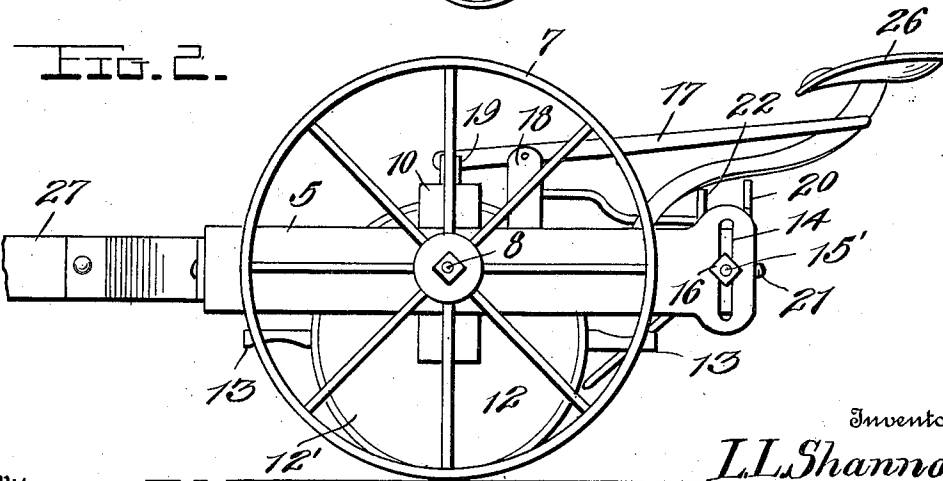
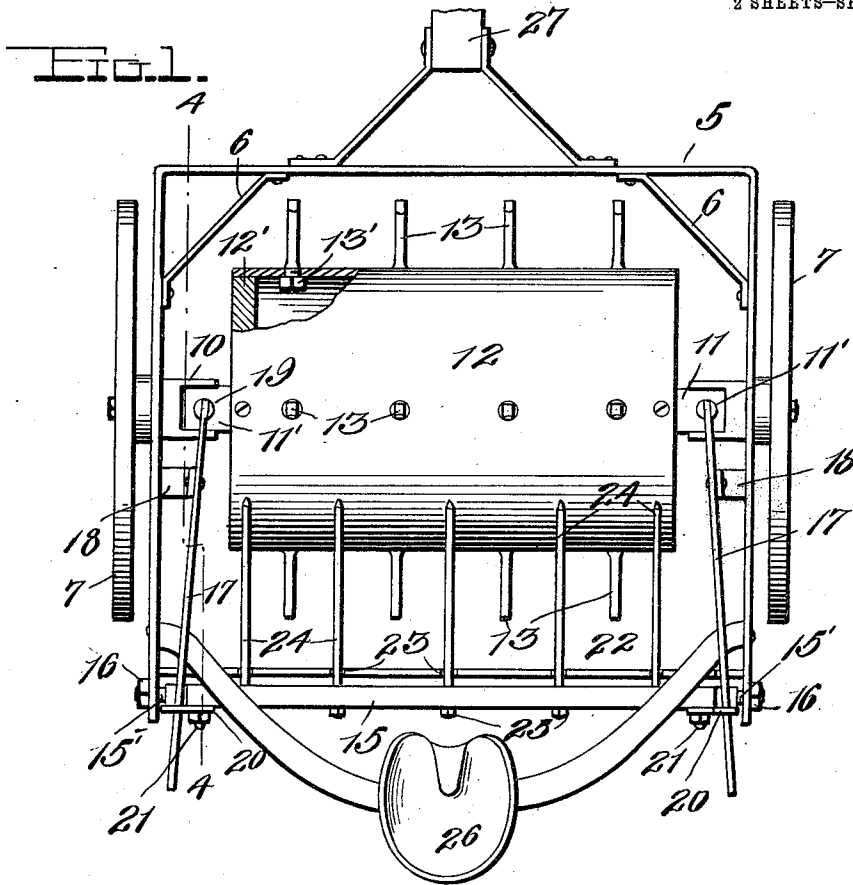


L. L. SHANNON,
 CLOD CRUSHER.
 APPLICATION FILED NOV. 12, 1910.

1,000,557.

Patented Aug. 15, 1911.

2 SHEETS—SHEET 1.



Witnesses

Chas. K. Griesbauer.
M. F. Peavey

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L. L. Shannon,

By

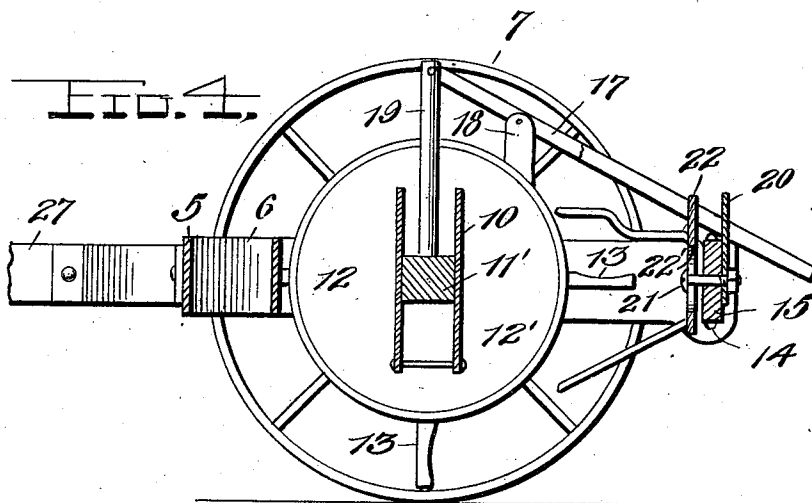
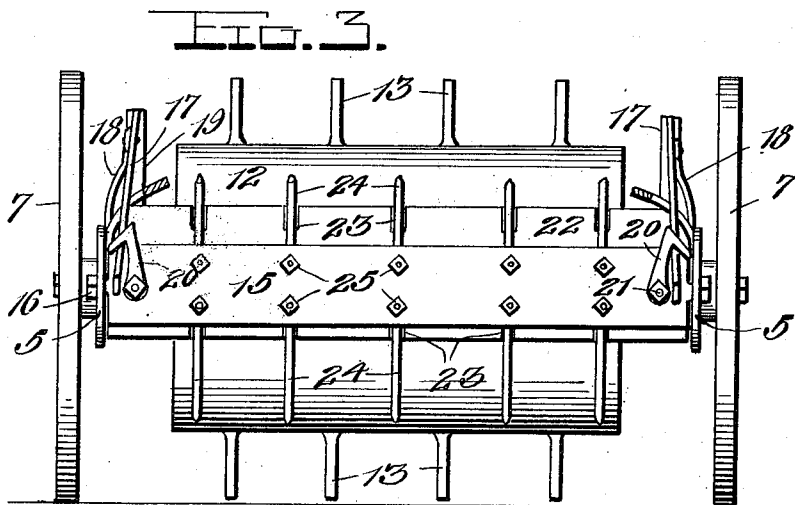
Watson E. Coleman,
 Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

LIVINGSTON L. SHANNON, OF ROANOKE, LOUISIANA.

CLOD-CRUSHER.

1,000,557.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed November 12, 1910. Serial No. 592,053.

To all whom it may concern:

Be it known that I, LIVINGSTON L. SHANNON, a citizen of the United States, residing at Roanoke, in the parish of Calcasieu and State of Louisiana, have invented certain new and useful Improvements in Clod-Crushers, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to an improved clod crusher for crushing or disintegrating clods of earth to put the soil in condition for planting purposes.

15 The invention has for its principal object to provide a machine of the above character of very novel construction whereby the clod crushing drum may be easily and quickly raised or lowered to an inoperative or operative position.

20 Another object of the invention resides in the provision of a clod crushing roller mounted in a wheeled frame and provided with a plurality of series of earth engaging arms and means mounted upon the frame 25 for dislodging particles of soil which may lodge between the adjacent arms.

30 A further object of the invention is to provide novel means for mounting the clod crushing cylinder whereby the same may be raised and lowered, the machine consisting of a few simply constructed elements whereby the same is rendered extremely strong and durable in practical use.

35 With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

40 Figure 1 is a plan view of a clod crushing machine embodying my improvements; Fig. 2 is a side elevation thereof; Fig. 3 is a rear end elevation of the machine, the clod crushing roller being elevated to its inoperative position; and Fig. 4 is a section 45 taken on the line 4—4 of Fig. 1.

Referring in detail to the accompanying drawings 5 designates a substantially U-shaped frame which is braced at its corners 50 by means of the diagonal bars 6. Upon op-

posite sides of the frame 5 the ground wheels 7 are revolvably mounted, suitable stud shafts 8 being fixed in the frame to support said wheels.

Vertical channeled guide members 10 are 55 disposed upon the inner faces of the sides of the frame 5 and are rigidly fixed thereon by means of the stud shafts 8 which support the wheels, the inner ends of said shafts being headed and countersunk in the bases of 60 the guides. These guides receive the enlarged rectangular ends 11' of a roller supporting shaft 11 upon which the clod crushing roller 12 is mounted. This roller consists of a cylindrical body having a head 12' 65 fixed in each end thereof. A plurality of soil engaging arms 13 are arranged in spaced longitudinal series upon the roller and extend radially therefrom. One end of these arms is threaded through the body of 70 the roller and has a nut 13' screwed upon its threaded end for engagement with the inner wall of the roller whereby the arm is rigidly secured to the same. There are preferably 75 four of these radiating arms in each series, though it will be understood that a greater number may be provided and also that the series of earth engaging arms may be increased in number and otherwise arranged than as shown in the drawings. 80

The rear ends of the machine frame 5 are of slightly increased width and vertically slotted, as shown at 14. These slotted ends of the frame receive the reduced screw threaded ends 15' of a transverse bar 15 and 85 upon the ends of the bar the nuts 16 are threaded to rigidly secure the same in its adjusted position in the frame. This vertical adjustment of the plate 15 is provided in order to properly position suitable cleaning 90 members for removing or dislodging clods of earth from between the arms 13, as will more fully hereinafter appear.

The roller adjusting means consists of the levers 17 which are pivotally mounted adjacent to their forward ends upon the upper 95 ends of the arms 18 which are fixed to the sides of the frame 5. The forward ends of said levers are pivotally mounted in the bifurcated upper ends of the short standards 100

19 which are threaded or otherwise fixed in the rectangular extremities of the roller shaft 11. Latch plates 20 are rotatably mounted upon the short bolts 21 which extend through the ends of the transverse bar 15 and through the vertical slots 22' which are provided in each end of a plate 22 arranged upon the inner face of the bar 15. From reference to Fig. 3 it will be observed that the latch plates 20 are adapted to be swung outwardly over the upper edges of the roller adjusting levers 17 whereby the roller is maintained in an elevated position in the frame. When so disposed the earth engaging arms or teeth which are carried by the roller are out of contact with the soil and the machine may be thus easily and quickly wheeled to and from the place of operation. The plate 22 is provided in its upper and lower longitudinal edges with a plurality of notches or recesses 23 in which the ends of the resilient cleaning rods 24 are disposed. These rods are bent downwardly and have their ends disposed through openings provided in the transverse bar 15, nuts 25 being threaded upon the ends of the rods to retain the same in their operative positions. By vertically adjusting the bar 15, the resilient cleaning rods may be properly disposed with relation to the periphery of the roller so as to engage the clods of earth as they are carried around by the arms 13 in the rotation of the roller. These rods are preferably formed from steel wire of a heavy gage and at their forward ends extend between the adjacent arms 13 carried by the roller 12. Thus in the event that rocks or large lumps of earth become lodged between the adjacent arms, they will be removed by means of the rods 24 and directed rearwardly from the machine. The lower rods 24 are also adapted to retain the clods of earth between them which are not crushed by the roller and as the roller continues its movement, the arms 13 strike these earth clods and move the same upwardly against the upper rods 24 where they are pulverized. In this manner liability of injury to the machine and breakage of the arms is overcome as well as the danger of the stones or earth being thrown from the roller in its rotative movement and striking the draft animals. If desired, in order to further insure the driver and team against injury by flying particles of earth or stones, a shield or guard may be provided over the roller.

From the above it will be seen that by simply adjusting the transverse bar 15 in the ends of the frame, the members 24 may be easily and quickly adjusted. The plate 22 may be separately adjusted upon the bar 15 so that the notches in the edges thereof will receive the cleaning rods and properly position the same between the arms of the roller

when it is in its operative position. A driver's seat 26 is suitably mounted upon the rear ends of the frame 5 and a tongue 27 is suitably secured to the front end of the frame upon which the usual doubletrees are mounted for the attachment of the draft animals.

From the foregoing it will be seen that I have devised a comparatively simple machine which is highly efficient in operation and admirably adapted for the purpose in view. The adjustability of the clod crushing roller will permit of the use of the machine in varying conditions of the ground surface and said roller may be easily and quickly raised to its inoperative position to avoid stumps or large boulders. As the parts of the device are all of common form and may be easily obtained at a nominal expense, the cost of repairs of the machine will be insignificant. The machine is very strong and substantial and owing to its simplicity of construction can be manufactured and marketed at a very low cost.

While I have shown and described the preferred construction and arrangement of the various parts, it will be understood that the device is susceptible to considerable modification without departing from the essential feature or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:

1. The combination with a wheel supported frame, of guide members mounted in said frame, a shaft disposed at its ends in said guide members for vertical movement, an earth breaking roller rotatably mounted on the shaft, means mounted upon opposite sides of the frame and connected to the ends of the roller shaft to elevate said roller in the frame, latch devices engaging said levers to support the roller in its elevated position, a transverse bar vertically adjustable in the sides of the frame, a plurality of arms secured to the roller and extending radially therefrom, and a plurality of arms fixed upon said adjustable transverse bar extending above and below said bar and projecting intermediate of the arms on said roller.

2. The combination with a wheel supported frame, of vertical guides secured to opposite sides of the frame, a shaft mounted at its ends in said guides for vertical movement, an earth breaking roller rotatably mounted on the shaft, said roller carrying a plurality of series of earth engaging arms, levers pivotally mounted in the frame and connected to said shaft to elevate the same in the guides, a transverse bar vertically adjustable in said frame, a plate slotted at its ends arranged upon one face of the transverse bar, bolts extending through said slots and through the bar, latch plates on said

bolts for engagement with the levers to main-
tain the shaft in its elevated position, said
plate being adjustable on said bolts and hav-
ing a plurality of notches in each of its lon-
5 gitudinal edges, and a plurality of resilient
cleaning rods fixed at one of their ends to
said transverse bar and extending through
the notches in said plate, the free ends of

said rods being disposed between the arms
carried by said roller. 10

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

LIVINGSTON L. SHANNON.

Witnesses:

T. A. MITCHELL,

J. J. CRUMPACKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."