

(No Model.)

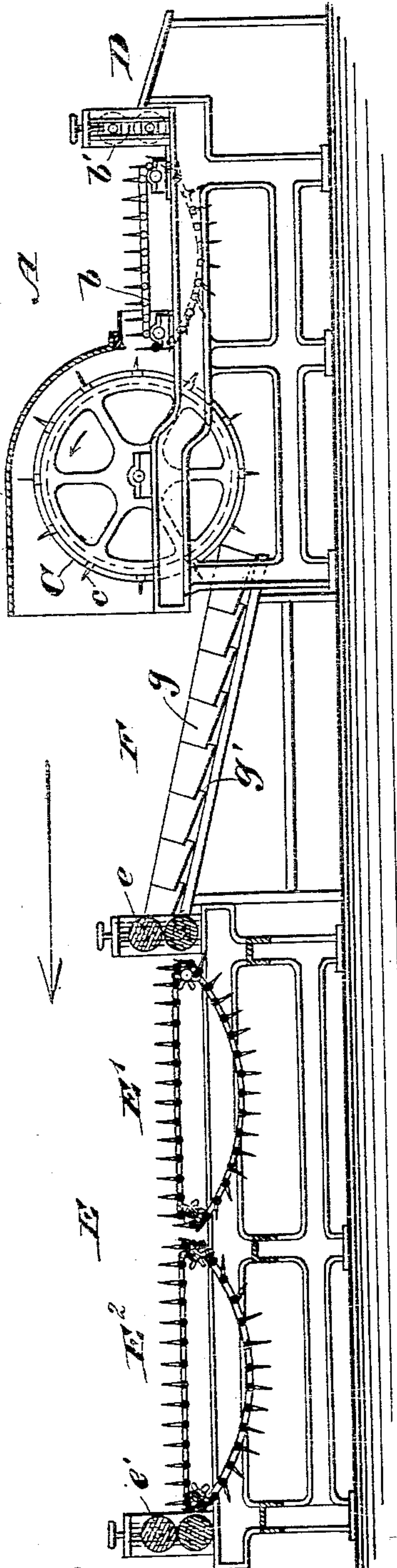
T. B. ALLEN.

MACHINE FOR HACKLING AND PREPARING FIBERS.

No. 504,648.

Patented Sept. 5, 1893.

Fig. 1



WITNESSES:

C. Neveu
C. Sedgwick

Fig. 2

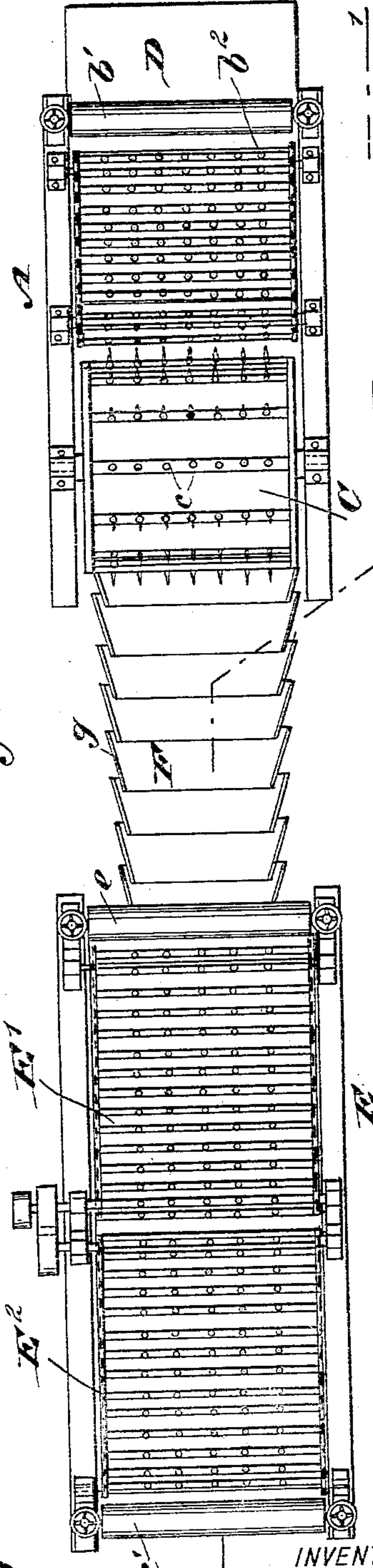


Fig. 3



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MACHINE FOR HACKLING AND PREPARING FIBERS.

SPECIFICATION forming part of Letters Patent No. 504,648, dated September 5, 1893.

Application filed September 19, 1892. Serial No. 446,285. (No model.)

To all whom it may concern:

Be it known that I, THEODORE B. ALLEN, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Machine for Hackling and Preparing Fibers, of which the following is a full, clear, and exact description.

In preparing certain fibers for rope making, particularly sisal, it has heretofore been necessary to subject it to successive treatment by hackling machines, two differently moving hackling chains or belts generally being employed, and the successive passages through such frames is necessary in order to properly prepare the fiber for the subsequent treatment in forming it into slivers or strands of equal size and converting it into rope. The successive hackling adds to the expense by prolonging the treatment and by necessitating employment of a large complement of attendants, and the object of the present improvement is to provide a compact machine, the elements of which are so combined and arranged as to hackle and comb the fiber and form it into a sliver, that the "leveling" and reducing of the sliver to a condition for the spinner may be accomplished by a reduced number of operations and a reduced number of machines and attendants, the object being further to materially increase the capacity of plants of this character.

While I believe the improvements are especially adapted to treating sisal, its usefulness is not limited to such material.

The invention comprises a hackling machine which finally hackles the fiber and delivers it in the form of a large, properly treated sliver, and an initial hackling and combing machine, which first hackles and combs the fiber and delivers the same to the said final hackling machine which consists of two ordinary differentially moving hackling chains or belts having the usual drawing and feed rolls.

A table in the form of an inclined trough hereinafter described, is arranged in connection with the final hackling machine, between the same and the combing cylinder, to support the fiber which passes continuously from the combing cylinder to the feed rolls of the hackling machine.

Reference is to be had to the accompanying

drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation, partly in section, as indicated by line 1—1, Fig. 2, showing an apparatus embodying my invention. Fig. 2 is a plan view thereof; and Fig. 3 is an end view of one of the sections of the trough-like table hereinafter to be described.

The combined hackling and combing machine A comprises a combing chain or belt *b* and a combing cylinder C arranged in conjunction therewith, the combing chain having feed rollers *b'*, and a feed table D being erected in front of the said feed rolls, on which table the raw material is placed by an attendant. The traveling belt is made up of gill bars *b²*, in the usual manner and its upper side travels in the direction of the combing cylinder C, forming the feed for the latter. The combing cylinder is provided on its periphery with combing pins *c* preferably in longitudinal rows, and the speed of the cylinder is sufficiently greater than the travel of the combing chain *b* to effect a proper initial hackling and combing of the material.

Beyond the combing cylinder is the final hackling machine E, consisting of a drawing frame comprising the combing belts or chains *E'*, *E²*, of differential speed, and the feed rolls *e*, and drawing rolls *e'*.

Interposed between the combing cylinder and hackling machine E, is a table F, consisting of an inclined chute of trough shape, the chute being made up of a series of concave tapering sections *g*. The sections *g* are arranged to overlap and they are vertically spaced at their overlapping ends, as best shown in Fig. 1, to form openings therebetween, as at *g'*. This arrangement somewhat lessens friction between the moving fibers and the chute by reducing the contact surface, and permits dust and dirt to gravitate through the openings provided.

In operation, the material being fed to the feed rollers *b'* by an attendant, it is drawn by the chain *b* in the direction of the cylinder C, and delivered to the more rapidly moving combing pins of the latter. The fibers are discharged from the cylinder C at the top of the latter and are thrown therefrom to the table F, and pass uninterrupt-

edly to the final hackling machine E, being taken up by the feed rollers *e* of the latter, the table F supporting the fibers as they are thrown from the combing cylinders, and enabling the same to be taken up by the feed rollers *e* without the aid of an attendant. The hackling chain *b* travels at a speed corresponding to that of its feed rolls *b'*. The fibers pass through the drawing frame E' E² and pass from the drawing rolls *e'* in the form of a thoroughly hackled and combed sliver. Thus by the above described apparatus I so effectively hackle and prepare the fiber in one operation that I do away with the necessity of several successive hackling machines, and actual use has demonstrated that the capacity is about double that of the machines generally employed.

A further economy results from the fact that my initial machine, comprising the combing chain and combing cylinder, so nearly completes the treatment that there is no damaging strain on the final reducing and "leveling" machines, whereas by treating the fiber by successive passages through hackling machines, as heretofore necessary, the latter were liable to be damaged and a consequent loss by stoppage for repairs resulted.

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

1. In hackling machines, the combination of an initial hackling mechanism comprising a combing cylinder and a combing belt or chain forming the feed for the cylinder, and a final hackling and combing mechanism beyond the cylinder, consisting of a drawing frame comprising differentially moving combing chains, that take up and finish the material thrown off from the cylinder, all com-

bined and co-operating, substantially as shown and described.

2. In hackling machines, the combination of an initial hackling mechanism, comprising a combing cylinder and a combing chain forming a feed for the cylinder and having its upper side or part moving toward the latter, and a final hackling and combing mechanism beyond the combing cylinder, consisting of a drawing frame comprising differentially moving combing chains or belts, all arranged, substantially as shown and described.

3. In hackling machines, the combination of an initial hackling mechanism, comprising a combing cylinder and a combing chain or belt forming a feed for the cylinder, a final hackling mechanism beyond the cylinder, consisting of a drawing frame comprising differentially moving combing chains or belts, and a receiving table interposed between the cylinder and drawing frame, for receiving the material thrown off from the cylinder, substantially as described.

4. In a machine for hackling and preparing fiber, a receiving chute leading to and in combination with drawing frames, the said chute being made up of overlapping sections, the overlapping ends being spaced vertically, substantially as described.

5. In a machine for hackling and preparing fibers, a receiving chute leading to and in combination with a drawing frame, the said chute being inclined and made up of overlapping sections, the overlapping ends being spaced vertically and forming openings, substantially as described.

THEODORE B. ALLEN.

Witnesses:

HARRY B. ALLEN,

M. L. ALLEN.