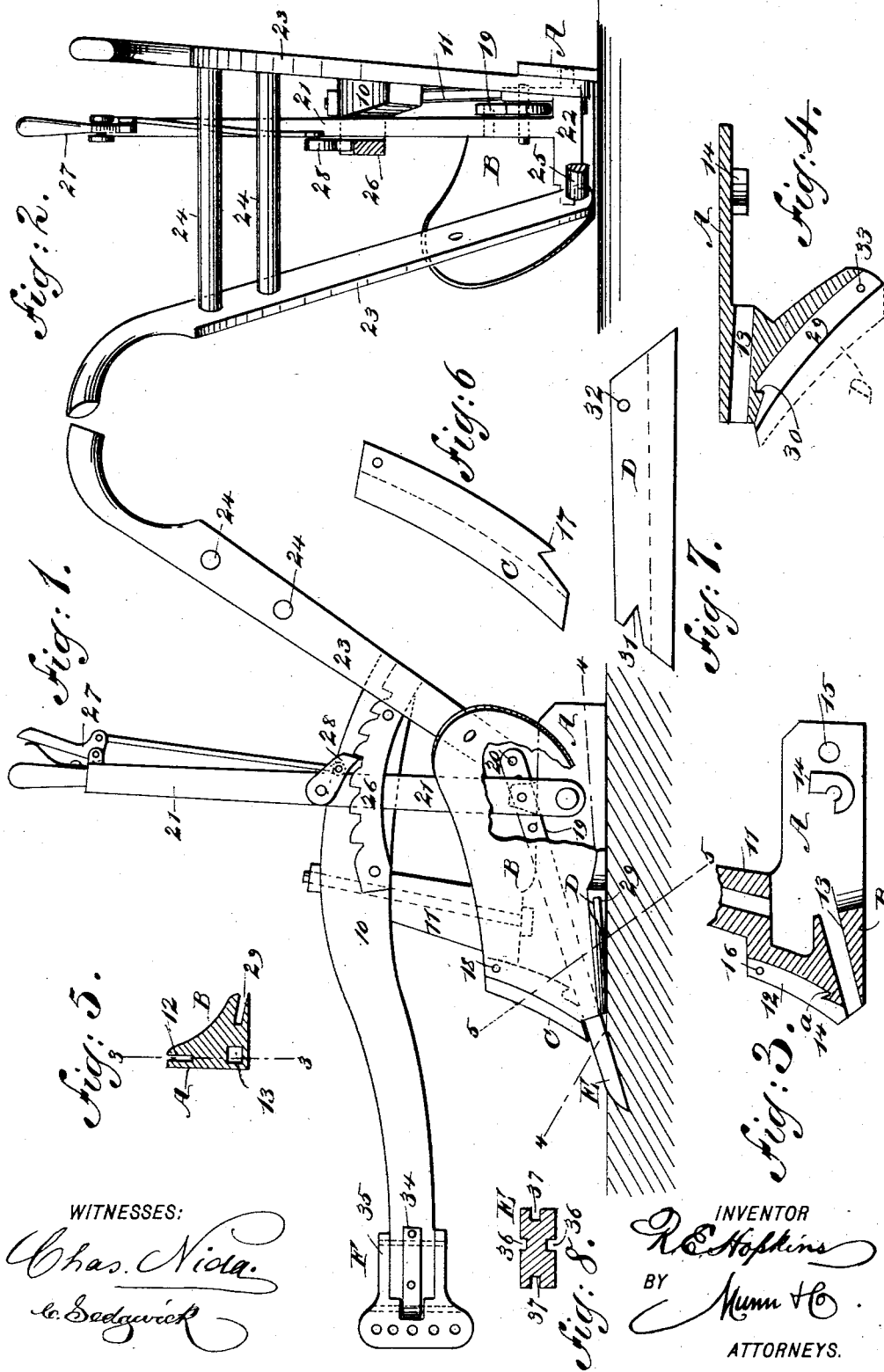


(No Model.)

R. E. HOPKINS.
PLOW.

No. 525,762.

Patented Sept. 11, 1894.



WITNESSES:

Chas. Viola.
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UNITED STATES PATENT OFFICE.

RICHARD E. HOPKINS, OF MCGAHEYSVILLE, VIRGINIA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 525,762, dated September 11, 1894.

Application filed November 2, 1893. Serial No. 489,808. (No model.)

To all whom it may concern:

Be it known that I, RICHARD ELLIOTT HOPKINS, of McGaheysville, in the county of Rockingham and State of Virginia, have invented
5 a new and useful Improvement in Plows, of which the following is a full, clear, and exact description.

My invention relates to an improvement in plows, and it has for its object to provide a
10 point capable of being slid into the share to such an extent that the said point may be projected a considerable distance beyond the share, or may be withdrawn within it, rendering the point as long or as short as occa-
15 sion may demand.

Another feature of the invention is to so locate the point that when it is thrust outward it will have a downward as well as an outward movement, and to provide a mechanism for shifting the point whereby the point
20 may be extended or withdrawn while the plow is running.

A further feature of the invention is to provide a vertical cutter at the forward portion
25 of the share, and a horizontal shear cutter at the lower forward side of the wing or mold board, which shears or cutters may be readily removed and sharpened, and replaced in a convenient and expeditious manner.

30 The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying
35 drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improved
40 plow, a portion of the mold board being broken away. Fig. 2 is a rear elevation of the plow. Fig. 3 is a rear view of the inner face of the land side, and a vertical section taken through the point of juncture of the
45 mold board and land side practically on the line 3—3 of Fig. 5. Fig. 4 is a horizontal section taken practically on the line 4—4 of Fig. 1. Fig. 5 is a vertical section on the line 5—5 of Fig. 1. Fig. 6 is a detail side elevation of
50 the vertical shear or cutter. Fig. 7 is a plan view of the horizontal shear or cutter; and Fig. 8 is a transverse section through the

point, illustrating a slight modification in its construction.

The prime feature of the invention relates
55 to the construction of the share, and the share in this instance comprises a land side A, a wing or mold board B, a vertical shear or cutter C, a horizontal shear or cutter D, and a point E. These parts are assembled and con-
60 nected in any approved manner, and they may be attached one to the other, and connected with the plow beam 10 through the medium of a standard 11, or all of them may be removably connected with the standard.
65

In the drawings, the land side A, which is shown in detail in Fig. 3, is provided with a sloping forward edge, and is much wider at the front or forward edge than at the back.
70 The mold board or wing B, is cast or otherwise formed integrally with the inner face of the land side, and in the combined mold board or wing and land side a longitudinal opening 13, is made, more or less inclined or diagonally located, having a downward slant
75 from the rear point of junction of the land side and wing, and extending through the front point of junction of the same parts at their lower edges. The mold board and land side may be separately formed, and the open-
80 ing 13 may be made in either the landside or in the mold board. A boss 14, is located upon the inner face of the land side near its inner end; and at the heel or rear extremity of the land side an aperture 15, is produced, while
85 a like aperture 16, is made in the forward upper portion of the land side and side wing. A vertical slot 12 is cut in the forward combined edges of the land side and mold board or entirely in the land side, or in the mold
90 board, which slot at its lower end connects with the diagonal opening 13; and in the lower portion of the rear wall of the said slot, a recess 14^a is produced.

The slot 12, is adapted to receive the rear
95 edge of the vertical cutter or shear C heretofore referred to, and the upper and lower edges of the cutter are usually beveled in opposite directions, the lower edge forming virtually a continuation of the upper wall of the
100 opening 13, as shown in Fig. 1, while upon the under rear edge of the cutter a stud 17, is formed, adapted to enter the recess 14^a in the slot in which the said cutter is to be in-

troduced. The stud 17, serves to hold the cutter in position at its lower end, the upper end being secured by passing a pin 18 through the mold board, cutter and land side.

5 The mold board may be of any suitable or approved construction, and may be attached to or may be formed integral with the standard 11, and it meets the wing and land side in a manner to afford a smooth connection with
10 the former, and the land side may be secured to the mold board or to the standard. It may be here remarked that the mold board is provided with a boss upon its inner face corresponding to the land side boss 14.

15 The point E preferably consists of a bar of steel rectangular in cross section, but it may be given any desired cross sectional shape; and usually the outer end of the point is more or less beveled or inclined upon its top surface. The point is adapted to slide in the
20 opening 13 in the land side and mold board, or it may be made to slide in a suitable opening made in the standard 11. The point E, moves more or less diagonally within the
25 share, and when drawn inward it moves rearward and upward, while when pushed outward it moves forwardly and downwardly. The inner end of the point is pivotally connected with a link 19, which may be strengthened in any approved manner if necessary.
30 The said link is provided with a series of apertures 20 at its inner end, by means of which it may be adjustably connected with the lower end of a shifting lever 21, which lever is provided with a substantially T-head 22, and the
35 said head is journaled in the mold board and in the land side, the trunnions of the head having bearings upon the bosses of these two parts. The bosses serve to strengthen the
40 mold board and land side, and likewise serve to strengthen the bearings for the lever.

Handles 23, are secured one to the land side and the other to the mold board; and the handles are connected by suitable upper and
45 lower cross bars 24 and 25. The lever 21 extends upward between the beam 10 and a rack 26, which rack is secured to the beam as shown in Figs. 1 and 2; and the shifting lever is provided with the usual thumb latch
50 27, operating a pawl 28, adapted for engagement with the rack. Preferably the latch is attached to the front side of the lever instead of at the back as shown.

In the lower forward portion of the mold
55 board B, a horizontal slot or pocket 29, is made, the wall of which pocket nearest to the land side is provided with a recess 30, as shown best in Fig. 4. The slot or pocket 29, is adapted to receive the horizontal shear or
60 cutter D, which shear or cutter is beveled at its ends, as shown in Fig. 7, and is provided with a recess 31 in one end, adapted to fit over a spur formed in the wall of the seat or pocket 29 by the recess 30 in that wall. In
65 this manner the inner end of the horizontal shear or cutter is held firmly in place while

the outer end is held in position by passing a pin or rivet through an opening 32 made in the shear and a corresponding opening 33 produced in the mold board.

70 The clevis F, is a double clevis, one clevis being placed at right angles to the other, and the two clevises are designated respectively as 34 and 35. The horizontal clevis is stationary, while the vertical clevis has lateral
75 movement over the horizontal one. Thus a vertical adjustment can be effected upon the vertical clevis, while a lateral adjustment is made upon the horizontal one, since the vertical clevis may be moved any desired distance in direction of either side over the horizontal clevis, being held in the adjusted position by a pin or its equivalent passed through
80 both clevises.

By means of the foregoing construction of
85 the share, the plow being set for example for the cultivation of soft ground, if a bit of hard ground should be reached while the plow is still in operation, by manipulating the lever
90 21 the point E may be forced downward and outward and made to enter the ground to a greater or a less depth, whereby the plow will be given a greater purchase or hold upon the ground while passing over a rough spot than it would otherwise have, thus insuring that
95 portion of the ground being plowed as deeply and as properly as the yielding portions.

It is evident that an adjustment may be effected whether the plow be stationary or moving, and that since the point has a downward slant it will enter the ground and hold
100 firmly. The cutter or shear C and likewise the cutter or shear D, are exceedingly advantageous, since they cut the earth much better than the ordinary ridge of the share or the lower edge of the mold board, as usually employed, and the cutters or shears may be readily removed and sharpened, and as the cutters
105 are usually made of steel, when they are removed the least possible amount of metal is used to replace them. The point also, in the event it should become bent or broken in any way, may be straightened or replaced, and should the point wear, the link 19 may be adjusted more or less in a forwardly direction
110 upon the lever 21, and thereby present a greater length of point outside of the share, or the point may be turned upside down.

I desire it to be distinctly understood that I do not confine myself to any particular manner for securing the several parts of the share together, as they may be attached to one another or to a predetermined support in any manner known to the trade; and furthermore I desire it to be understood that the point
115 may be made reversible, and may be provided with grooves 36, as shown in Fig. 8, in both its upper and its lower faces to receive the lower end of the vertical cutter or shear, and the point may be likewise provided with grooves
120 37 in its sides to receive the horizontal cutter or shear. The shifting lever 21, may also be

dispensed with, and the point may be adjusted outwardly or inwardly by means of a screw shaft or its equivalent.

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

1. In a plow, the combination with a share having a mold board and a horizontal landside, the said share being provided with a longitudinal opening inclined downward and forward, of an adjustable point having a guided movement in said opening and adapted to be projected therefrom at an angle to the said landside, and a shifting device substantially as described connected with the rear end of the point for moving the said point backward and forward in the inclined opening, as and for the purpose specified.

2. In a plow a sliding point having a downward inclination and a shifting lever connected to the inner end of the point for drawing the point rearward and forcing it forward, as and for the purpose set forth.

3. In a plow, the combination with a share, of a sliding point having guided movement in the share, and having a downward inclination a link pivotally connected with the rear end of said point, and a shifting lever connected with the said link, substantially as shown and described.

4. In a plow, a share, the same comprising a removable cutter or shear located vertically at the forward portion of the plow share, a landside, a mold board, a removable horizontal cutter or shear located at the lower portion of the mold board, a sliding point having guided movement between the landside and mold board, a link pivotally connected to the rear end of said point and a shifting lever connected with the said link, as and for the purpose set forth.

5. In a plow, the combination with a mold board and a landside attached to the mold board, the mold board and landside at their point of juncture being provided with a vertical pocket and the mold board with a horizontal pocket, of a vertical shear or cutter removably located in the vertical pocket a horizontal shear or cutter located in the horizontal pocket of the mold board, a point having a sliding and guided movement between the landside and mold board, and beneath the

vertical cutter or shear, a link pivotally connected with the rear end of said point and a shifting lever adjustably connected at its lower end with the said link, as and for the purpose specified.

6. In a plow, the combination with a mold board, and a landside attached to the mold board the combined landside and mold board having a longitudinal opening formed therein, the said opening being diagonally located and extending from the rear point of junction of the landside and mold board through the front point of junction of the same parts at their lower edges, the said mold board and landside at their front point of juncture being further provided with a vertical slot or pocket connecting at its lower end with the longitudinal opening and having a recess formed in the lower portion of its rear wall, of a vertical shear or cutter removably located in the vertical pocket and having a stud on its under rear edge adapted to enter the said recess, an adjustable point having a sliding and guided movement in the longitudinal opening, a link pivotally connected to the rear end of said point, and a shifting lever connected with the said link, substantially as shown and described.

7. In a plow, the combination, with a mold board and a landside attached to the mold board, the mold board and landside at their point of juncture being provided with a vertical pocket and the mold board with a horizontal pocket having a spur formed in its wall, of a vertical shear or cutter removably located in the vertical pocket, a horizontal shear or cutter located in the horizontal pocket of the mold board and provided with a recess in one end adapted to fit over the spur in the wall of the horizontal pocket, a point having a sliding and guided movement between the landside and mold board, and beneath the vertical cutter or shear, a link pivotally connected with the rear end of said point, and a shifting lever adjustably connected with the said link, as and for the purpose specified.

RICHARD E. HOPKINS.

Witnesses:

J. MCDOWELL,
MACE BENDER.