

No. 639,685.

Patented Dec. 19, 1899.

J. O'CONNELL.

SAFETY LOCKING DEVICE FOR COTTON BEATERS.

(Application filed July 7, 1899.)

(No Model.)

Fig. 1.

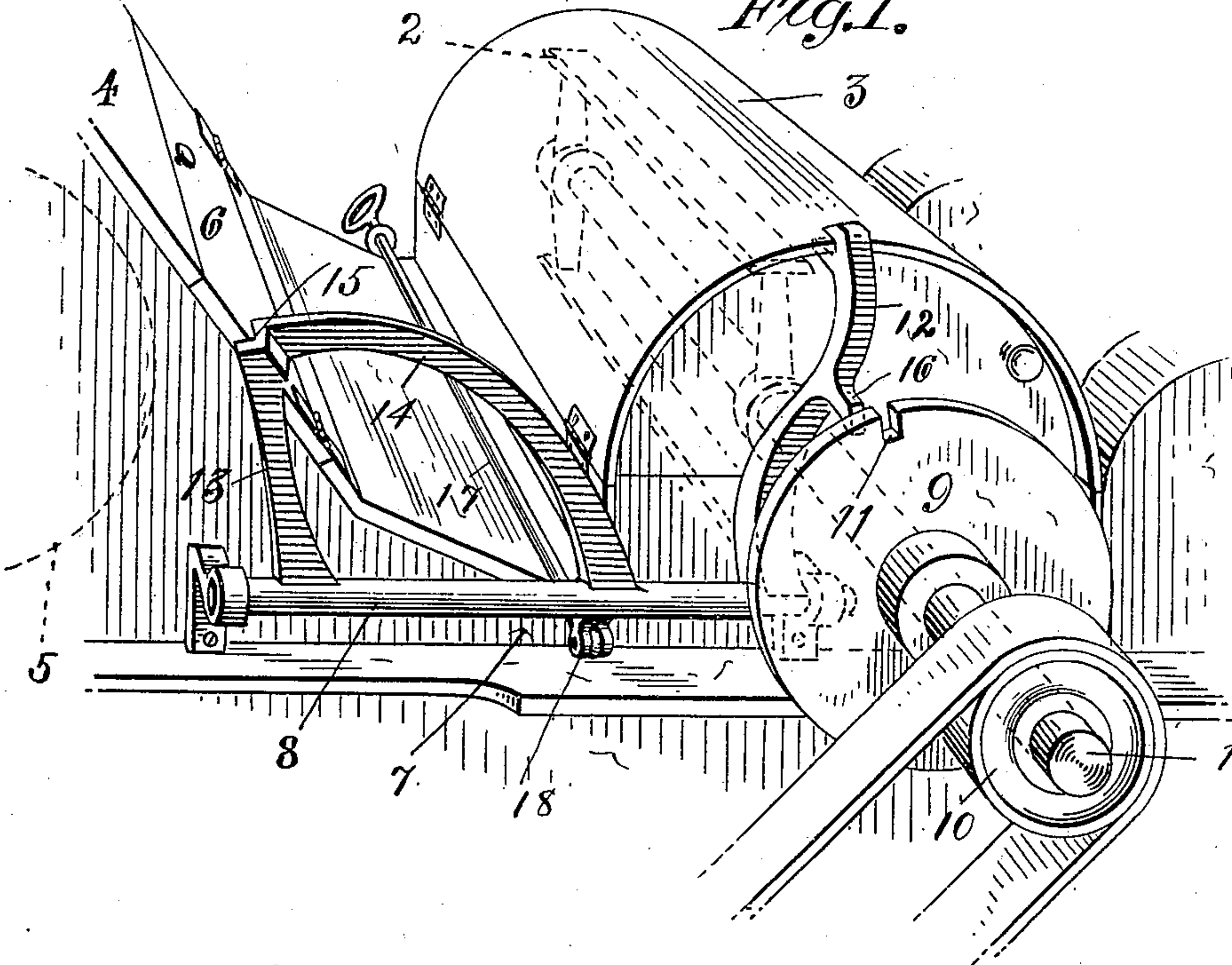


Fig. 2.

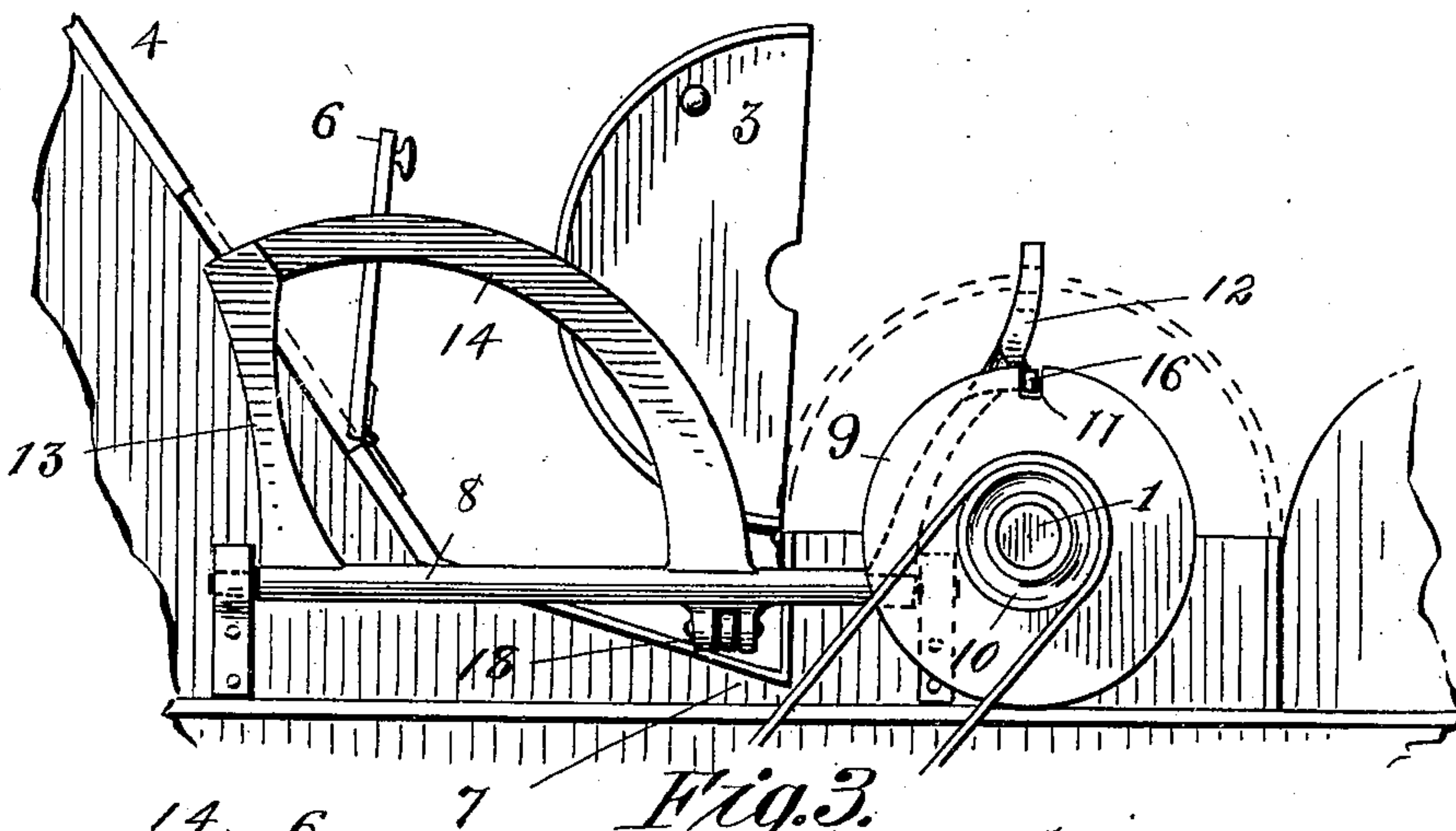
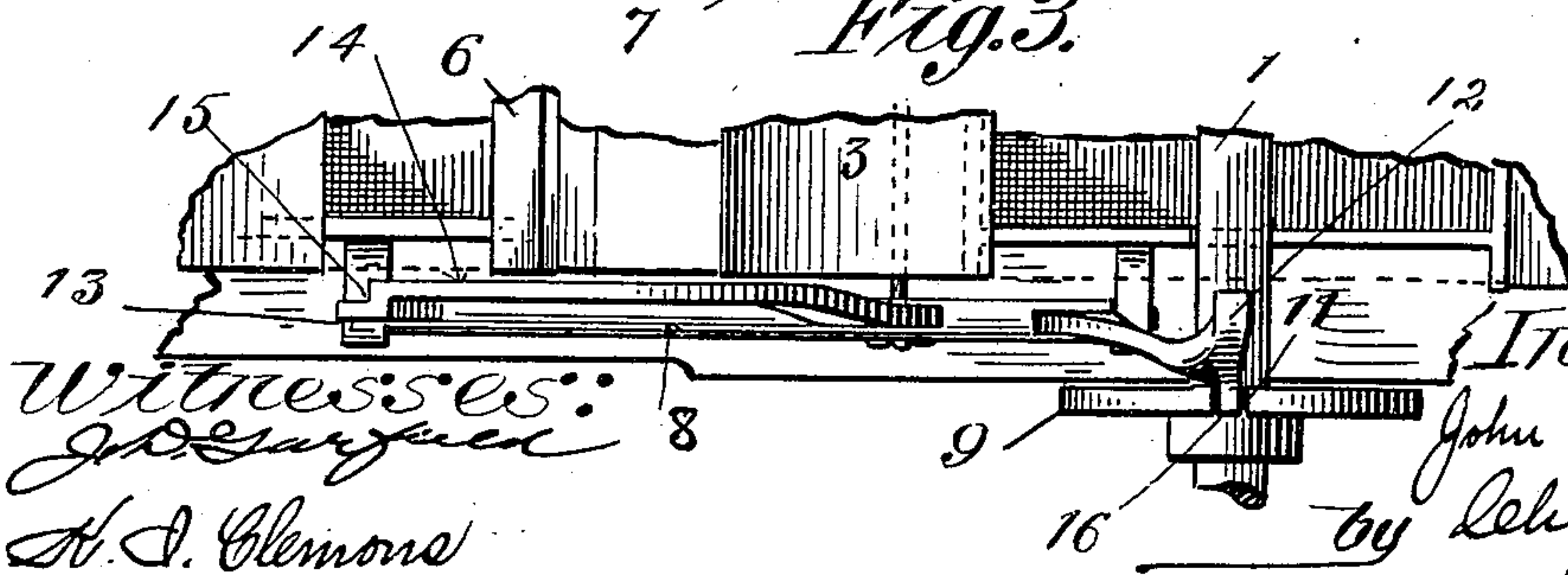


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SAFETY LOCKING DEVICE FOR COTTON-BEATERS.

SPECIFICATION forming part of Letters Patent No. 639,685, dated December 19, 1899.

Application filed July 7, 1899. Serial No. 723,116. (No model.)

To all whom it may concern:

Be it known that I, JOHN O'CONNELL, a citizen of the United States of America, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Safety Locking Devices for Cotton-Beaters, of which the following is a specification.

This invention relates to cotton-beaters and analogous machines, and has for its object the construction of locking devices for the covers of the beater-cylinder and other rotating parts of the machine, and adapted, when manipulated to unlock said cover, to interlock with the driving mechanism, to the end that the actuation of the machine shall be made impossible while said cover parts are unlocked.

The invention consists in the construction which will be fully described farther on and clearly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of that part of a cotton-beater to which this invention is particularly applicable and shows the invention applied thereto. Fig. 2 is a side elevation showing the locking device in engagement with the driving-shaft and the covers open. Fig. 3 is a plan view showing the position of the parts when said covers are open and whereby the locking device is rendered inoperative to release the main shaft until the covers are closed.

In cotton-beaters and analogous machines the great majority of accidents to operatives occur either by putting the hand into the open beater-cylinder or through a door-opening just back of the beater-cylinder into the space occupied by the exhaust-cylinder. The narrow passage between said two cylinders frequently becomes clogged and the operative will thrust his hand into said passage to clear it, and if inserted too far the fingers will be struck by the beater-arms. The last-named operation is productive of more accidents than the first, for it may be effected safely if done with care, whereas only the most fool-hardy would ever insert a hand into the beater-cylinder if the machine were in operation.

Referring to the drawings, 1 is the driving-shaft, having the beater-arms 2 thereon. 3 is the cover for said beater-arms.

4 is the casing of the exhaust-cylinder 5, (indicated only in dotted lines in Fig. 1.) 6 is a door-opening in the casing, through which access may be had to the said cylinder and to the narrow passage in the part of the casing of the machine between said exhaust and beater cylinders, and indicated by 7. A rock-shaft 8 is located in proximity to the edges of said door 6 and said cover 3, suitably supported on the frame of the machine, one end of said rock-shaft lying in proximity to the driving-shaft 1. On said driving-shaft is a disk 9, rigidly secured thereto between the pulley 10 and the end of the beater-cylinder and provided with one or more notches 11. An arm 12 on the end of the rock-shaft nearest the beater-cylinder is adapted to engage the edge of the cover 3 for the beater-arms when the rock-shaft is swung toward the cylinders. On the opposite end of the rock-shaft is an arm 13, substantially in the same plane as the arm 12, and from the upper end of said arm 13 to the rock-shaft is a segment-shaped member 14, a part of which is located in a plane nearer the edge of the cover 3 and door 6 than the plane of the said two arms 12 and 13, as shown in Fig. 3. The latter-named arms and the member 14 are preferably all cast integral with the rock-shaft.

The offset of the plane of the segment-shaped member 14 beyond that of the arms 12 and 13, as described, results in the formation of a shoulder 15 at the upper end of the arm 13, and when the rock-shaft is swung toward the machine said shoulder overlaps the edge of the closed door 6, and the arm 12 engages the edge of the cylinder-cover 3, as shown in Fig. 1, and the segment-shaped member 14 lies in a plane inside of the edges of said door and said cover. On said arm 12 is a lug 16, which projects outwardly toward the inside of the disk 9 and in position to engage the notch 11 in the said disk when the rock-shaft 8 is swung outwardly; but when the parts are in the position shown in Fig. 1 and the cover 3 and door 6 are locked, the end of said lug lies close to the side of said disk, whereby the outward-swinging movement of the rock-shaft 8 would be prevented until the notch 11 on the disk 9 is brought to registering position with the lug 16 of the arm 12, and this is feasible only when the

said disk is at rest. When the machine has been brought to a standstill, the rock-shaft 8 may be swung outward to cause the said lug 16 to enter said notch 11, and this brings the parts to the position shown in Fig. 3, where it will be seen that the member 14 lies just outside the path of movement of the edge of the door 6 and the cover 3 when they are opened, and said member is made of such shape that in their open position the said edges of said door and cover will be opposite some portion of said member, whereby the swinging of the rock-shaft toward the machine far enough to cause the disengagement of the lug 16 and notch 11 will be rendered impossible.

It is apparent from the foregoing description that when either the door 6 or the cover 3 are open the machine cannot be started, and whenever the said door and cover are locked in a closed position neither of said parts can be opened without first stopping the machine.

The rock-shaft may be swung by hand in either direction, and for the sake of convenience in starting the machine a rod 17, attached to a depending arm 18 on the under side of the rock-shaft, extends to the opposite side of the machine.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a cotton-beater or analogous machine, the combination with the cover of the beater-cylinder, and a door in the casing of the machine near said cylinder, and the driving mechanism of said machine, of a locking device movable between said door and cover and said driving mechanism, whereby it is

adapted to engage said door and cover in closed position upon being disengaged from said driving mechanism, and inversely adapted to engage with the latter, upon disengagement from said door and cover, substantially as described.

2. In a cotton-beater or analogous machine, a movable cover for the beater-cylinder, and a door giving access to said cylinder from behind, a locking mechanism for said door and cover consisting of a swinging member adapted to lock said door and cover in closed position, a driving mechanism for said machine, and means on said swinging member for intercepting the movements of said driving mechanism, when said member is swung to permit the opening of either said door or said cover, substantially as described.

3. In a cotton-beater or analogous machine, a movable cover for the beater-cylinder, and a door giving access to said cylinder from behind, a locking mechanism for said door and cover consisting of a swinging member adapted to lock said door and cover in closed position, a driving mechanism for said machine, and means on said swinging member for intercepting the movements of said driving mechanism, when said member is swung to permit the opening of either said door or said cover, and whereby the disengagement of said member with said mechanism cannot be effected while said door or cover is open, substantially as described.

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