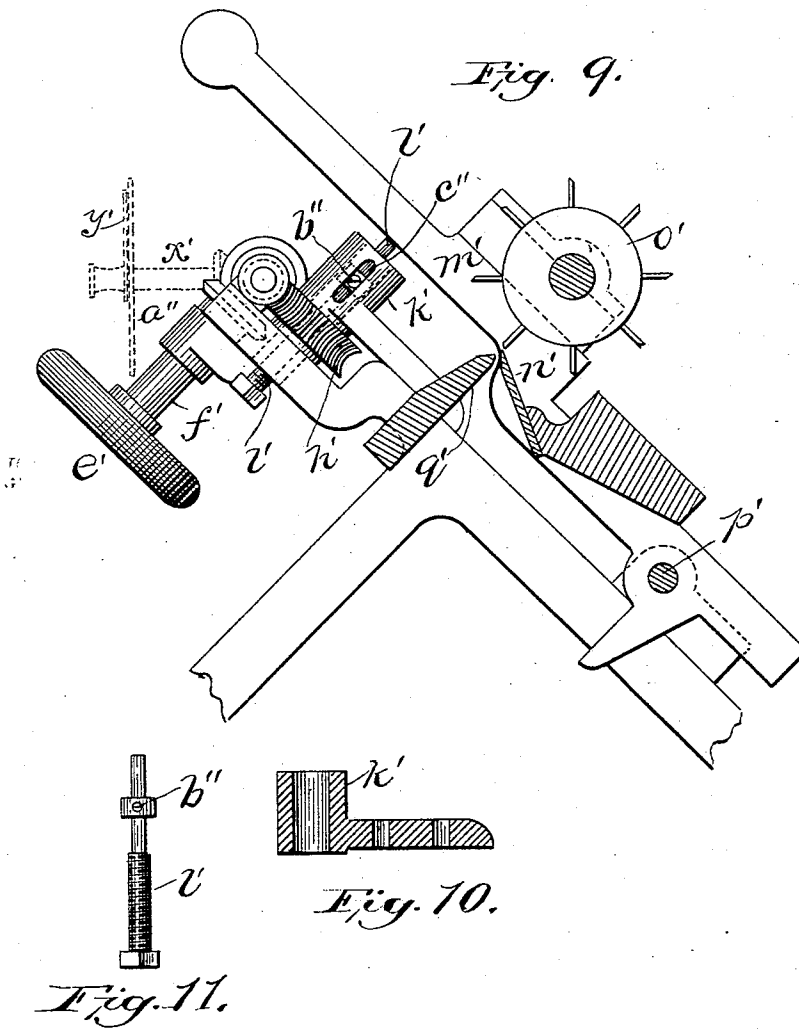
(No Model.)

5 Sheets—Sheet 5.

M. LA FOUNTAIN, Jr.
ADJUSTABLE MEANS FOR INSTRUMENTALITIES IN CLOTH
FINISHING MACHINES.

No. 573,669.

Patented Dec. 22, 1896.



Witnesses.

Arthur J. Randall
W. B. Briggs

Inventor.

M. La Fountain, Jr.
By *Arthur V. Crossley*
Att'y.

UNITED STATES PATENT OFFICE.

MAXIM LA FOUNTAIN, JR., OF SPRINGFIELD, VERMONT.

ADJUSTABLE MEANS FOR INSTRUMENTALITIES IN CLOTH-FINISHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 573,669, dated December 22, 1896.

Application filed November 4, 1895. Serial No. 567,864. (No model.)

To all whom it may concern:

Be it known that I, MAXIM LA FOUNTAIN, Jr., of Springfield, in the county of Windsor and State of Vermont, have invented certain
5 new and useful Improvements in Adjusting Means for Instrumentalities in Cloth-Finishing Machines, of which the following is a specification.

This invention has reference to machines
10 for finishing cloth, such as gigging and napping and shearing machines; and it has for its object the provision of improvements in means for adjusting certain of the instrumentalities in machines of the character mentioned, so as to meet particular requirements
15 or necessities, and to effect such adjustments by a single movement from one side or at one point of the machine.

To these ends my invention consists of a
20 hand-wheel and its shaft combined with the element, part, or device to be adjusted and its movable supports or bearings on opposite sides of the machine, adjusting devices so arranged in connection with the said supports
25 as that they may move the same in order to secure their adjustment, and means intermediate of the said hand-wheel shaft and said adjusting devices on both sides of the machine, whereby the adjusting devices may be
30 operated simultaneously and to the same extent or degree by the operation of the said hand-wheel, all as I will proceed to describe more in detail hereinafter and then point out with particularity in the appended claims.

Reference is to be had to the annexed drawings, forming a part of this specification, and to the letters marked thereon, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a side view of a combined teaseling, gigging, and shearing machine to which my improvements are applicable. Fig. 2 is a detail side view of one form of my improvements, showing it applied
45 in such a way as to operate a wire brush to effect the cleaning or clearing of teasels from all flock or wool that happens to become lodged upon them. Fig. 3 is a rear view of the same, parts being shown as in section and other parts as broken out or broken away.
50 Fig. 4 is an end view showing my improvements as applied in such manner as to adjust

the cloth-guiding rolls in a gigging-machine for the purpose of letting the cloth on or off the gigging rolls or workers, so that the latter
55 may operate with greater or less energy on the cloth, as the same may consist of light or heavy goods, or as circumstances may require. Fig. 5 is a rear view, a part being represented as broken out, showing the invention as
60 adapted to be applied to a shearing-machine for the adjustment of the shearing devices proper, so as to effect a more or less close shearing of the nap. Fig. 6 is a sectional side or end view of what is represented in Fig. 5,
65 and, in addition, parts immediately coacting with the same. Figs. 7 and 8 are detail views of parts comprised in the construction shown in Figs. 5 and 6. Fig. 9 is a view somewhat similar to Fig. 6, but showing a slightly-modi-
70 fied construction. Figs. 10 and 11 are detail views of parts comprised in the construction shown in Fig. 9.

In the drawings, *a* designates the frame or supporting means for the moving parts of the
75 machine, and *A* designates the teaseling part, *B* the napping part, and *C* the shearing part, of a cloth-finishing machine in which these functions are performed. (See Fig. 1.)

Referring to part *A* of said machine and to
80 what is represented in Figs. 2 and 3, *b* is the teaseling cylinder or drum, provided with teasels (not shown) in the usual way. As is well known, the teasels, after being in use for a time, become clogged with flock and wool
85 or other substance, so as to be rendered inefficient until they are cleaned or freed from such clogging substance. Heretofore it has been common in order to clean the teasels to take them off the cylinder and clean them
90 with a hand-card or with a bristle brush. This method was not only inconvenient, but consumed much time, and hence was done at considerable expense. In the application of
95 my invention to this part of the machine this expense and loss of time are avoided, since I am enabled to effect a cleaning of the teasels without removal from the cylinder in less than one minute of time. This is effected by the following instrumentalities operating in
100 combination:

c is a cylindrical wire brush—that is, a brush composed of wires extending radially from the periphery of the cylinder. The said

brush is journaled in boxes *d*, supported by the upper ends of brackets *e*, which are adapted to slide vertically in guideways formed in the uprights *f*, supported on the frame *a*.

5 *g* is a shaft journaled in the uprights *f* and provided upon one end with a hand-wheel *h* and having toothed pinions *i* fixed thereon, which pinions are adapted to engage toothed racks *j*, formed on the sliding brackets *e*, (see
10 Fig. 2,) so that when the said shaft is turned through the medium of the said hand-wheel the sliding bracket, and consequently the brush, may be raised or lowered. When the
15 brush is raised, it will be brought into contact with the teasels on the teaseling-cylinder, and when lowered it will be removed from contact therewith. To make the brush effective by way of clearing the teasels when brought into contact therewith, it must be
20 rotated, and when the said brush is out of contact with the teaseling-cylinder it is desirable that it should be quiescent. These ends are attained through the means next to be described.

25 *k* is a pulley fixed on one end of the brush-shaft, around which pulley and a pulley *l*, turning on the short shaft *m*, secured to the frame, there passes a belt *n*. Compounded with or secured to the pulley *l* is a pulley *o*,
30 driven by a belt *p* from a pulley on any suitable moving shaft of the machine. When the brush is in lowered position, as is shown in the drawings, though the pulley *l* will be driven the belt *n* will not be operated, but
35 when the said brush is raised the belt will be tightened on the pulley *l* and the brush will be rapidly rotated, so that when it is brought into contact with the teasels it will quickly and thoroughly clean or free them from all
40 clogging substances. When the hand-wheel is released by which the brush is raised, said brush will be lowered by its own gravity to the position shown in the drawings and its rotation will cease. The wire brush is an important feature of this part of my invention.

45 Another part or application of my invention is illustrated in Fig. 4 in connection with what is portrayed at B in Fig. 1. In these figures the invention is shown as employed
50 to let the cloth in a gigging-machine on and off the napping-rolls by the adjustment of the guide-rolls.

In the instance at present under consideration, *q* designates a hand-wheel whose shaft *r*
55 is provided with a worm *s*, which engages and is adapted to turn a worm-gear *t*, compounded or connected with which is a pinion *u*, which meshes with a gear or segment *v*, provided with an arm *w*, in the end of which is journaled one end of a cloth-guiding roll *x*. Under these conditions when the hand-wheel *q* is turned the segment *v* may be likewise turned and so move the cloth-guiding roll *x* nearer to or farther away from the napping-
60 rolls *y*, causing the cloth *z*, passing thereover and guided thereby, to bear with greater or less force on the napping-rolls, with the re-

sult of securing greater or less napping energy in the operation of the last-mentioned instrumentalities.

70 Compounded with the worm-gear *t* and pinion *u* and turning upon the same shaft is a sprocket-wheel *a'*, about which and four similar sprocket-wheels *a'* is passed a sprocket-chain *b'*, so that the said four additional
75 sprocket-wheels are turned in unison with and to the same extent as the sprocket-wheel first described. Compounded with each additional sprocket-wheel *a'* is a pinion *u'*, similar to the pinion *u*, which engages a toothed
80 gear *v'*, provided with an arm *w'*, which carries one end of a cloth-guiding roll *x*. Each toothed gear or segment *v'* engages a similar gear or segment *v''*, provided with an arm *w''*, likewise having one end of a cloth-guiding
85 roller *x* journaled therein. It will now be seen that as each additional sprocket-wheel is moved it will operate the cloth-guiding rolls journaled in the arms *w'* and *w''* through the medium of the gearing described,
90 so as to let the cloth on or off the napping-rolls, or, in other words, so as to cause the cloth to bear with greater or less force on the napping-rolls.

95 It will be understood that the shaft to which the worm-wheel *t* is secured may extend through the machine, so that the cloth-guiding rolls may be operated and controlled by means similar to those just described and in exact unison therewith, all movements being
100 accomplished by the one operation of turning the hand-wheel *q*.

On the face of the worm-wheel *t* there is inscribed a suitable scale *c'*, which, in connection with the fixed pointer or hand *d'*, indicates with exactness the degree of adjustment
105 of the cloth-guiding rolls toward or from the napping-rolls and affords a means of adjusting the said cloth-guiding rolls with certainty to suit different grades or weights of goods. A
110 great saving of time is also effected by being able to make the adjustments from a single point in the machine and by the movement of a single device, namely, the hand-wheel *q*.

115 Figs. 5 to 8, inclusive, in connection with section C of the machine shown in Fig. 1, illustrate another part of my improvements. In this case the invention is shown as employed to adjust the ledger-blade and rotary shear with respect to the rest over which the cloth
120 *z* passes.

Heretofore it has been usual to adjust the ledger-blade and shear by means of a screw on each side of the machine, the operator turning the said screw to effect the adjustment
125 on one side of the machine, and then going over to the opposite side and performing the same operation. Those skilled in the art will understand that this method not only consumed much time, but was uncertain
130 in its effects. By the use of my improved means I can secure the desired adjustment from a single point and by the movement of a single element or instrument and with cer-

tainty of getting the same degree of adjustment on both sides.

In the figures now under consideration, e' designates a hand-wheel on the shaft f' , on which is a worm g' , which engages a worm-gear h' , on whose shaft h'' is fixed an eccentric i' , which operates in a surrounding strap j' , forming part of a hollow interiorly-screw-threaded stud k' . Tapped into the stud k' is a screw l' , on which the frame m' , carrying the ledger-blade n' and rotary shear o' , rests. The frame m' is pivoted at p' , so that as the free end of the said frame is raised or lowered the ledger-blade and rotary shear will be carried farther away from or be brought nearer to the rest q' , over which the cloth z travels, and so effect a longer or closer shear of the nap on the cloth. A check-nut r' holds the screw l' in adjusted position in the stud k' .

It will now be seen and clearly understood that the adjustment of the ledger-blade and shear may be effected by the simple operation of the hand-wheel e' , it being kept in mind that the shaft h'' extends across the machine and is equipped with similar co-operating means on the opposite side, as is clearly indicated in Fig. 5. Any other equivalent means may be employed in lieu of the shaft h'' for effecting the adjustment of the frame-supporting screw l' on the side of the machine opposite to that shown in Fig. 6. The worm g' also engages a worm-wheel s' , which, through the medium of bevel-wheels t' and u' , turns a shaft or arbor x' , on which is fixed a pointer or hand y' , which, in connection with a scale z' on a fixed dial a'' , indicates with exactness the extent and direction of adjustment of the shearing devices.

In Figs. 9 to 11, inclusive, a slightly-modified form of means is shown for effecting the adjustment of the frame m' . In this instance the stud or support k' for the screw l' is not internally screw-threaded, but the worm-gear h' is, and the latter engages the said screw l' , which is kept from turning in its stud or support k' by means of a pin b'' , operating in a slot c'' of the said stud or support k' . By this means the turning of the worm-gear h' moves the frame-supporting screw up or down, as the case may be. I attach great importance in this part of my invention to the fact that the adjusting means on both sides of the machine are so connected that by the operation of a single hand-wheel or its equivalent the adjusting means on both sides are operated in unison and to exactly the same degree or extent.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A teasel-cleaner consisting of a driving-pulley, a rotary wire brush mounted in bearings movable between the driving-pulley and the teaseling-cylinder, racks connected with

the movable bearings, pinions for moving the racks, a hand-wheel for operating the said pinions, a pulley on the shaft of the rotary wire brush, and a belt connecting the two pulleys, the belt being of such length that when the brush is moved to engage the teasels, the brush will be rotated, and will be quiescent when it is away from the teaseling-cylinder.

2. In a cloth gigging or napping machine, the combination with the napping-rolls and the guide-rolls for letting the cloth on and off the latter, of arms in which the guiding-rolls are journaled, toothed gears or segments forming a part of said arms, a hand-wheel and its shaft, and gearing between the said hand-wheel and its shaft and all of the said toothed gears or segments for moving the same in unison and to the same degree or extent, as set forth.

3. In a cloth gigging or napping machine, the combination with the napping-rolls and the guide-rolls for letting the cloth on and off the latter, of arms in which the guiding-rolls are journaled, toothed gears or segments forming a part of said arms, a hand-wheel and its shaft, gearing between the said hand-wheel and its shaft and all of the said toothed gears or segments for moving the same in unison and to the same degree or extent, and a scale and hand or pointer to indicate the extent and direction of movement or adjustment of the said gears or segments and their adjuncts, as set forth.

4. In a cloth-shearing machine, the combination with the cloth-rest, a ledger-blade, a rotating shear, and an adjustable frame on which said blade and said shear are supported, of means for adjusting the said frame, a cross-shaft for operating the said means in unison and to the same extent, gearing for rotating the said shaft and a single hand-wheel for actuating said gearing, substantially as set forth.

5. In a cloth-shearing machine, the combination with a cloth-rest, an adjustable frame, and a ledger-blade and rotating shear supported on said frame, of a movable stud for each side of the frame, a cross-shaft having means engaging the studs, for moving them longitudinally, and a hand-wheel for rotating said shaft to adjust the studs and the frame.

6. In a cloth-shearing machine, the combination with a cloth-rest, an adjustable frame, and a ledger-blade and rotating shear supported on said frame, of a movable stud for each side of the frame, a cross-shaft having means engaging the studs, for moving them longitudinally, a hand-wheel for actuating said shaft to adjust the frame, and a scale and pointer to indicate the extent and direction of adjustment of the said frame.

7. In a cloth-shearing machine, the combination with a cloth-rest, an adjustable frame, and a ledger-blade and rotating shear supported on said frame, of a movable stud for each side of the frame, means for adjusting

the frame relatively to each stud, a cross-shaft having means for adjusting the studs simultaneously, a worm-wheel on said shaft, and a hand-wheel provided with a worm for
5 engaging and actuating said worm-wheel and shaft.

In testimony whereof I have signed my

name to this specification, in the presence of two subscribing witnesses, this 30th day of October, A. D. 1895.

MAXIM LA FOUNTAIN, JR.

Witnesses:

ALICE M. WHEELER,

MERRILL L. LAWRENCE.