

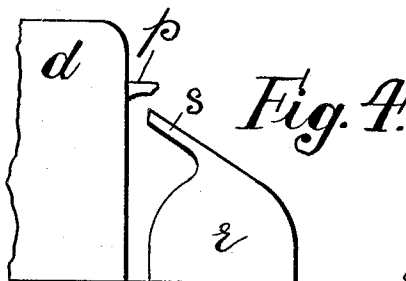
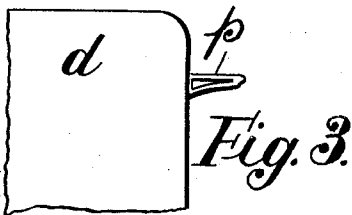
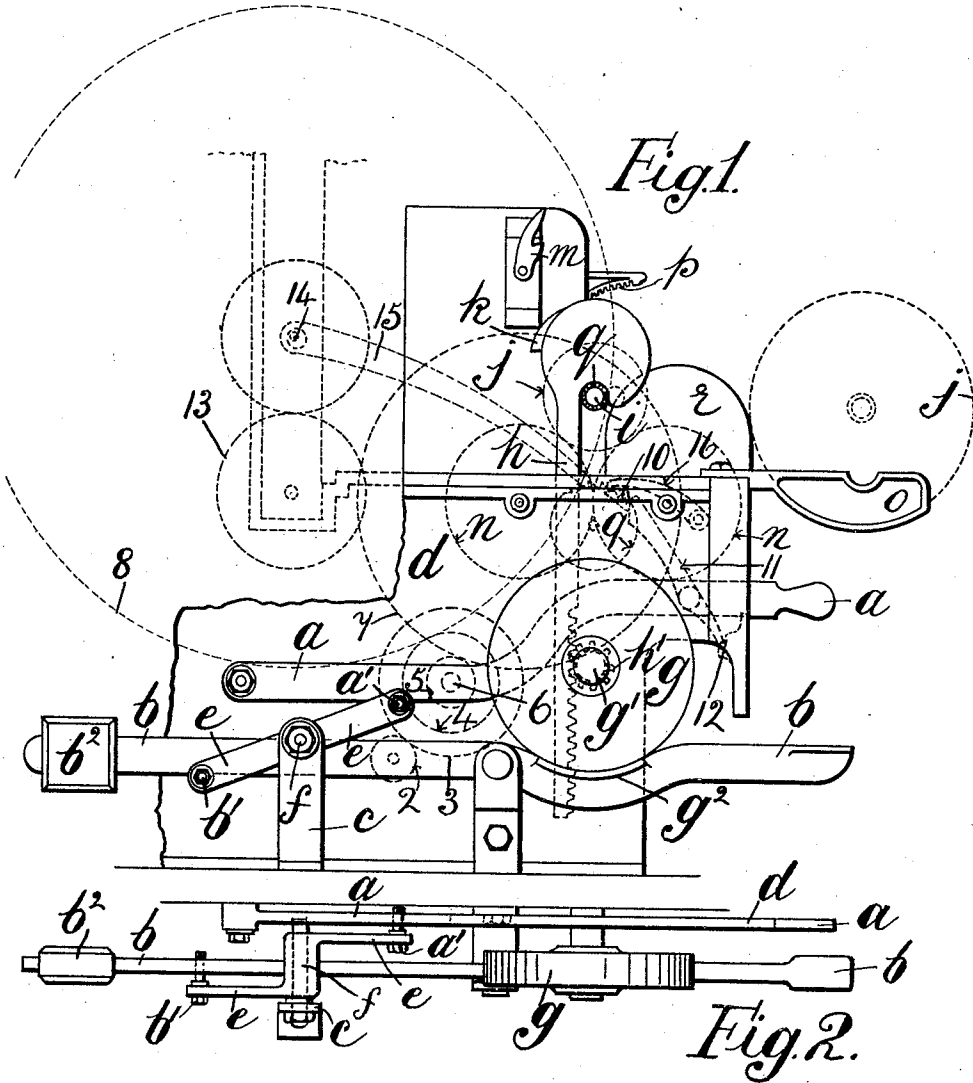
F. BARLOW.

LAPPING MECHANISM OF OPENERS, SCUTCHERS, AND LIKE MACHINES.

APPLICATION FILED MAY 12, 1910.

1,062,757.

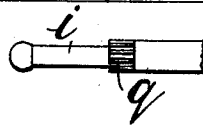
Patented May 27, 1913.



Witnesses

John Miller
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Fig. 5.



Inventor

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UNITED STATES PATENT OFFICE.

FRANK BARLOW, OF HYDE, ENGLAND.

LAPPING MECHANISM OF OPENERS, SCUTCHERS, AND LIKE MACHINES.

1,062,757.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed May 12, 1910. Serial No. 561,008.

To all whom it may concern:

Be it known that I, FRANK BARLOW, subject of the King of Great Britain and Ireland, and resident of Hyde, in the county of Chester, England, manager, have invented certain new and useful Improvements in or in Connection with the Lapping Mechanism of Openers, Scutchers, and Like Machines, of which the following is a specification.

My invention relates to improvements in the lapping mechanism of openers, scutchers and like machines employed in the preparation of cotton or other fibers for spinning or other purposes, the object being to provide means for raising the completed lap, for automatically taking off the brake and in conjunction therewith means for discharging the completed lap automatically on to the cradle at the discharge end of the machine.

Prior to the date of my invention it has been necessary to employ manual labor for removing the completed lap from the roller mechanism by which it is formed into a lap roll as will be well understood. It very often happens under the present arrangement that the completed lap is continued to be rolled before being removed when the machine attendant is not near the machine at the time the lap is completed, and as a consequence the severed end of the lap is more or less consolidated with the layer beneath it so rendering it difficult to find besides which it is damaged or "rat-tailed."

My invention is designed with the object of overcoming the aforesaid defects and consists essentially in means for communicating motion from the ordinary hand block lever to the weighted brake lever so that the brake may be taken off, means for supporting the vertical racks in the position to which they are raised by the elasticity of the lap after the brake has been removed and means for discharging the completed lap into the lap cradle, the whole of the mechanism acting automatically.

My invention will be fully described with reference to the accompanying drawings in which,

Figure 1 is a side elevation of so much of a scutcher lap machine as is necessary to illustrate my invention, Fig. 2 plan of same, Figs. 3 and 4 partial side elevations of a scutcher lap machine showing modifications hereinafter referred to and Fig. 5 partial plan of a lap rod or roller forming part of my invention.

In accordance with my invention I arrange adjacent to the drop lever *a* and brake lever *b* a bracket *c* which may either be fixed to the floor adjacent to the machine or be secured to the framing *d* of the latter. I adjustably pivot to this bracket a double armed lever *e*, mounted on a stud or pin *f* secured to the bracket. The arms of the lever *e* are provided at each end with an adjustable stud or equivalent means, one stud *a*¹ projecting beneath the underside of the drop lever *a* and the other *b*¹ at the underside of the brake lever *b* thus forming a beam lever with a stud or projection at each side its pivotal center. By means of this arrangement it will be understood that when the outer end of the drop lever *a* descends on the completion of a lap in the ordinary way such lever comes in contact with the stud *a*¹ beneath it thereby moving the beam lever about its stud or pin *f* and so bringing the second stud *b*¹ under the weighted arm of the brake lever *b* and simultaneously removing the brake shoe from the brake drum *g* operating in conjunction with the vertical racks *h* by the upper hooked ends of which the lap rod or roller *i* is held during the lapping process. The racks are therefore free to be lifted a little distance by the resiliency of the lap roll *j* to their uppermost position when a projecting catch or tooth *k* on one of them operates a pivoted catch or pawl *m* which afterward falls beneath the aforesaid projection on the rack and so relieves the lap of weight.

I combine with the mechanism hereinbefore described means for discharging or removing the completed lap from the usual fluted calender rollers *n* on to the lap cradle *o* adjacent thereto. For this purpose I form in one with or secure to the frame *d* of the machine above the lap roller or rod and at each end a fixed or adjustable rack *p* and fix on or form in one with the lap roller at each end pinions *q*. When the lap is completed and the racks raised to the uppermost position referred to the pinions *q* come into gear with the stationary racks and as the calender rollers *n* continue to rotate the frictional contact of the outer one with the periphery of the lap causes the latter to rotate and the pinions to have rolling contact with the racks *p* as a result of which the lap is automatically discharged on to the cradle *o*.

Any approved driving mechanism is provided. A toothed pinion 2 is driven by the

main driving shaft of the machine. This pinion gears into a toothed wheel 3 mounted on a shaft 6 on which are also mounted pinions 4 and 5. The shaft 6 is journaled in the drop lever *a* at one end, and its other end, at the other side of the machine, is journaled in a swiveled bearing so as to permit the shaft to move downward with the drop lever without interfering with the action of the gearing at the other side of the machine. The pinion 4 drives a toothed wheel 8 which is secured on the upper shaft of the lap delivery rollers 13 13¹, and the pinion 5 drives a toothed wheel 7 secured on the shaft of one of the calender rolls *n*. The pinion 5 drives the wheel 7 continuously, even when the drop lever *a* falls. The fall of the drop lever *a* is controlled by a catch 11 which is pivoted to it, and the lower end of this catch normally engages with a stationary projection 12 on the frame of the machine. When the catch is in engagement with this projection, the lever *a* is held up and the pinion 4 is held in gear with the wheel 8.

The catch 11 is released from the projection 12 by means of a timing wheel 9 provided with a cam 10. This wheel 9 is operated by a pawl 15 worked by an eccentric 14 secured on the shaft of the upper feed roller 13¹. When the cam engages with the upper end of the catch or lever 11 it forces its upper end outward and releases its lower end from the projection 12, thus allowing the lever *a* to drop by gravity and move the pinion 5 out of gear with the wheel 8. When the lever *a* is lifted again, the catch 11 is placed on the projection 12. The timing wheel has ratchet shaped teeth around its periphery for the pawl to engage with, and it is arranged and proportioned to operate for any desired diameter of lap *j*. The racks *h* gear into the toothed pinions *h*¹ secured on the shaft *g*¹, which shaft has a brake sheave or wheel *g* secured on it. The brake lever *b* is pivoted to the frame and carries a brake *g*² which is normally held in contact with the brake wheel by a weight *b*². The brake retards the motion of the shaft *g*¹ which is revolved by the racks which engage with the pinions *h*¹. The racks revolve the shaft as the lap *j* increases in diameter, against the frictional resistance of the brake. When the brake is released by the dropping of lever *a*, as hereinbefore described, the resiliency of the lap roll lifts up the racks *h* until the catches *k* engage with the pivoted catches *m*, and by this time the pinions *q* on the lap rod *i* have engaged with the segments or curved racks *p*. The calender rolls continue to revolve and the segment and pinions roll the lap to one side, so that it

falls into the cradle *o* clear of the calender rolls.

While I have described racks and pinions for discharging the lap I would nevertheless have it understood that in place of pinions I may fix on the lap roller *i* plain disks, or disks covered with leather or any other suitable medium adapted to come in contact with plain brackets such as shown in Fig. 3, in place of the racks so as to give a frictional rolling motion for the same purpose. Or the ends of the lap roller *i* may have rolling contact directly with the plain brackets, the undersides of which may be covered with strips of rubber, leather or like material which will assist in the rolling motion of the lap toward the cradle *o*. Fig. 4 shows a further modification in which rather shorter plain brackets *p* are employed while the ordinary end guards *r* are provided with inclined arms *s* the inner ends of which are arranged to allow the lap roller to rise to its uppermost position. As it approaches this point it is forced outward by the brackets *p* so as to be in position over the inner ends of the arms *s*. As the calender roller continues to rotate the lap is discharged into the cradle *o*, the lap rod *i* sliding down the arms *s*.

I do not claim the driving devices, or the timing wheel and the parts which co-act with it, same being shown and described in English Patent No. 6191, of A. D. 1893.

What I claim is:

The combination, with a revoluble lap roll, a pair of revoluble calender rolls, toothed racks which normally hold the lap roll in engagement with the calender rolls, a revoluble shaft, toothed pinions secured on the said shaft and gearing into the said racks, a brake wheel secured on the said shaft, a brake normally bearing on the said brake wheel and retarding the upward movement of the racks, disengageable driving mechanism, and a drop lever controlling the said driving mechanism and operatively connected with the said brake; of automatic catch mechanism for sustaining the racks when they are raised to a prearranged extent, pinions secured concentric with the said lap roll, and discharging segments arranged in the upward path of the last said pinions and operating to roll the lap roll clear of the calender rolls when the racks are sustained by the said catch mechanism.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

FRANK BARLOW.

Witnesses:

AUG. E. EVIUS,

WILLIAM H. TAYLOR.