(No Model.)

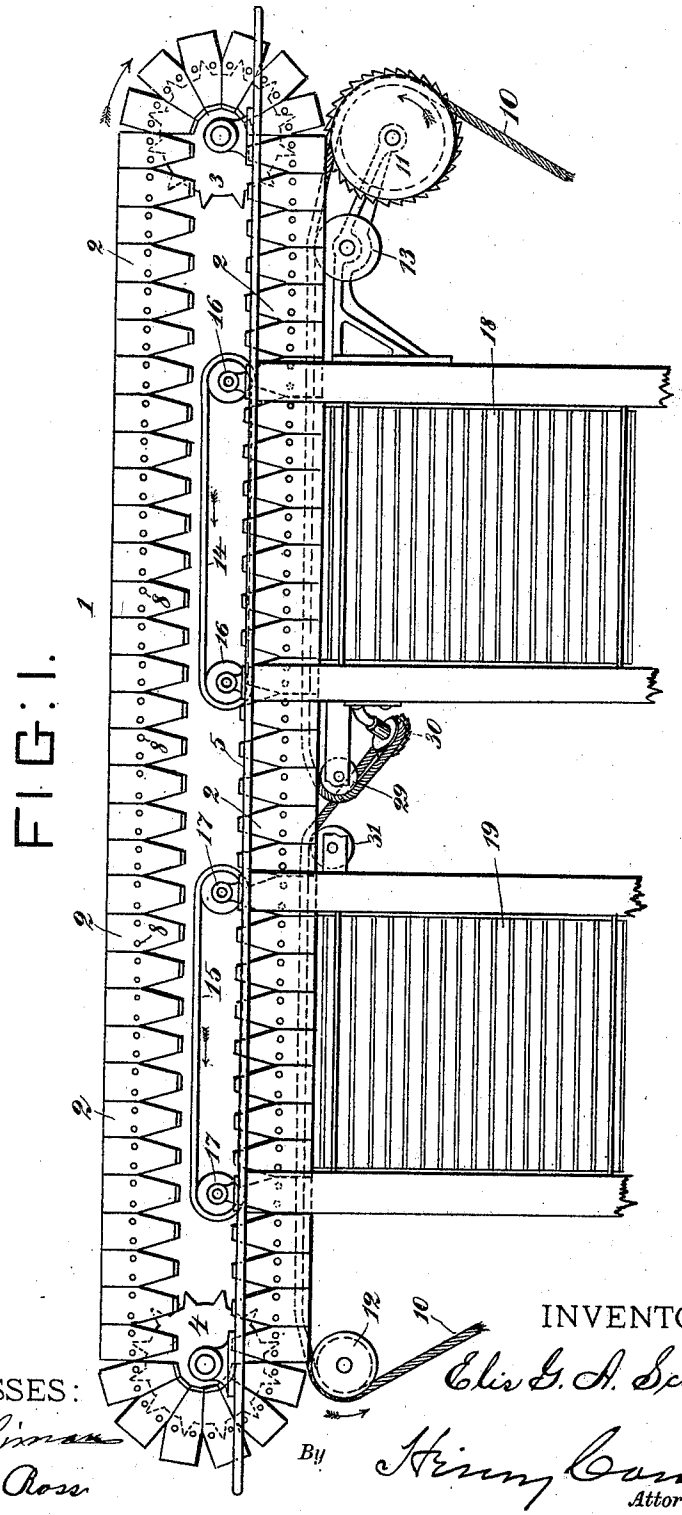
4 Sheets—Sheet 1.

E. G. A. SCHENSON.

FEEDER FOR SCUTCHING MACHINES.

No. 606,476. Patented June 28, 1898.

FIG. 1.



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E. G. A. SCHENSON.

FEEDER FOR SCUTCHING MACHINES.

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FIG. 5.

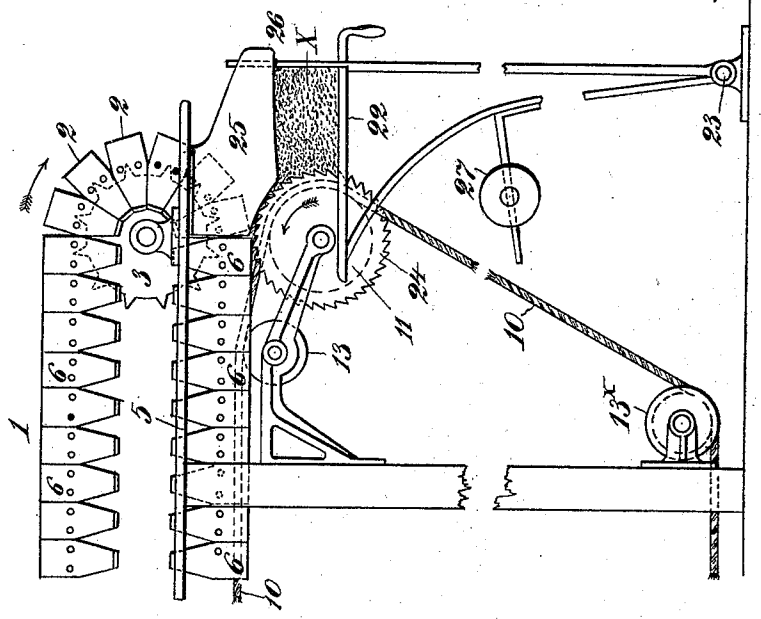


FIG. 4.

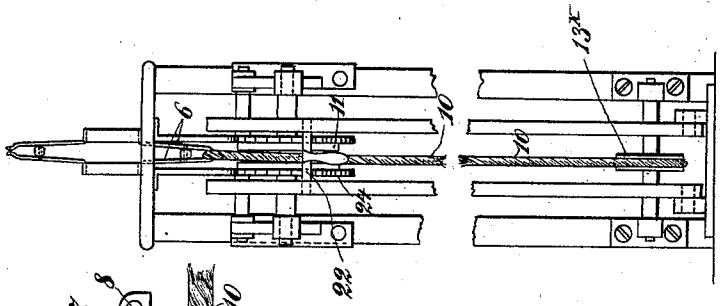


FIG. 2.

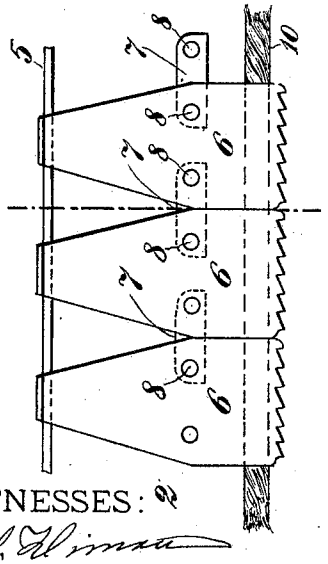
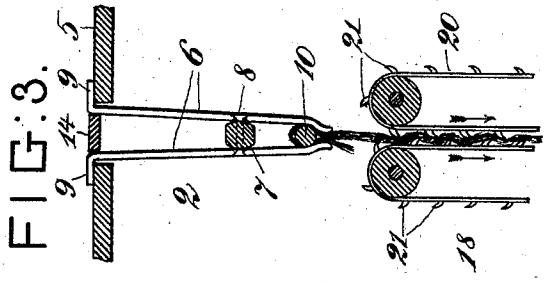


FIG. 3.



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FIG: 8.

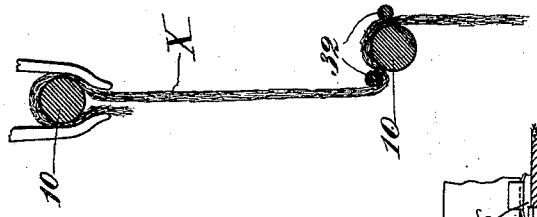


FIG: 6.

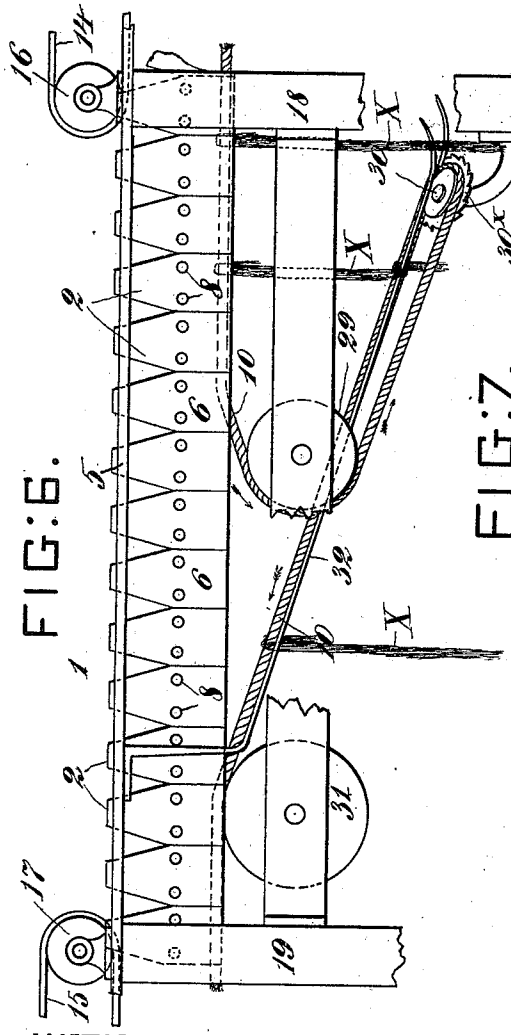
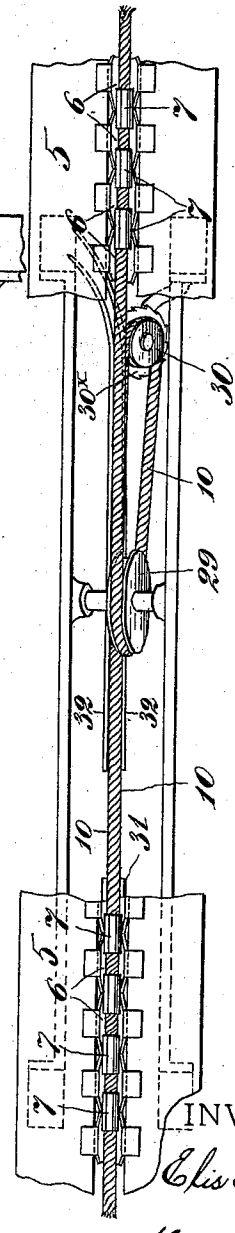


FIG: 7.



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FIG. 10.

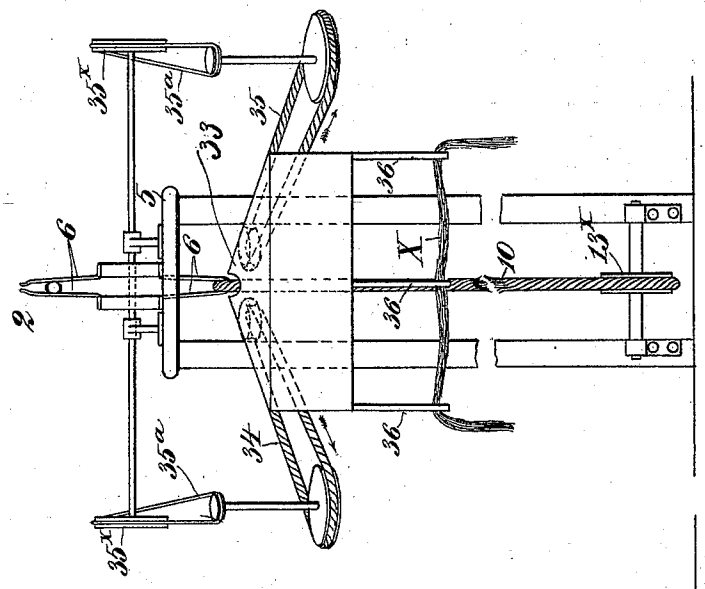
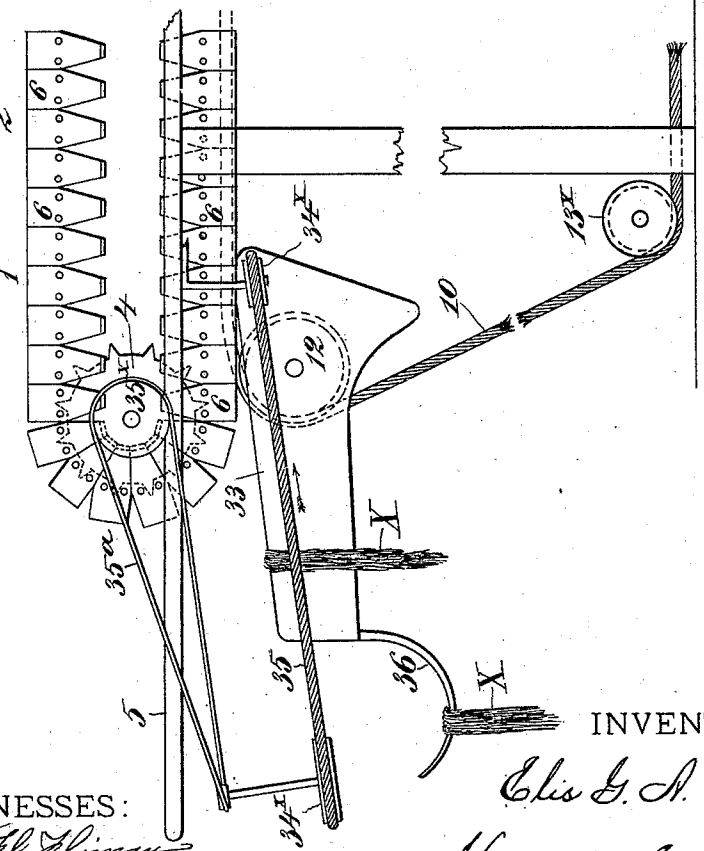


FIG. 9.



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UNITED STATES PATENT OFFICE.

ELIS GUSTAF ADOLF SCHENSON, OF ARBRA, SWEDEN, ASSIGNOR TO THE PATENTAKTIEBOLAGET SVEA, OF STOCKHOLM, SWEDEN.

FEEDER FOR SCUTCHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 606,476, dated June 28, 1898.

Application filed December 23, 1896. Serial No. 616,718. (No model.)

To all whom it may concern:

Be it known that I, ELIS GUSTAF ADOLF SCHENSON, a subject of the King of Sweden and Norway, residing at Arbra, in the Kingdom of Sweden, have invented certain new and useful Improvements in Feeders for Scutching-Machines and the Like, of which the following is a specification.

This invention relates to machines for the treatment of flax and other fibrous or textile material, commonly known as "scutching" and "hackling" machines; and the object of the invention is to produce a feeder or feeding mechanism for carrying the fibrous material through the scutching or hackling machines, which latter may be of any kind suited to operate with the feeder.

The feeding mechanism consists in a general way of an endless series of clips connected in the form of a chain running on sprocket-wheels and driven in any suitable manner and an endless rope embraced by the clips and moving with them. The raw fibrous material is presented sidewise to the said rope and clips and is fed into the bite of the clips at the point where the rope passes into the same. In the continuous movement of the rope and clips the fiber is folded near one end over the rope, gripped and carried along, its pendent longer end being drawn through a scutching or hackling machine below. After passing through one scutching-machine the fiber is turned end for end by a peculiar arrangement of the rope over sheaves, and the other end thereof is carried through a second scutching or hackling machine. After passing through this second machine the fiber is carried out over and deposited by special mechanism on receiving hooks or the like.

The feeder will now be more particularly described with reference to the accompanying drawings, which illustrate an embodiment thereof.

Figure 1 is a side elevation of the endless chain of clamps with a part of the endless rope and of the scutching or hackling machine. Fig. 2 is a side view of three of the clips of the feeder on a larger scale than Fig. 1; and Fig. 3 is a transverse section on the same scale as Fig. 2, showing the fiber in the clip and also as being operated on by a scutching-machine. Fig. 4 is an end view of the supply end or front end of the feeding mechanism, and Fig. 5 is a side view of the same, both being on the same scale as Fig. 1. These views show the fiber-supplying mechanism situated at the right-hand end of Fig. 1, but omitted from the latter view for lack of room. Figs. 6 and 7 are respectively a side view and an end view, on a larger scale than Fig. 1, of a part of the mechanism illustrating the device for shifting the fiber end for end between the scutching or hackling machines. Fig. 8 is a view on a large scale, which also illustrates a detail of this mechanism. This view will be hereinafter described. Figs. 9 and 10 respectively are a side view and an end view of the mechanism at the delivery end of the feeder (the left-hand end in Fig. 1) for delivering and piling up the treated fiber. This device is represented on the same scale as Fig. 1 and is omitted from that view for lack of room.

The endless chain 1 (see Fig. 1) is composed of clips 2, coupled together like the links of a chain and therefore called a "chain." This chain is mounted on two sprocket-wheels 3 and 4, the bearings of which are supported on a bed 5, which is slotted longitudinally for the clips to depend through and play in as they are carried along. Each clip 2 is composed of two like jaws 6 6, (see Figs. 2 and 3,) which are connected loosely together in pairs by intermediate links 7 and rivets 8, so that the jaws may open and close slightly, turning as levers on the fulcrums at rivets 8. The inner ends of the jaws 6 are slightly tapered and each has an outwardly-turned flange or shoulder 9 to take over, bear on, and slide along the upper face of the smooth bed 5, as seen in Fig. 3, and the broader outer ends of the jaws are bent inwardly and may have their edges toothed or serrated, as seen in Fig. 2.

10 is an endless rope arranged over suitable guide pulleys or sheaves. Of these, sheaves 11 and 12 (see Fig. 1) are arranged directly under the respective sprocket-wheels 3 and 4 and below the chain 1. A pulley 13 guides the rope 10 into the jaws of the clips. The lower guide-sheaves of the rope $13^{\times}$ are seen in Figs. 5 and 9. Inside of the endless chain, Figs. 1 and 3, are situated at proper intervals endless belts 14 and 15, carried, respec-

tively, on pulleys 16 and 17 and so arranged that the lower side of each belt runs in the longitudinal slot in the bed 5 between the flanged inner ends of the clip-jaws 6, as clearly shown in Fig. 3, so as to spread said inner ends and cause the outer ends of the jaws to clamp on the rope 10. In Fig. 1 portions of two scutching-machines 18 and 19 are shown. These may be constructed in many ways. For example, each may consist of two endless bands or aprons (20 in Fig. 3) with transverse cleats (21 in Fig. 3) so placed that those on one moving apron enter between those on the other apron. I have not deemed it necessary to show mechanism for driving these machines, as they are not my invention.

Figs. 4 and 5 show the devices for supplying the fiber X to the carrying and feeding mechanism.

22 is a table to support the fiber, said table being pivoted below, at 23, by its legs, so that it may be swung or moved toward the sheave or pulley 11. On the same shaft with the sheave 11 are secured two toothed wheels 24, situated one on each side of said sheave. At the under side of the bed 5 and in front of the wheels 24 are fixed plates 25, curved to fit over the said wheels, so that there will be only a small space between them. These plates extend out over the table 22, which has a backboard 26 (omitted from Fig. 4) cut away to allow the plates 25 to pass by it and permit the table to move in toward the wheels 24. A weight 27 or other equivalent device is mounted on the legs of the table 22 and arranged to press it up toward the wheels 24.

The raw fibrous material X is laid on the table 22, which is drawn back for the purpose, and when released the weight 27 presses the mass of fiber confined between the table 22, the backboard 26, and the plates 25 up to the toothed wheels 24, which are rotating in the direction indicated by the arrow thereon. The teeth on the wheels 24 carry up the fiber in tufts and supply it to the bite of the endless series of clips 1 and rope 10, the depth of the teeth determining the amount of fiber in each tuft. Thus the fiber will be fed substantially as in the form of a sheet or lap of uniform thickness. The fiber is caught between the jaws of the clips and bent over the rope 10, as clearly indicated in Fig. 3.

As the fiber is carried along its longer pendent end enters the first scutching-machine 18, and in order that it may be gripped the more firmly by the clips while the scutching-machine is acting on it the belt 14 is placed at this point and is of such length as to act on that portion of the chain of clips which may be at any time directly over this machine 18. The other belt 15 is in a like manner arranged over the scutching-machine 19. The belts 14 and 15 may as well be chains or other endless flexible spreading devices of the proper width.

When the fiber carried by the endless chain of clips shall have passed the first scutching-machine 18, it passes out of the clips and is turned end for end, so that its other end may be operated on by the second scutching-machine 19.

The mechanism for turning the fiber will now be described with especial reference to Figs. 6, 7, and 8. The rope 10, moving in the direction of the arrows in Fig. 6, leaves the clips 2 and passes over a somewhat obliquely-mounted guide-sheave 29 below the clips, thence back toward the front end of the machine, thence about another nearly horizontal guide-sheave 30, and thence upward and downward over a guide-sheave 31 into the jaws of the clips again. The inclined part of the rope extending from the sheave 30 to sheave 31 is embraced between two fixed and smooth guide-bars 32, which may flare or diverge somewhat at a point in front of the sheave 30.

The fiber or material X is grasped somewhat nearer one end than the other (see Fig. 3) when it is first supplied to the feeder, and it is the longer free pendent end thereof which is scutched or hackled by the first machine 18. When this finished end of the fiber emerges from the machine 18, it is brought into contract with the sheave 30, which is provided with teeth $30^{\times}$. These carry the bight of the fiber over the rope 10 and into the bite or nip between the guide-bars 32. This position of the fiber is clearly illustrated in the enlarged detail view Fig. 8, which shows the rope 10 above still grasping one end of the fiber, while the other pendent end is being gripped between the rope below and the guide-bars 32. These bars being smooth and the rope comparatively rough, the latter carries the fiber along toward the sheave 31; but as the upper end of the fiber approaches the sheave 29 it is released by the rope 10 leaving the jaws of the clips. The fiber now drops and hangs suspended from the inclined part of the rope 10, which carries it over the sheave 31 into the jaws of the clips. Thus the fiber is turned end for end and the end first gripped by the clips will now be carried into the second scutching-machine 19.

In Fig. 6 some tufts of the fiber X are shown in the several positions they assume in turning end for end.

The fiber after passing through the last scutching-machine 19 is carried on and delivered by means clearly illustrated in Figs. 9 and 10.

At the delivery end of the endless chain of clips 2 is a triangular table 33, the apex of which is directed toward the chain and extends under the same. The sheave 12 extends up through a slot in this table. At the converging sides of the table are arranged endless ropes 34 and 35, mounted on suitable horizontally-arranged sheaves $34^{\times}$. The sides of the table are flanged down and the ropes 34 and 35 are a little below the upper surface of the table. The sheaves $34^{\times}$ may be driven from sheaves $35^{\times}$ on the same shaft with the

sprocket-wheel 4 of the chain of clips through the medium of belts 35^a, as seen in Figs. 9 and 10.

As the fiber carried by the chain nears the delivery end thereof it is parted by the apex of the table 33 and its two pendent ends pass in between the smooth pendent flanges on the table and the endless ropes 34 and 35, moving along the same in the direction indicated by the arrows. As the fiber passes over the broader part of the table it becomes straightened out, and when it passes off therefrom it falls into a receptacle formed of hooks 36 or onto a table, as may be desired.

I have not deemed it necessary to show the entire framework on which the feeder is mounted, as this may be of any kind desired and may be designed and built by any good workman.

I have for convenience called the lower portion of the endless chain of clips which carries the fiber the "lower side" of the chain and the upper portion of the endless rope carried in said clips the "upper side." The rope and chain of clips will be in a vertical plane, as shown, the former directly under the latter.

Having thus described my invention, I claim—

1. A feeder for carrying fibrous material through a scutching or hackling machine, comprising an endless series of clips 2, arranged in a vertical plane over the said machine with its lower side adjacent thereto, the wheels on which said endless series of clips is mounted, means for moving said series of clips, an endless rope arranged in a vertical plane and its upper side engaging the jaws of the clips at the lower side of said endless series, whereby the latter carry the rope in their travel, guides on which said rope is supported, and means for supplying the fiber laterally and in a regulated manner into the bite of the rope and series of clips at the point where the rope enters the latter, substantially as set forth.

2. A feeder for carrying fibrous material through a scutching or hackling machine, comprising an endless series of clips 2, arranged in a vertical plane over the said machine with its lower side adjacent thereto, the wheels on which said endless series of clips is mounted, means for moving said series of clips, an endless rope arranged in a vertical plane and its upper side engaging the jaws of the clips at the lower side of said endless series, whereby the latter carry the rope in their travel, guides on which said rope is supported, means for supplying the fiber to the feeder in a regulated manner, and means substantially as described for spreading the upper ends of the jaws of the clips 2, above the scutching-machine, substantially as set forth.

3. A feeder for carrying fibrous material through a scutching or hackling machine, comprising an endless series of clips 2, arranged in a vertical plane over the said machine with its lower side adjacent thereto, the wheels on which said endless series of clips is mounted, means for moving said series of clips, an endless rope arranged in a vertical plane and its upper side engaging the jaws of the clips at the lower side of said endless series, whereby the latter carry the rope in their travel, guides on which said rope is supported, means for supplying fiber in regulated quantity to the feeder, and means for causing the jaws of the clips 2 to clamp firmly on the fiber, said means comprising an endless belt 14 and carrying-pulleys therefor, the said belt being arranged in a vertical plane with its lower side occupying a position between the upper ends of the jaws of the clips, substantially as set forth.

4. In a fiber feeding and carrying machine, the combination with the endless chain of clips, means for moving said clips and the endless rope 10, having its upper side embraced by the jaws of said clips, of means for turning the fiber end for end, comprising a sheave 29, which guides the rope from the clips, a toothed sheave 30, situated below and forward of the sheave 29, the rope 10 passing over both of said sheaves, the sheave 31, which guides the rope back into the clips, and the smooth bars, 32, arranged at the sides of that part of the rope 10 between the sheaves 30 and 31, substantially as set forth.

5. The combination with the endless chain of clips, means for moving said clips and the endless rope having its upper side embraced by the jaws of the clips at the lower side of the chain, of the sheave 12 which guides the rope out of the clips at the delivery end of the feeder, the triangular table 33, situated at the delivery end of the chain, and the moving endless ropes arranged at the respective sides of the table, for receiving and straightening out the fiber, substantially as set forth.

6. In a feeder for the purpose set forth, the combination with the endless rope 10, of a chain of clips 2, each composed of two jaws 6, hinged together and adapted to be clamped on the said rope, and means for spreading the other ends of the jaws to cause them to clamp on the rope, substantially as set forth.

7. The combination with the endless chain or clips, means for moving said clips and the endless rope 10, embraced and carried thereby, of means for supplying the fiber to the chain, comprising the toothed wheels 24, the rocking table 22, means for pressing the table up to the said toothed wheels, and the fixed plates 25, over the said wheels, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ELIS GUSTAF ADOLF SCHENSON.

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ERNST SVANQVIST.