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Patented Mar. 14, 1899.

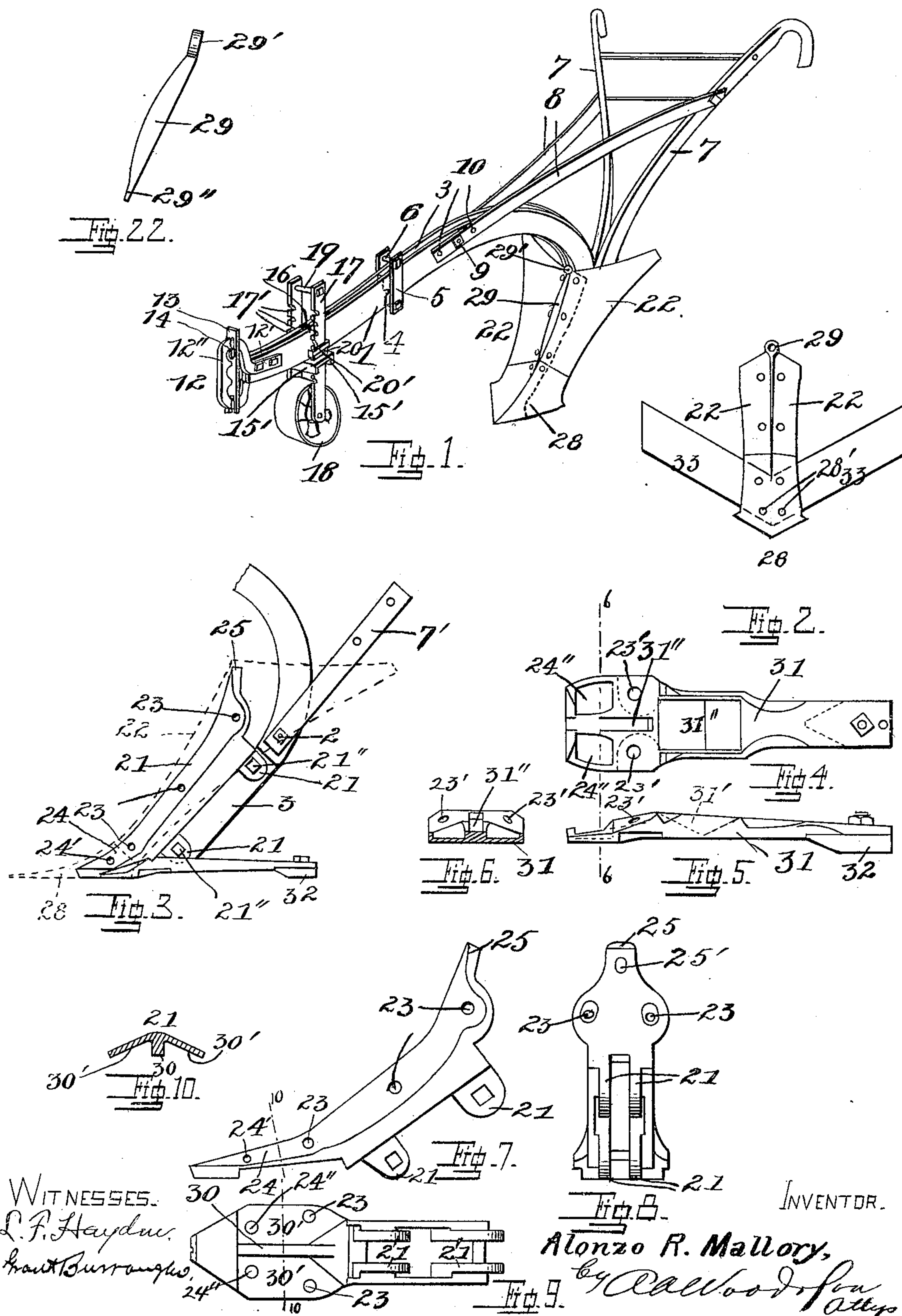
A. R. MALLORY.

PLow.

(Application filed June 30, 1896.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES.
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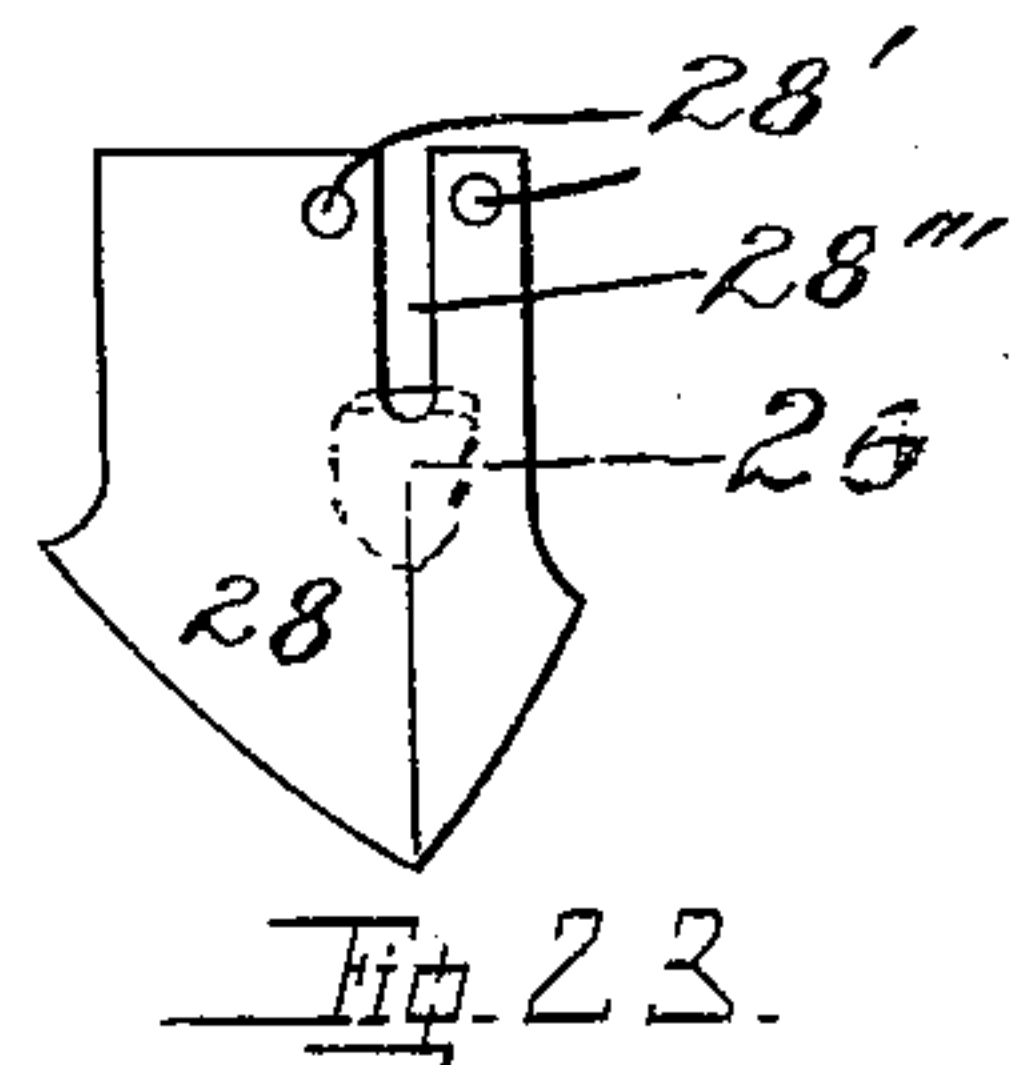
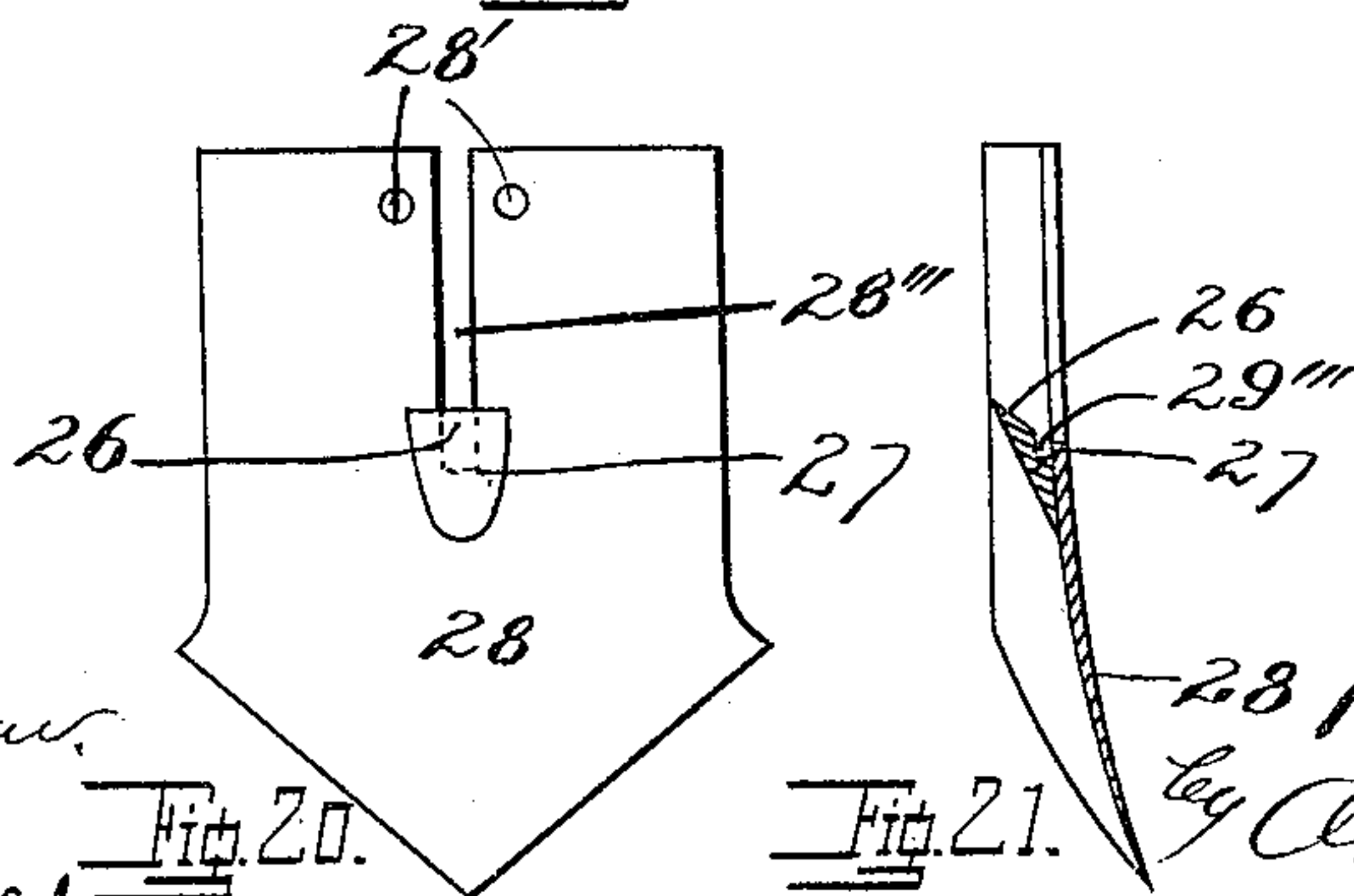
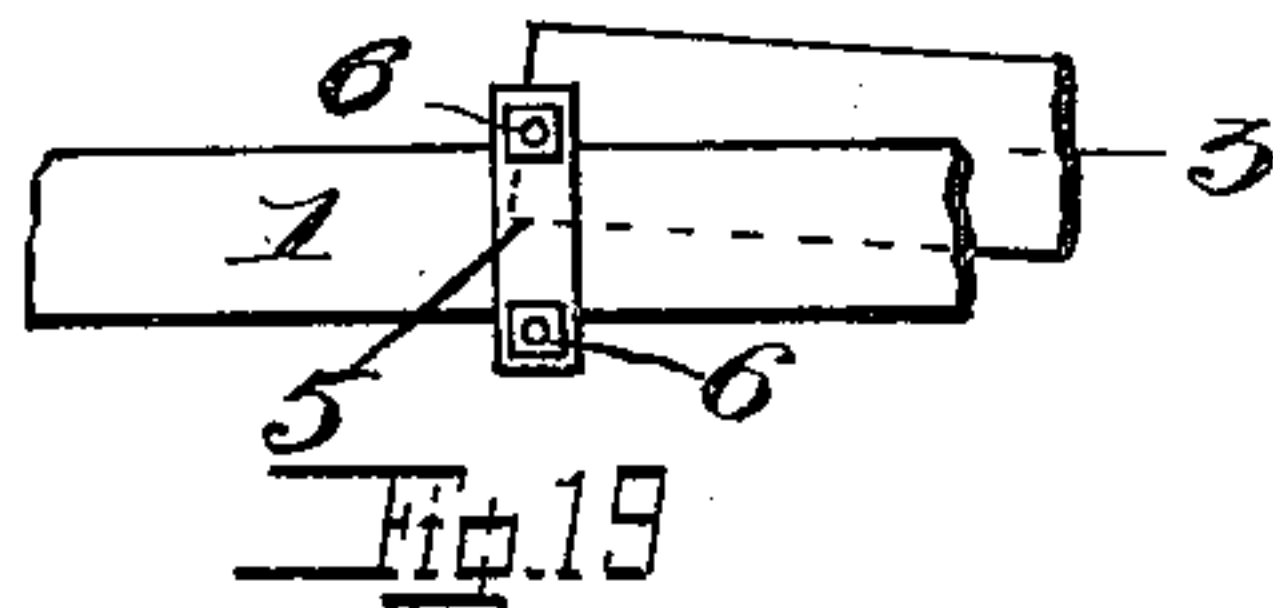
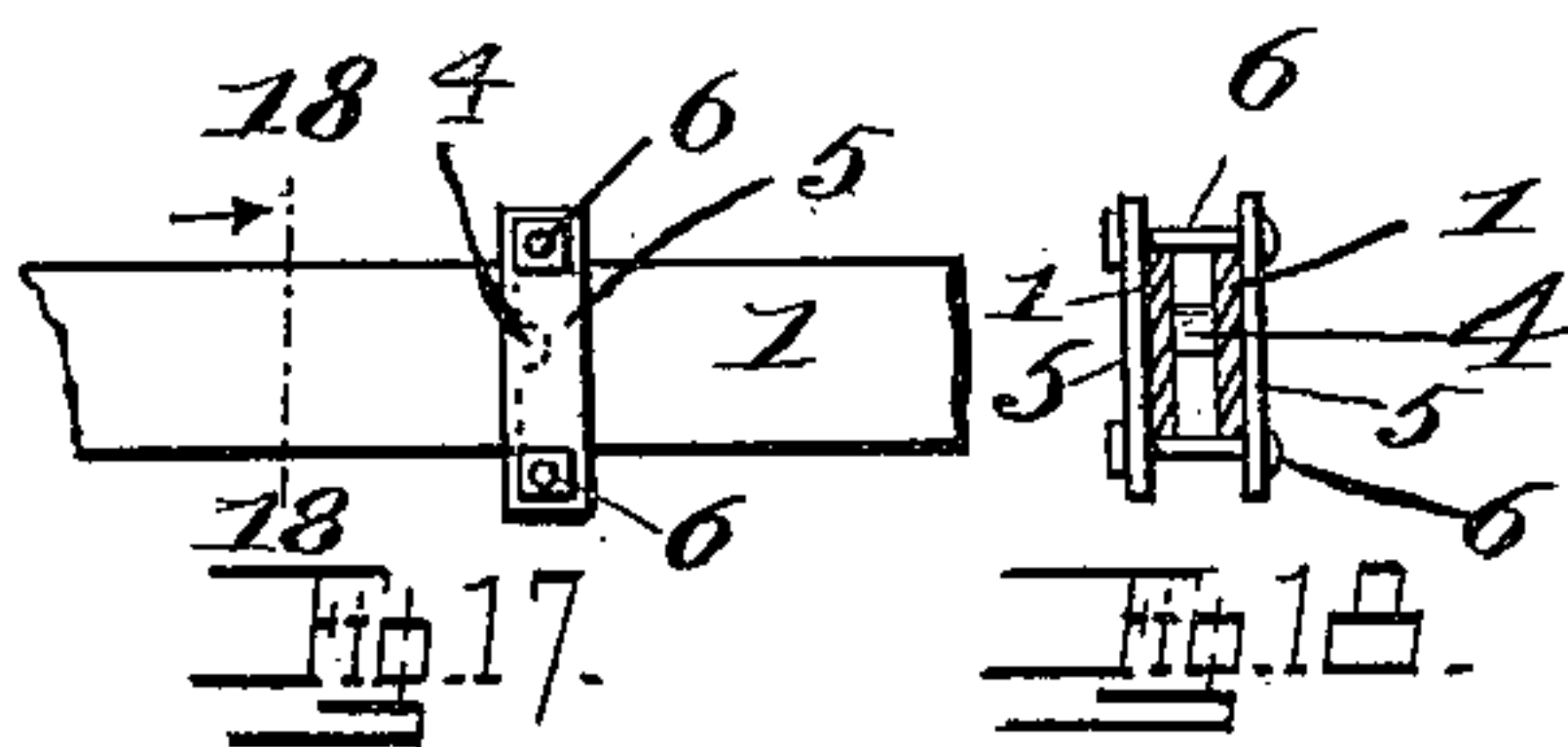
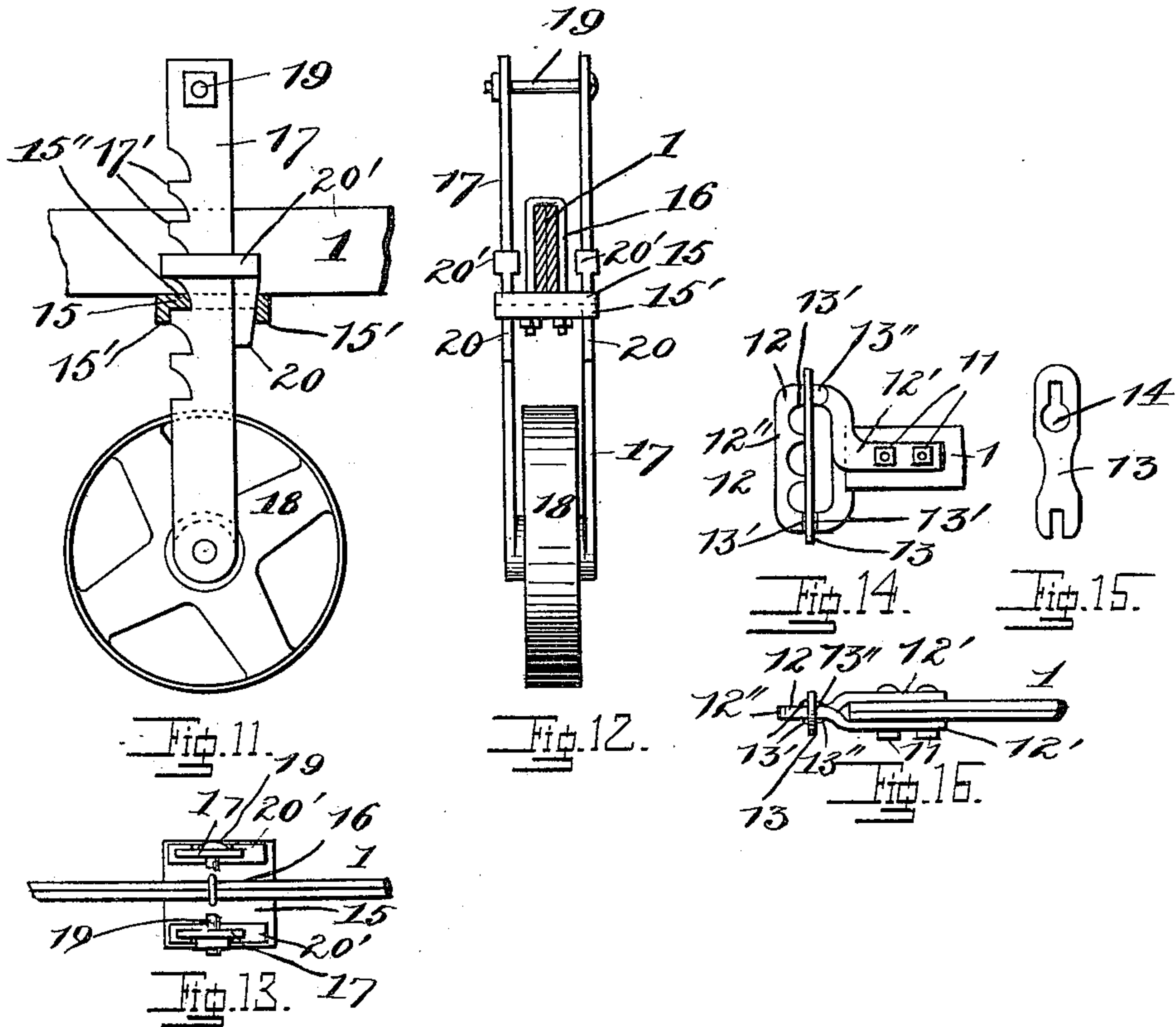
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

ALONZO R. MALLORY, OF ATLANTA, GEORGIA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 621,307, dated March 14, 1899.

Application filed June 30, 1896. Serial No. 597,637. (No model.)

To all whom it may concern:

Be it known that I, ALONZO R. MALLORY, a citizen of the United States of America, and a resident of Atlanta, in the county of Fulton and State of Georgia, have made a certain new and useful Plow; and I do hereby 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

In the accompanying drawings, Figure 1 is a perspective view of the device, showing same with wings attached. Fig. 2 is a front elevation of a set of blades, including heel-sweep wings. Fig. 3 is a side elevation of the standard, showing the backing for the belts in position thereon. Fig. 4 is a plan view of the heel-plate. Fig. 5 is an edge view thereof. Fig. 6 is a cross-section on the line 6 6, Figs. 4 and 5. Fig. 7 is a side elevation of the casing serving as a backing for the belts, showing its form and manner of attachment to the standard. Fig. 8 is a rear elevation thereof, and Fig. 9 is an inverted plan view of same. Fig. 10 is a cross-section on the line 10 10, Figs. 7 and 8. Fig. 11 is a side elevation of the gage-wheel, and Fig. 12 is a rear elevation thereof. Fig. 13 is a plan of side gage-wheel attachment. Fig. 14 is a side of the clevis. Fig. 15 is a detail of the stop-plate therefor, and Fig. 16 is a plan of said clevis. Fig. 17 is a side elevation of the clamp securing the pivoted standard to the beam proper. Fig. 18 is a section on the line 18 18, Fig. 17. Fig. 19 shows means for securing said beam and standard in adjustment. Figs. 20 and 21 are respectively back and sectional views of point, forming the extreme end of the share when assembled. Fig. 22 is a side view of the opener-blade. Fig. 23 is a face view of the right-hand turn-plow point.

In the figures like reference characters are uniformly employed in the designation of corresponding elements of construction.

1 is a beam which is composed of two flat metallic bars curved in the form of a modified sigmoid and terminating at the back ends, substantially as shown in Fig. 3, on which

point on bolt or pin 2 is pivoted to the standard 3, said standard conforming approximately to the curvature of the beam 1, lying between the two bars forming said beam and extending below the ends thereof and pivotally pointed, substantially as shown in Fig. 3. As shown in Figs. 17 and 18, a notch 4, of which there may be as many as desired, is cut in the forward end of said standard 3, a clamp consisting of straps 5 and bolts 6 serving to converge the two side bars onto the forward end of the said standard when said beam is in the adjustment shown in Fig. 1, and when the bars are relatively situated, as seen in Fig. 19, are in exactly the reverse position. The corresponding one of said bars 6 engages the notch 4, preventing the movement of the bars relatively to each other and at the same time, as before stated, clamping the side bars to the beam and said standard securely together.

7 are the handles, which are assembled in the usual manner and are secured by their lower ends to the beam by the pivoting-bolt 2, either directly or, as indicated in Fig. 3, by means of straps 7', which would then form part of said handles.

8 are braces which extend from the handles 7 in approximately horizontal direction and are attached at their other ends to the beam just back of the clamp hereinbefore described, bolts 9 serving to secure them there, and said braces being made adjustable as to their point of forward attachment by means of a series of wheels 10 through the braces 8 and adapted to receive bolt 9.

As shown in Figs. 1, 14, 15, and 16, the forward ends of bars are held together by means of bolts 11, which said bolts also serve to secure the clevis 12 thereto. This clevis consists of two parallel portions 12', having a loop 12'' bent at their forward ends, wherein the usual notches are cut to receive the singletree-ring, and by a movement of which ring from notch to notch an adjustment of the line of draft is secured. The ring is secured in the desired one of these notches by means of a plate 13, which is bifurcated at its lower end and slotted in its upper end, the lower end of said slot being enlarged and circular in contour, as shown at 14 in Fig. 15.

This circular portion of the slot is necessary to allow the said plate to be slipped over one of the parallel portions 12' of the clevis and to be turned into place and slipped between the lips 13' and the lugs 13'' on the clevis, which are so situated on said clevis that the plate touches or nearly touches the dividing-lugs between the notches. From this position it may be moved by drawing it upwardly, causing its bifurcated lower end to pass from between the lips 13' and so allowing said lower end to swing backwardly and the ring to be passed from notch to notch. In order that the upper end of the plate 13 may not slip backwardly also and so allow said plate to become displaced and troublesome, I have provided the hereinbefore-mentioned lugs 13'', which are of a size to just fill the opening 14 and allow said opening to pass over them, and after passing the plate over them said opening 14 is reduced in size by the blow of the hammer on the edge of the plate adjacent thereto, and said plate may not then fall backwardly at its upper end.

Figs. 1, 11, 12, and 13 show a caster-wheel or gage-wheel which is constructed and made vertically adjustable, as follows: A plate 15 is secured in a horizontal position centrally under the forward end of the beam proper by means of a clip 16, as shown in Figs. 12 and 13, said clip passing its bifurcated end through the holes in the aforesaid plate and straddling the beam-nuts, serving to draw same tight and providing for a fore-and-aft adjustment. For the sake of stiffness of said plate and of forming suitable abutments for the contacting of parts flanges 15' are made on the said plate, projecting downwardly on its fore-and-aft edges. In each edge of said plate parallel to the beam are slots, said slots being set slightly backwardly from the center of said plates, whereby a lip 15'' is lifted for engagement with the teeth 17' of the standards 17, which teeth lie along the front edge of each of said standards and engage the lips 15'', the standards being from the points of their teeth to the back edge of a size equal to the length of the aforesaid slots, whereby they may be moved vertically through said slots and provide for the adjustment of the caster-wheel 18, carried freely rotatable between their lower ends, the upper ends of said standards being held, if desired, by a bolt 19. In order to hold these standards in their proper vertical positions, it is necessary that the teeth 17' should not only engage the lips 15'', but that said engagement should be made stable and the uprights be thereby secured against oscillation. This I do by means of a wedge-shaped key 20, which fills the slot between the back edge of each standard 17 and the correlative flange 15' and is driven thereinto from the top, having a lug bearing on the back edge of the standard and having a shackle 20' partially encircling the said standard above the plate 15.

To the lower end of the standard 3 is se-

cured the base or backing, to which are secured, by means of suitable bolts or rivets, the blades or share-sections, all of which I will now proceed to describe.

21 is a casting which is provided with lugs 21' on its back edge, by means of which and the bolts 21'' said casting is secured to the foot 3. Obviously a flange or flanges may be substituted for these lugs without a departure from the essence of the invention. The face of the casting 21 is of a form shown in Figs. 3 and 7 to 10, inclusive, and is inclined backwardly from the vertical median, so as to conform as nearly as possible to the form of the back of the plates 22. At their inner edges as nearly as practicable the holes 23 are made therein for suitable bolts or rivets with which to secure said plates in place. The backward inclination of the faces of this casting is such as will give the plates 22 or any plate which it is desired to affix thereto the desired correlative inclination. This is also a fact, as the degree of angle from the horizontal of the lower portion 24 of these faces, or rather the lower end of the casting 21, which will be observed in Fig. 3, is at an angle of approximately thirty degrees, whereas the angle of the main body is about forty-five degrees. This proportion would be ordinarily about correct; but I have shown in Fig. 7 a different angle of this lower portion 24, to which a long point, somewhat after the manner of a subsoiling-point, might be attached. 25 is a lug which projects upwardly from said casting, for a purpose to be hereinafter treated of. The lower end of the said casting 21 is shaped so that it will enter under the lip 26 on the casting 27 on the back side of the blade 28, which forms the point of the share when assembled and which is secured to the casting 21 by bolts passing through the holes 28' in the said blade and 24' in the aforesaid casting 21, the upper edge of said blade being of a form correlative to the lower ends of the plates 22, whereby it forms a continuous surface therewith and is held more rigidly in place.

Fig. 22 is a detail of an opening-blade 29. (Shown in front elevation in position in Fig. 2.) This blade conforms its back edges to the front of the casting 21 as far as it contacts therewith, having on its upper end an eye 29', which corresponds in position with the hole 25' in the lug 25, to which it is secured by suitable bolt or rivet lying between the inner edges of the plates 22 and in the slot 28'' in the plate 28, a tang 29'' projecting into the opening 29''', formed by recessing the block 27, and so setting said block on the point 28 as to allow a portion of said point to close one side of the recess aforesaid. Projecting front edge of this blade 29 may be of any desired contour and is sharpened so as to make the initial cut in the earth and cut roots or other like obstructions with which it may contact.

It is obvious that any kind or character whatever of blades may be attached to this

device and form any of the well-known forms of share and of any size, as well as many other shapes of blades for special work.

As shown in Figs. 7 and 10, the under side 5 of the casting 21, near the point thereof, is concaved, and a rib 30 runs down the center of said concave, as shown in Fig. 10. Seen in Figs. 4, 5, and 6 is a slide-bar 31, which carries on its back end a heel-plate 32, of hard 10 material, and conforms at its front end to the shape of the portion of the casting 21 just described, with the exception that it falls short of faces 30'. Slide-bar is clamped in place by means of bolts passing through the 15 holes 24', 24'', 23, and 23', a depression 31' being made in the upper side of this bar, into which the lower end of the foot 3 and the lugs 21 (lower) fit and contact with the bottom, thereby further bracing this side plate. A 20 depression 31'' fits over a portion of the rib 30, and thereby still further secures the bar in place. In the recess just mentioned, formed between the faces 30' and the contiguous upper side of the bar 31, are inserted the contiguous ends of heel-sweep blades 33, which 25 when assembled stand at relative angles, (shown in Fig. 2,) said blades being held in place by bolts passing through the holes 24', 24'', 23, and 23'. This construction clamps 30 these blades firmly and provides a much better heel-sweep than the ordinary integral one.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

35 1. In a plow, a beam consisting of two bars curved downwardly at their back ends, a curved standard lying between said bars and pivotally secured by about its middle to the lower ends of said bars, and having a notch 40 in its forward end, and a clamp consisting of flat straps and bolts, said clamp being set upon said beam so as to press the bars thereof together and engage said notch by one of its bolts, substantially as and for the purpose 45 specified.

2. In a plow, a beam and a clevis consisting of a loop bolted to said bar by its ends, the loop having its major diameter vertically 50 positioned, notches in the inner side of the forward half of said loop and a plate slotted at its upper end and bifurcated at its lower set on said loop across the open sides of said notches, and guides for said plate in its vertical movements.

55 3. In a plow, a beam and a clevis consisting of a loop bolted to the beam by its ends, the loop having its major diameter vertically positioned, notches in the inner side of the forward half of said loop and a plate having 60 a keyhole-slot in its upper end, its lower bifurcated, set on said loop across the open sides of said notches, the upper part of said loop being provided with lugs back of said plate slightly larger than the circular portion 65 of said slot, for the purpose specified.

4. In a plow, a beam and standard and a share having a vertical opening in its face,

and a blade independently secured by its upper end to the standard and projecting its edge through said vertical opening for the 70 purpose specified.

5. In a plow, a beam, and standard and a share having a vertical opening in its face, and a blade independently secured by its upper 75 end to the standard and having its lower end projected behind said share below said vertical opening and projecting its edge through said vertical opening for the purpose specified.

6. In a plow, a beam, handles and a stand- 80 ard, a block secured to the lower end of said standard having its face beveled backwardly from a median line and a share secured to and lying upon each of said faces, and a blade 85 secured to said block along said median line and projecting its edge forwardly between the said shares.

7. In a plow, a beam, handles and a stand- 90 ard, a block on the lower end of said standard adapted to receive a share-blade, on the upper part of its face, the lower part of its face lying at a more acute angle to the draft- line and being adapted to receive a point- blade for the purpose specified.

8. In a plow, a beam, handles and a stand- 95 ard, a block on the lower end of said standard adapted to receive a share-blade, on the upper part of its face, the lower part of its face lying at a more acute angle to the draft- line and being adapted to receive a point- 100 blade and a blade having a block on its back side adapted to engage the lower end of said block, for the purpose specified.

9. In a plow, a beam, handles and stand- 105 ard, a block secured to the lower end of said standard, adapted to receive a blade on its face, the lower side of said block at its lower end being concaved, and a bar secured to said block over said concave with a space intervening between same and said concaved 110 face and heel-sweep blades adapted to be inserted in said space.

10. In a plow, a beam, handles and a stand- 115 ard, a block secured to the lower end of said standard, adapted to receive a blade on its face, the lower side being concaved, a rib along the center of said concave, and a bar secured to said block over said concave with a space intervening between same and said 120 concaved face and heel-sweep blades adapted to be inserted in said space their adjacent ends abutting on the sides of said rib.

11. In a plow, a standard, a point-blade, adapted to be secured thereto and having a vertical slit in its upper end, a wing-blade 125 adapted to be secured to said standard and abut its lower end upon the upper end of said point-blade, and a knife-edged blade adapted to lie along the edge of said wing-blade and rest its lower end in said slit, sub- 130 stantially as and for the purpose specified.

12. In a plow, a standard, a point-blade, adapted to be secured thereto and having a vertical slit in its upper end, a wing-blade

adapted to be secured to said standard and
abut its lower end upon the upper end of said
point-blade, and a knife-edged blade adapt-
ed to lie along the edge of said wing-blade
5 and rest its lower end in said slit, said point-
blade having its edge on the opposite side
from the said wing-blade cut away to near
said slot, substantially as and for the pur-
pose specified.
10 13. In a plow, wing-blades and a point-

blade having its edges parallel, its upper end
at right angles to said edges and its point
sharpened and diamond-shaped.

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

ALONZO R. MALLORY.

Witnesses:

A. P. WOOD,

M. BROWN.