

(No Model.)

E. C. HORNE.

COTTON GIN.

No. 311,001.

Patented Jan. 20, 1885.

Fig. 1.

Fig. 2.

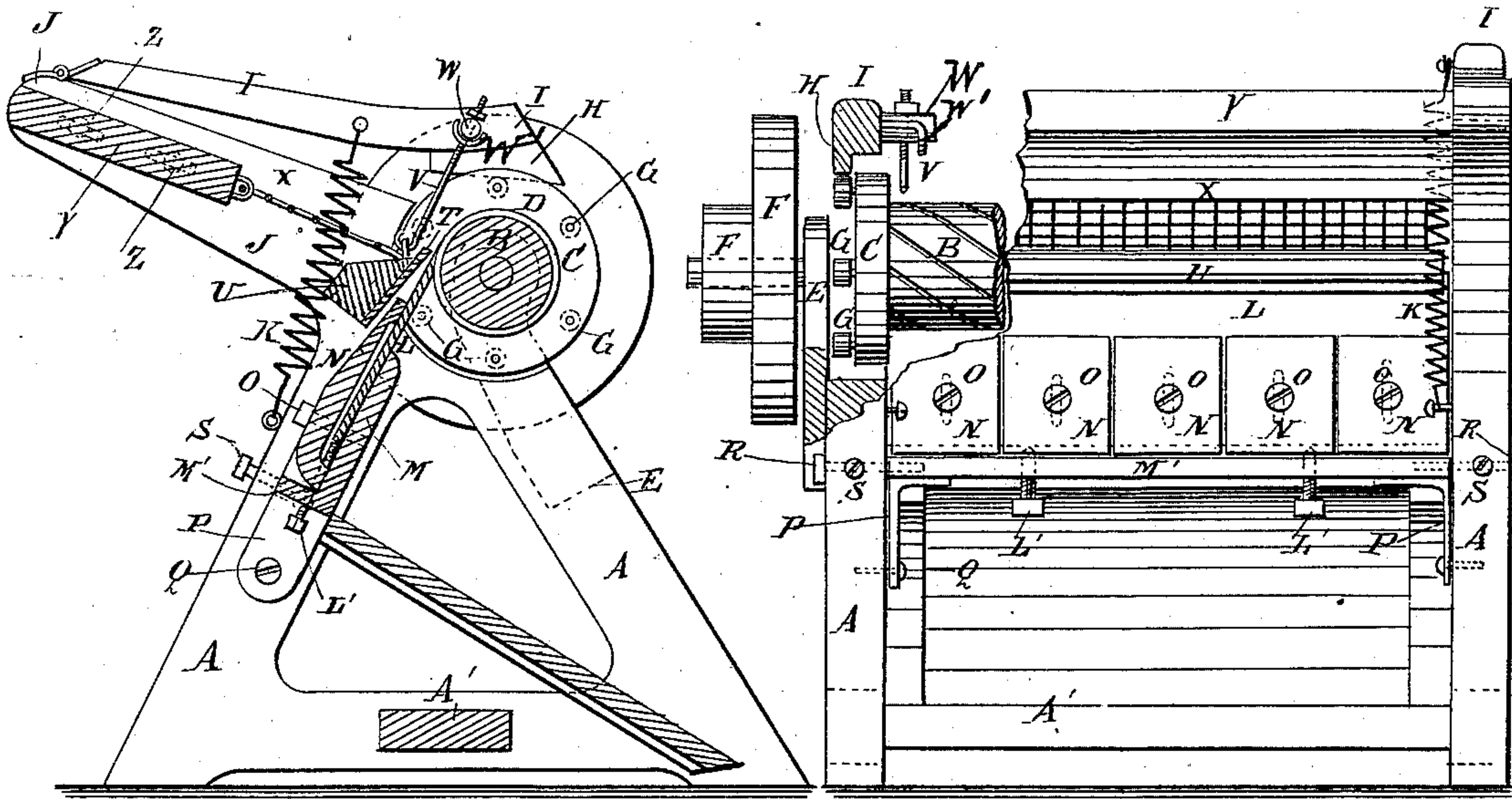
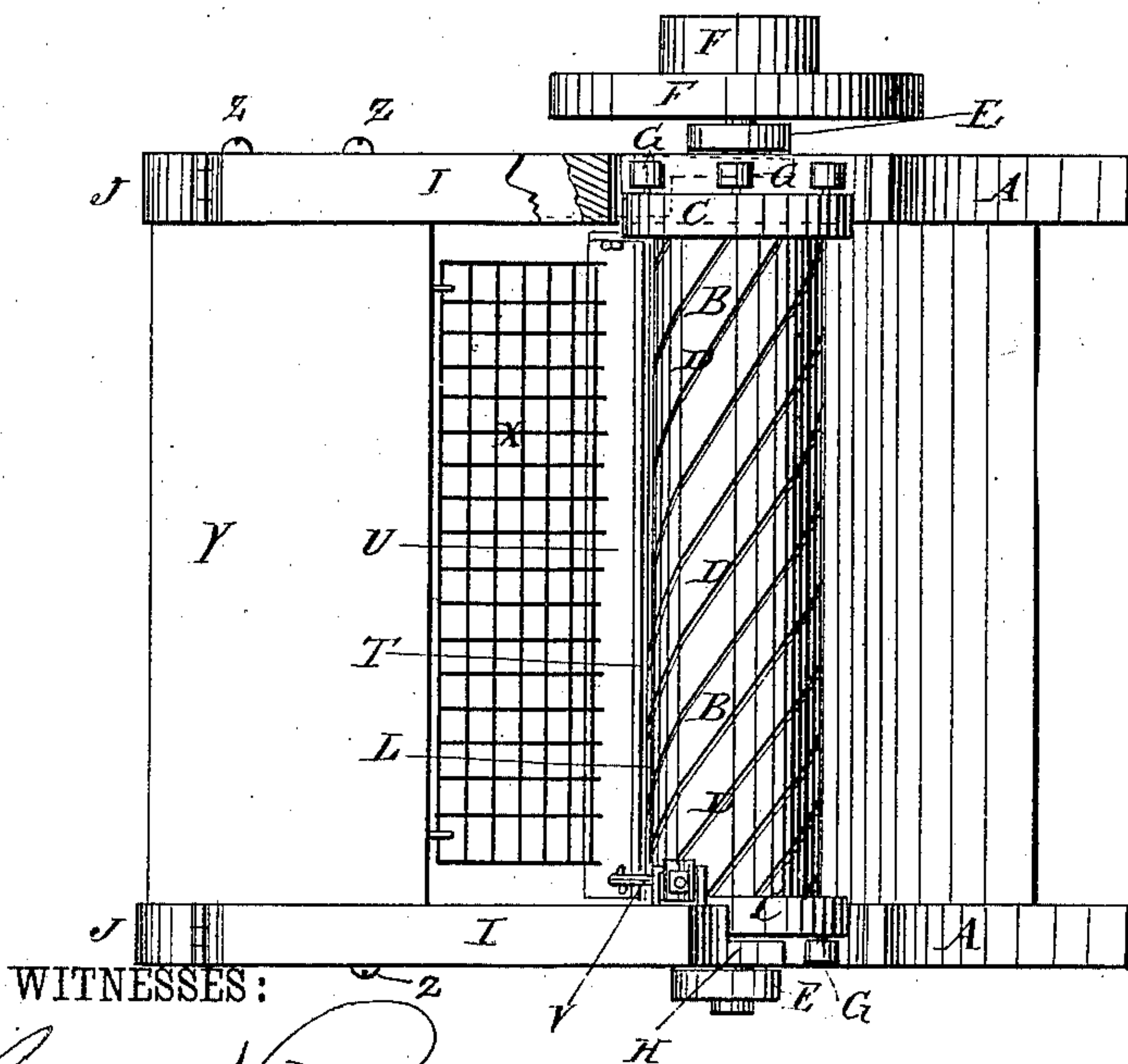


Fig. 3.



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COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 311,001, dated January 20, 1885.

Application filed July 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELI C. HORNE, of Jasper, in the county of Hamilton and State of Florida, have invented certain new and useful Improvements in Cotton-Gins, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of my improvement. Fig. 2 is a rear elevation of the same, part being broken away. Fig. 3 is a plan view of the same, part being broken away.

The object of this invention is to facilitate the ginning of cotton and prevent the fibers from being broken while passing through the machine.

The invention comprises a cotton-gin constructed with a knife secured to its holding-plate by screws, with its edge near the ginning-cylinder, so as to separate the seeds from the fibers as the said fibers are drawn between the said cylinder and knife. The knife is secured to its holding-plate by screws and sectional clamping-plates, so that the said knife will be held firmly in place. The knife-holding plate is secured to the end frames of the gin by pivoted bracket-arms, clamping-bolts, and set-screws, whereby the said knife can be readily adjusted at any desired distance from the ginning-cylinder. At the rear of the knife and cylinder are placed a vibrating bar and plate, supported by rods from bars hinged to the frame-arms, and provided with cams resting upon rollers pivoted to the end flanges of the ginning-cylinder, whereby the said bar and plate will be raised and lowered, to straighten the fibers and push back the seeds by the revolution of the said cylinder. The cams of the hinged bars are held down upon their rollers by springs connected with the said bars and the frame of the gin. To the vibrating bar and plate is attached the inner edge of a wire netting, hinged at its outer edge to a plate secured adjustably to the frame-arms by screws, whereby the seeds are allowed to escape from the machine, and the said bar and plate can be adjusted to any desired distance from the knife and cylinder, as will be hereinafter fully described and claimed.

A represents the end frames of the machine, the lower parts of which are connected by a cross-bar, A'.

B is the cylinder, which is made with flanges C upon its ends, and is covered with strips, D, of leather applied to it spirally, as shown in Fig. 3. The flanged ends of the cylinder B are placed in recesses in the tops of the frames A, and the journals of the said cylinder revolve in bearings E, attached to the said frames. One of the journals of the cylinder B projects, and to it is attached a cone-pulley, F, to receive the driving-belt.

To the outer sides of the flanges C of the cylinder B are pivoted small rollers G, upon which rest the cams H, formed upon or attached to the inner ends of the bars I, so that the said bars will have a downward movement as each roller G passes out from beneath the cams H, and an upward movement as the next rollers pass in beneath the said cams. The outer ends of the bars I are hinged to the outer ends of the upwardly-inclined arms J, formed upon or attached to the rear side of the upper ends of the frames A. The cams H are held down upon the rollers G by spiral springs K, the upper ends of which are attached to the hinged bars I, and their lower ends are attached to the inner sides of the frames A.

L is the knife for separating the seeds from the fiber. The knife L rests against the holding-plate M, where it is clamped in place by the sectional plate N, secured to the holding-plate M by the screws O, and reduced or cut away on one side intermediately of its upper and lower ends to remove it thereat from contact with the knife, whereby said section-plate may be adjusted or deflected at different points along its surface upon the knife, to cause the latter to bear upon the cylinder where worn away or uneven.

To the lower corners of the holding-plate M are attached arms or brackets P, the lower ends of which are pivoted to the frames A by the bolts Q, so that the said holding-plate M and the knife L can be adjusted toward or from the cylinder B. The holding-plate M is secured in place when adjusted by screw-bolts R, which pass through slots in the end frames, A, and screw into the ends of the said plate M, and which are held against the outward pressure of the knife L by set-screws S, pass-

ing in through the rear edges of the end frames, A, and resting against the sides of the screw-bolts R. The ginning-knife L is raised and lowered by means of set-screws L', which pass up through a flange, M', upon the lower edge of the holding-plate M, and rest against the lower edge of the said knife L. The rear side of the upper edge of the ginning-knife L is beveled, and against the said bevel rests the plate T, attached to the forward side of the bar U. To the upper sides of the ends of the bar U are hinged the lower ends of the rods V, the upper ends of which are secured by nuts or other suitable means to the pins W, supported in curved bail-shaped brackets W', having lateral or horizontal arms entering and secured to the bars I, and its plate T will be raised and lowered by and with the said cam-bars I. The upper side of the bar U is beveled, and to it is attached the forward edge of a wire-netting, X, the meshes of which are of such a size as to allow the cotton-seeds to pass through them freely. The rear edge of the wire-netting X is hinged to the forward edge of the plate Y, so that the bar U and plate T can move up and down freely. The plate Y is placed between the arms J, and its ends are secured to the said arms by screws Z, which pass through slots in the said arms and screw into the said ends, so that the plate Y can be readily adjusted to bring the bar U and plate T to any desired distance from the knife L. The hopper or chute through which the cotton is fed to the machine is not shown in the drawings, as there is nothing new in its construction. With this construction, as the cotton is drawn by the revolution of the cylinder B between the said cylinder and the knife L, the up and down movements of the bar U and plate T raise the cotton, and thus straighten the fibers, so that the said fibers will be drawn through longitudinally, and will thus be less liable to be broken and shortened than when the ordinary gin is used. At the same time the knife L prevents the seeds from passing through with the fibers, and the bar U and plate T in their upward movements push back the seeds, and thus assist in separating them from the fibers, the said seeds escaping from the machine through the wire-netting X.

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

1. In a cotton-gin, the combination, with

the knife and its holding-plate, of the sectional clamping-plate provided with adjusting or holding screws, and having one side cut away or reduced intermediately of its upper and lower ends, and the knife-adjusting screws passed through the knife-holding plate and the sectional clamping-plate and bearing against the lower edge of the knife, substantially as and for the purpose set forth.

2. In a cotton-gin, the combination, with the knife and holding-plate, of the pivoted bracket-arms and screws passing through the base of said plate and bearing against the lower edge of said knife for adjusting and holding the plate, substantially as herein shown and described, whereby the knife can be readily adjusted to any desired distance from the ginning-cylinder, as set forth.

3. In a cotton-gin, the combination, with the knife, of the holding-plate, the pivoted brackets or arms connected to said plate, the adjusting screw-bolts connecting with said plate, and the holding-screws bearing against the sides of said bolts, substantially as and for the purpose specified.

4. In a cotton-gin, the combination, with the cylinder and knife, of the vibrating bar and plate U T, the hinged screen X, connected to said bar, the adjusting-plate Y, and a supporting and operating mechanism, substantially as herein shown and described, whereby the cotton fibers are straightened and the seeds are pushed back, as set forth.

5. In a cotton-gin, the cylinder having the flanges C, the arms J of the frame, and the bar and plate U T, in combination with the rods V, connected to said bar U, pivotal pins W, curved bail-shaped brackets W', having lateral arms, the rollers G, the cams H, and the hinged bars I, substantially as and for the purpose set forth.

6. In a cotton-gin, the combination, with the arms J of the frame and the vibrating bar and plate U T, of the hinged wire-netting X, the adjustable plate Y, and its fastening-screws Z, substantially as herein shown and described, whereby the seeds are allowed to escape from the gin, and the said bar and plate can be adjusted at any desired distance from the knife, as set forth.

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Witnesses:

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