(No Model.)

J. MALLON.

STUBBLE DIGGER AND CULTIVATOR.

No. 367,989. Patented Aug. 9, 1887.

FIG. 1.

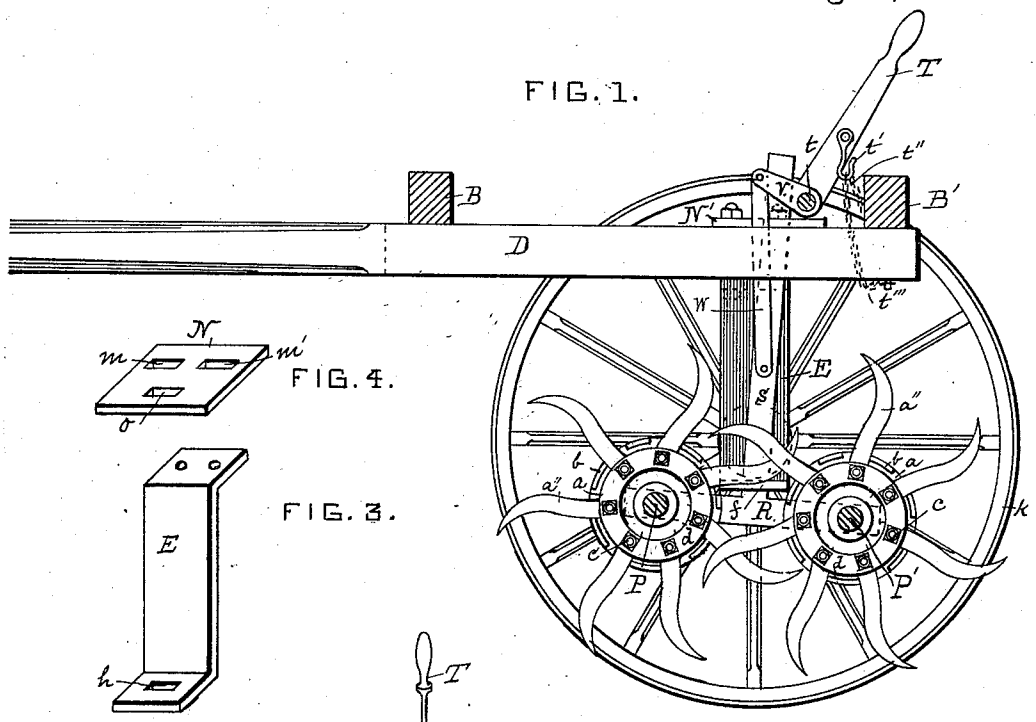


FIG. 4.

FIG. 3.

FIG. 2.

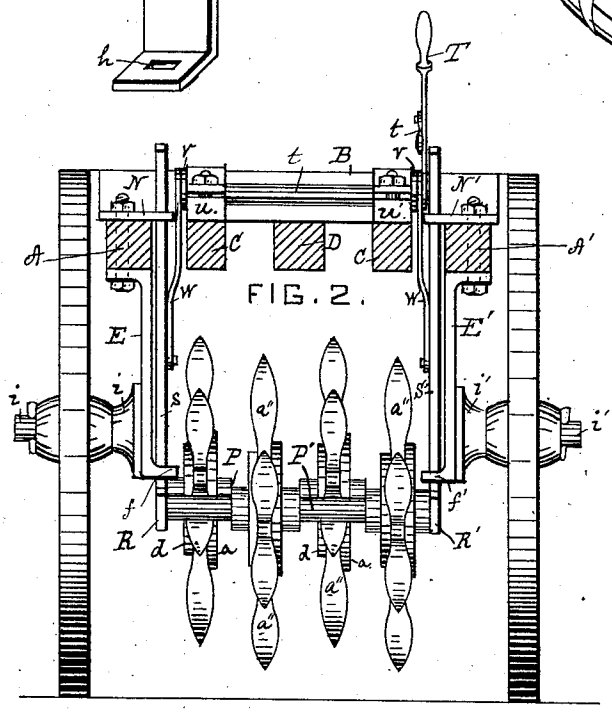


FIG. 5.

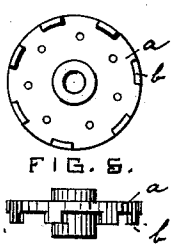
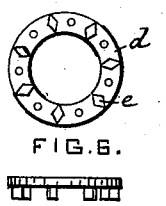


FIG. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES MALLON, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO MINNIE MALLON, OF SAME PLACE.

STUBBLE-DIGGER AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 367,989, dated August 9, 1887.

Application filed April 16, 1887. Serial No. 235,055. (No model.)

To all whom it may concern:

Be it known that I, JAMES MALLON, a citizen of the United States, and a resident of New Orleans, parish of Orleans, State of Louisiana, have invented new and useful Improvements in Stubble-Diggers and Cultivators, of which the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification.

This invention relates to certain improvements in that class of farming implements which are employed in digging and cultivating sugar-cane stubble.

My improved machine is especially intended for the cultivation of sugar-cane; but it may be used with equally good results in the cultivation of corn and other crops, or wherever it is necessary to destroy or remove the stubble or roots of former crops before another planting.

The nature of my improvements will be understood from the following description, taken in connection with the drawings, on which—

Figure 1 is a vertical longitudinal section of the machine. Fig. 2 is an end view of same. Fig. 3 is a perspective view of one of a pair of standards which are adapted to be secured to the under side of the machine-frame; and Fig. 4 is a similar view of an adjusting-plate, intended to be secured to the upper side of the frame by the same bolts which are used for securing the standard. Figs. 5 and 6 are detached views of the disks, to which the digger-teeth are pivotally secured.

The frame of the machine is preferably made rectangular in form, and composed of a pair of side pieces, A A′, a front and rear cross-piece, B B′, a pair of inner longitudinal pieces, C C′, and a central draft-pole, D, all of which are secured in their respective positions by means of bolts or other suitable fastenings.

To the side pieces, A A′, of the frame, and immediately in rear of a transverse central line of same, is secured a pair of downwardly-projecting standards, E E′, the lower ends of which are provided with inwardly-projecting flanges *f f′*, each having a vertical longitudinal slot therein, as shown at *h* in Fig. 3, for purposes hereinafter fully set forth.

To the outer sides of the standards, and near the lower ends thereof, are bolted or otherwise secured on the same axial line the journal-pins *i i*, upon which the transporting-wheels *k k′* are adapted to operate, as in other wheeled machines.

The standards E E′ are secured to the outer longitudinal side pieces of the frame by means of bolts that are made sufficiently long to pass upward through the aforesaid pieces and project through the elongated slots *m m′* of a pair of adjusting-plates, N N′, which are fitted to the pieces A A′ directly above the standards.

The adjusting-plates N N′ are made to project over the inner edges of their respective side pieces, and the projecting portions of each are provided with vertical longitudinal slots *o*, similar to the slot *h* formed in the lower flange of the standards E E′.

The letters P P′ designate a pair of shafts which are rigidly connected with the outer ends of the horizontal parts of a pair of T-shaped frames, R R′, the vertical portions or stems *s s* of which are adapted to operate in the slots formed in the inwardly-projecting portions of the standards E E′ and the adjusting-plates N N′ above same, and are inserted into said slots from the under side of the machine, as will be readily understood by referring to the drawings.

The T-shaped frames are self-adjusting, but can be raised or lowered at will by means of a lever, T, which is keyed to a rock-shaft, *t*, operating in the journal-boxes *u u′*, that are bolted to the pieces C C′, the ends of the shaft being connected with the aforesaid T-shaped pieces by means of the cranks *v v′* and connecting-rods *w w′*, as shown in Figs. 1 and 2.

The digger-teeth *a″* are arranged in sets of seven, (more or less,) and connected with hubs of peculiar construction, said hubs being formed in two parts each, as shown in Figs. 5 and 6. The main portion of each hub is lettered *a*, and consists of a disk having a center bored so as to freely revolve on its shaft P or P′. The face of each disk is provided around its edge with a series of projections, *b*, between which the digger-teeth are arranged for operation, the inner ends of the said teeth being loosely fitted on bolts *c*, whereby an annular ring, *d*, forming the second part of the hub, is secured to the disk portion thereof. The inner face of the ring *d* is provided between the

bolt-holes thereof with projections *e*, which are adapted to press against the face of the disk, and thus allow the teeth to move freely back and forth to the extent of the space between the lugs on the face of the disk. By this construction of hub the teeth are prevented from becoming twisted, and at the same time it allows one or more teeth to be withdrawn for repair or substitution without in any manner interfering with the balance of the set.

By reason of the slotted bolt-holes in the adjusting-plates N N′ it will be seen that the said plates can be moved back or forth, so as to change the position of the T-shaped frames, and thus cause the teeth of the forward and rearward shafts to cut at equal or unequal depths, as the nature of the soil may require. When the adjusting-plates are moved to the rear, the forward diggers will enter to a certain depth, while those following will go still deeper and with less strain, owing to the loosening of the earth by the forward cutters.

As heretofore stated, the frames carrying the digging mechanism are self-adjusting, having an up-and-down movement, which is rendered more or less easy by the position of the adjusting-plates N N′. When the latter are in their rearmost position, they cause the stems of the T-frames to incline rearwardly, and thus to have a tendency to move upwardly as the machine is being drawn forward. When set in this manner, the machine is best adapted for operating in loose or sandy soil. By moving the adjusting-plates forward to a central position the T-frame stems will be brought to perpendicular positions and require greater pressure to raise same. When moved as far forward as the slots in the plates N N′ will permit, the machine is best adapted for operating in heavy stiff soil, the frames being less liable to be pressed upward when in that position.

To afford means for limiting the cutting-depth of the digger-teeth, as well as to effectually guard against the dropping of the T-frames in crossing quarter ditches, &c., I provide the lever T with a hook, *t′*, and secure one end of a short chain, *t″*, to the machine-frame, as shown at *t‴*, so that either of the links of the free end of the chain may be made to engage the aforesaid hook when the lever is pressed forward, and thus hold the same at such angle as to prevent the frames and digging mechanism from dropping below a certain elevation.

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

1. The disk *a*, having projections around its edge, as described, in combination with the annular ring provided with side projections, *e*, the digger-teeth *a″*, and bolts, whereby the aforesaid parts are connected, substantially as and for the purpose set forth.

2. In combination with the slotted plates N N′ and standards E E′, the T-shaped frames and the mechanism described for raising and lowering the said frames, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES MALLON.

Witnesses:

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