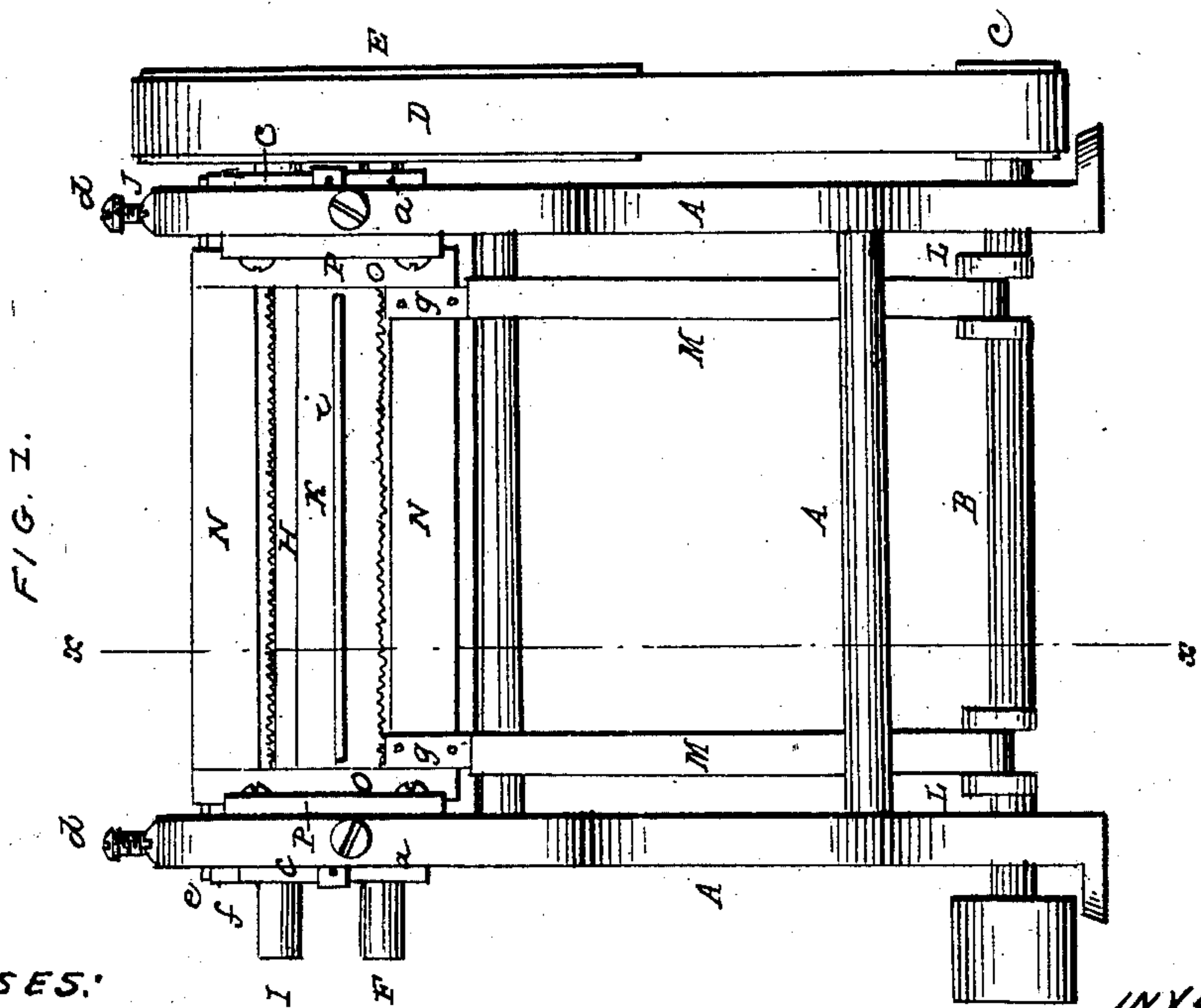
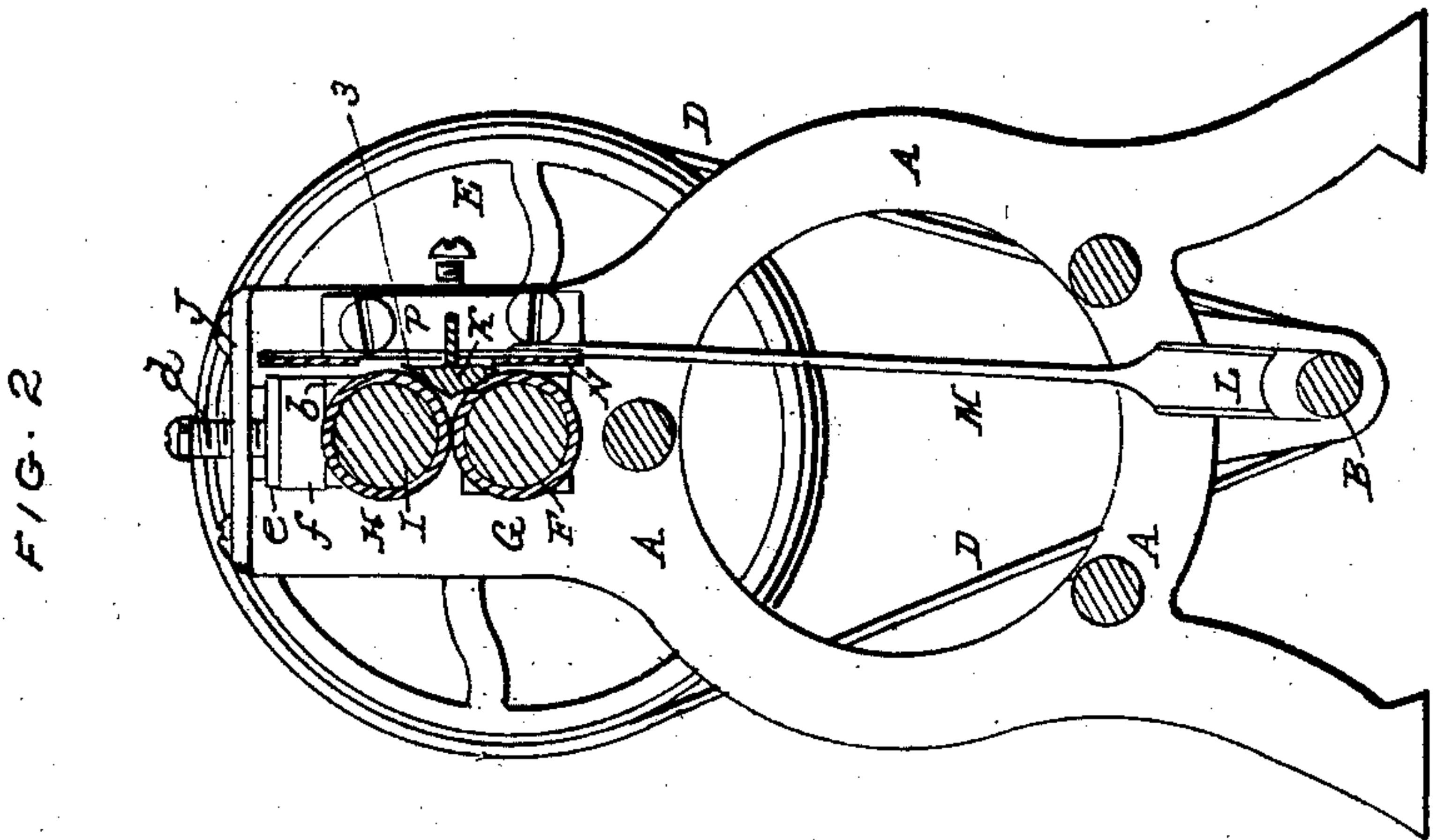


SPOFFORD & HERSEY.

Cotton Gin.

No. 55,787.

Patented June 19, 1866.



WITNESSES:

J. H. Starnes
A. H. Starnes

INVENTOR.

Chas. Spofford
Chas. L. Hersey

UNITED STATES PATENT OFFICE.

CHAS. SPOFFORD AND C. H. HERSEY, OF BOSTON, MASSACHUSETTS,
ASSIGNORS TO THEMSELVES, W. E. HAWES, AND FRANCIS C. HERSEY,
OF SAME PLACE.

IMPROVEMENT IN COTTON-GINS.

Specification forming part of Letters Patent No. 55,787, dated June 19, 1866.

To all whom it may concern:

Be it known that we, CHARLES SPOFFORD and CHARLES H. HERSEY, both of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Cotton-Gins, 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—

Figure 1 is a front elevation of our improved machine for ginning cotton. Fig. 2 is a vertical section on the line *x x* of Fig. 1.

That class of cotton-gins where a longitudinal bar or plate is employed in connection with a single roller are objectionable for the following reasons: It is necessary that the plate be held up forcibly against the roller in order that the cotton may be drawn in and fed forward between them while the seeds are being removed by the comb. The friction thus produced heats the roller so as frequently to soften it to such a degree that the fibers of the cotton adhere to and are wound around the roller, thus interrupting the uniform feed of the cotton and rendering it liable to take fire.

To remove the above-mentioned difficulties is the object of our invention, which consists in the employment of a pair of rollers in connection with a longitudinal bar of such form that when pressed up against the rollers no more of the surfaces of the bar and rollers come in contact than what is just sufficient to hold the cotton while the comb is acting upon the seed, the contact of the two rollers chiefly serving to feed the cotton forward, by which means nearly double the amount of work is performed than by the employment of cotton-gins of the ordinary construction.

To enable others skilled in the art to understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A is the frame-work, in suitable bearings in which revolves the driving-shaft B, provided at one end with a drum, C, over which passes the endless belt D, which drives the wheel E, secured to one end of a shaft, F, which has its bearings in boxes *a*, which rest within recesses *b*, cut in the frame-work.

The shaft F is covered with a roll, G, of rubber or other suitable elastic material, upon which rests a similar roll, H, the shaft I of which has its bearings in boxes *c*, which slide up and down within the recesses *b* of the frame-work.

Over the top of the recesses *b* are fastened the plates J, through which pass the screws *d*, the lower ends of which bear against the plates *e*, upon blocks of rubber *f*, resting on the boxes *a*, by which means the pressure of the roll H upon the roll G is regulated as required, the contact of the roll G, when in motion, turning the roll H.

A bar, K, of a triangular form, as seen in section, Fig. 2, extends longitudinally in front of the rolls G H, coming in contact with their surfaces only at 3, as seen in section, Fig. 2, whereby the fibers of the cotton may be seized and held between the bar and each roll while the combs (presently to be described) are brought down upon the portion of the cotton containing the seed, thus avoiding all unnecessary friction and consequent heating of the rolls.

The driving-shaft B is provided with cranks L, to which are attached the lower ends of the connecting-rods M, the upper ends of these rods being secured at *g* to the lower one of a pair of combs or clearers, N, connected together by the plates O.

To the sides of the frame are secured the guides P, within grooves *h* in which travel the plates O, by which means the combs N are kept a short distance from the outer face of the bar K while being moved up and down during the operation of removing the seeds.

The triangular bar K is provided with a ledge or projection, *i*, which extends out sufficiently far to prevent the opposite ends of the same fibers from being broken by being drawn in opposite directions between the bar K and the rolls.

Operation: The receptacle containing the cotton to be ginned being properly connected with the apparatus, power is applied to the driving-shaft, and the combs and rolls are set in motion. The upper comb being raised, the fibers of the cotton are taken down by the revolution of the roller H, and seized between it

and the portion *a* of the bar K, in contact therewith, while the comb is brought down, causing its teeth to push the seeds down from the upper edge of the bar K onto the ledge *i* of the bar, and draw the fibers from the seed as required. The combs now rise, causing the lower one to act upon the cotton, which is held between the lower roll, G, and bar K in a manner similar to that above described, the two combs thus acting alternately on the cotton.

The distance from the upper to the lower edge of the bar K, over its projecting ledge *i*, is sufficiently great to prevent the opposite ends of the same fibers from being drawn in contrary directions and being broken.

As the combs alternately move up or down away from the bar K the cotton is drawn in and fed along by the contact of the rolls, thereby pulling the seed up or down against the

upper or lower edges of the bar until the teeth of the comb have entirely separated the fibers from the seed. The cotton, after having passed through the rolls, is removed by brushes or any other suitable means.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The employment of the triangular-shaped bar K, in combination with the rolls G H and combs N, operating substantially as and for the purpose set forth.

2. The triangular-shaped bar K, with its projecting ledge *i*, substantially as and for the purpose described.

CHAS. SPOFFORD.

CHAS. H. HERSEY.

Witnesses:

P. E. TESCHEMACHER,

N. W. STEARNS.