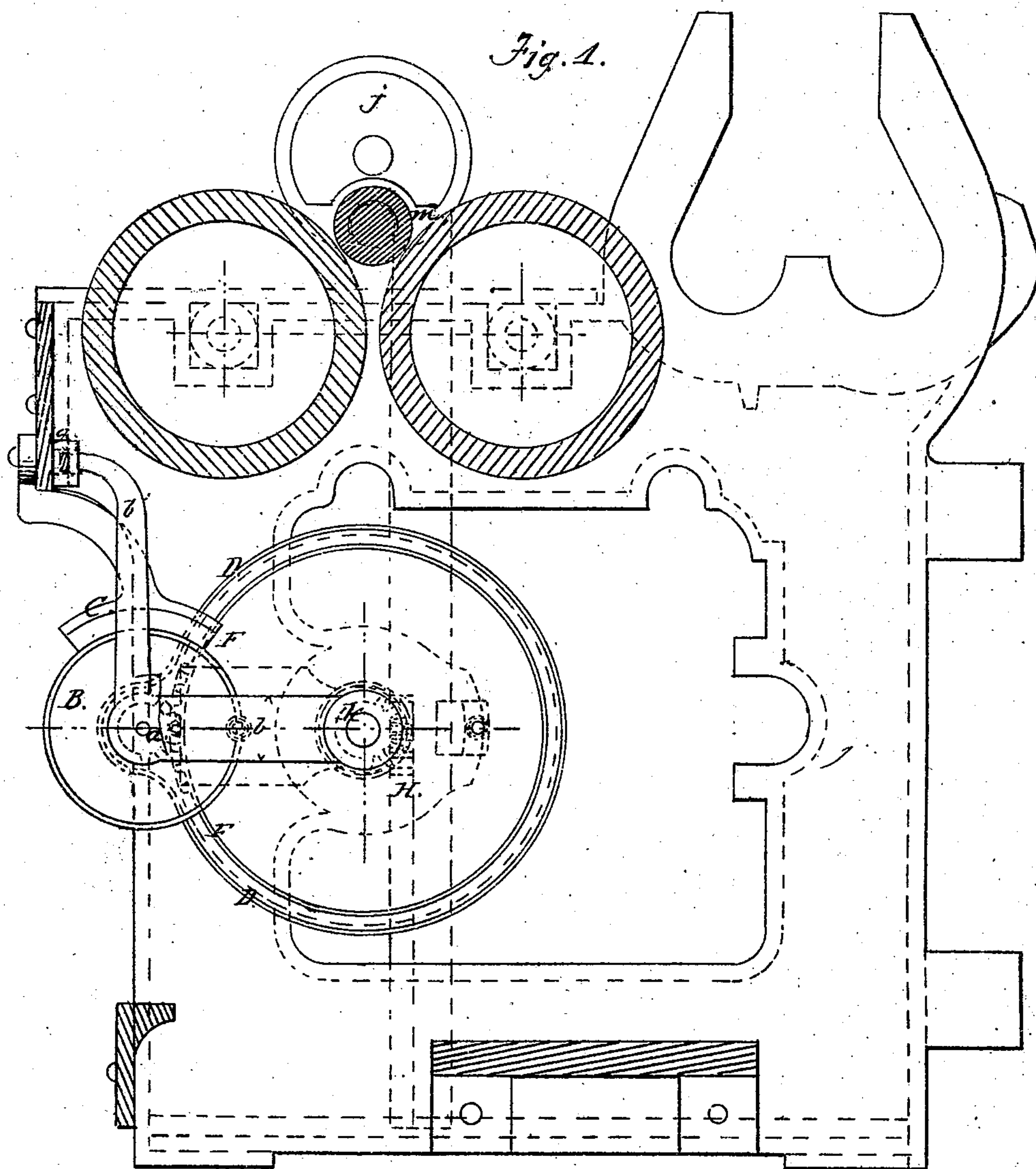


R Kilson

Brake for Cotton Lappers

No. 75169

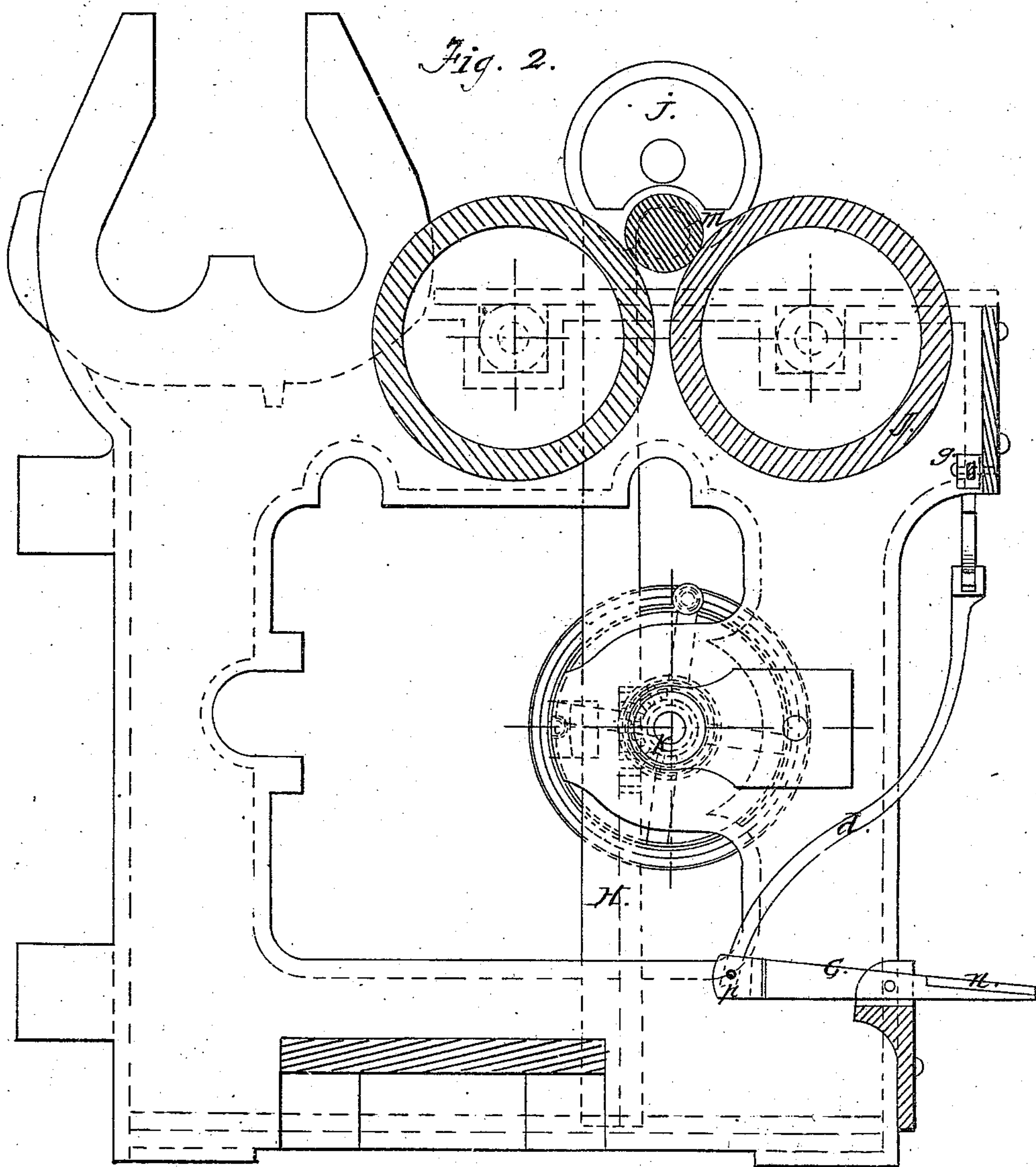
Patented Mar. 3. 1868



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United States Patent Office.

RICHARD KITSON, OF LOWELL, MASSACHUSETTS.

Letters Patent No. 75,169, dated March 3, 1868.

IMPROVEMENT IN BRAKES FOR COTTON-LAPPERS.

The Schedule referred to in these Letters Patent and making part of the same.

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 certain new and useful Improvements in Brakes for Cotton Lappers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figures 1 and 2, sheet 1, are longitudinal vertical central sections of an ordinary lap-head, with my improvements applied thereto.

Figure 3, sheet 2, is a front side elevation after a portion of the top girt A has been removed, to show the connecting points of, and the levers, arms, or connections by which the friction-pulley B is brought into or released from contact with the stationary shoe C.

Figure 4, sheet 2, is a central horizontal plane section of the gear F and pinion a, which connect with the friction-pulley B, to operate the same.

This invention consists, first, in a stationary shoe, C, secured to the back girt A or other suitable support, and a friction-pulley, B, beneath it. When said friction-pulley is fastened to the [shaft of the pinion a, between the arm b and the shield D, (which form the swinging yoke,) the upward motion brings the friction-pulley into contact with the shoe C, to check the motion of the pulley, and the downward motion of which yoke releases the pulley from contact with the shoe, and allows the pulley to turn; second, my invention consists in the swinging-yoke shield D, arranged on the central shaft E, and forming a case to enclose the gear F and pinion a, to prevent sand, dirt, or the short fibre of cotton getting on to the gear or pinion, or between the teeth of said gear to clog or wear the same. Said shield also forms a convenient support for one end of the pinion-shaft, which passes through the friction-pulley, and enters the arm b at the junction of the horizontal and vertical portions b and b' thereof.

A weight, f, is suspended from the lever g, near the end, h, by a stirrup, l, which may be moved along on the lever in either direction to increase or diminish the effect of the weight upon the lever. At each end of the lap-head a vertical sliding rack, H, is arranged, and on the top of each rack-bar is a weighty head, I, to run the racks down when desired. On each end of the shaft E, and outside of the frame, a pinion-gear, k, is secured. These pinions gear into the teeth of the vertical racks, by which they may be operated in either direction.

The usual rolls or cylinders J are employed, and above these rolls, and between them, is the movable lap-roll m. The weighted heads of the rack-bars hook on to the ends of the roll m and hold it down, subject to the action of the lap of cotton and the brake when the machine is in operation.

The cotton, after passing through various operations, is formed into a sheet or lap, which passes under and is rolled on to and around the roll m, and as the lap of cotton is winding on to said roll, and gradually enlarging in diameter, there is a continued and increasing upward strain on the racks to turn the pinion k and shaft E, and allow the roll m to rise too rapidly, thereby winding a loose, uneven lap. In forming or preparing laps of cotton for carding, it is very important that the lap of previously-prepared cotton should be wound on to the roll as evenly and as closely as can be conveniently done, so that when a lap of cotton is placed on the carding-engine, such close and hard-wound lap of cotton will supply the card a longer time.

In the use of my improved brake for cotton-lappers, the movable weight f on the lever g, connected with the top of the arm b', raises the yoke, and holds the friction-pulley B in contact with the stationary shoe C, and produces a continued, even, and equal strain on the racks, preventing said racks and the roll m rising too rapidly, but holding said roll down on the tops of the cylinders J, and between them, and winding the lap of cotton on to the roll m very evenly, closely, and completely. The weight f may be moved towards the end h of the lever g, and a closer and more compact lap formed. After the lap of cotton has been formed on the roll m, (of the desired size,) the feed of the machine is stopped, the operator presses his foot on the top of the foot-lever G, near the end, n, which raises the end, h, of the lever g' and the weight f by means of the curved connecting-rod d, releasing the friction-pulley from contact with the stationary shoe, by swinging the yoke downward. The wheel M, or a crank on the end of the shaft E, is then turned, to raise the racks a little, and clear the heads I of the rack-bars from the ends of the roll m, which roll, with the formed lap, is removed; the smooth roll withdrawn from the centre of the lap and replaced between the cylinders J, the . . . of the operator

is again pressed on the foot-lever, to release the friction, as before, when the racks will run downward until the bearings in the under sides of the weighted head of the rack-bars come on the tops of the bearings or ends of the roll *m*. The foot of the operator is removed from the foot-lever *G*, and the feed of the machine thrown into action, the lap of cotton guided under and around the roll *m*, and another lap formed as before.

It will therefore be readily seen that the shield *D* and arm *b* form a very convenient yoke and support for the friction-pulley *B* and pinion *a*, and that the shield serves a still further purpose of keeping sand and dirt out of the teeth of the gears. It will also be seen that the stationary shoe *C* is a very permanent and substantial device for controlling the action of the friction-pulley *B* and other connections, and that the connecting-rod *d*, between the foot-lever *G* and the weighted lever *g*, keeps the brake constantly under the control of the operator.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. I claim the stationary shoe *C*, combined with the friction-pulley *B* and swinging yoke, in the manner and for the purpose substantially as specified.

2. I claim the swinging yoke, consisting of the shield *D* and arm *b*, arranged and applied substantially in the manner and for the purpose set forth.

3. I claim the shield *D*, arranged to cover the gears, and form one bearing or support for the shaft of the pinion *a* and pulley *B*, as explained.

4. I claim the combination of the shield *D*, gear *F*, pinion *a*, friction-pulley *B*, stationary shoe *C*, arm or lever *b*, transverse lever *g*, weight *f*, connecting-rod *d*, and foot-lever *G*, all arranged to operate substantially as and for the purposes set forth.

RICHARD KITSON.

Witnesses:

JOHN E. CRANE,

B. T. MILLS.