

May 10, 1932.

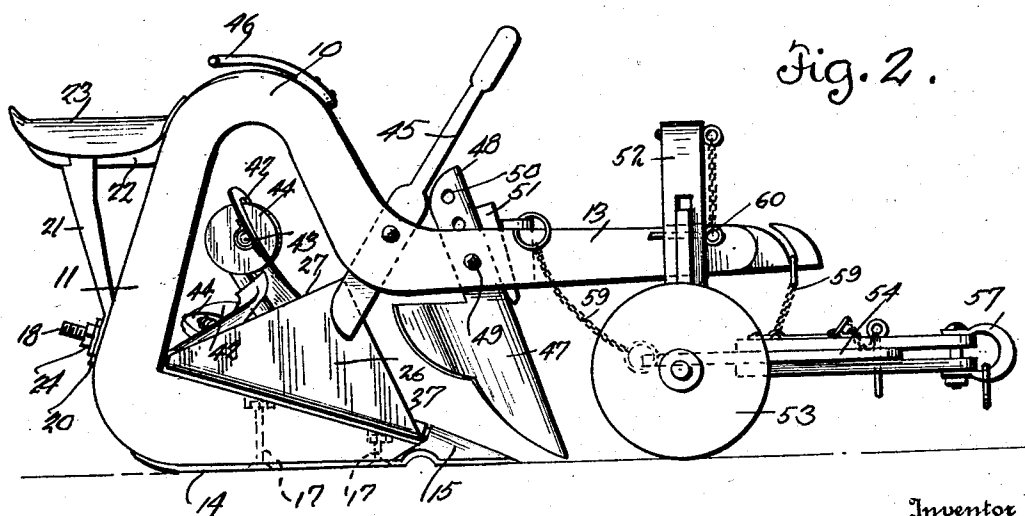
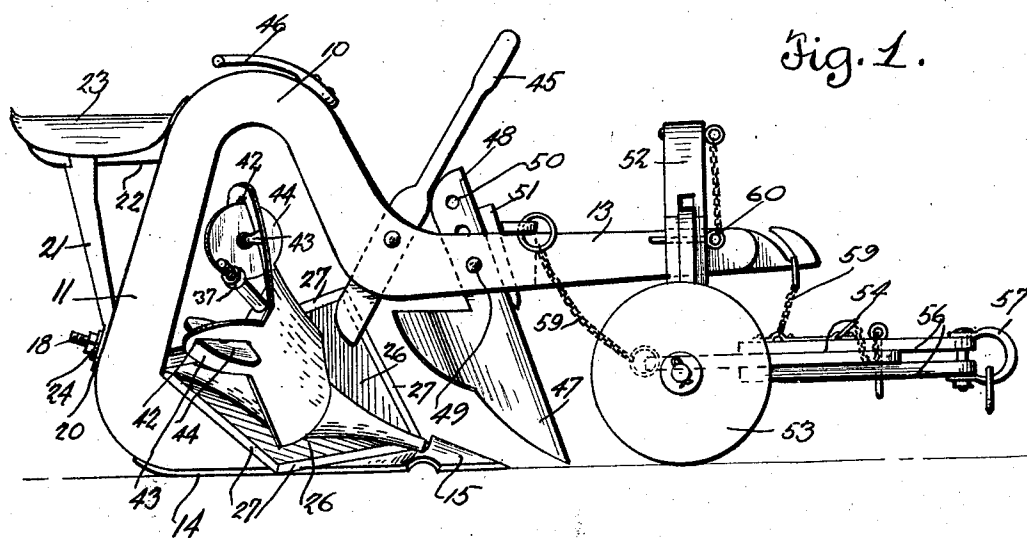
J. SZAKACS

1,857,700

PLow

Filed Oct. 29, 1931

2 Sheets-Sheet 1



Joseph Szakacs, Inventor

By *Reginald Lowry* Attorney

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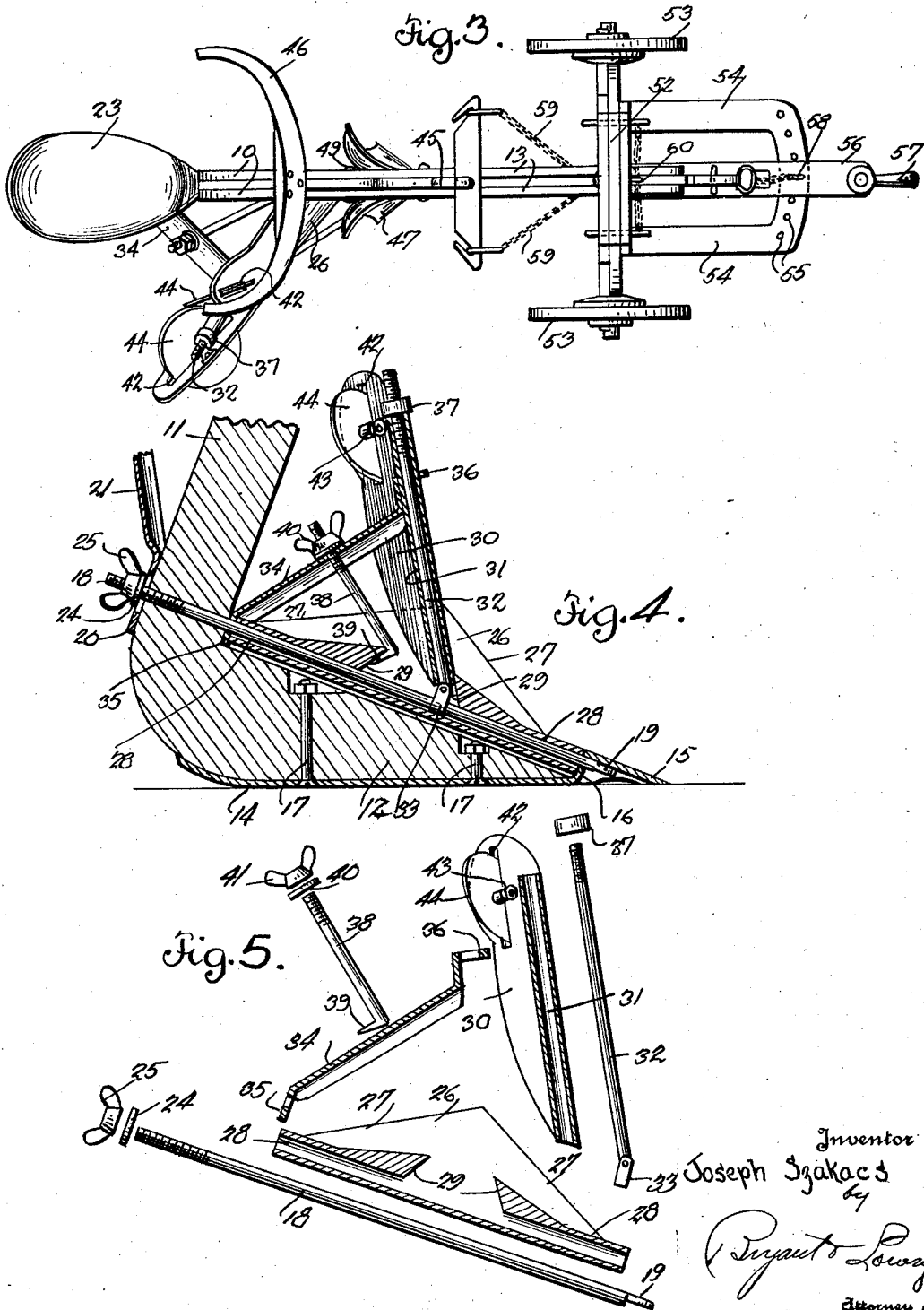
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# UNITED STATES PATENT OFFICE

JOSEPH SZAKACS, OF LINCOLN, NEBRASKA, ASSIGNOR OF ONE-HALF TO JOSEPH BASMAN, OF SOUTH MILWAUKEE, WISCONSIN

## PLOW

Application filed October 29, 1931. Serial No. 571,879.

This invention relates to plows and more especially relates to a reversible or hillside plow.

One important object of the invention is to provide an improved general arrangement of devices of this character.

A second important object of the invention is to provide improved share supporting and reversing means for such a plow.

A third important object of the invention is to provide a novel arrangement of locking means for holding the share set in its desired position.

A fourth important object of the invention is to provide a novel share arrangement for such a plow, the share being equipped with rotary means for assisting in turning the earth.

A fifth important object of the invention is to provide an improved share for such a plow so arranged that it has four cutting edges arranged in pairs and supported so that either pair may be positioned forwardly of the plow.

With the above and other objects in view, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings and specifically claimed.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—

Figure 1 is a side elevation of the plow with the share thrown to the right;

Figure 2 is a similar view with the share to the left;

Figure 3 is a plan view with the device arranged as in Figure 1;

Figure 4 is an enlarged detail section of the lower rear part of the plow, the section being taken on the vertical median plane of the frame; and

Figure 5 is a disassembled view, partly in section, of the share and its associated parts.

In the embodiment of the invention as here shown there is provided a frame consisting of a pair of parallel members each having an arch portion 10 which extends downwardly at the rear to provide a standard 11 carrying

at its bottom a forwardly extending shoe 12. Each arch portion extends forward to form a beam side 13. The arches and beam sides are spaced but the standards are brought together at their lower ends. A sole 14 is secured to the shoes and projects forwardly to form a point 15 of substantially arrow head shape. The metal of the shoe is forged to provide this point in such manner that a shoulder 16 is formed at the rear of the point. Bolts 17 secure the sole to the shoe so that the sole and point may be replaced when worn or broken.

The upper face of the shoe is inclined upwardly from front to rear and extending parallel to this inclined face is a pivot bolt 18 having a flat head 19. This bolt passes through the shoulder 16 so that the head 19 lies in the hollow of the point. The bolt 18 extends between the standards and through a plate 20 formed on the bottom of a seat supporting leg 21 which supports at its upper end a bar or beam 22 by which the upper end of the leg is tied to the arch portions 10. On the bar 22 is mounted a seat or saddle 23. The bolt 18 is provided with a washer 24 which rests against the plate 20 and with a butterfly nut 25 which seats on said washer.

The share consists of a substantially square metal plate 26 having all four edges 27 sharpened. This plate is bent along one diagonal line of the square so that the two triangular portions of the plate on the opposite sides of the diagonal line lie at substantially 135° to each other. Within the angle thus formed there is provided at each end of the diagonal line a bearing sleeve 28 through which the bolt 18 passes. The proximal ends of these sleeves are undercut to provide spaced bevelled faces 29. When the share is thus mounted on the bolt 18 either half may be arranged in vertical position and the other half will then extend outwardly and downwardly from the bolt at approximately 45° to the horizontal. Moreover the share being symmetrical about both diagonal lines either sleeve 28 may be arranged next the point 15. Thus if one pair of edges becomes dull the share may be taken off, turned end for end and replaced to bring

the remaining pair of edges into use. In connection with the share there is provided a mold board 30 the lower end of which seats on the share and bears against the forward bevel 29. The sides of this mold board extend backwardly from its center line and in the bend thus formed there is provided a sleeve 31 through which passes a bolt 32. A yoke or loop 33 is pivoted to the lower end of the bolt 32 and receives the bolt 18. A brace 34 has its lower end 35 provided with an opening to receive the bolt 18 and this lower end is located just behind the rear sleeve 28. The other end 36 of this brace 34 is offset and provided with an opening to receive the bolt 32, the offset end 35 resting on top of the sleeve 31. A nut 37 screws onto the bolt 32 to secure these parts together. A bolt 38 extends through the brace 34 about centrally thereof and has a hook end 39 which engages the rear bevel 29. A washer 40 and butterfly nut 41 are provided for this bolt. By means of the two bolts 32 and 38 and the brace 34 the mold board is secured rigidly to the share. Each half of the mold board is provided with a slot 42 in its upper part. Bearing means 43 are arranged at the sides of these slots and disks 44 are revolvably supported by these bearing means and project forwardly through the slots. Pivoted between the forward lower ends of the arches 10 is a securing lever 45 having its lower end slotted to engage the forward edge of that half of the share which may be in vertical position. By this means the working half of the share is held to one side or the other of the frame as may be desired.

Handles 46 are fixed to the arch. A coulter 47 is provided with a shank 48 which extends up between the beam sides and is held in vertically adjusted position by a bolt 49 passing through the beam and selectively through one of a series of spaced holes 50 in the shank. A wedge 51 serves to hold the coulter against tilting.

The forward end of the beam extends through an opening in a vertically adjustable frame 52 supported on ground wheels 53 and the frame 52 is provided with a forwardly extending yoke 54 having an arcuate front end provided with spaced openings 55. A draw bar 56 is pivoted concentrically of the arcuate yoke end and is provided on its forward end with a clevis 57. This draw bar is held in angularly adjusted position on the yoke by a bolt 58 which passes through the bar and selectively through one of the holes 55. Safety chains 59 secure the wheeled frame to the plow proper and pins 60 are used to adjust the frame 52 vertically.

In use, as the end of each furrow is reached, the plow is turned around, and the lever 45 swung to free the share. The share is then swung over to bring the part previously in the ground to vertical position and

the lever moved to engage the part just brought into such position. Plowing is now resumed in the opposite direction.

There has thus been provided a highly efficient device of the kind described and for the purpose specified.

It is obvious that many changes may be made in the form and construction of this invention without departing from the material principles involved. It is not therefore desired to confine the invention to the exact form herein shown and described but it is desired to include all such forms and constructions as come within the scope claimed.

I claim:—

1. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, said plow share being tiltably mounted on said bolt and arranged for selective positioning of the ends of said last diagonal line forwardly, means to releasably hold the share in tilted position, a mold board having its lower end seated in said dihedral angle and provided with a bolt receiving sleeve on its rear face, and a bolt passing through the mold board sleeve and engaging the first bolt to secure the mold board thereto.

2. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, said plow share being tiltably mounted on said bolt and arranged for selective positioning of the ends of said last diagonal line forwardly, means to releasably hold the share in tilted position, a mold board having its lower end seated in said dihedral angle and provided with a bolt receiving sleeve on its rear face, a bolt passing through the mold board sleeve and engaging the first bolt to secure the mold board thereto, a brace connecting the rear end of the first bolt and the upper end of the second bolt.

3. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, said plow share being tiltably mounted on said bolt and arranged for selective positioning of the ends of said last diagonal line forwardly, means to releasably hold

the share in tilted position, a mold board having its lower end seated in said dihedral angle and provided with a bolt receiving sleeve on its rear face, a bolt passing through the mold board sleeve and engaging the first bolt to secure the mold board thereto, a brace connecting the rear end of the first bolt and the upper end of the second bolt, and a second brace connecting the middle of the first brace with the share.

4. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve extending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, and a nut on the second bolt bearing against the mold board sleeve.

5. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve extending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, a nut on the second bolt bearing against the mold board sleeve, and a brace connecting the rear end of the first bolt and the upper end of the second bolt.

6. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite

sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve extending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, a nut on the second bolt bearing against the mold board sleeve, a brace connecting the rear end of the first bolt and the upper end of the second bolt, and a second brace connecting the middle of the first brace with the share.

7. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve extending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, a nut on the second bolt bearing against the mold board sleeve, a brace connecting the rear end of the first bolt and the upper end of the second bolt, and a hook bolt extending through said brace and engaging the bevelled end of the remaining share sleeve.

8. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, said plow share being tiltably mounted on said bolt and arranged for selective positioning of the ends of said last diagonal line forwardly, means to releasably hold the share in tilted position, a mold board having its lower end seated in said dihedral angle and provided with a bolt receiving sleeve on its rear face, a bolt passing through the mold board

sleeve and engaging the first bolt to secure the mold board thereto, wings on the upper end of said mold board each provided with a slot, and disks revolubly mounted on the rear faces of said wings and projecting through said slots.

9. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, said plow share being tiltably mounted on said bolt and arranged for selective positioning of the ends of said last diagonal line forwardly, means to releasably hold the share in tilted position, a mold board having its lower end seated in said dihedral angle and provided with a bolt receiving sleeve on its rear face, a bolt passing through the mold board sleeve and engaging the first bolt to secure the mold board thereto, a brace connecting the rear end of the first bolt and the upper end of the second bolt, wings on the upper end of said mold board each provided with a slot, and disks revolubly mounted on the rear faces of said wings and projecting through said slots.

10. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, said plow share being tiltably mounted on said bolt and arranged for selective positioning of the ends of said last diagonal line forwardly, means to releasably hold the share in tilted position, a mold board having its lower end seated in said dihedral angle and provided with a bolt receiving sleeve on its rear face, a bolt passing through the mold board sleeve and engaging the first bolt to secure the mold board thereto, a brace connecting the rear end of the first bolt and the upper end of the second bolt, a second brace connecting the middle of the first brace with the share, wings on the upper end of said mold board each provided with a slot, and disks revolubly mounted on the rear faces of said wings and projecting through said slots.

11. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each

end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve extending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, a nut on the second bolt bearing against the mold board sleeve, wings on the upper end of said mold board each provided with a slot, and disks revolubly mounted on the rear faces of said wings and projecting through said slots.

12. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve extending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, a nut on the second bolt bearing against the mold board sleeve, a brace connecting the rear end of the first bolt and the upper end of the second bolt, wings on the upper end of said mold board each provided with a slot, and disks revolubly mounted on the rear faces of said wings and projecting through said slots.

13. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve ex-

tending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, a nut on the second bolt bearing against the mold board sleeve, a brace connecting the rear end of the first bolt and the upper end of the second bolt, a second brace connecting the middle of the first brace with the share, wings on the upper end of said mold board each provided with a slot, and disks revolubly mounted on the rear faces of said wings and projecting through said slots.

14. In a plow, a frame including a shoe having an inclined upper face, a bolt supported adjacent and parallel to said upper face, a plow share of quadrilateral form symmetrical about both diagonal lines of the quadrilateral and having the portions on opposite sides of one diagonal line inclined with respect to each other to form a dihedral angle, sleeves in said angle at the ends of said line to receive the bolt whereby each end of the last mentioned diagonal line may be selectively arranged in forward position, means to releasably hold the share in tiltably adjusted position, said sleeves having their adjacent ends bevelled to provide undercuts, a mold board having its lower end seated in said dihedral angle against the bevelled end of the forward sleeve and having a bolt receiving sleeve extending along its rear face, a bolt passing through the last sleeve and having a yoke pivoted to its lower end and engaging the first bolt, a nut on the second bolt bearing against the mold board sleeve, a brace connecting the rear end of the first bolt and the upper end of the second bolt, a hook bolt extending through said brace and engaging the bevelled end of the remaining share sleeve, wings on the upper end of said mold board each provided with a slot, and disks revolubly mounted on the rear faces of said wings and projecting through said slots.

In testimony whereof I affix my signature.

JOSEPH SZAKACS.