

(No Model.)

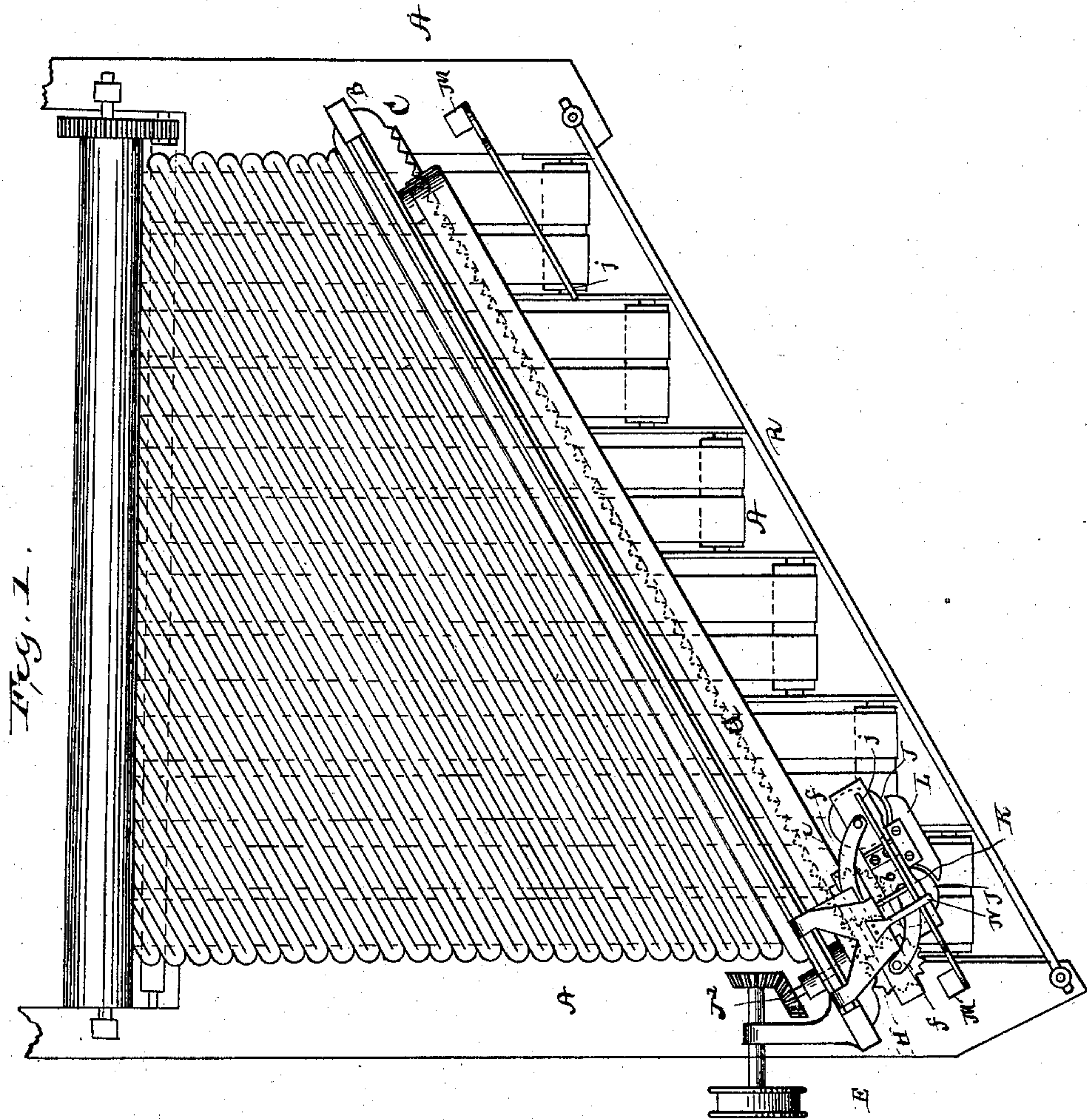
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J. F. GEBHART.

FEEDING DEVICE FOR CARDING ENGINES.

No. 263,161.

Patented Aug. 22, 1882.



Witnesses.  
Edwin L. Yewell.  
J. J. McCarthy.

Inventor,  
John F. Gebhart.  
By C. M. Alexander,  
Attorney.

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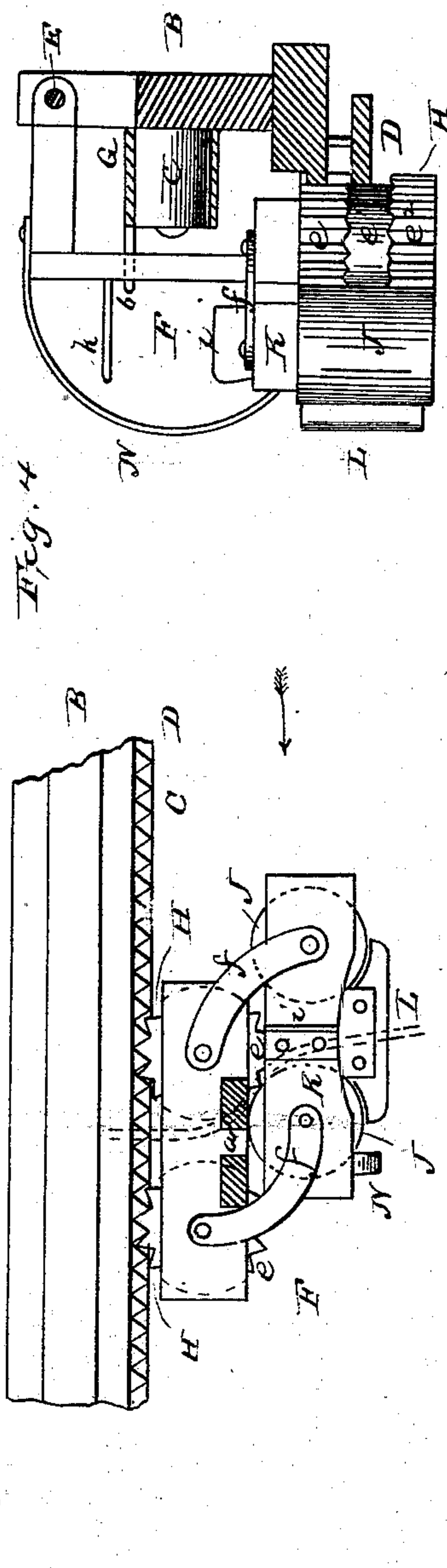
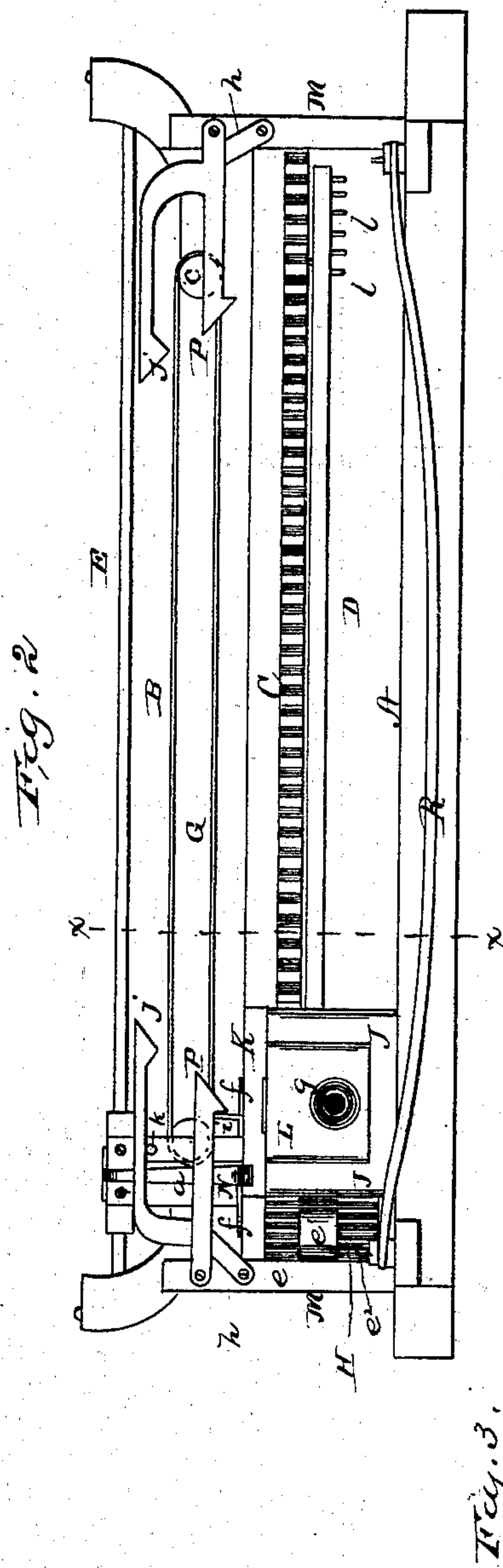
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## FEEDING DEVICE FOR CARDING ENGINES.

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# UNITED STATES PATENT OFFICE.

JOHN F. GEBHART, OF NEW ALBANY, INDIANA.

## FEEDING DEVICE FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 263,161, dated August 22, 1882.

Application filed March 17, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. GEBHART, of New Albany, in the county of Floyd, and in the State Indiana, have invented certain new and useful Improvements in Feeding Devices for Carding-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is plan view of the feed-table, the traveler, the bowed equalizing-rod, and the shifting devices for the feed and distributing rollers, showing also lines of roving distributed on said feed-table. Fig. 2 is a front elevation of Fig. 1. Fig. 3 is an enlarged horizontal section through the traveler, indicating the smooth feed-rollers. Fig. 4 is a vertical cross-section through the rack, the frame, and guide-rod, indicated by dotted line *x x*, Fig. 2, showing an edge view of the traveler.

This invention relates to machinery which is designed for preparing fibrous substances (especially wool) for spinning; and my object is mainly to obtain a perfect and reliable mechanism for feeding second breaker and condenser carding-engines and to obtain a continuous uniformity of the prepared sliver or roving during the process of laying it in parallel serpentine rows upon an endless feed-table.

In machines of this class as hitherto constructed a very serious defect exists, in that the wool is unevenly distributed upon and across the feed-table of the engines.

The following description of my invention, when taken in connection with the annexed drawings, will enable others skilled in the art to fully understand it.

In the annexed drawings, the letter A designates the feed-table, which is composed of a frame and a number of narrow endless bands or aprons of different lengths passed around rollers at opposite ends of the table.

Obliquely across the front end of the feed-table A is a horizontal frame, B, which is mounted on standards at its extremities, and is arranged in a horizontal plane parallel to the top of the said feed-table, at a suitable distance above the same.

Along the lower front side of the frame B is a toothed bar or rack, C, and below this rack

is a smooth edge bar, D, which is flush with the ends of the rack-teeth.

The extremities of the frame B are curved upward and connected together by means of a horizontal rod, E, on which traverses the distributing-traveler F, which is composed of the several parts hereinafter named. The rectangular depending portion of the traveler F has a vertical slot, *a*, through it, in which plays freely a stud, *b*, that projects from the edge of an endless belt, G. This belt G is carried on pulleys *c c*, projecting from the face of the frame A, one of which pulleys is rotated by mechanism engaging with a pinion, *J*<sup>2</sup>, thus giving a continuous motion to the said belt and a reciprocating rectilinear motion to the traveler F, the latter traversing the entire length of the frame or feed. The lower end of the traveler or traveling guide F has applied to it two vertical toothed drums, H H, which are free to rotate. The upper toothed portion, *e*, of said drums H engages with the teeth of the rack C, the annular grooves *e'* bear, by their smooth peripheries, against the straight edge of the bar D below said rack, and the toothed or serrated portion *e*<sup>2</sup> of the drums H H rotates in contact with two smooth surface friction-rollers, J J, and thus gives rotation thereto.

K designates a horizontal plate, which is connected to the traveler F by means of curved vibrating arms *f f*, that are pivoted at their extremities to said parts, as shown in Fig. 1. These curved or segmental arms *f f* allow the plate K to be shifted endwise to the right or left by means hereinafter explained.

The smooth or plain faced rollers J J turn on vertical studs fixed to the bottom of the plate K, and in front of these rollers a piece, L, is applied, which is rigidly secured at its upper end to the plate K.

Through the center of the piece L is a funnel-shaped eye, *g*, which directs and guides the roving between the rollers J J.

The front edge of the plate K is concave, and against this concave edge bears a spring, N, which is secured fast to the top of the traveler F. By forming the concave depression in the face of the plate K, as described, I relieve the spring or obtain an even tension when said plate is shifted at the ends of the feed. By the pressure of the spring N against the plate K either one or the other of the smooth



rollers J, as the case may be, will be held against one or the other of the serrated portions  $e^2$ , thereby securing a feed of the roving between said roller and wheel.

5 The drawings, Fig. 3, show a roving passing through the funnel-eye  $g$  and between a roller J and portion  $e^2$ , in which position of the parts the traveler will be moving in the direction indicated by the arrow. When the  
10 traveler is moved in an opposite direction the opposite roller and feed-wheel will be brought into action, as hereinafter explained.

At the extremities of the feed or feed-table A, and pivoted to posts M M, are hooks P P,  
15 which are supported upon stops  $h h$  in position for operation.

At the middle of the length of the plate K a flat stud,  $i$ , is secured, which, when the traveler reaches the terminus of each stroke, is engaged by a hook, P. When the traveler starts  
20 on its return-stroke the said engaged hook will shift the plate K and change the relative positions of the smooth and toothed rollers. After this shifting of the rollers a cam or V-  
25 shaped tooth,  $j$ , formed on an arm of each hook P, will be brought in contact with a pin,  $k$ , on the traveler F, which will cause the hook P to release the lug or stud  $i$ . The traveler will then proceed on its way across the feed-table  
30 and deliver a line of roving evenly on the endless apron.

In practice I fix into the bottom of the guide-bar D, near its ends, several short pins,  $l$ , (shown in Fig. 2,) which will catch the roving  
35 and temporarily arrest it until the traveler has proceeded the required distance, when the roving will of itself drop free from the studs. These short studs or pins  $l$  may be pitched backward. These pins allow the roving to  
40 drop by its own weight after the traveler has moved a short distance. They check the roving at the termini of the strokes of the traveler, so that the roving will be laid evenly at the sides of the feed-table. If the pins  $l$  are  
45 slightly pitched back, they will more positively catch and shed the roving.

R designates a rod which is arranged in front of the feed and traveler and extended from end to end of the feed-table A. This rod  
50 is bowed, as shown in Fig. 2, when the roving is fed from above beneath it, and it is secured at its extremities rigidly to said table. This rod will, by reason of its curvature, equalize the friction and tension of the roving as it  
55 passes under it on its way to and through the eye  $g$ , above described. If the roving is fed over the rod R, the latter should be bowed upward or in a reverse manner to that shown in

Fig. 2. The bowed guide-rod R will, by reason of its curvature, take up the slack of the  
60 roving on its way to the eye of the traveler. When the distributor of the roving is arranged on the floor or beneath the bed A the curve or bow of the said rod will be up. When the roving-distributor is above the bed A the curve  
65 of the rod R will be down. It is of course understood that the point of delivery of the roving to the said rod is at the middle of its length.

The belt G is or may be operated from the  
70 carding-machine in the same manner as the ordinary Apperly and Clusmered feeder.

Having described my invention, I claim—

1. The combination of the traveler F, mechanism for reciprocating the same, its toothed  
75 drums, a rack-bar, a feed-table, the shifting plate connected by pivoted arms to said traveler, and the smooth rollers receiving rotation, substantially in the manner and for the purposes described. 80.

2. The combination, with the traveler arranged to reciprocate over the feed-table, and means for moving this traveler, of the toothed  
drums, the shifting plate bearing feed-rollers, and an eye piece or guide for the roving, and  
85 a spring acting on the curved edge of the said plate, substantially as described.

3. The combination of shifting hooks and releasing devices therefor with a traveler bearing  
90 toothed drums, and a shifting plate having feed-rollers applied to it, substantially as described.

4. The combination, with the traveler F, of the annularly-grooved toothed drums H H, the rack which engages with the upper teeth of  
95 said drums, the smooth-edge guide rail or bar applied beneath the rack and receiving the grooved parts of the drums, the smooth feed-rollers, a spring for holding said rollers against the drums, and shifting devices for the plate K,  
100 all substantially in the manner and for the purposes described.

5. The combination, with the bar D and pins  $l$ , arranged at the ends of said bar, of the traveler and means for reciprocating the same,  
105 said traveler being adapted to feed and distribute the roving upon the endless feed-apron, substantially as and for the purposes described.

In testimony whereof I affix my signature, in  
110 presence of two witnesses, this 17th day of February, 1882.

JOHN F. GEBHART.

Witnesses:

T. R. FUGIT,  
J. G. DANIEL.