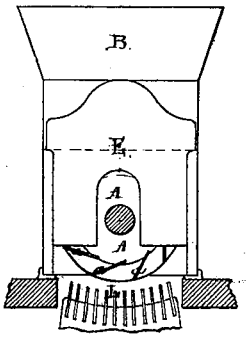
W. McALLISTER.

FLOCK MACHINE.

No. 109,920. Patented Dec. 6, 1870.

Fig. 3



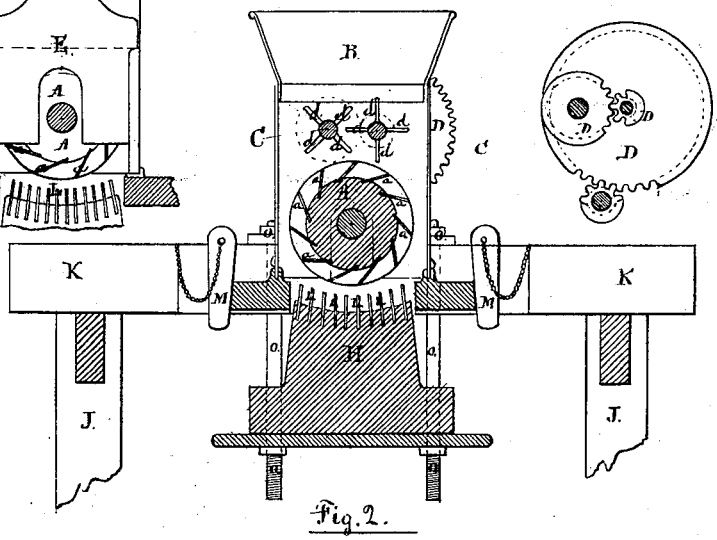


Fig. 2.

Fig. 4

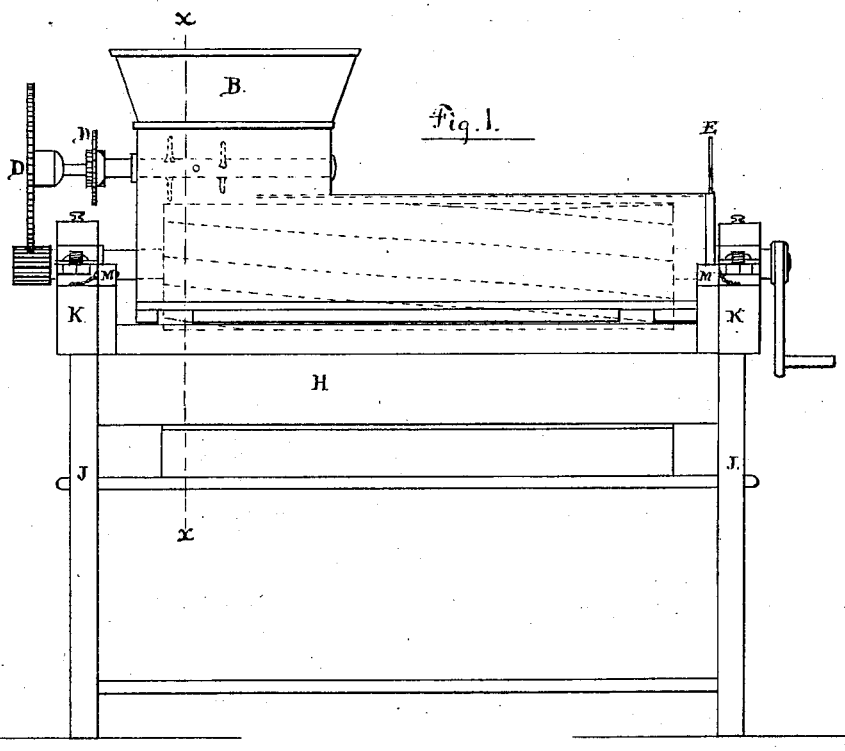


Fig. 1.

Witnesses.

Ellis L'Hotte

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WILLIAM McALLISTER, OF LAWRENCE, MASSACHUSETTS.

Letters Patent No. 109,920, dated December 6, 1870.

IMPROVEMENT IN FLOCK-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, WILLIAM McALLISTER, of Lawrence, county of Essex and State of Massachusetts, have invented certain Improvements in Flock-Machines, of which the following is a specification.

Figure 1 is an elevation of the machine.

Figure 2 is a section on the line *x x*.

Figure 3 is a view showing the gate E partly lifted.

Figure 4 is a gear carrying the feed.

A is a roller, provided with spiral knives *a a*.

B is a hopper, through which the material enters.

C is the feed regulating the supply of material to the cutter.

D is the gear carrying the feed.

E is a gate for regulating the exit of the flock.

H is a bed supporting two or more knives.

L L are the knives in the bed H.

K K and J J are frame-work supporting various parts of the machine.

M M are wedges holding in place the bed H.

O O are set-screws to elevate or depress bed H.

The first part of my invention relates to the combination of the stationary knives and rotary spiral knives, in such a manner that the said stationary knives can be reversed readily by lifting the bed in which they are held from its place, and reversing it end for end; the object of this part of my invention being a simple and economical method of keeping the knives of a flock-machine constantly sharp and ready for use.

The second part of my invention relates to the feeding mechanism, consisting of the hopper B and spiked feed-rollers C, revolving in opposite directions, having their spikes interlapping; the object of this part of my invention being to produce a new and cheap mechanism for tearing apart the flock material, and regulating the supply of the same to the reducing-chamber.

The third part of my invention relates to the combination, with the hopper and knives of a flock-machine, of a reducing-chamber, provided with an adjustable opening for the escape of the flock; the object of this part of my invention being to increase or diminish the quantity of flock which can escape from the reducing-chamber, thereby keeping it a longer or shorter time under the action of the reducing-knives.

The frame-work K K and J J should be of some durable material, and very strongly put together, affording a steady support to bed H and roller A.

Bed H has two or more parallel steel knives, and should be provided with set-screws or some mechanical device of that kind.

Roller A is provided with a series of parallel steel knives, *a a*, arranged in a spiral, so disposed that the edges of the same may revolve nearly in contact with the edges of the knives L.

Roller A is inclosed in a case or box, called a reducing-chamber. This chamber has a hopper, B, at one end, and an aperture at the other end, with an adjustable cover or gate, E.

Thus this reducing-chamber is provided with an inlet to receive the flock through the hopper, knives to reduce the flock, and an outlet for the escape of the flock through the gate.

This gate is made adjustable, and furnishes a simple and good method of controlling the rate and fineness of the product of the machine.

By means of this gate, the flock may be retained in the reducing-chamber, and subjected to the action of the knives a longer or shorter time, as required to make a finer or coarser product.

This reducing-chamber, with an adjustable outlet, possesses many advantages; for example, by shutting the gate nearly down when the flock material is uneven and lumpy, the coarse material will be held back in the chamber, and the flock material of sufficiently fine grade allowed to escape; and, in general, this adjustable gate is a most valuable part of my invention, as it completely controls the product of the machine, and its influence extends back upon the flock material while in the reducing-chamber, and is felt by the flock from the moment it enters the hopper

The essential parts of the reducing-chamber are the inlet or hopper, the knives, and the outlet or gate.

Between the hopper B and the reducing-chamber is the feed C. This consists of two or more rollers with protruding spikes.

These spiked rollers revolve in opposite directions, having their spikes interlapping, and are placed under the hopper, so that the spikes may catch and tear out a certain portion from the material in the hopper, and carry it down to the reducing-knives in the chamber below.

The essential parts of this feed are the hopper, the rollers, and the spikes on these rollers.

I am aware that hoppers containing feed-rollers are not new, and are used in other machines; but, where two rollers have been used, they have been either plain or corrugated, for the purpose merely of feeding, and not spiked, as in my machine, for the double purpose of picking apart the material, and then feeding it to the place where it is required.

Bed H is so constructed that it can readily be lifted from its position, and reversed, end for end, when the knives L have become dull.

These knives should be made of a softer quality of metal than the spiral knives *a a*, in order that the former may take the main part of the wear while in use.

By a constant action of the machine, the edge of the knives L of the bed H will be turned in the direc-

tion away from the revolving knives at the same time the opposite edges of the knives L are being constantly sharpened, so that, when bed H is reversed, we have a new sharp edge on the knives L to oppose to the revolving knives *a a*.

In order that this reversion may be easily done, I use the wedges M, which being removed, the roller A can be lifted from its bearings, and the bed H reversed.

The knives *a a* should be made of good tempered steel, and will seldom require sharpening. When this is necessary, it can be done without detaching them from their places.

What I claim as my invention is—

1. The reversible bed H and knives L, when constructed and operating substantially as and for the purposes described.

2. The feeding mechanism above described, consisting of the hopper and the spiked feed-rollers, revolving in opposite directions, and having their spikes interlapping.

3. The reducing-chamber above described—that is, when provided with an inlet to receive the flock, and an outlet whose dimensions are controlled by an adjustable cover, for the purpose of retaining the flock a longer or shorter time, as and for the purposes above described.

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Witnesses:
WM. SCHOULER,
E. L. MOTTE.