G. F. MAHONEY & T. L. DURANT.

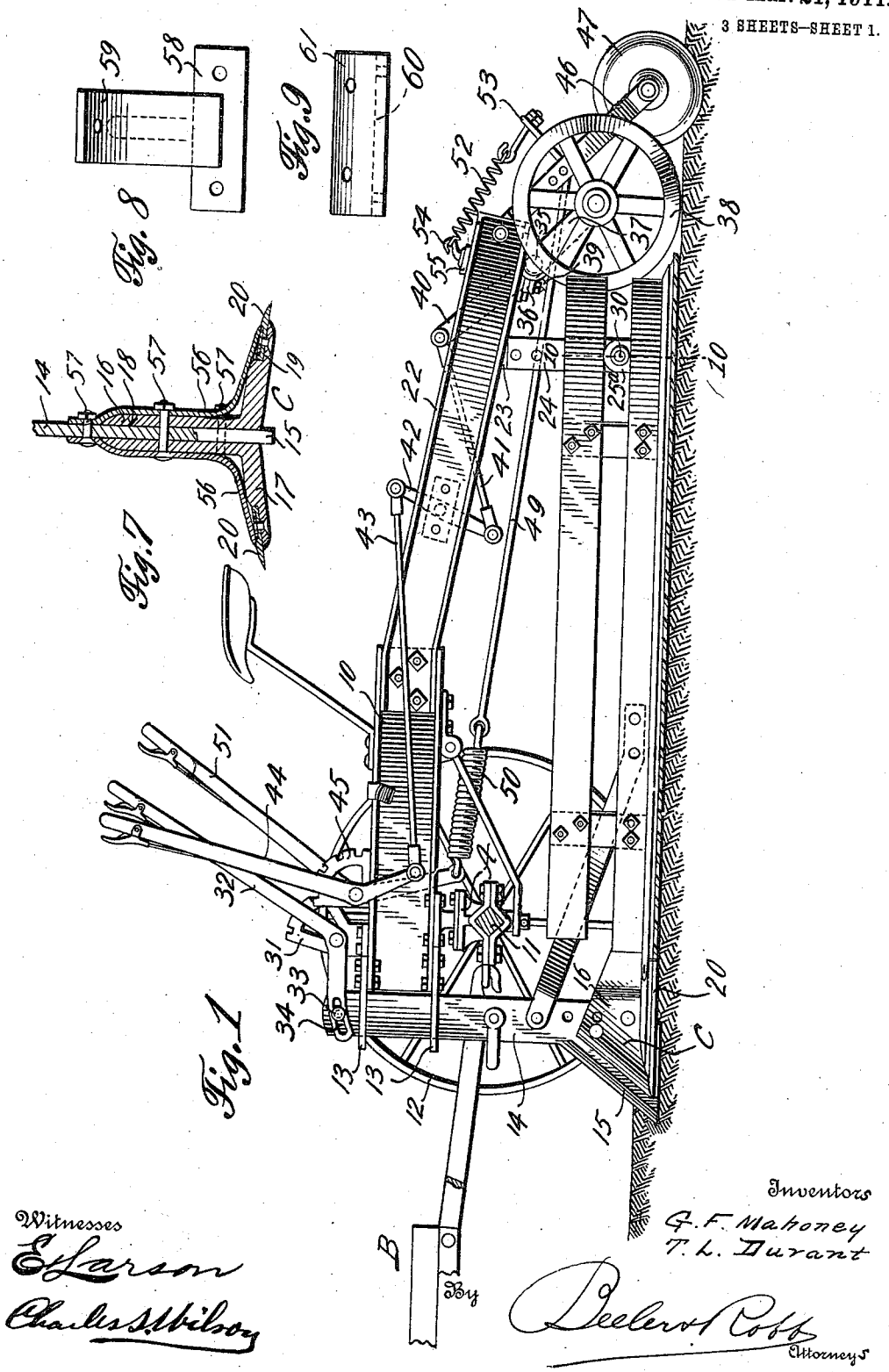
COMBINED SAGE BRUSH CUTTING AND LATERAL DITCHING MACHINE.

APPLICATION FILED APR. 14, 1910.

987,387.

Patented Mar. 21, 1911.

3 SHEETS—SHEET 1.



Witnesses

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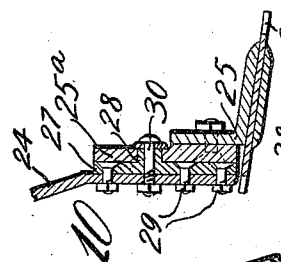

Fig. 10

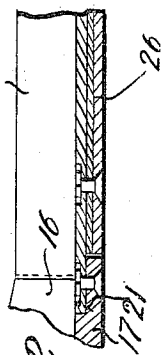

Fig. 12

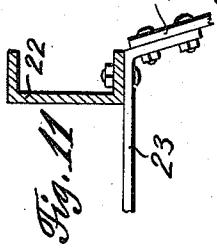

Fig. 11

Fig. 2

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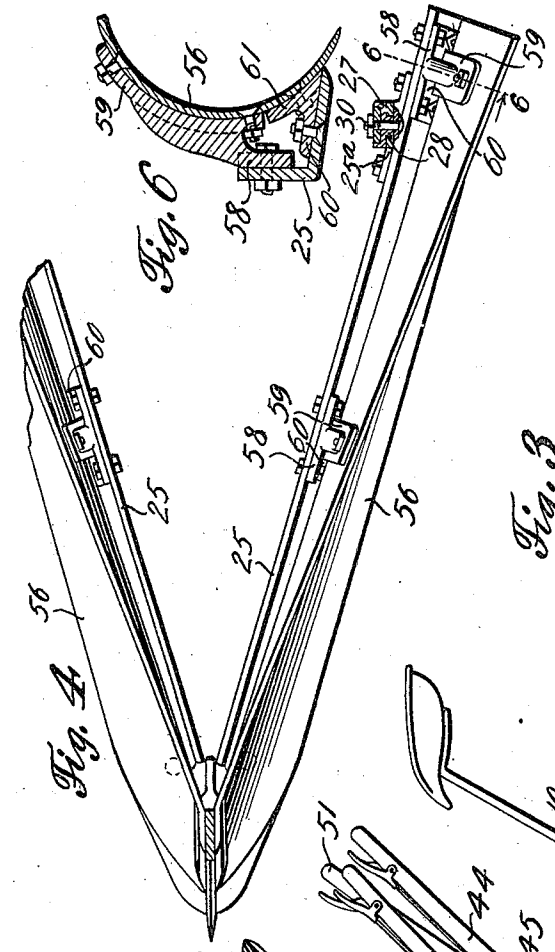

Fig. 6

Fig. 4

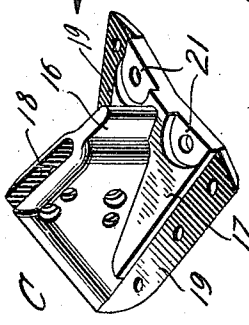

Fig. 5

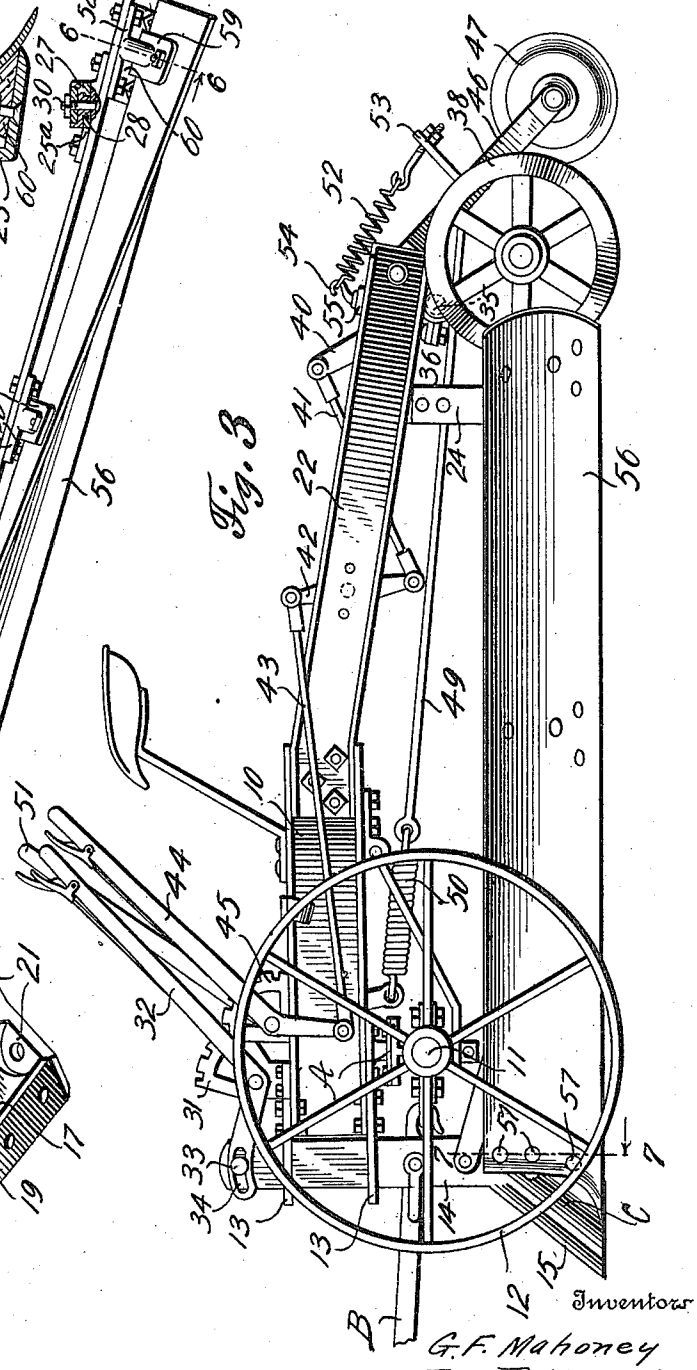

Fig. 3

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UNITED STATES PATENT OFFICE.

GEORGE F. MAHONEY AND THECLA L. DURANT, OF MOUNTAIN HOME, IDAHO.

COMBINED SAGE-BRUSH-CUTTING AND LATERAL-DITCHING MACHINE.

987,387. Specification of Letters Patent. Patented Mar. 21, 1911.

Application filed April 14, 1910. Serial No. 555,520.

To all whom it may concern:

Be it known that we, GEORGE F. MAHONEY and THECLA L. DURANT, citizens of the United States, residing at Mountain Home, in the county of Elmore and State of Idaho, have invented certain new and useful Improvements in Combined Sage-Brush-Cutting and Lateral-Ditching Machines, of which the following is a specification.

This invention relates to improvements in sage brush cutting machines wherein a positive divergent supporting frame is provided.

Further it is designed to construct a machine of this nature wherein all of the various elements thereof may be operated from the operator's seat.

The present invention also contemplates the provision of a detachable means whereby lateral ditching may be performed with the same machine.

A further object of this invention is to provide a double yieldable pressure regulated colter.

With the above and other objects in view, this invention consists of the construction, combination and arrangement of parts all as hereinafter more fully described, claimed, and illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of a device constructed in accordance with the present invention adapted for use as a sage brush cutting machine; Fig. 2 is a top plan view thereof; Fig. 3 is a side elevation similar to Fig. 1, illustrating the device as adapted for use as a lateral ditcher; Fig. 4 is a partial top plan view of Fig. 3; Fig. 5 is a perspective view of the cutter head; Fig. 6 is a section taken along line 6—6 of Fig. 4; Fig. 7 is a similar view taken along line 7—7 of Figs. 3 and 4; Fig. 8 is an outside elevation of the supporting bracket adapted to secure and brace the upper side of the ditching plates; Fig. 9 is a similar view of the lower securing means of the same; Fig. 10 is a section taken along line 10—10 of Fig. 1; Fig. 11 is a partial section taken along line 11—11 of Fig. 2; Fig. 12 is a section illustrating the connection between the cutter bars and the cutter head.

The machine forming the subject matter of the present invention comprises an I-beam having the cutter head reciprocatingly mounted thereon and a pair of divergent channel bars extending from the rear extremity thereof, said I-beam and channel bars carrying the wheels of the machine. The cutter bars are pivotally connected to the cutter head and extend laterally in the same general direction as the channel bars. To convert the machine into a ditching machine, ditching plates or cutting members are secured to the angle bars supporting the cutter bars.

Reference being had more particularly to the drawings 10 indicates an I-beam of the usual construction, said I-beam having the front axle 11, carrying the wheels 12, swiveled thereto through the instrumentality of the ball and socket joint designated in general as A. A draft rigging B is secured to the forward axle 11 in the usual manner and provides a means whereby the motion may be imparted to the machine in any conventional manner.

A pair of bracket plates 13 are attached to the lower and upper transverse bars of the I-beam, said plates being slotted to permit the reciprocation of the forward or vertical cutter plate 14. The vertical cutter plate 14 is enlarged at its lower extremity to form the cutter plate 15, said cutter plate extending below the lower surface of the cutter head, as hereinafter more fully described.

The cutter head indicated in general as C is formed of one solid piece of metal provided with an upwardly extending securing bracket 16 which extends partially across the nose 17 of the base portion of the cutter head. This attaching bracket is provided with a slot 18 which extends completely through the cutter head and in which is pivoted the cutting plate, said cutting plate projecting below the lower surface of the nose and from the forward edge thereof, as clearly shown in Figs. 1 and 3. A depression 19 is provided along the converging edges of the nose 17 in which are secured the cutting plates 20, said cutting plates curving at their forward extremities and abutting against the forward and vertical cutting plate 15. The lower surface of the nose 17 is concaved in order that the cutting plates 20 may be in positive engagement with the ground. The nose is also provided with the recesses or depressions 21 located adjacent to the attaching bracket 16 and between the depressions 19, said recesses being semi-circular and adapted to provide a means whereby the longitudinal cutting bars

may be pivotally connected to the cutter head.

A pair of channel bars 22 are secured to the rear extremity of the I-beam 10 and fit flush in the channels of said I-beam, said channel bars diverging and extending rearwardly and downwardly, thus bringing the rear supporting wheels and pressure regulated adjustable colter into close relation with the ground.

A transverse bar 23 is secured adjacent to the rear extremities of the channel bars and projects on each side thereof, said projections being bent downwardly to which are detachably connected the bars 24, said bars diverging from said channel bars. The lower extremities of these bars are secured to the upwardly extending portions of the angle irons 25, to which the cutting bars or plates 26 are secured. This connection comprises a bracket 25^a rigidly carried by the angle bar 25, said bracket having a central opening therein. A channel bar 27 spans the supporting bar 24 and is provided with a stud or projection 28 which is received in said orifice in the bracket, thus providing a pivotal connection between the supporting bar and the bracket. A plurality of bolts 29 rigidly connect the channel bar to the supporting bar 24 while a bolt 30 passes completely through the angle bar 25, the bracket 25^a, the channel bar 27 and the supporting bar 24, forming the pivotal point of the device.

A quadrant 31 is secured to the I-beam adjacent to the bracket plate 13 and coöperates with the lever 32, said lever being curved at its lower extremity to engage the pin 33 carried at the upper terminal of the forward cutting bar 14, said pin being engaged by a slot 34 in said lever. This lever provides a means whereby the cutter head and the forward extremity of the cutter bars may be lifted on the pivotal point 28 as an axis.

The rear supporting wheels are mounted on an axle 35 which extends across the divergent channel bars 22 and is secured thereto by the boxings 36 carried on the under side of said channel bars. The extremities 37 of the axle are bent downwardly and have journaled thereon the wheels 38. A clamping member 39 is centrally disposed on the axle 35 and has secured thereto the lever 40, said lever being pivotally connected to the link 41. This link extends forwardly and downwardly and is connected to the lower extremity of the centrally pivoted lever 42, said lever being mounted on one of the channel bars 22. The upper extremity of the lever 42 is pivoted to a link 43 which in turn is connected to the hand lever 44 coöperating with the quadrant 45 of the I-beam 10. From this construction, it will be understood that upon the operation of the lever 44 the levers 42 and 40 will be swung simultaneously in a like direction and consequently bring into and remove from contact with the ground the wheels 38.

A pair of bracket arms 46 are pivotally connected to the inner sides of the rear terminals of the channel bars 22 and have journaled between their lower extremities the colter 47. A transverse bracing bar 48 is interposed between said bracket bars 46, to which is connected the operating rod 49, said operating rod extending forwardly to a spring 50 interposed between the lower terminal of the lever 51 and the extremity of the bar 49, said lever 51 adapted to raise and lower the colter. It will be understood from this that the spring 50 tends to normally force the colter 47 into engagement with the ground.

In order to aid the lever 51 in the removal of the colter 47 from contact with the ground, a spring 52 is interposed between the projecting bar 53 carrier by the transverse bar 48 and the hook 54 supported by the bar 55 spanning the space between the channel bars 22.

In order to convert the machine heretofore described into a lateral ditching machine, it is necessary to remove the cutter bars 26 and secure the ditching plates 56 to the angle irons 25. These ditching plates operate longitudinally and are approximately straight in cross section at their forward extremities where they are secured by the bolts 57 to the bracket 16 and the cutting bar 14. As they extend rearwardly, the curve in said ditching plates becomes more pronounced until the extremities of the same are approximately semi-circular in cross section. A plurality of brackets secure the upper edge of the ditching plates to the upwardly extending side or arm of the angle bar 25. The bracket comprises the longitudinal plate 58 to support the upper edge of the blade 56, which is secured to the vertical portion of the angle bar 25, and on which is formed the upwardly extending bracket 59, the curve of which conforms with the contour of the cutting plate. To support and brace the lower edges of the cutting plates 56, a somewhat similar bracket is secured to the base portion of the angle iron 25, said bracket comprising a longitudinal member 60 secured to said base portion on which is formed a curved bracket member 61 conforming with the contour of the plate 56.

From this construction, it will readily be seen that the cutting plates 56 operate partially below the surface of the ground, and in coöperation with the cutter head throws the earth to one side in a furrow, creating a ditch of the width of the distance between the rear terminals of the cutter bars.

The cutter bars 26 may be constructed in three sections thereby permitting the inner of said sections being removed should the same become damaged in lieu of removing an entire bar. It will also be noticed that the cutter bars may operate beneath or over the surface of the earth due to the adjustment of the frame carrying the same.

Having thus described the invention, what we claim as new is:

1. In a sage brush cutting machine, the combination with a main supporting beam, of wheels swiveled thereto, converging supporting bars secured to said supporting beam, rear wheels pivotally mounted on said supporting bars, a bracket pivotally connected to said supporting bars, a colter mounted in said bracket, and means whereby said colter may be withdrawn from the ground.

2. In a machine of the class described, the combination with a supporting frame, of auxiliary supporting beams secured thereto, a transverse supporting bar carried by said auxiliary beams, a cutter head carried by said supporting frame, supporting bars pivotally connected to said cutter head, and means whereby said supporting bars are pivotally connected to said transverse supporting bar.

3. In a machine of the class described, the combination with a cutter head, of supporting bars converging thereto and pivotally connected therewith, supports pivotally connected to the rear terminals of said supporting bars, means whereby said cutter head may be adjusted vertically, and means whereby the rear terminals of said supporting bars may be raised and lowered independently of the movement of said cutter-head.

4. A sage brush cutting machine comprising, in combination with a cutter head, of angle bars pivotally connected to said cutter head, brackets detachably secured to said angle bars, and lateral ditching plates carried by said brackets.

5. A sage brush cutting machine comprising, in combination with a cutter head, of angle bars pivotally connected to said cutter head, pairs of brackets superposed above each other, detachably secured to said angle bars, and lateral ditching plates detachably secured to said brackets.

6. A sage brush cutting machine comprising, in combination with a cutter head, of angle bars pivotally connected to said cutter head, pairs of brackets superposed above each other detachably secured to said angle bars, said brackets comprising straight portions carrying transverse curved supporting brackets, and lateral ditching plates detachably secured to said transverse curved brackets.

7. In a machine of the class described, the combination with a supporting frame, of a cutter head adjustable vertically at the forward extremity thereof, supporting bars pivotally connected to said cutter head adapted to receive interchangeable earth working devices, means whereby the rear terminals of said supporting bars are pivotally supported by said frame, and means whereby the rear terminals of said supporting bars may be raised and lowered independently of the adjustment of said cutter head.

8. In a machine of the class described, the combination with a supporting frame, of a cutter plate movable vertically therein, a sectional cutter head adapted to be carried by the lower terminal of said cutter plate, a supporting bar pivoted to each section of said cutter head, adapted to receive interchangeable earth working devices, means whereby the rear terminals of said supporting bars are pivotally supported by the frame, means whereby the cutter head may be raised and lowered through the instrumentality of said cutter plate, and means whereby the rear terminals of said supporting bars may be raised and lowered independently of the adjustment imparted to the cutter head.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE F. MAHONEY.
THECLA L. DURANT.

Witnesses:
ELIZABETH GREENWALD,
ANNA GOODALL.