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D. G. BURKHART.

PLOW.

APPLICATION FILED JULY 16, 1904.

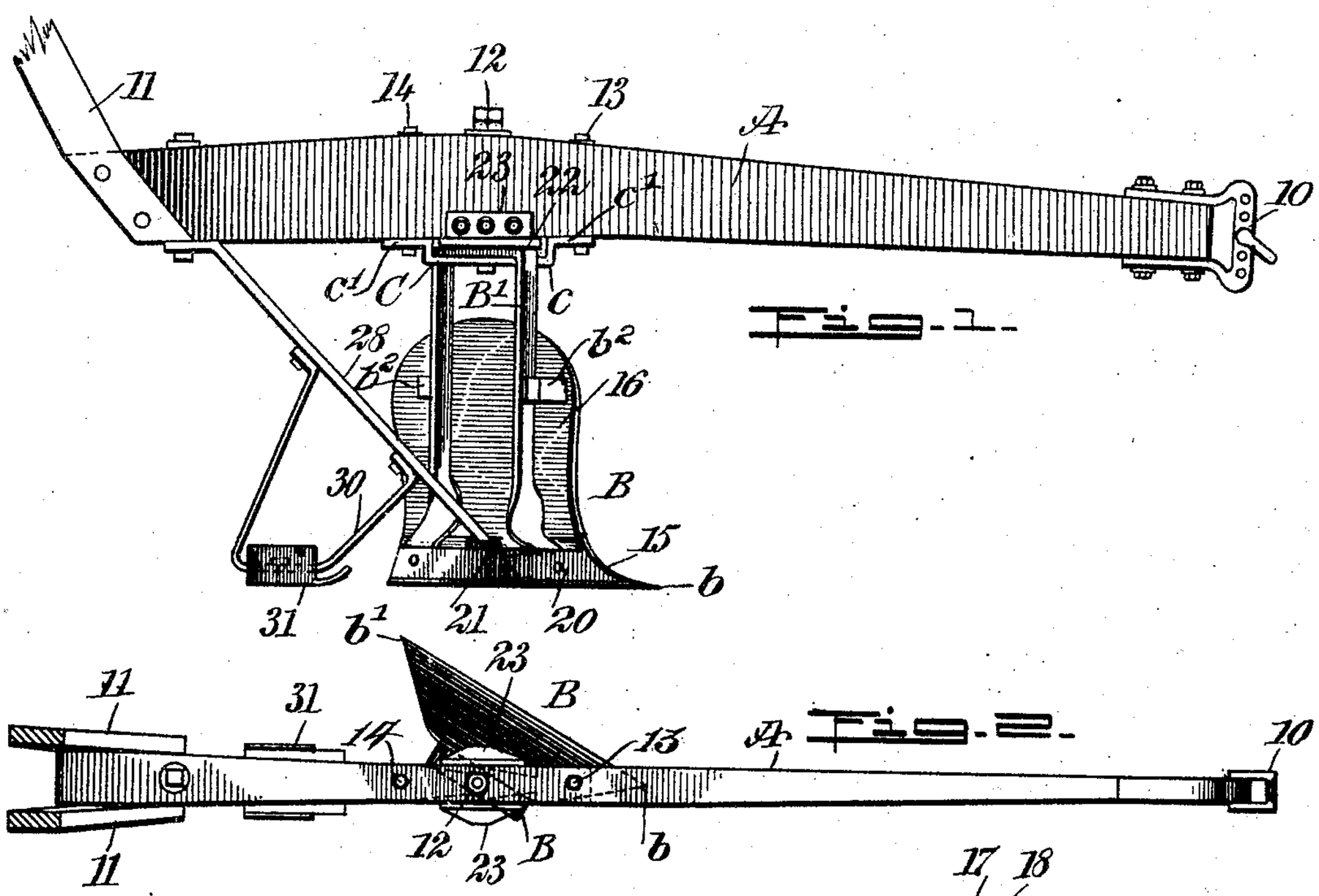

Fig. 1.

Fig. 2.

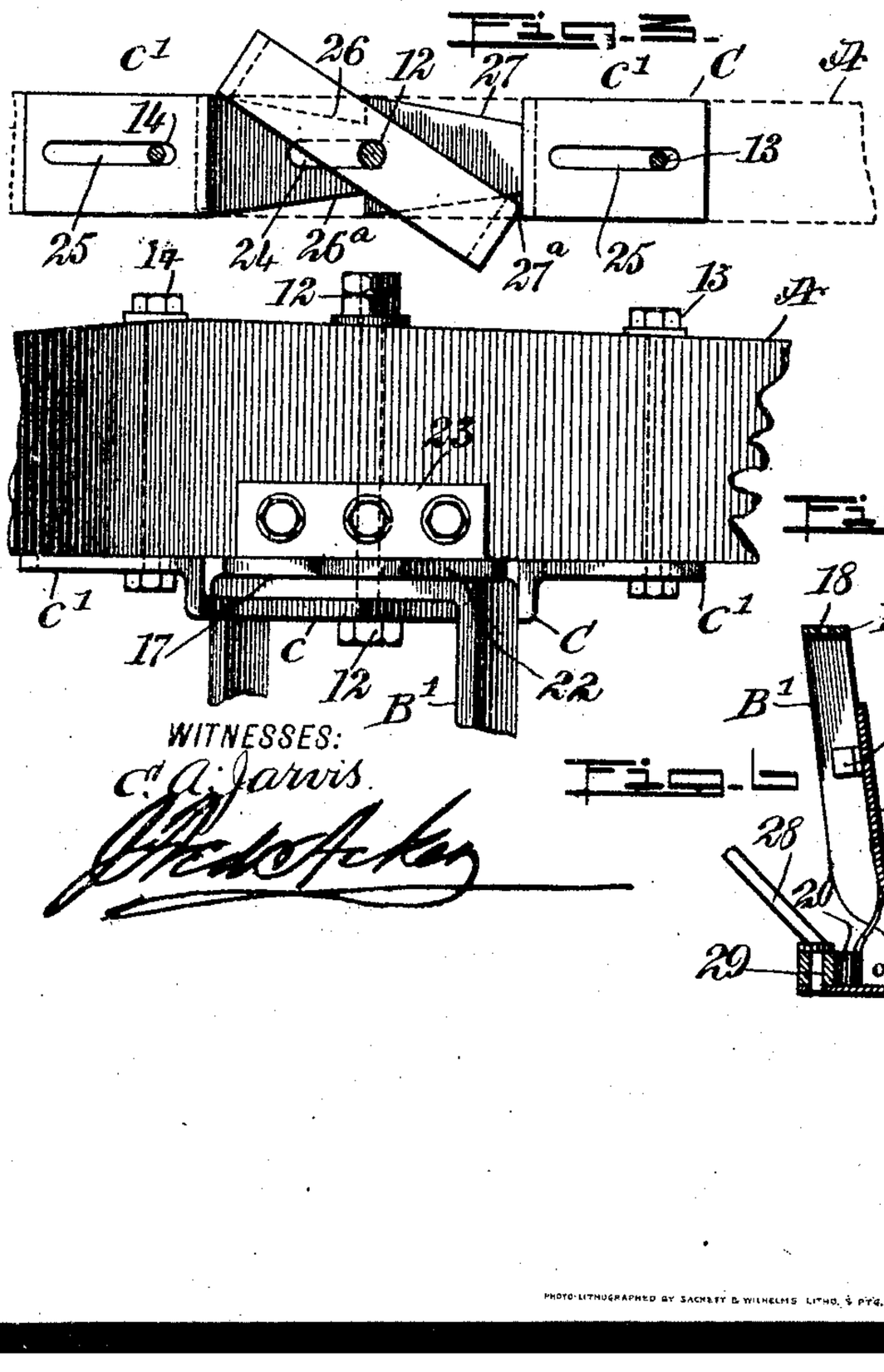

Fig. 3.

Fig. 4.

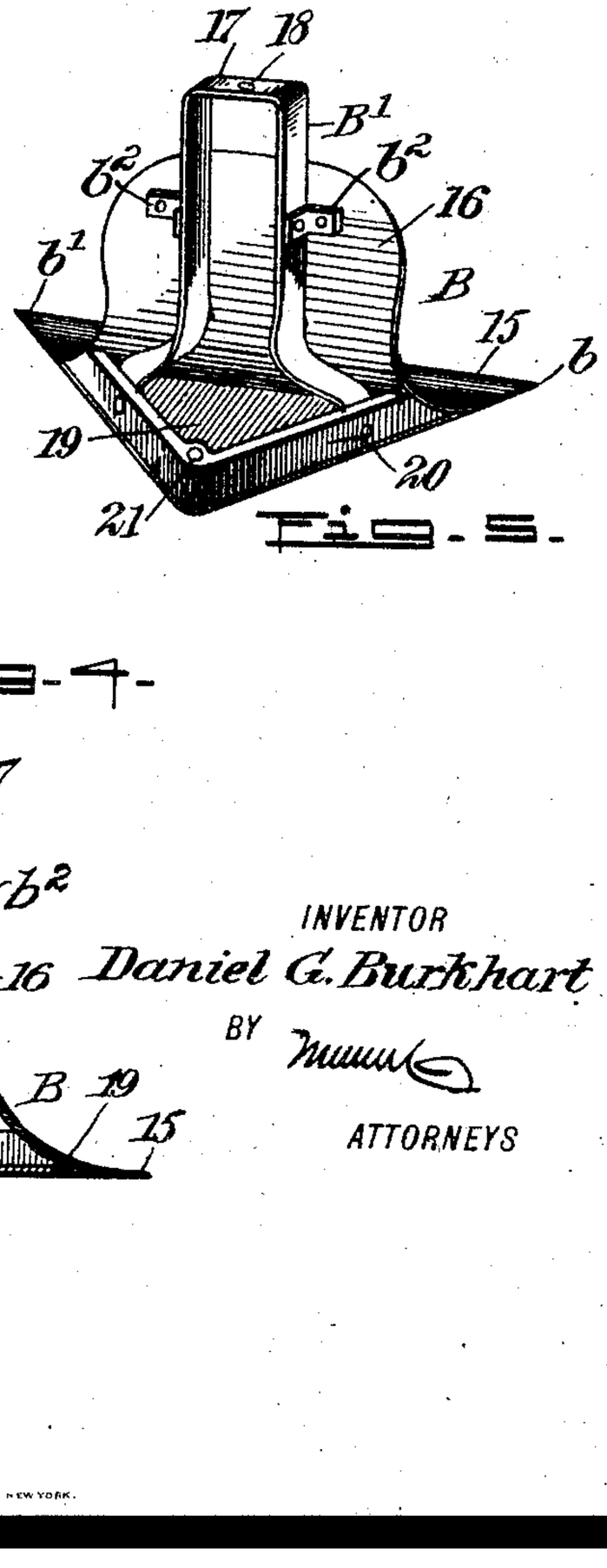

Fig. 6.

Fig. 5.

WITNESSES:

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No. 785,474. Patented March 21, 1905.

UNITED STATES PATENT OFFICE.

DANIEL G. BURKHART, OF DAYTON, WASHINGTON.

PLOW.

SPECIFICATION forming part of Letters Patent No. 785,474, dated March 21, 1905.

Application filed July 16, 1904. Serial No. 216,846.

To all whom it may concern:

Be it known that I, DANIEL G. BURKHART, a citizen of the United States, and a resident of Dayton, in the county of Columbia and State of Washington, have invented a new and Improved Plow, of which the following is a full, clear, and exact description.

The purpose of my invention is to provide novel details of construction for a plow that adapt it for convenient and effective service as a hillside-plow by affording means for quickly changing the moldboard and plowshare from one side of the plow-beam to the opposite side of the same, so that by turning the team and the plow around the plow will operate to turn the furrow over upon the one last plowed and obviating the necessity of plowing around a portion of the inclined land, as is required by an ordinary plow used in hillside-plowing.

A further purpose of the invention is to provide the beam with an evener on which the pivoted shank of the share has bearing, which bearing has adjustment in direction of either end of the plow-beam, that portion of the evener receiving the shank of the plowshare being so beveled that as the evener is adjusted it automatically adjusts the plowshare to work to or from the land—that is to say, changes the angularity of the share in a horizontal direction with reference to the plow-beam—the said evener also serving to hold the plowshare in its adjusted position.

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 drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved plow. Fig. 2 is a plan view of the same, the handles being in section. Fig. 3 is a plan view of the evener, the fastening-bolts and the king-bolt being in section, and it is likewise a plan view of the standard for the plowshare, a portion of the plow-beam appearing in dotted lines. Fig. 4 is a partial side elevation of the plow-beam drawn upon an enlarged scale and a side elevation of the wear-plate for the beam, a side elevation of the evener, and a perspective view of the upper portion of the standard for the share, the said view illustrating the position of said parts relative to each other. Fig. 5 is a perspective view of the plowshare and its shank viewed from the rear, and Fig. 6 is a vertical section through the plowshare and its shank.

The plow-beam A may be made of wood or metal and have the form and proportions indicated or may be changed therefrom if found advantageous. A draft device 10 is located at the forward end of the beam A, and at the rear end of the latter the usual handles 11 are attached and suitably braced. A king-bolt 12 is passed vertically through the beam at a point between its center and rear end adapted to constitute a pivotal support for the plowshare B through the medium of its shank B′, and at each side of the king-bolt 12, at equal distances therefrom, combined adjusting and fastening bolts 13 and 14 are respectively located, having operative relation with respect to the shank of the plowshare B to change its angularity with respect to the beam A.

With reference to the plowshare B it consists of a wide blade 15, tapered at its side edges toward a rear central point, producing at its working edges two opposing points *b* and *b*′. The blade 15 is likewise upwardly and rearwardly curved to meet a correspondingly-curved moldboard 16, the blade and moldboard being secured together in any suitable manner. The moldboard is narrower than the blade 15 and is curved at its upper edge portion.

The bottom of the plowshare is made flat and solid by securing to the under face of the blade 15 a plate 19 of sheet metal, which is triangular in shape and extends to the rear of the moldboard 16 and the blade 15 and is secured to an angular or correspondingly shaped marginal frame 20, and at that portion of the frame 20 where its members connect a socket 21 is formed. This flat angular rearwardly-extending bottom of the plowshare prevents dirt from coming up at the rear of the moldboard to clog the latter in its action.

The shank B′ for the plowshare is substan-

tially inverted-U shape, having an upper flat member 17, in which at its center an opening 18 is made, and through this opening the lower portion of the king-bolt 12 is passed. The members of the shank B′ are attached to the rear of the moldboard by brackets b^2 and are secured at their lower ends to the frame 20 at each side of the socket 21, as is shown in Fig. 5. The object of the special construction of the moldboard 16 is to provide a clean-cut and nicely-rounded furrow and to afford ample capacity for turning over the earth.

It will be observed that this plow has only one share or blade 15, and the moldboard being at an angle to the bottom of the plowshare when in position is held by the pressure of the soil as it strikes the moldboard. A further feature of this plowshare is the simple manner in which it is reversed.

In reversing the plowshare the operator will bear down on the handles, resting the blade 15 at the outer point b, for example, at the same time elevating the corresponding or opposite point b', and when this is accomplished the plow is pulled to the rear, whereupon it will reverse itself, the king-bolt 12 serving as the pivot. In order that the shank B′ of the plowshare shall not unduly wear the plow-beam A, especially when the beam is of wood, a wear-plate 22 is secured upon the bottom portion of the said beam, usually through the medium of side flanges 23, suitably bolted to the beam, and the king-bolt 12 passes through the center of the wear-plate. I desire it to be understood, however, that the side flanges 23 may be omitted and that any form of wear-plate may be employed.

The evener C is made of metal and is located at the bottom portion of the said plow-beam, the king-bolt 12 being made to pass through the longitudinal slot 24, produced at or near its central portion. In the details of its construction the evener consists of a downwardly-extending central yoke c and end flange members c', which extend from the upper terminal portions of the central section c. The flange members c' are each provided with a longitudinal slot 25, and the combined adjusting and attaching bolts 13 and 14 are passed at their lower ends through the said slots 25, and by means of suitable nuts these bolts 13 and 14 can be made to hold the evener C in the position to which it may be adjusted, or by loosening the bolts 13 and 14 the evener C can be moved endwise along the bottom in direction of either end.

In the construction of the central yoke member c of the evener two opposing inclined planes 26 and 26^a are produced at the side edges thereof, extending from one end to the center or about to the center, this part being narrowest at the central portion of the evener, and this yoke member of said evener is further provided with two other side inclined planes 27 and 27^a, likewise reversely formed, extending from the center of the evener to the opposite end of the said yoke member, the side lines converging as the said end is reached. This latter portion—namely, that bounded at its sides by the inclined planes 27 and 27^a—is widest at the central portion of the yoke member, as is clearly shown in Fig. 3.

In assembling the parts before the evener is secured to the bottom it is passed beneath the upper member 17 of the shank B′ of the plowshare, and if the plowshare is to occupy a normal position in direction of either side of the beam—namely, the position indicated in Fig. 2, wherein the inner point is below the longitudinal center of the beam—the king-bolt will pass through the central portion of the yoke member c of the evener and the adjusting-bolts 13 and 14 will be at the forward end portions of the slots 25 in the flanges c' of the evener, as is shown in Fig. 3, whereupon when the plowshare is turned the upper member 17 of its shank will occupy the diagonal position shown in Fig. 3, engaging with the end portions of said yoke member c, and the said shank can then turn to the right or to the left, as may be required.

If it is desired to cause the inner point, or that which is below the beam, to be carried inward or outward in order to make the plow work toward or from the land, such adjustment is automatically accomplished by loosening the bolts 13 and 14 and then moving the evener C endwise in direction of either end of the beam, as may be required, whereupon one or the other of the inclined planes or edges described with relation to the yoke member c of the evener will so act on the vertical members of the shank B′ as to render the position of the said shank with relation to the beam A more or less obtuse, and the engaging beveled edges will serve to hold the shank B′ and the attached plow in the adjusted position as soon as the bolts 13 and 14 are made fast, and the plow will keep such position relative to the beam no matter whether it is shifted to the right or to the left.

A brace 28 is attached to the lower rear end portion of the beam A, and this brace, as is shown in Fig. 6, has a vertical lower terminal 29, which is mounted to turn in the socket 21 of the plowshare marginal frame 20. A stirrup 30 is secured to this brace 28, extending diagonally downward and rearward therefrom, and the lower portion of this stirrup serves to support a shoe 31, which travels on the ground at the rear of the share and limits the depth to which the share shall enter the ground, and in order that this shoe may offer the least possible resistance it has a flat bottom and upwardly-turned ends. The said shoe always occupies a position central with respect to the longitudinal axis of the plow-beam. Thus it will be observed that the plow-

share turns on two points—namely, the king-bolt 12 and the lower terminal 29 of the brace 28.

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

1. In a plow, a beam, an evener adjustable upon the beam, a plowshare, an inverted-U shank for the said share, the vertical members whereof engage with the evener at its sides and the horizontal portion of the shank with the top of the evener, and a king-bolt having pivotal relation to the said shank, the evener being adjustable on the king-bolt.

2. In a plow, a beam, an evener adjustable upon the beam, a plowshare, an inverted-U shank therefor, the vertical members of which shank engage with the side edges of the evener and the top of the shank with the upper portion of the evener, a king-bolt having pivotal relation with respect to the said shank, means for adjusting the evener, and a plowshare including a moldboard, carried by the lower portion of the said shank, the blade of the said share having diverging points at the extremities of its cutting edge, whereby the said share can be readily reversed while the plow is in action.

3. In a plow, a beam, an evener adjustable upon the beam, the said evener being provided with a central yoke-section having two sets of inclined planes at its side edges, each set of inclined planes converging in direction of the same end of the said yoke, an inverted-U shank, the vertical members whereof engage with the inclined planes of the said yoke, the top of the shank engaging with the upper portion of the yoke, a king-bolt passed loosely through the upper portion of the shank and through the slot in the yoke of the evener, fastening devices for the evener, and a plowshare and moldboard carried by the said shank, the blade of the plowshare having oppositely-extending terminal ends at its cutting edge, whereby to turn the share from one side of the beam to the other while the plow is in action.

4. In a plow, a beam, an evener adjustable upon the beam, the said evener being provided with a central yoke-section having two sets of inclined planes at its side edges, each set of inclined planes converging in direction of the same end of the said yoke, an inverted-U shank, the vertical members whereof engage with the inclined planes of the said yoke, the top of the shank engaging with the upper portion of the yoke, a king-bolt passed loosely through the upper portion of the shank and through the slot in the yoke of the evener, fastening devices for the evener, a plowshare and moldboard carried by the said shank, the blade of the plowshare having oppositely-extending terminal ends at its cutting edge whereby to turn the share from one side of the beam to the other while the plow is in action, a brace attached to the rear portion of the beam and having pivotal connection with the rear portion of the plowshare, and a shoe located at the rear of the said share, supported by the said brace.

5. A plow-beam, a plowshare, a U-shank connected with the plowshare, a king-bolt pivoting the said shank to the beam, and an evener over which the upper portion of the shank passes, the said evener being provided with oppositely-inclined side edges with which the vertical members of the shank engage, so that the angle of inclination of the share may be changed relative to the beam as the evener is adjusted in direction of either end of the beam.

6. In a plow, a beam, an evener having a central downwardly-extending yoke-section provided with double-inclined planes at its side edges, converging in direction of the same end of the yoke-section, and end flange-sections, the yoke-section being provided with a longitudinal slot and each flange likewise with a longitudinal slot, bolts passed through the said beam and the slots in the flange-sections of the evener, a plowshare, an inverted-U-shaped shank connected with the plowshare, the upper bow portion of which engages with the upper face of the yoke-section of the evener, the vertical members of the said shank engaging with the inclined planes of the said yoke-section of the evener, a brace attached to the rear of the beam and pivotally connected with the rear of the share, and a king-bolt loosely passed through the beam and an opening in the upper portion of the said shank and through the slot in the yoke-section of the evener, as set forth.

7. In a plow, a share comprising a wide cutting-blade having rearwardly-inclined cutting edges and an upwardly and rearwardly turned rear portion, a moldboard having a corresponding upward and rearward inclination to that of the blade, a shank connecting the blade and the moldboard, and a triangular plate secured to the bottom of the said blade and extending rearward of said blade.

8. In a plow a reversible share comprising a blade having a wide cutting edge, the side edges of said blade being inclined rearward in direction of a central point at the rear of the blade, the body of the blade being upwardly and rearwardly curved, a moldboard connected with the blade and having a corresponding upward and rearward curvature, a shank connecting the moldboard and the blade, a flat triangular plate secured at its wider end to the bottom portion of the blade, and a marginal frame for the rear portion of the said plate, provided with a socket therein at a rear central point.

9. In a plow, a beam, an evener having end adjustment on the beam, a reversible plowshare, a shank for the plowshare, controlled by the end movement of the evener to change the horizontal inclination of the share, and a

king-bolt pivoting the said share to the beam, the said evener being adjustable on the king-bolt and in loose engagement therewith.

10. In a hillside-plow, a beam, a shank mounted to turn on the beam, means for limiting the movement of the shank, and a share carried by the shank, comprising a blade tapered at its side edges and terminating at its rear in a central point, an upwardly-curved moldboard, and a rearwardly-extending horizontal triangularly-shaped plate, so that by turning the team and beam the plow will operate to turn the furrow over upon the one last plowed, obviating the necessity of plowing around a portion of the inclined land.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL G. BURKHART.

Witnesses:

J. G. MILLER,

WILL H. FAULT.