

(No Model.)

3 Sheets—Sheet 1.

WALTER LORD & WILL LORD.
EVENING MECHANISM FOR OPENERS AND SCUTCHERS.

No. 575,780.

Patented Jan. 26, 1897.

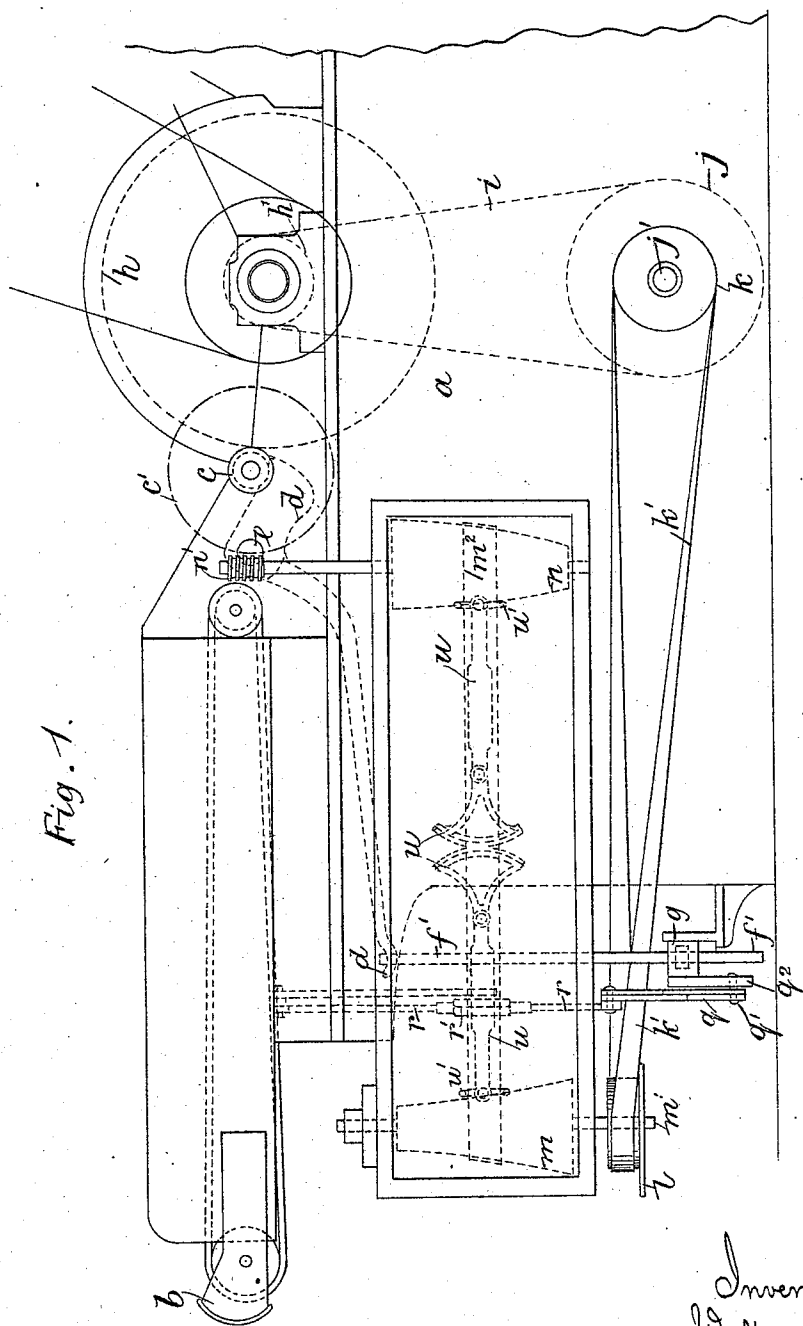


Fig. 1.

Witnesses

H. van Oudenmaele
C. A. Scott

Inventors
Walter Lord
Will Lord

by *Richard R.*
Attorneys

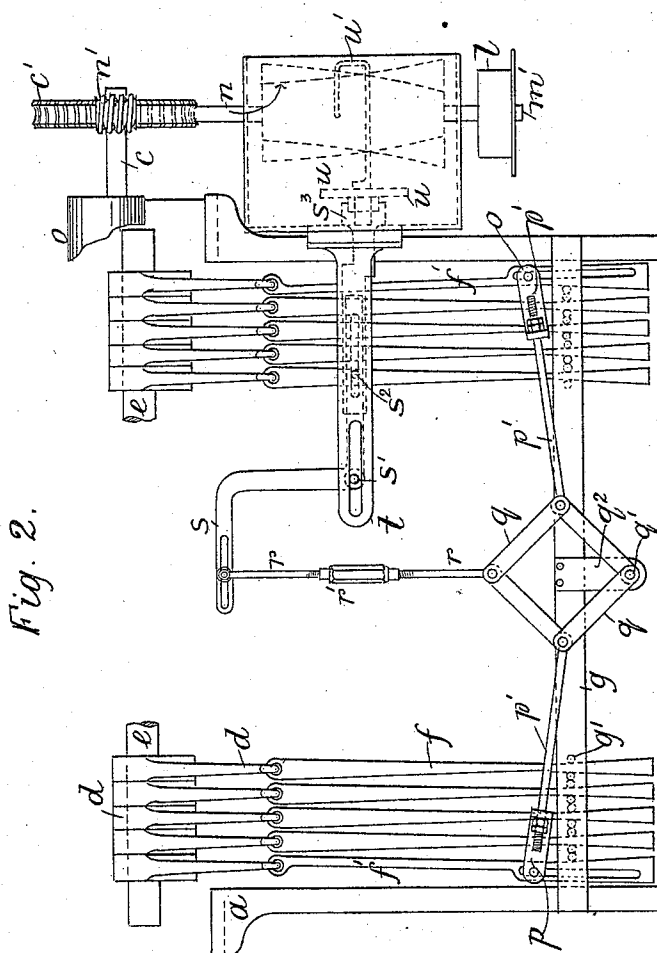
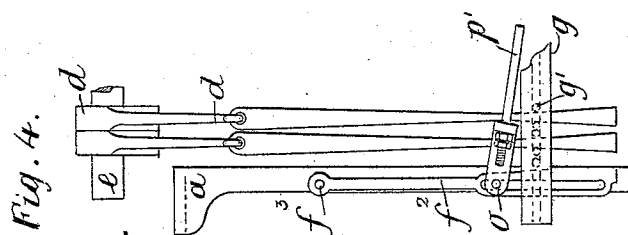
(No Model.)

3 Sheets—Sheet 2.

WALTER LORD & WILL LORD.
EVENING MECHANISM FOR OPENERS AND SCUTCHERS.

No. 575,780.

Patented Jan. 26, 1897.



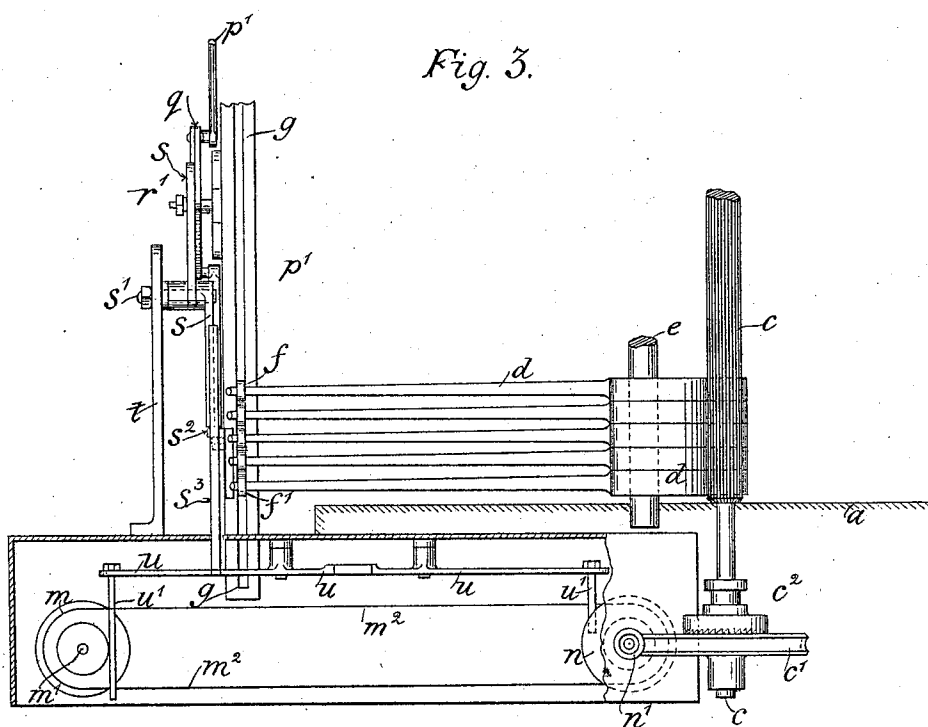
Witnesses
H. van Dusen
E. A. Scott.

Inventors
Walter Lord
Will Lord
by *R. Anderson*
Attorneys

3 Sheets—Sheet 3.

No. 575,780.

Patented Jan. 26, 1897.



Witnesses
H. van Oldenmeel
E. A. Scott

Inventors
Walter Lord
Will Lord

by *Richard R*
Attorneys

UNITED STATES PATENT OFFICE.

WALTER LORD AND WILL LORD, OF TODMORDEN, ENGLAND.

EVENING MECHANISM FOR OPENERS AND SCUTCHERS.

SPECIFICATION forming part of Letters Patent No. 575,780, dated January 26, 1897.

Application filed June 30, 1896. Serial No. 597,606. (No model.) Patented in England December 12, 1895, No. 23,816.

To all whom it may concern:

Be it known that we, WALTER LORD and WILL LORD, subjects of the Queen of Great Britain, residing at Todmorden, in the county of York, England, have invented certain new and useful Improvements in Openers and Scutchers for Cotton and other Fibrous Materials, (for which we have obtained Letters Patent in Great Britain, No. 23,816, bearing date December 12, 1895,) of which the following is a specification.

Our invention relates to openers and scutchers; and it consists of improvements in the feed-regulating apparatus commonly known as the "piano-feed."

In carrying our improvements into effect we couple each end pendant or fish-tail lever by an adjustable rod to an arrangement of toggle-levers, which are pivoted on a fixed center secured to a bracket fixed at or about mid-length of the box or frame in which the pendants are guided. The opposite center of the toggle-levers is connected by an adjustable rod and elbow-lever or other suitable connections to the strap-fork guide-levers by which the strap is shifted on the cones.

In order that our invention may be fully understood and readily carried into effect, we will describe the accompanying three sheets of drawings, reference being had to the letters marked thereon.

Figure 1 is a side elevation, Fig. 2 is an end elevation, and Fig. 3 a plan, of the piano-feed-regulating motion of an opener or scutcher made according to our invention; and Fig. 4 is a view of a part of Fig. 2 to illustrate a modification.

In the drawings, *a* represents the frame of the machine; *b*, the feed-apron; *c*, the feed-roller; *d*, the pedals, pivoted on a shaft *e*. One end of each of these pedals bears against the under side of the feed-roller *c*, and from the other end of the pedals are suspended the fish-tail levers *f*. The ends of these levers are tapered, with the largest end at the bottom, where they pass through a box or frame *g* and are separated from one another by bowls or rollers *g'*, supported in the frame *g*.

On the axis of a beater-cylinder *h*, Fig. 1, is mounted a pulley *h'*, which by means of a band *i* gives motion to a pulley *j* on a shaft *j'*. A pulley *k* on this shaft gives motion by

a strap *k'* to a pulley *l*, secured upon the shaft *m'* of one of the pair of regulating-cones *m* and *n*, the latter of which is driven by a strap *m²* from the cone *m*.

Each end fish-tail lever *f'* is slotted, (see Fig. 2,) and in each slot is a bolt *o* for securing a bracket *p* in any desired position to the slotted levers *f'*. To these brackets are secured rods *p'*, which are connected at their other ends to toggle-levers *q*, pivoted on a fixed stud *q'*, carried in a bracket *q²*, the opposite joint of the toggles being connected by a rod *r*, made in two parts and united by a right and left hand nut *r'* to an elbow-lever *s*, pivoted on a stud *s'*, fitted in a slot in a stationary bracket *t*. The other end of the lever *s* is connected by a bolt *s²* to an adjustable bar *s³*, fitted to clip over one of the pair of pivoted toothed quadrant-arms *u*, which are geared together and carry strap-fork guides *u'* for the cone-strap *m²*. On the shaft of the cone *n* is secured, as usual, a worm *n'*, which gears into a worm-wheel *c'*, mounted loosely on the feed-roller *c*. A sliding clutch *c²*, mounted on a feather-key on the feed-roller, gears into clutch-teeth on the worm-wheel for stopping and starting the feed-roller as required.

In Fig. 4 special end pendants *f²*, pivoted to the frame *a* at *f³*, are shown instead of the pendants *f'*.

In operation when the cotton or other fiber passes in extra large lumps over, say, one, two, or more of the pedal-levers *d* the ends of these levers with their dependent fish-tail levers *f* are raised, and this lifting movement of the fish-tail levers causes one of the end levers *f'*, or both of them, to move outward, whereby the toggle-levers *q* are moved and the rod *r* is drawn down. This movement being conveyed to the elbow-lever *s*, fulcrumed at *s'*, raises its other end and the bar *s³*, which clips one of the toothed quadrant-arms *u* and so moves both of the quadrant-arms and the two strap-forks *u'*, the latter moving the strap *m²* upward, thus reducing the speed of the driven cone *n* and by the worm *n'* and worm-wheel *c'* giving a slower speed to the feed-roller *c* and checking the supply of fiber to the machine until the lumps of fiber have passed beyond the feed-roller, when the parts regain their normal positions.

Having now particularly described and as-

certained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim, and desire to secure by Letters Patent of the United States,

5 is—

1. In combination, the feed-roller, the pedal-levers engaging the same, the depending fish-tail levers, the guide-box therefor, the laterally-movable levers f' one at each end
10 of the row of fish-tail levers, the toggle-levers arranged between the levers f' , the connecting-rods p' between the toggle-levers and the levers f' , the driving-cones and strap, and the shifting mechanism therefor, comprising
15 the lever and the rod connecting said lever with the toggle-levers, substantially as described.

2. In combination, the feed-roller, the pedal-levers and fish-tail levers, the guide-box
20 therefor, the driving-cones, the lever mechanism for shifting the strap thereon and means

for operating the said lever mechanism comprising the toggle-levers, the connection therefrom to the fish-tail levers, and the connection to the shifting-lever mechanism, substantially as described. 25

3. In combination, the feed-roller, the pedal-levers, the fish-tail levers, the guide-box, the shifting driving mechanism, the toggle-levers pivotally connected to the guide-box
30 to be supported thereby and the connections from the toggles to the fish-tail levers and the shifting mechanism respectively, substantially as described.

In witness whereof we have hereunto set
our hands in presence of two witnesses. 35

WALTER LORD.
WILL LORD.

Witnesses:

H. B. BARLOW,
HERBERT R. ABBEY.