

R. Kitson.

Brake for Cotton Lapping Mach.

N^o 40,048.

Patented Sept. 22, 1863.

Fig. 1.

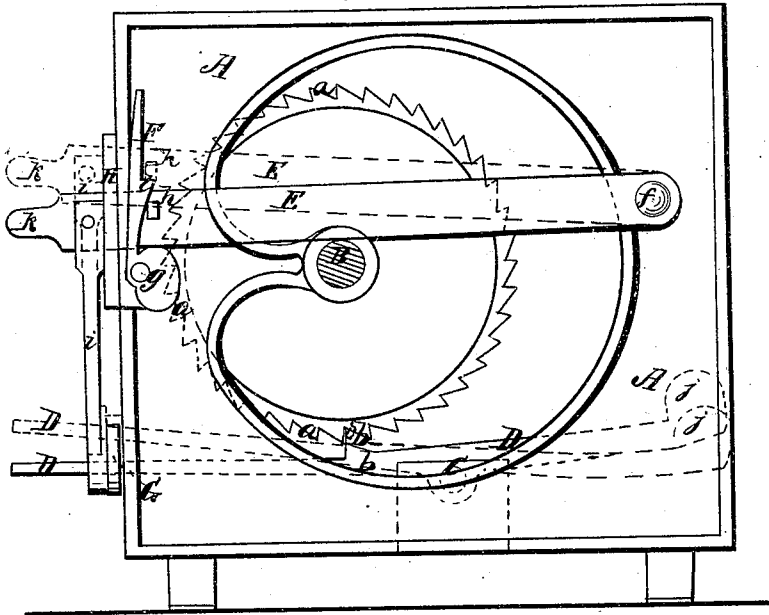
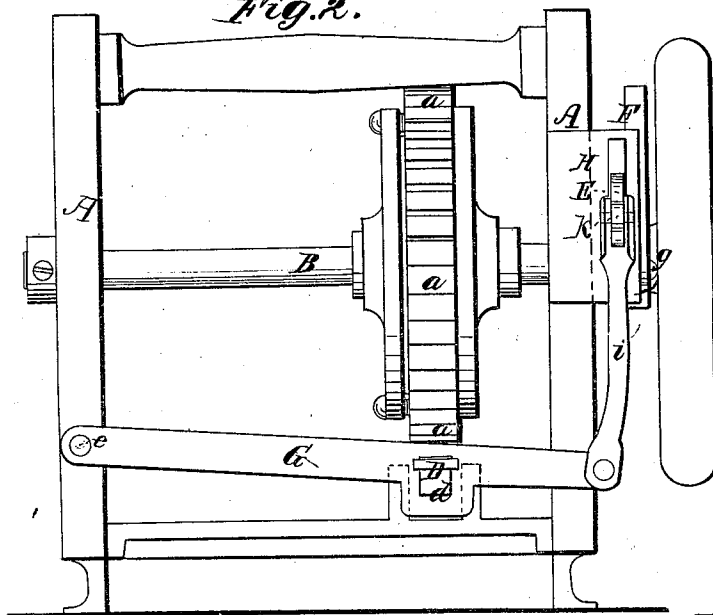


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

RICHARD KITSON, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN BRAKES TO COTTON-LAPPERS.

Specification forming part of Letters Patent No. 40,048, dated September 22, 1863.

To all whom it may concern:

Be it known that I, RICHARD KITSON, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and improved mode of applying brakes to cotton-lappers and other machines for condensing several sheets of cotton or other fibrous material into a single sheet; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a portion of a lapper illustrating the application of my invention. Fig. 2 is a front view of the same.

Similar letters of reference indicate corresponding parts in both figures.

In lappers and breaker-cards and other machines for condensing a number of sheets of cotton or fibrous material into one sheet or lap a friction-brake is employed to produce the necessary pressure on the roll around which the lap is wound to give the lap the required degree of compression, and this brake requires to be thrown out of operation when the lap has attained its full size and is ready to be taken out, and to remain inoperative while the full lap-roll is being removed and a fresh one substituted, and be brought again into operation on the starting of the machine to commence the formation of a new lap. The brake is usually kept in operation by means of a weight attached to a foot-lever or treadle, and when it requires to be thrown out of operation the attendant has to press his foot on a treadle to raise the weight, and this pressure has to be continued to keep the brake inoperative while the roll is being changed.

The object of my invention is to insure the brake coming into and being thrown out of operation at the proper time without any direct attention or especial manipulation from the person in charge of the machine; and to this end it consists in combining it with the shipper or other device which stops and starts the feed-rolls of the machine in such manner that it is thrown into operation by the act of starting the feed-rolls and out of operation by the act of stopping the said rolls.

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

A is the framing of the machine. B is the

cross-shaft which commonly carries the pulley upon which the brake operates and the pinions or other devices for producing the pressure on the lap-roll, arranged in suitable bearings in the framing. Neither the lap-roll nor the devices for producing pressure upon it is shown. The shaft B may be furnished with the usual pulley to be acted upon by a brake operated by the foot-lever in the usual manner; but I prefer to apply and have represented upon the said shaft a brake composed of a disk secured tightly to the said shaft, and a friction-box inclosing the said disk, but fitted to turn upon the said shaft, and having upon its periphery a circular series of ratchet-teeth, *a a*, which are operated upon by a stop, *b*, on a weighted lever, D, which takes the place of the usual foot-lever, to make the box produce the necessary friction on the disk, such brake being the subject-matter of my Letters Patent dated June 2, 1863. The said lever works on a fixed fulcrum-pin, *c*, and the weight *j*, which brings the stop *b* into operation, is on the rear end of the said lever. The front end of the said lever protrudes forward beyond the framing A, and passes through a slot, *d*, in a transversely-arranged lever, G, working on a fixed fulcrum, *e*.

E is the shipper, commonly used for stopping and starting the feed-rolls, arranged to work upon the fixed fulcrum *f*, and combined with the feed-rolls in the usual manner. The feed-rolls are not represented. F is the weighted stop, which acts upon a stud or projection, *h*, on the shipper, to hold up the said lever in a position to keep the feed-rolls in operation, the said stop working in the usual manner on a fixed pin, *g*, secured in the framing A. The shipper works in a fixed guide, H, secured to the frame, and is connected by a rod, *i*, with the lever G, and its own weight, aided by the weight of the lever G and rod *i*, is sufficient, when it is not supported by the stop F, to overcome the action of the weight *j* on the brake-lever D and stop the operation of the brake.

When the lap-roll has been placed in the machine ready for commencing the operation of forming the lap, the operator takes hold of the end or handle *k* of the shipper and raises up the latter to the position for starting the feed-rolls, and the shipper by this movement

raises the rod *i* and lever *G*, and so leaves the front end of the brake-lever free to move upward in the slot *d* of the lever *G*, and permits the weight *j* to bring the stop *b* of the brake-lever into action on one of the ratchet-teeth *a* and set the brake in operation to produce pressure upon the lap-roll. The above-mentioned movement of the brake-shipper brings its stud *h* above the shoulder *l* of the stop *F*, and the weight of the said stop causes the said shoulder to drop back under the said stud and lock the shipper. This condition of the parts is represented in red outline in Fig. 1. When the lap has attained its full size and is ready to be taken out, the operator takes hold of the upper end of the stop *F* and pulls it forward far enough to draw its shoulder *l* from under the stud *h* of the shipper, and allow the latter to drop to the bottom of the guide *H* and stop the operation of the feed-rolls, and this movement of the shipper causes the lever *G* to descend and to depress the front end of the brake lever, and

thereby withdraw the tooth *b* of the latter lever out of gear with the teeth *a* of the brake and permit the free revolution of the shaft *B*, and so relieve the lap-roll of pressure. This condition of the parts is represented in black outline in Fig. 1.

A similar method of combining the ordinary foot-lever, which operates the ordinary brake with the shipper, will produce an operation of the brake, the results of which will be similar to those above described.

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

So combining the brake with the shipper that it is brought into action when the operation of the machine commences, and is thrown out of operation when the operation of the machine ceases, substantially as herein described.

RICHARD KITSON.

Witnesses:

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