

N. McLEOD.

2 Sheets—Sheet 1.

Feed Cutter.

No. 83,984.

Patented Nov. 10, 1868.

Fig. 1.

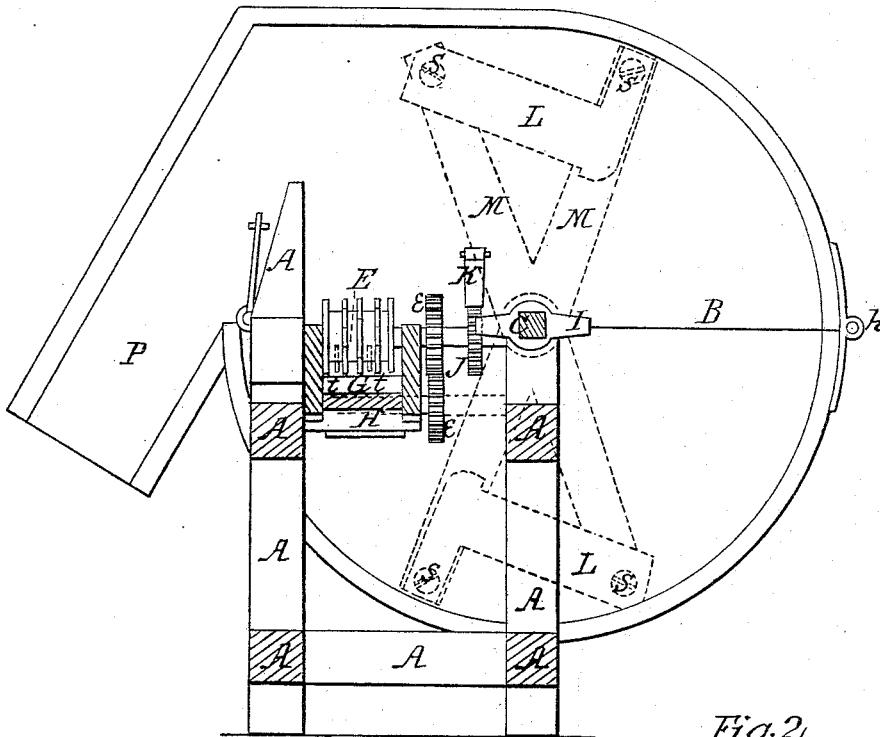
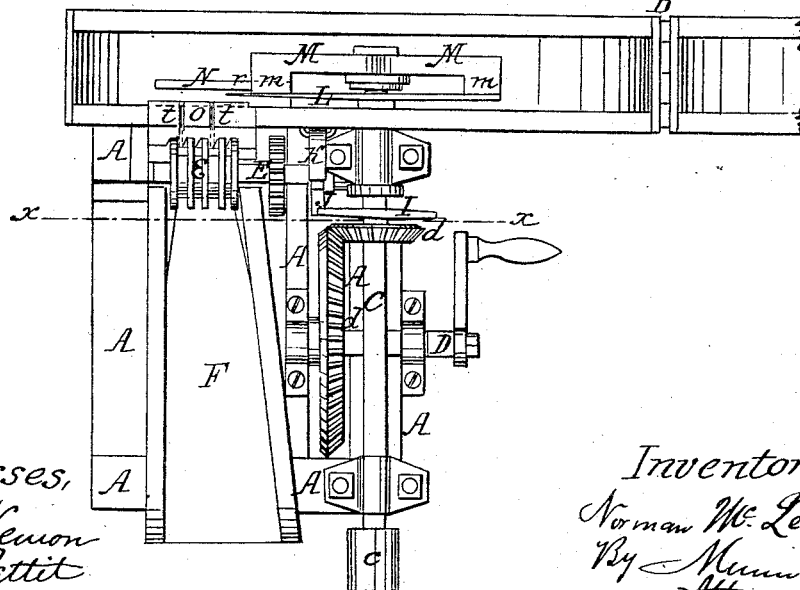


Fig. 2.



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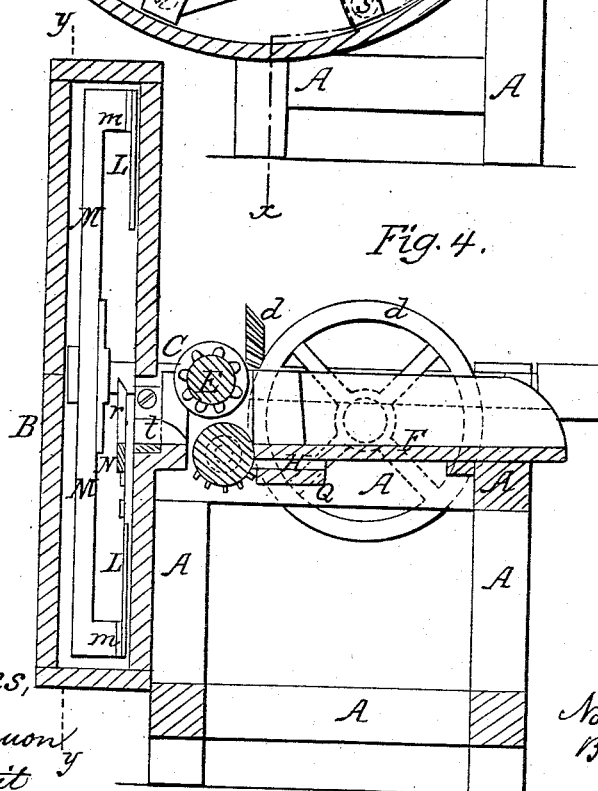
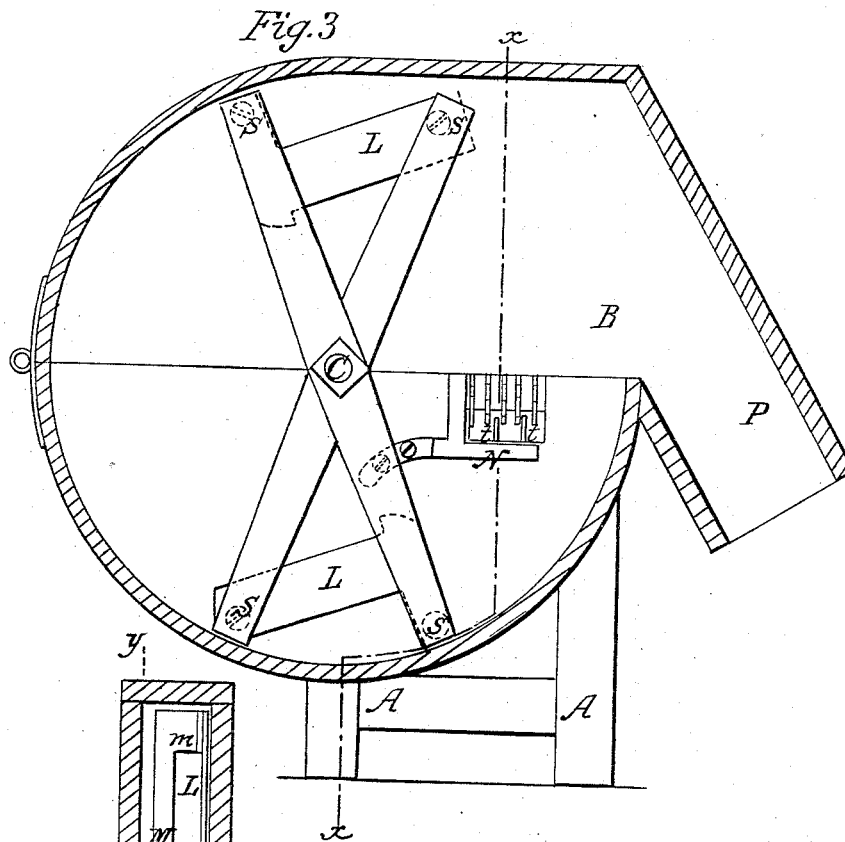
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N. McLEOD.
Feed Cutter.

2 Sheets—Sheet 2.

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NORMAN McLEOD, OF CLIO, SOUTH CAROLINA.

Letters Patent No. 83,984, dated November 10, 1868.

IMPROVEMENT IN FEED-CUTTERS.

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

To all whom it may concern:

Be it known that I, NORMAN McLEOD, of Clio, in the district of Marlborough, and State of South Carolina, have invented a new and improved Feed-Cutter; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical cross-section, and

Figure 2, a top view.

Figure 3 is a sectional front elevation, in the line *y y* of fig. 4.

Figure 4 is a sectional side elevation, in the line *x x*, figs. 2 and 3.

This invention contains several important improvements in feed-cutters, among which may be mentioned the following, viz: first, the knives can be sharpened on the machine; secondly, it does not waste the straw or grain; thirdly, it can be operated equally well by hand or horse-power, in doors or out; fourthly, it is simple, light, portable, and cheap; fifthly, the sheaf-box or feed-table can be easily removed, for convenience in transporting the instrument, and in carrying it through small doors.

All these improvements result from the peculiar construction and arrangement of the several parts, which will now be more particularly described.

In the drawings, A indicates the frame of the machine, attached to the end of which is a circular box or screen, B, containing the cutting-knives.

O is the shaft upon which the cutters are mounted, and D is a small crank-shaft, connected with it by bevel-gearing *d d*, for operating it by hand, a belt-pulley, *e*, being provided for operating it by horse-power, or water or steam-power.

F is the feed-table or sheaf-box, which I usually make of much greater length than is represented in the drawings. The outer end of the feed-table rests upon a beam of the frame A. The inner end is provided with tenons, which fit into mortises, either in the frame or the screen B, or it may be so constructed that the whole end of the table shall fit into a socket, prepared for its reception, so that, in either case, the feed-table may be instantly removed by lifting its outer end slightly, and pulling it lengthwise from its socket.

At or near the inner end of the table F are the feed-rollers, the lower one of which, G, has its bearings, H, attached to the bottom of the table itself by means of the cross-piece Q, which is, in turn, secured to the under side of the free end of the table. The table is not fastened to the walls of the sheaf-box, towards its inner end, in order that it may act as a spring, and yield when the feed jams between the rolls.

The upper feed-roll E is provided with teeth, and works the lower roll by means of gearing *e e*.

The upper feed-roll is rotated by means of an arm, I, attached to the main shaft O, which strikes against

a ratchet-wheel, J, affixed to the roller-shaft, and rotates the latter in an intermittent manner, one step at every stroke of the arm. A pawl, K, prevents any back action of the feed-roll.

The cutter-knives L L are made in the angular form represented by dotted lines in fig. 1, and are attached by screws *s s* to a pair of cross-arms, M M, fixed to the main shaft O. The knives do not lie in contact with the arms M M, but are held slightly away from them by means of blocks *m m*, through which the screws pass, so that, as the cutters revolve with their shaft, they pass on one side of a fixed iron or steel plate, N, while the arms M M pass on the other side of it, the blocks *m m* passing just beyond the end of it. In this way the knives intercept the feed between the plate N and an iron or steel plate, O, at the inner end of the feed-table, and sever it easily.

The part thus severed is carried round the circular box by means of the arms M M, and is thrown out through a spout, P. If desired to discharge it further from the machine, the spout P may be removed by turning the top or cover of the box B back on its hinge *h*, or otherwise.

It will be observed that the position of the knives L L on their arms is such that their edge strikes the grain or straw obliquely, cutting it in a clear, even manner.

The grain is held from sliding under the knife by spurs *t t*, projecting up from the plate O, and by a projection, *n*, on the inner end of the plate N.

These devices keep the straw at all times under the knives, and hold it steadily, so that nothing shall impede the perfect operation of the cutter.

It will also be observed that the arrangement of the arm I, in relation to the cutting-knives, is such that it moves the feed-rolls just in season to present the proper supply for each knife in its turn.

In this machine the knives can be readily whetted, without removing them from the arms M M, or they can be taken off and ground, without difficulty.

The machine can be used with any kind of power that may be convenient. It can be constructed for horse or steam-power, at even less expense than for hand-power, inasmuch as the shaft D, crank, and gearing *d d*, may be dispensed with for any other than hand-power.

When used in the field, it does not waste the grain or straw, but all the latter is saved, being caught in the circular screen, as it falls from the cutter, and being swept round by the arms and delivered in a compact heap at the end of the spout. In practical operation, this part of the machine has been found exceedingly valuable, working admirably in every respect.

The saving of the cut feed in this manner is a matter of great importance, where the machine is to be used in the field, and adapts it particularly to the use of the army, where, from necessity, the feed has to be generally cut out of doors.

The easy adaptation of this machine to horse-power or steam-power also renders it better for southern farmers than any other machine yet brought into public use, from the fact that almost every farmer in that section of country is provided with a horse-power for ginning cotton and other purposes, which can, without any additional expense, be applied to this machine.

The whole apparatus can be made at little expense, and will last for years, being strong and firm in all its parts, and as little liable to get out of order as anything of the kind yet brought into use.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The knives L L, when made in the shape described, and attached to the arms M M, in the manner set forth.
2. The circular screen B, composed of two parts, the upper one of which is provided with a spout, P, and

hinged to the lower portion, which is rigidly secured to the frame A, all constructed in the manner and for the purpose set forth.

3. The combination of the arm I with the ratchet-wheel J, pawl K, feed-roll E, and knives L L, whereby the said parts are made to operate together, substantially as and for the purpose set forth.

4. The arrangement and combination of the shafts C C, cutters M L, screen B, feed-table F, rolls E G, ratchet J, pawl K, and arm I, substantially as described and shown.

To the above specification of my improvement, I have signed my hand, this 10th day of June, 1868.

N. McLEOD.

Witnesses:

CHAS. A. PETTIT,
SOLON C. KEMON.