

(No Model.)

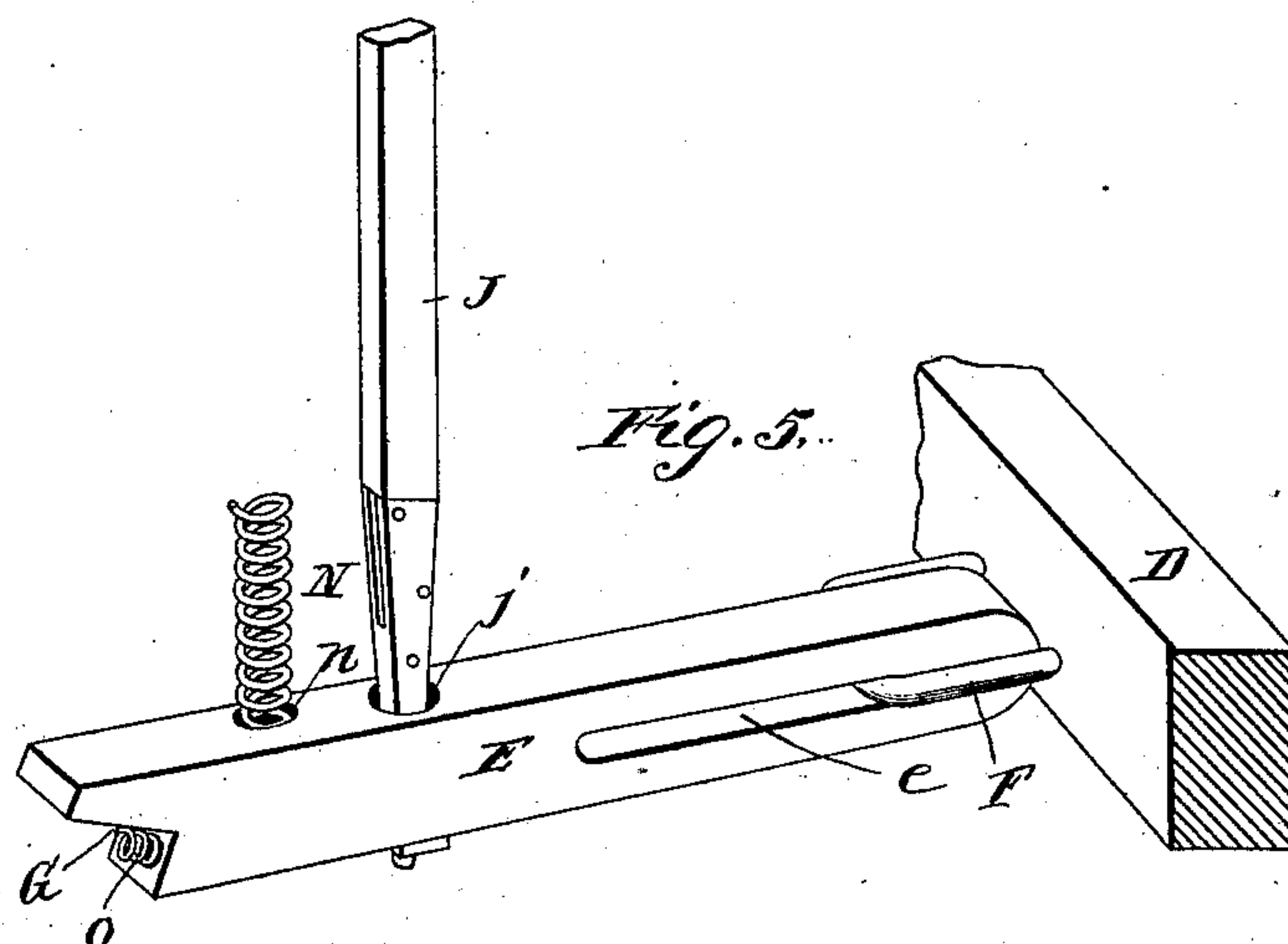
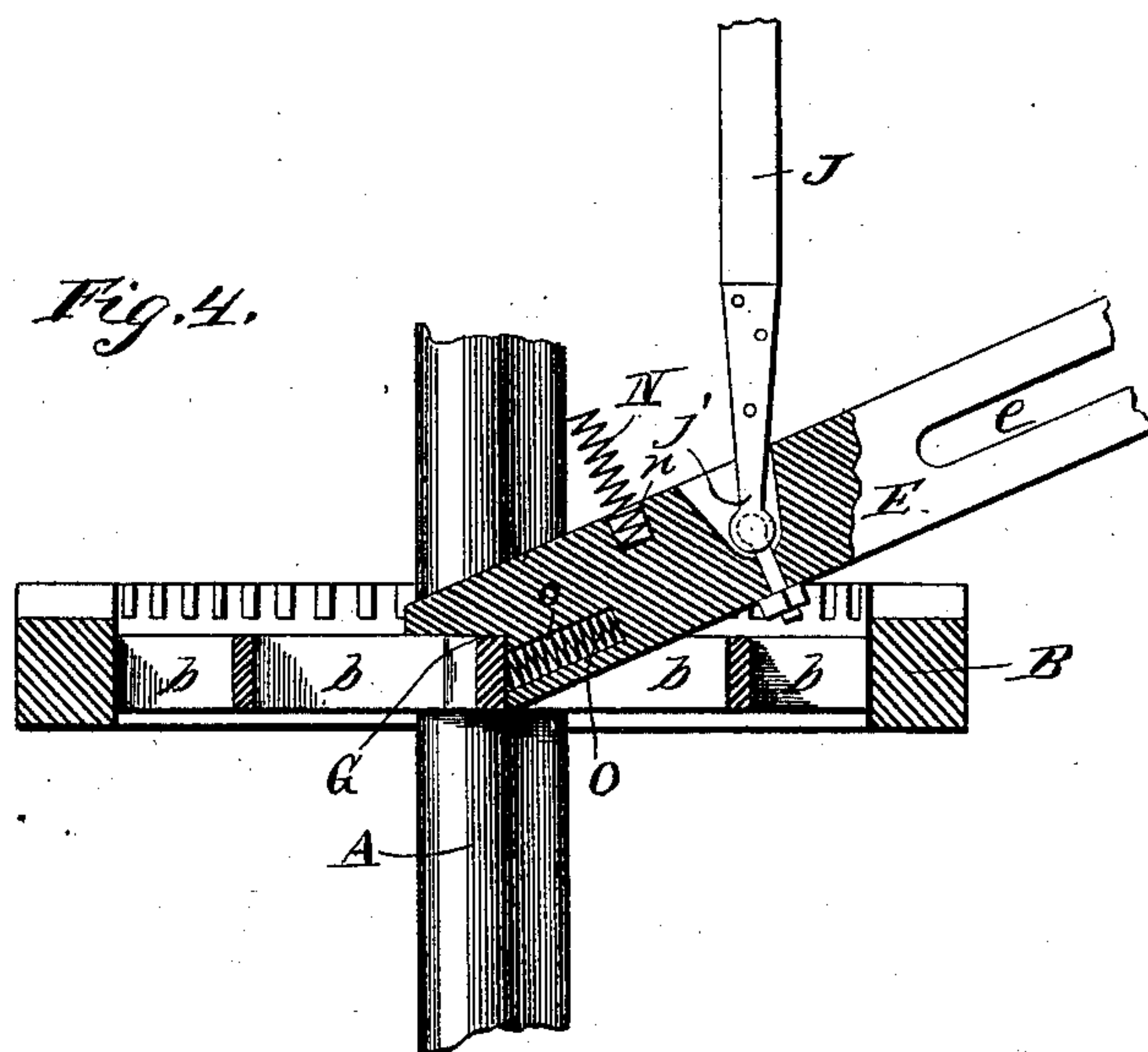
2 Sheets—Sheet 2.

S. L. CARPENTER.

GIN BRAKE.

No. 362,491.

Patented May 10, 1887.



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UNITED STATES PATENT OFFICE.

STEVEN LAFAYETTE CARPENTER, OF MOSCOW, TENNESSEE.

GIN-BRAKE.

SPECIFICATION forming part of Letters Patent No. 362,491, dated May 10, 1887.

Application filed January 7, 1887. Serial No. 223,685. (No model.)

To all whom it may concern:

Be it known that I, STEVEN LAFAYETTE CARPENTER, a citizen of the United States, residing at Moscow, in the county of Fayette and State of Tennessee, have invented a new and useful Improvement in Gin-Brakes, of which the following is a specification.

This invention relates to improved and novel means whereby a cotton-gin when in full operation can be brought to a complete and sudden stop, so as to prevent accident to the gin-operator or to persons who have approached dangerously near the rotating gearing and shafting in the gin-house; and it consists, essentially, in so connecting with a double-armed pivoted lever and certain connecting-rods, hereinafter described, a brake or detent bar hinged or pivoted at its base to a girder of the gin-house, so that the gin-operator can, by pressing with his foot on a step or board secured to one of the connecting-rods, cause the said brake or detent bar to fall and to engage at its free end against one of the spokes of the main horizontal driving-gear wheel of the gin mechanism, so as to prevent the further forward rotation of the same.

The invention further consists in the construction and novel arrangement of parts, hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side view of a portion of the gin-house and the gin mechanism, with the improved brake or detent bar attached thereto. Fig. 2 is a detail view of the metal link or loop by means of which the brake-bar is attached to one of the girders of the gin-house. Figs. 3 and 4 are respectively a plan view and a sectional view of the main horizontal driving-wheel of the gin mechanism, showing the spokes against which the brake-bar impinges. Fig. 5 is a perspective view of the brake-bar and its connections enlarged.

Referring to the drawings by letter, A designates the thick vertical main shaft of the gin mechanism, to the lower part of which the levers of the horse-power are usually attached in the ordinary manner, and which is journaled in a suitable step secured to the ground and a similar step secured to a proper portion of the frame of the gin-house.

B is the large horizontal gear-wheel (in this

instance a crown-wheel) which drives the train of gearing operating the shaft of the gin-saws. It is not necessary to illustrate said train, as it is of the common well-known construction. The wheel B is secured at a proper position on the shaft A, and is provided with the equidistant spokes *b b*, as shown in Figs. 3 and 4.

C is the gin, located upon the floor *c* of the gin-house at a desirable point, and D is a girder running below the floor between the gin and the wheel.

E is the brake or detent bar having its end that rests against the girder D rounded, so as to turn easily up and down thereon. The said bar is provided with the axial longitudinal slot *e*, through which passes the metallic loop or link F, the bend of the loop resting in the outer end of the slot. The ends of the said loop pass through proper openings in the girder D, are threaded, and engaged by nuts *f* on the opposite side of the girder, as shown.

The wheel B is placed at a lower level than the girder, in order that when the brake-bar falls it may not impinge on the edge of the wheel. The free end of the brake-bar is cut away or rabbeted at G, so that when the bar falls upon a spoke, *b*, the top of the rabbet will rest evenly upon the upper edge of the spoke and the side of the rabbet, and rest similarly on the side of the same. Thus while the rabbet is right-angled, its top and sides are inclined to the surfaces of the brake-bar.

The mechanism for operating the brake-bar is as follows:

H is a short standard, having a bifurcated upper end, *h*, between the arms of which is pivoted the double armed lever I. The end of the inwardly-extending arm of the said lever has pivoted to and depending from it a connecting-rod, J, upon the lower end of which is secured, by bolts, rivets, or otherwise, a downwardly-tapering socket, *j*, which is flexibly secured to the brake-bar. The end of the outwardly-extending arm of the lever I has pivoted to and depending from it the rod K, to the lower end of which is secured a metallic socket or bar, L, having its end bent laterally or formed into a slightly-bent hook, as at *l*, and provided on the side with a horizontal plate or step, *l'*, as shown.

M is a bent bar or hook secured to the floor

c, similar to the hook l, and arranged to engage therewith. When so engaged, the rods K J and lever L are so arranged as to hold the free end of the brake-bar above the wheel B; but
 5 should the gin-operator perceive that an accident is likely to occur to himself from the gin-saws, or to some other person, from the mechanism, by pressing with his foot on the step l' he can release the hook l from the hook
 10 M, and the brake-bar immediately falling, its free end will engage, as described, against one of the spokes b and instantly stop the wheel B and the other parts of the gin mechanism. Many accidents can be thus prevented, especially those happening to gin-operators,
 15 whose hands are liable to be caught between the saws.

N is a coiled spring resting in a recess, n, circular in diameter, made in the upper surface
 20 of the brake-bar near its free end. The said spring protrudes from the recess, and when the brake-bar is raised is compressed against one of the timbers n' of the gin-house, so that when the bar is released the spring will force
 25 it rapidly down and not let its descent depend entirely on gravity.

O is a strong spiral spring inserted into a recess, o, in the face of the shoulder or rabbet of the free end of the brake bar, and protruding therefrom to a slight extent. When the
 30 brake-bar falls, the outer end of said spring impinges upon the side of the adjacent spoke b, and gives somewhat to its forward motion; but as soon as the motion of the wheel B is
 35 ended the recoil of the spring reverses that motion, and also that of the gin-saws, so as to release the operator's hand if caught between the saws. The recoil of this spring will also
 40 give sufficient reverse motion to the shaft A and horse-power levers to draw the traces of the horses rearward and straighten them so that they cannot become tangled, thereby preventing serious accident.

It is evident that, while the invention is
 45 particularly adapted to cotton-gins, it can be applied to all machines which are operated by rotary horse-powers having radiating levers to which the harnesses of the horses are attached, as the brake-bar could be made to de-
 50 scend against any one of said levers and would

have the same action thereon as on the spokes of the main wheel of the gin mechanism.

Having thus described my invention, I claim—

1. The combination, in a gin-brake, of the
 brake-bar provided with a longitudinal slot, the metal loop passing through the slot in the brake-bar, and mechanism, substantially as described, whereby the inner end of the brake-bar
 55 can be held above the actuating-wheel of the gin-driving mechanism, or can be allowed to fall at any moment, so as to impinge against a spoke and stop the motion of the wheel, substantially as specified. 60

2. The combination, with the hinged brake-
 bar, constructed substantially as described, of the lever, the connected rod pivoted to the inner arm of said lever and to the side of the brake-bar, the rod pivoted to and depending
 65 from the end of the outer arm of the lever, and a retaining and releasing device, substantially as described, whereby the lower end of said depending rod can be held down or be at any
 70 moment allowed to rise, thereby operating the brake-bar, substantially as described. 75

3. The combination, with the hinged brake-bar adapted to act upon the actuating-wheel, the lever I, the connecting-rod J, and depending rod K, of the hooks M and l, and step l', all constructed and arranged substantially as
 80 and for the purpose set forth.

4. The combination of the brake-bar adapted to act upon the actuating-wheel, the lifting and lowering mechanism, and the spring N, arranged above and bearing on the brake-bar,
 85 substantially as set forth.

5. The combination of the brake-bar E, hinged above the actuating-wheel, and the coiled spring O, secured to the brake-bar and projecting from the same so as to impinge
 90 upon and be compressed by one of the spokes of the actuating-wheel, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
 95 presence of two witnesses.

STEVEN LAFAYETTE CARPENTER.

Witnesses:

JNO. W. OWEN,
 W. L. DAVIS.