

J. A. HUGGINS.
AUTOMATIC ADJUSTING PLOW.
APPLICATION FILED JULY 18, 1912.

1,061,291.

Patented May 13, 1913.

2 SHEETS—SHEET 1.

Fig. 2.

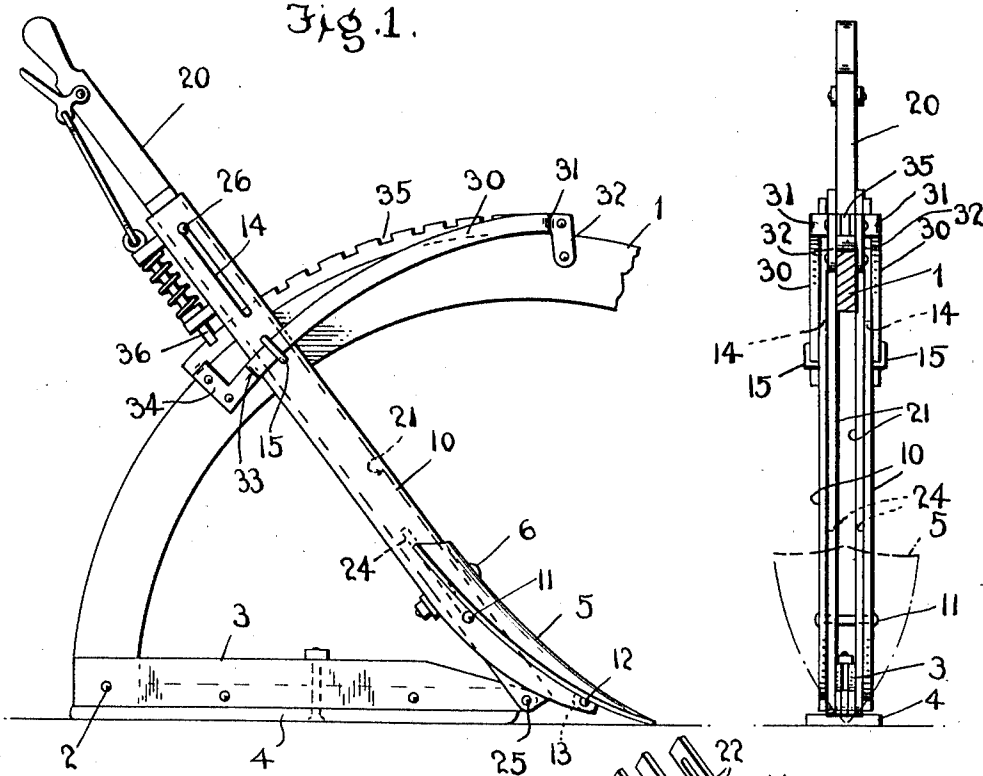


Fig. 4.

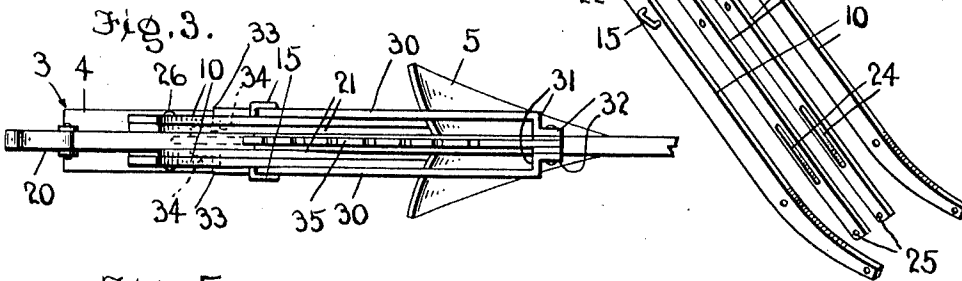
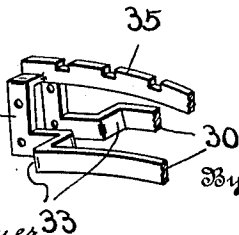


Fig. 5.



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2 SHEETS-SHEET 2.

Fig. 6.

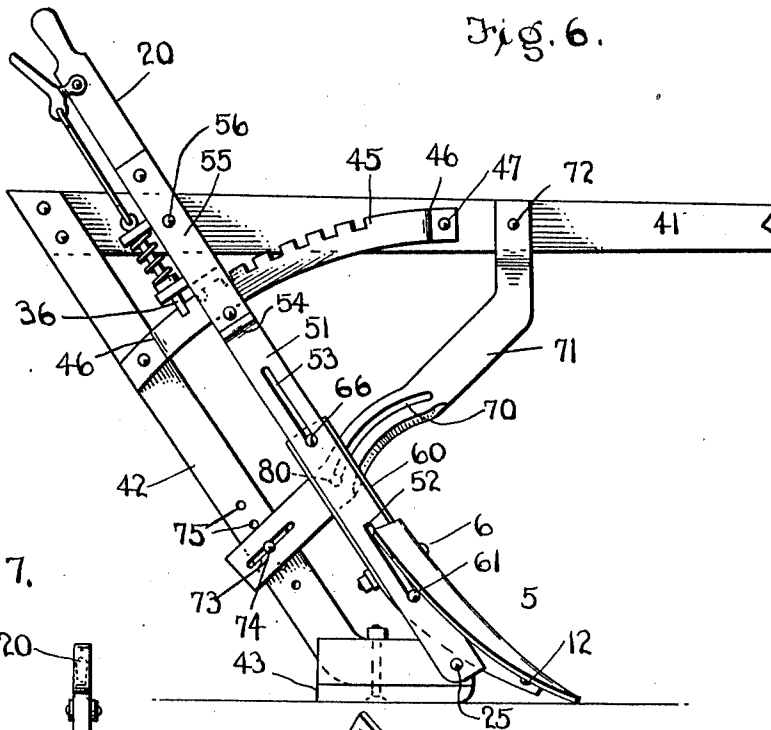


Fig. 7.

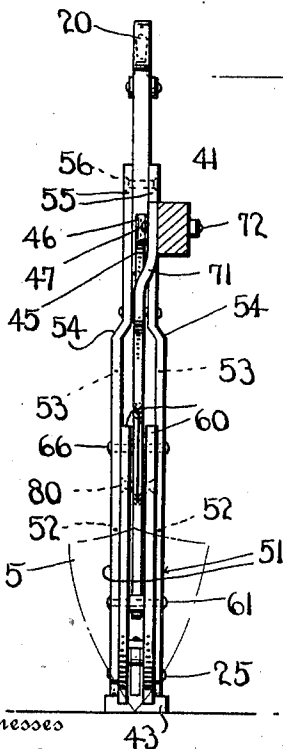
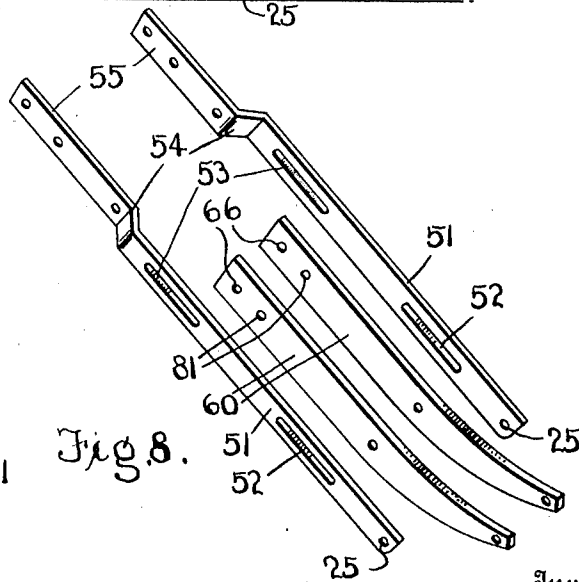


Fig. 8.



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UNITED STATES PATENT OFFICE.

JAMES ALLEN HUGGINS, OF RED SPRINGS, NORTH CAROLINA.

AUTOMATIC-ADJUSTING PLOW.

1,061,291.

Specification of Letters Patent.

Patented May 13, 1913.

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To all whom it may concern:

Be it known that I, JAMES ALLEN HUGGINS, a citizen of the United States, residing at Red Springs, in the county of Robeson and State of North Carolina, have invented certain new and useful Improvements in Automatic-Adjusting Plows; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to plows, and more especially to the standards thereof; and the object of the same is to improve the construction of a plow standard and its connection with the beam so that when it is adjusted to change the angle or inclination of the shovel the point of the latter will not be depressed below a horizontal line which passes through the bottom of the shoe. This and other objects are carried out by constructing the plow and its parts in the manner hereinafter more fully described and claimed, and as shown in the drawings, wherein—

Figure 1 is a side elevation of this improved plow in its preferred construction, and Fig. 2 is a front elevation thereof with the beam in section; Fig. 3 is a plan view; Fig. 4 is a perspective detail of the two members of the standard slightly separated and disposed astride the two fork-arms which are also slightly separated; Fig. 5 is a perspective detail of the casting at the rear end of the rack and the guide-bars; Sheet 2 shows a slight modification, whereon Fig. 6 is a side elevation, Fig. 7 a front elevation, and Fig. 8 a perspective detail of the fork arms and standard members slightly separated from each other.

In the drawings, and more especially on Sheet 1, the numeral 1 designates the beam which is curved downward at its rear end and is connected as at 2 with the runner 3 which carries a shoe 4 of any suitable construction, and 5 is the shovel which is attached as at 6 to the plow standard by any suitable means such as a bolt as illustrated herein.

No novelty is claimed for the parts thus far described, save as they co-act with the details of the invention set forth below.

The standard in my preferred construction consists of two members 10 connected

with each other near their lower ends by a cross bolt or rivet 11, and bolted at their lower ends as at 12 to a lug 13 under the shovel 5, and each member has a slot 14 near its upper end and below said slot a loop 15 for a purpose to be described. The operating lever has a handle 20 at its upper end standing above the curved rear portion of the beam 1, and a forked lower end consisting of two arms 21 riveted as at 22 astride the lower end of the handle 20 and extending across the curved portion of the beam and between said members 10, said arms having longitudinal slots 24 in which the cross rivet 11 moves, and being pivoted at their lower ends as at 25 to the front end of the runner 3. Above the beam a cross rivet 26 extends through said fork arms, and its extremities play loosely in the slots 14 in the standard members 10. Thus the slots of the latter are guided on the upper cross rivet 26, while the lower cross rivet 11 is guided in the slot 24 in the fork arms 21, and it follows that the standard may move longitudinally with respect to the operating lever as the latter is swung around its pivot 25. The guide in this construction of my invention is duplicated, and by preference is formed in the shape of like bars 30 standing on opposite sides of the beam 1 and offset therefrom as at 31 near their front ends, forward of which they merge into a toe 32 which is riveted to the beam; the bars being also offset as at 33 near their rear ends, in rear of which they merge into a heel 34 also riveted to the beam. It may be well, as best seen in Fig. 5, to form the two heels integral with a rack bar 35 which overlies the upper edge of the beam and extends to and is connected with the toes 32, this rack being toothed so as to receive a spring-actuated thumb latch 36 carried by the handle 20 as best seen in Fig. 1. The gist of the invention lies in the peculiar curvature given to the guides, for, while the beam 1 is by preference curved around the pivotal point 25 as a center, the guide bar 30 is struck on an arc having a different center. It follows that when the handle is adjusted forward from the position shown in Fig. 1, the loops 15 on the standard members 10 ride along the guide bars 30 and cause said members to move upward astride the fork arms 21, as the cross rivets and slots will permit. The result is that the point of the shovel 5

is never depressed below a plane through the bottom of the shoe 4.

In the modified construction illustrated on Sheet 2 of the drawings, the beam 41 is straight and is connected with the runner 43 by an oblique brace 42, the handle 20 and thumb latch 36 are the same, the curved rack bar 45 is offset near its extremities as at 46 so that it will stand a little to one side of the beam and the brace, and is riveted to these members as at 47—the rack bar being in this instance also struck on a curve around the pivotal point 25 between the lower ends of the fork arms and the front end of the runner 43. The fork arms 51 in this instance are each slotted twice as at 52 and 53, and above the uppermost slots they are bent inward into elbows 54, thence carried upward as at 55 and riveted as at 56 astride the lower end of the handle 20. The standard members 60 in this instance stand between the fork arms 51 and carry two cross rivets 61 and 66 whose extremities move in said slots 52 and 53; and the shovel 5 is bolted to said members at 6 and 12 as described above, but the members are made a trifle wider than the fork arms 51 (as best seen in Fig. 6) so that the curved shovel 5 will overlies the parts and shall not be bound frictionally upon the upper edges of the arms by means of said bolts 6 and 12. The guide in the present instance consists of a slot 70 formed in an oblique bar 71 which is pivoted at its upper end as at 72 to the beam 41 and slotted at its lower end as at 73, and through said slot passes a bolt 74 which is adjustable into one of a series of holes 75 in the rear brace 42. It follows that when this bolt is moved into one of the other holes, the position of the guide slot 70 is changed slightly, and this may be useful when it is desired to substitute some other form of shovel. But the action is the same as in my preferred form above described, for when the operating lever is moved around its pivot 25 the standard is caused to rise and fall between the fork arms so that the point of the shovel never descends below a horizontal line drawn through the bottom of the shoe. This is effected by means of a rivet 80 passing through eyes 81 in the members 60 just beneath the uppermost cross rivet 66, which rivet travels in the slot 70 as the handle is swung around its pivot 25, and said slot—like the guide bar 30 shown in Fig. 1—is struck on an arc having a different center from the pivot point 25 as will be clear. It will be seen from Fig. 7 that with this construction a wooden beam 41 may be employed, although I do not wish to be limited to the materials of parts in any event, nor to their exact sizes, shapes and proportions; and I reserve the right to make such changes in details as do not depart from the principle of the invention. As above stated, the

gist of the idea lies in the provision of means for causing the standard to slide longitudinally within or astride the fork arms of the operating lever, as the latter is adjusted about its pivotal connection 25 with the runner. Such adjustment is obviously for the purpose of setting the shovel at different angles to the line of progress, but it is not desired that the point of the shovel shall descend to a line lower than the lower face of the shoe, and in order that it will not do so when the handle is moved forward, the guide bars 30 or the guide slot 70 is provided. On Sheet 1 the standard members 10 straddle a curved beam 1 and the guide bars 30 are on opposite sides of such beam; on Sheet 2 the standard members 60 straddle a single bar 71 having a curved slot 70, and therefore the arms 51 of the fork at the lower end of the operating lever pass outside the standard members in this instance whereas they stand between the standard members in the other instance. It will be obvious that the action is the same in either event, but that details of structure must be modified to meet the changed position of the standard members and fork arms.

What is claimed as new is:—

1. In a plow, the combination with the runner, a lever having a fork at its lower end whose arms are longitudinally slotted and pivoted to said runner and a handle at its upper end, the beam, a rack bar secured to the beam and past which said handle moves, and a latch on the handle engaging said rack bar; of a plow standard made in spaced members, the shovel carried by said members, a cross rivet passing through the members and the slots of said fork-arms, and means for adjusting the standard along said arms as the lever is turned on its pivot.

2. In a plow having a runner, the combination with a lever having a fork at its lower end whose arms are pivoted to said runner and a handle at its upper end, the beam, and devices carried by the beam for holding the lever in adjusted position; of a plow standard made in spaced members curved forward at their lower ends, the shovel secured upon said ends and overlying the lower ends of the fork-arms, a cross rivet passing through said members and slidably mounted in said slots, and means for adjusting the standard along said arms as the lever is turned on its pivot.

3. In a plow, the combination with the runner, a lever having a pair of arms pivoted to the runner and a handle, a latch on the lever, the beam, and a rack bar secured to the beam and engaged by the latch; of a plow standard including a pair of members, the shovel carried by them, longitudinal slots in one of said pairs, a cross rivet passing through the other of said pairs and

slidably engaging said slots, and means for adjusting the standard along said arms as the lever is turned on its pivot.

4. In a plow, the combination with the
5 runner, a lever having a fork at its lower
end whose arms are slotted and pivoted to
said runner and a handle at its upper end,
a beam, a brace connecting the beam with
the runner, a thumb-latch on said lever,
10 and a rack bar curved around said pivot
and having offset ends secured respectively
to said brace and beam; of the plow stand-
ard slidably mounted between said fork-
arms, a cross rivet through the standard
15 moving in said slots, the shovel mounted on
the standard, and a curved guide eccentric
to said pivot and engaged by the standard
for moving the latter longitudinally of the
fork-arms when the handle is turned around
20 its pivot.

5. In a plow, the combination with the
runner, a lever having a fork at its lower
end whose arms are slotted and pivoted to
said runner and a handle at its upper end,
25 a beam, a brace connecting the beam with
the runner, a thumb-latch on said lever,
and a rack bar curved around said pivot
and having offset ends secured respectively
to said brace and beam; of the standard
30 slidably mounted between the fork-arms, a
cross rivet through the standard slidably
mounted in said slots, the shovel carried by

the standard, a bar passing between the
fork-arms and pivoted at its upper end to
the beam, its body having a guide-slot 35
struck on a curve eccentric with said pivot
and its lower end having a longitudinal
slot, means for adjusting the last-named
slot over and securing it to said brace, and
devices on the standard engaging said 40
curved slot for moving the standard longi-
tudinally of the fork-arms as the lever is
turned around its pivot.

6. In a plow, the combination with the
runner, the beam, an oblique brace connect- 45
ing these parts, a lever pivoted at its lower
end to said runner, a thumb-latch on the
lever, and a curved rack bar connecting the
beam and brace; of the standard slidably
mounted on the lever, the shovel secured to 50
said standard, a bar pivotally connected at
its upper end with the beam and adjustably
connected at its lower end with said in-
clined brace and having between said ends
a guide slot struck on a curve eccentric to 55
said pivot, and devices on the standard en-
gaging said slots, for the purpose set forth.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

JAMES ALLEN HUGGINS.

Witnesses:

A. M. WALKER,

J. W. GRAHAM.