

H. W. BROWN.

Cotton Gin.

No. 19,679.

Patented March 23, 1858.

Fig. 1.

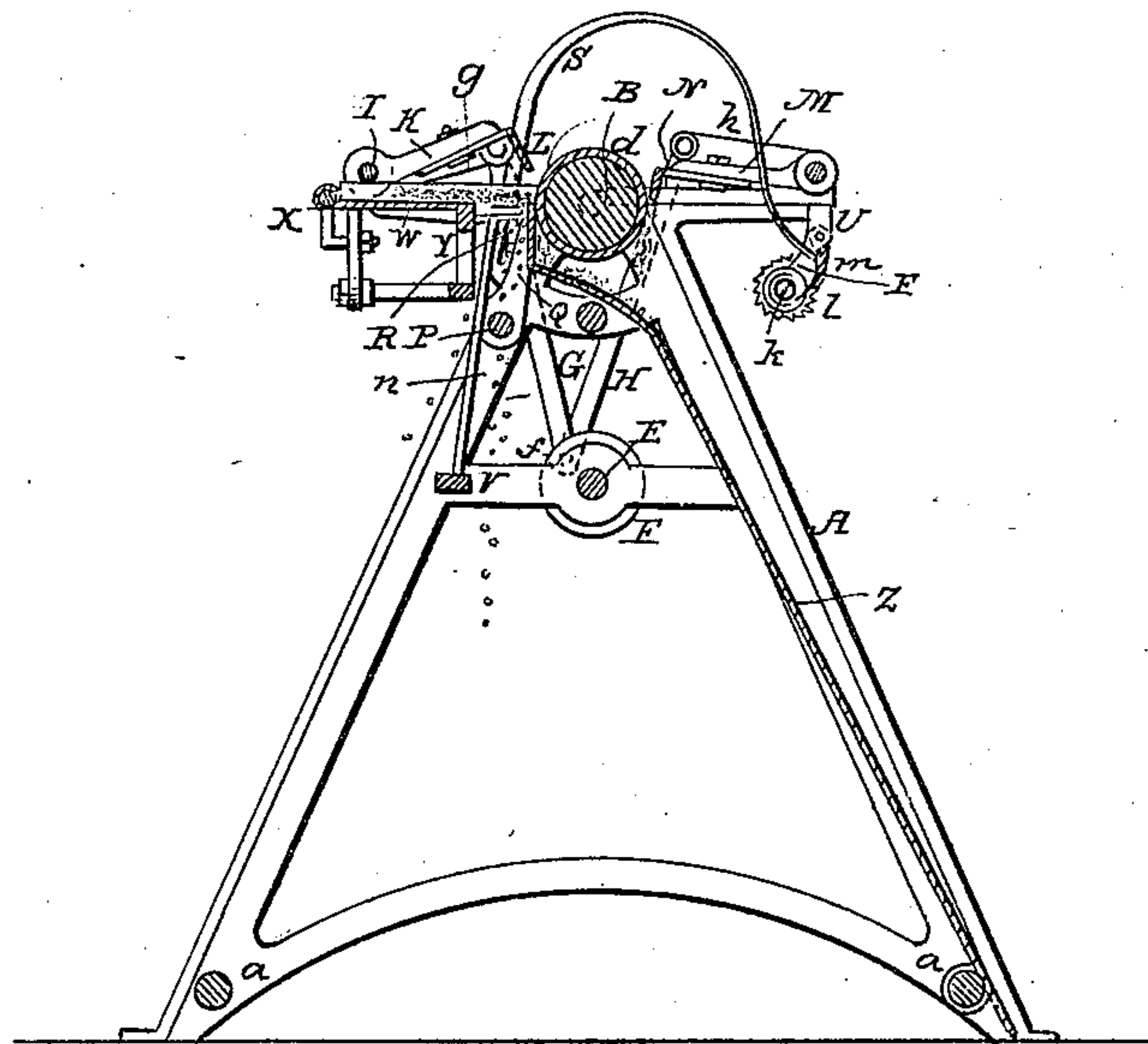
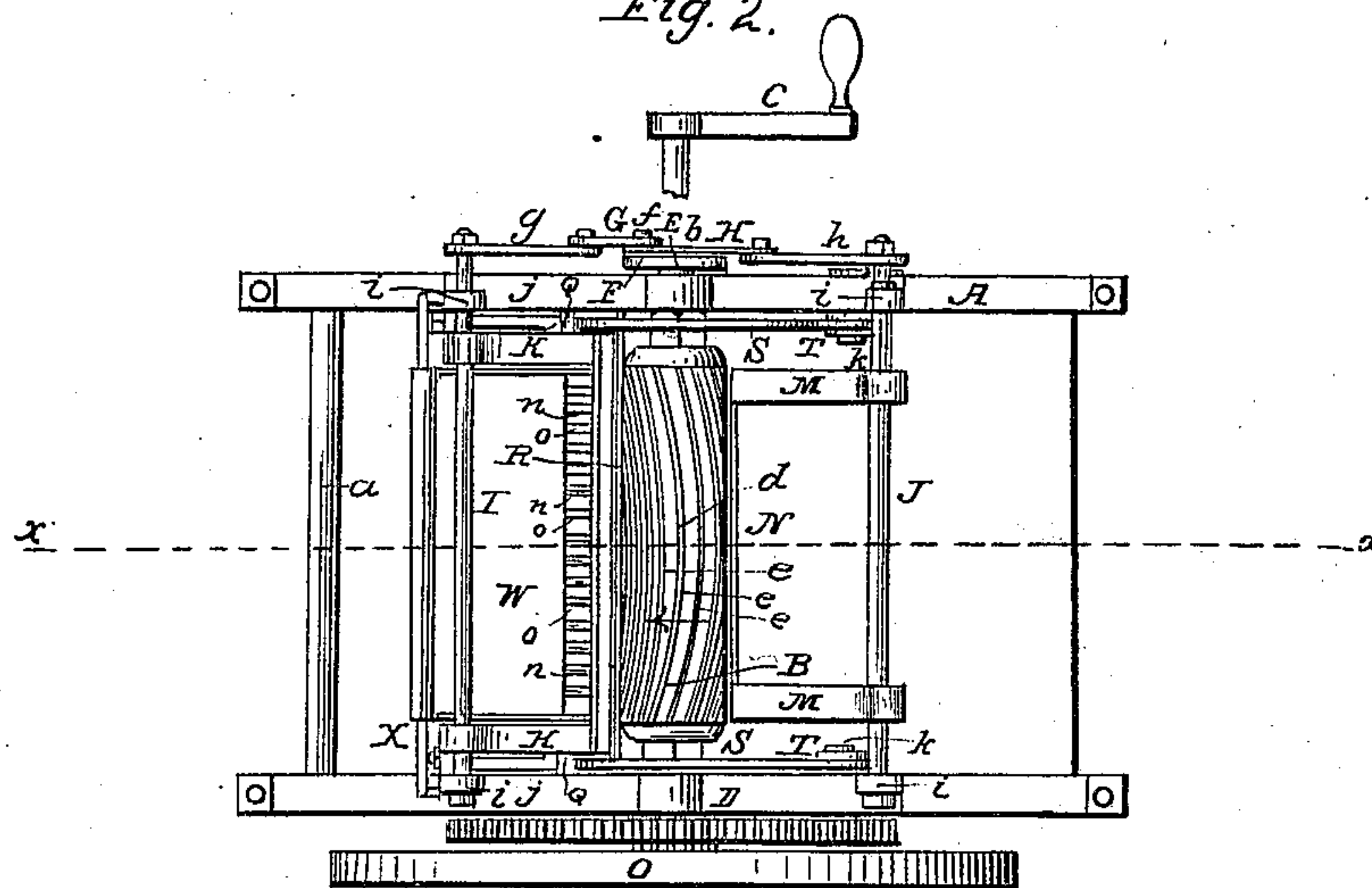


Fig. 2.



UNITED STATES PATENT OFFICE.

HIRAM W. BROWN, OF MILLVILLE, NEW JERSEY.

IMPROVEMENT IN COTTON-GINS.

Specification forming part of Letters Patent No. 19,679, dated March 23, 1853.

To all whom it may concern:

Be it known that I, HIRAM W. BROWN, of Millville, in the county of Cumberland and State of New Jersey, have invented a new and Improved Cotton-Gin; and I do hereby declare that the following is full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my improvement taken in the line *x x*, Fig. 2. Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to an improvement in what is known as the "roller-gin" for ginning Sea Island or long-staple cotton.

The object of the invention is to expedite the process to a very considerable degree without injuring the staple or fiber. This object is attained by, and the invention therefore consists in, the employment or use of a roller, vibratory stripper, pressure-plate, yielding feed-board, and screen, used in connection with a doffer, and operating as hereinafter described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a frame, which supports the working parts of the machine. This frame may be of cast metal and formed of two triangular-shaped skeleton sides connected by cross-ties *a*.

On the upper part of the frame A there is placed a roller, B, the shaft *b* of which projects beyond one side of the frame, and is provided with a crank, *c*. The roller B may be of metal, but its periphery is covered with leather *d*, and the leather is creased in curved form, as shown at *e*, Fig. 2, the concave sides of the creases facing the direction in which the roller rotates, as shown by the arrow, Fig. 2. The end of the roller-shaft *b* opposite that to which the crank is attached has a spur-wheel, C, upon it, and this wheel gears into a pinion, D, which is fitted on one end of a shaft, E, placed in frame A below the roller B, and in the same plane.

On the end of the shaft E, opposite to that to which the pinion is attached, there is placed a crank-pulley, F, and the lower ends of the

connecting-rods G H are placed on the same pin *f* of this crank-pulley. The upper ends of the two rods G H are attached to the ends of arms *g h*, which are placed on the ends of shafts I J, said shafts being at opposite sides of the roller B, and at suitable distance from it, the bearings *i* of the shafts being on the ends of bars *j* on the top of the frame A.

On the shaft I two arms, K K, are placed, and a plate, L, is attached to the ends of the arms. The plate L projects downward at right angles with the arms K K, as shown clearly in Fig. 1. On the shaft J two similar arms, M M, are placed, having a similar plate, N, attached to them.

O is a fly-wheel, attached to one end of shaft E.

The arms K K M M are of such a length that the plates L N are quite near the roller B; and it will be seen that when the shaft *b* is turned a vibratory motion is given both shafts I J, and the plates L N work up and down near the periphery of the roller and at opposite sides of it.

P is a shaft attached to one side of the frame A, near its upper part. This shaft has two arms, Q Q, attached to it, one at each end. To the upper ends of the arms Q Q a steel plate, R, is attached. This plate is made to bear against the periphery of the roller B by means of springs S S, which are formed of curved steel bars, having one end attached to the arms Q Q, and the opposite ends attached to barrel or coil springs T T, which are secured to small shafts *k k*, that pass through the lower ends of pendants U U. The outer ends of the shafts *k k* have each a ratchet, *l*, on them, and pawls *m*, attached to the pendants U U, catch into them.

V is a shaft fitted in the frame A, and having a series of rods, *n*, attached to it. The rods *n* are upright, nearly vertical, and their upper ends are bent over in a horizontal position toward the plate R.

W is the feed board or plate, the outer edge of which is fitted loosely around or upon a shaft, X, which is attached to the frame. The inner end of the feed board or plate has a series of rods, *o*, attached to it, said rods fitting between the upper horizontal parts of the rods *n*. The inner part of the feed board or plate rests upon a spring, Y.

The operation of the machine is as follows:

The cotton to be ginned (shown in red in Fig. 1) is placed upon the feed board or plate W, and motion being given the shaft *b* the roller B is of course rotated, and the cotton is drawn up over the upper edge of the plate R, and down between said plate and the roller B. At the same time the cotton is subjected to the action of the plate L, and at a point quite near the plate R, and the seeds (shown in blue) are stripped from the cotton by the action of said plate; and as the inner edge of the feed board or plate W rests upon the spring Y, said board or plate will have a certain vibrating motion given it in consequence of the plate L acting upon the cotton, and this motion will serve to loosen the seeds from the cotton and allow them to fall between the rods *n o*, the ginned cotton passing down underneath the roller, and stripped off from it on the opposite side by the action of the plate N, which is technically termed a "doffer," the cotton passing by its own gravity down a guide-plate, Z.

The gin works in a perfect and rapid manner; the fiber or staple is not at all injured by the operation, and the seeds are allowed to fall or pass from the cotton as soon as they are loosened and detached from the mass by the action of the plate L. The plate R, in consequence of being kept adjusted to the roller B by the springs S, is allowed to yield or give to a certain extent, so that in case gravel or hard foreign substances should pass between the roller and plate, neither would be injured

thereby. The curved creases *c* in the leather *d* of the roller B serves to prevent the cotton from spreading toward the ends of the rollers by giving it an opposite movement or a tendency to such movement. The tension of springs S may be increased or diminished, as desired, by winding up or unwinding the springs T.

I am aware that a roller and vibrating and stationary plates have been previously used for ginning cotton, but arranged in a manner different to that herein shown.

So far as I am aware, no provision has been made for the ready discharge of the seed from the cotton.

I therefore do not claim, broadly, a roller, B, vibrating plate L, and pressure-plate R, irrespective of the arrangement and connection with the parts herein shown, as these are seen in the patent of Fouse McCarthy, dated July 3, 1840; but,

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

The roller B, stripping-plate L, and pressure-plate R, arranged as described, in combination with the yielding or vibrating feed board or plate W, provided with the rods *o*, the rods *n*, and doffer N, the whole being arranged to operate conjointly, as and for the purpose set forth.

HIRAM W. BROWN.

Witnesses:

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HENRY A. FORBES.