J. R. ROSSETTER.

REVERSIBLE PLOW.

APPLICATION FILED NOV. 10, 1909.

962,389.

Patented June 21, 1910.

2 SHEETS—SHEET 1.

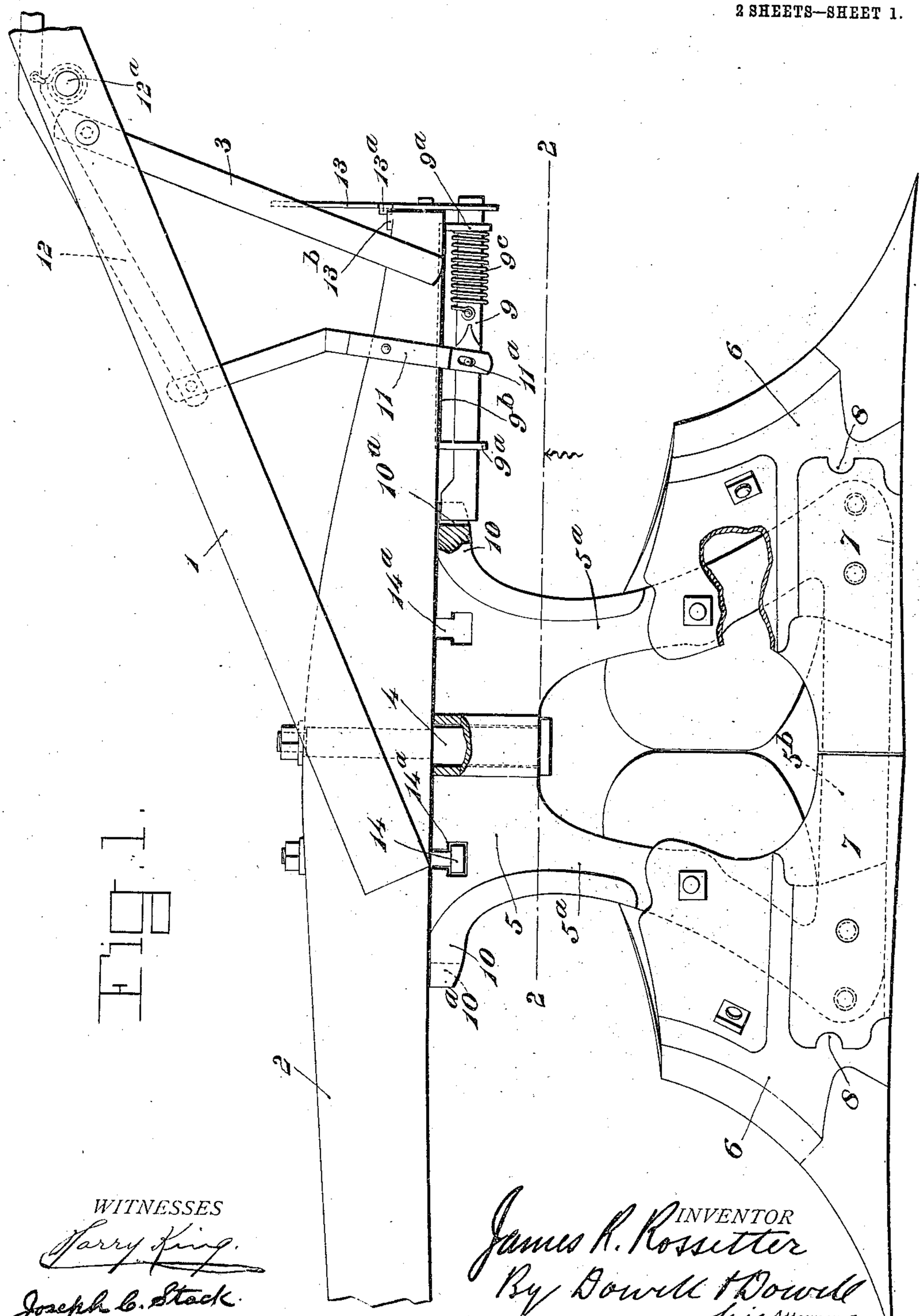

Fig. 1.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

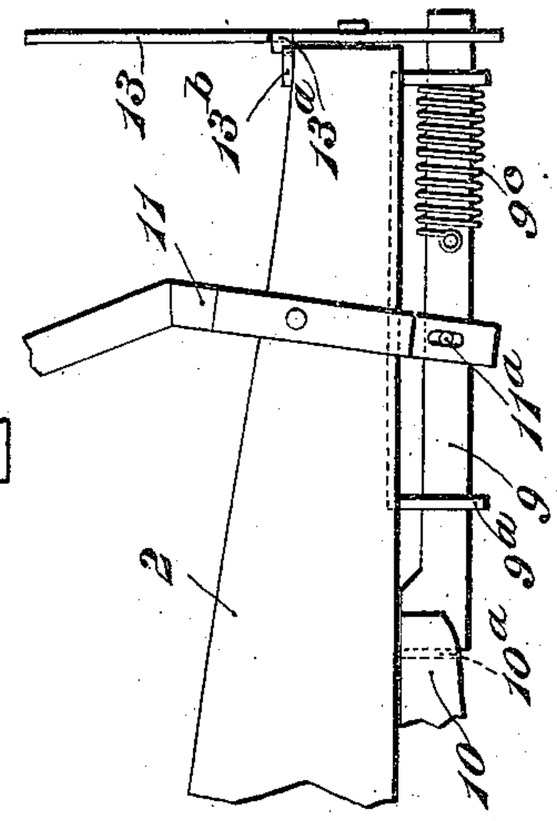


Fig. 5.

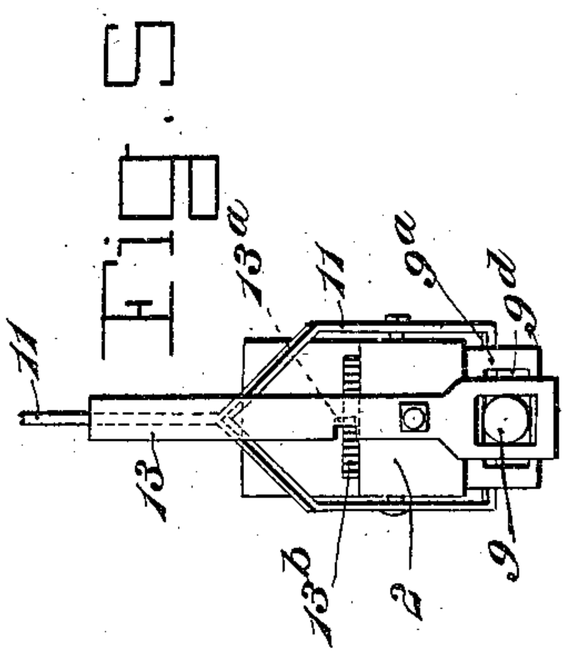


Fig. 2.

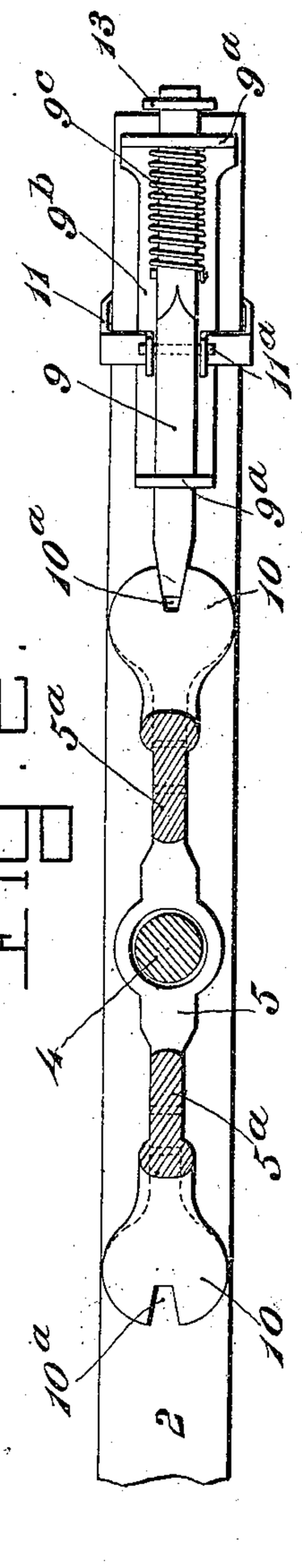
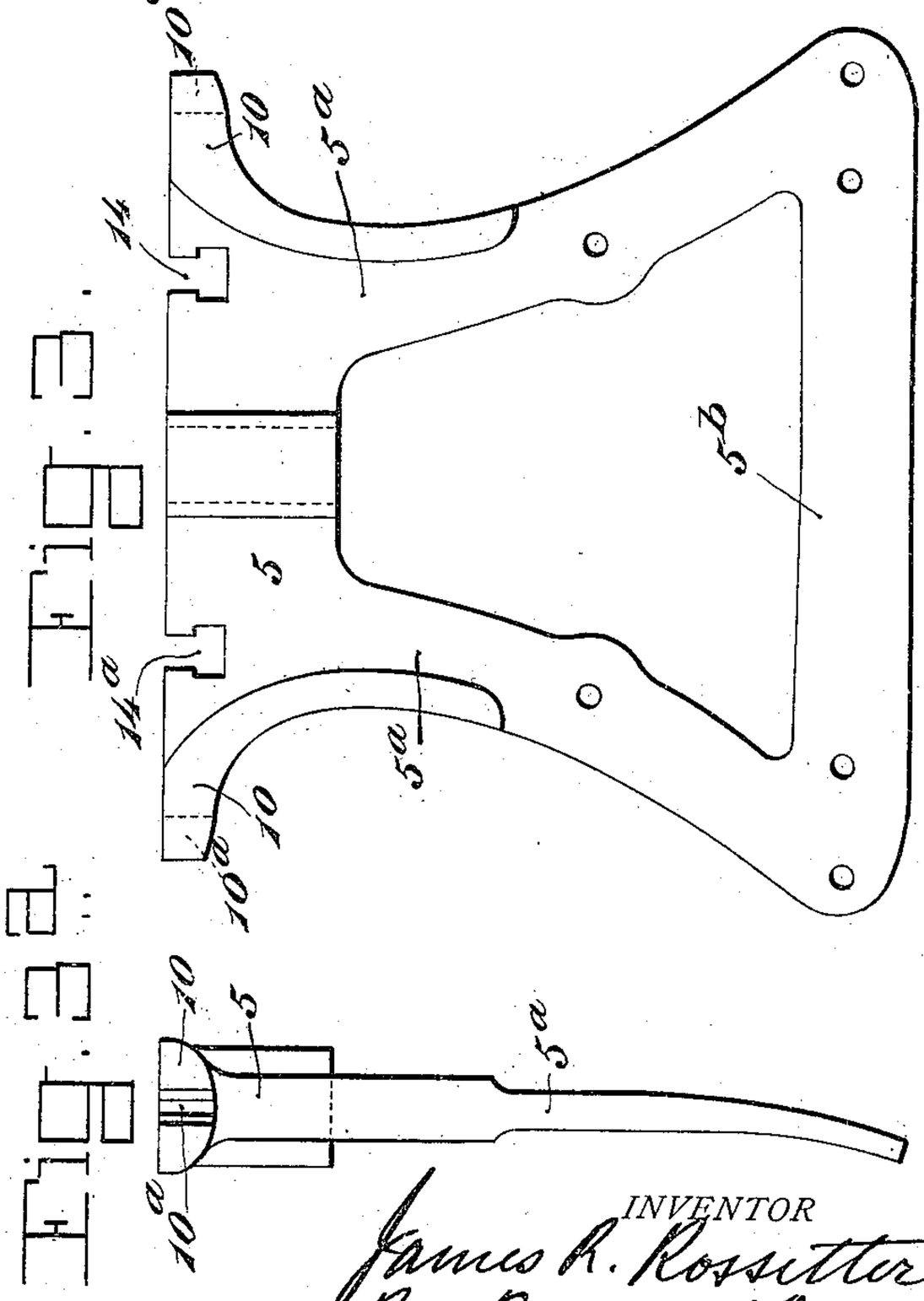


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES R. ROSSETTER, OF KNOXVILLE, TENNESSEE, ASSIGNOR TO THE WM. J. OLIVER MANUFACTURING COMPANY, OF KNOXVILLE, TENNESSEE, A CORPORATION OF TENNESSEE.

REVERSIBLE PLOW.

962,389. Specification of Letters Patent. Patented June 21, 1910.

Application filed November 10, 1909. Serial No. 527,339.

To all whom it may concern:

Be it known that I, JAMES R. ROSSETTER, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Reversible Plows, of which the following is a specification.

My invention relates to reversible moldboard or sidehill plows, and its objects are, among others, first, to retain the individuality of both the right hand and left hand plows, *i. e.* to provide a reversible implement that will work both ways as efficiently as a single implement, and one in which both plows will have the proper dip or suck as well as the proper "gather" or inward curvature of the landside side of the plow that is necessary to hold the implement to a straight line at work and prevent it from zigzagging in the furrow and running out of the land; second, to enable repairs to be made readily, and the different functional parts of the individual plows to be removed and replaced without interfering with any other part or parts; third, to hold the beam rigid relative to the plows, by means of the latch, so as to prevent or minimize varying lateral motion from side to side and keep the working plow with the necessary "land"; fourth, to provide for giving the implement the proper "land" in whichever direction it is going; fifth, to relieve the swivel pin or bolt from the pull up strain on the beam; and, finally, to provide a generally improved, very efficient and durable implement of the character to which my invention pertains. These objects are accomplished by means substantially as hereinafter described with reference to the accompanying drawings, which form a part of this specification, and more particularly pointed out in the claims at the end of the description.

In said drawings: Figure 1 is a side view of a reversible plow embodying my invention. Fig. 2 is a horizontal section on line 2—2 of Fig. 1, with parts in elevation. Fig. 3 is a side view of the double plow standard. Fig. 3[a] is an end view of the same. Fig. 4 is a side view of the rear portion of the plow beam and attachments. Fig. 5 is a rear end view of the same.

1 denotes the plow handles; 2 the beam; 3 braces; and 4 the swivel pin or bolt upon which the beam turns for reversing the team or draft relative to the plows.

To obtain the desired individuality and efficient operation of the individual plows, I provide a double plow standard 5 substantially as shown in Figs. 3 and 3[a], which is a yoke-like structure having oppositely-inclined or downwardly-diverging legs 5[a] constituting the individual standards proper, the same having a bottom bridge piece 5[b] connecting the legs. To the respective legs of this double standard, I bolt the frogs or saddles 6 of right and left hand plows, preferably of the general design and construction disclosed in my U. S. Patent No. 925,134, dated June 15, 1909, and my pending application for patent filed May 7, 1909, Serial No. 494,529; and upon each frog there are fitted and fastened the regular working parts for a single or individual plow, including the moldboard, point, and detachable landside, so that each plow has the same individuality as a single implement. Thus, instead of one continuous landside, as heretofore usual in implements of this type, I have the two detachable landsides 7, each of which, as will be noted, embodies the feature covered by my said Patent No. 925,134, *i. e.* the interlocking lug and socket connection 8 between the frog and the toe of the landside to prevent lateral displacement of the latter and maintain the proper concavity on the landside face of the plow, which is necessary to hold the implement to a straight line at work and obviate any tendency to run out of the land. By this construction, and because of the individuality of the two plows, I am able to provide and maintain the proper dip or suck as well as the "gather" for each plow, which is as necessary for satisfactory operation when these two plows are put together as when used as individual plows. It is also possible to remove any part of either plow when in need of repairs without interfering with any other part, and when one or both of the landsides are removed the implement is as rigid as before they were taken off, the landsides being virtually independent of the plows and vice versa.

In order to hold the beam rigid enough to keep the plow with the necessary "land", by overcoming lateral motion from side to side which in some plows varies as much

as two inches or more, I have provided a spring-actuated locking bolt 9 on the under side of the beam at the rear, and arranged to engage the standard as shown in Fig. 2. The upper part of the yoke-like standard has an upwardly flaring form, so that the end portions 10, which are engaged by the bolt, are removed a substantial distance from the pivot bolt 4, and thus greatly increases the rigidity of the structure. The said end portions 10 are enlarged and rounded, and are provided with wedge-shaped notches 10^a for engagement by the similarly-shaped end of the bolt 9. The bolt slides in guides 9^a which are or may be apertured ears depending from an iron 9^b attached to the under side of the beam. The spring is denoted by the numeral 9^c. A forked lever 11 is fulcrumed to the plow-beam and has its legs bent inwardly thereunder and connected to the bolt 9 by a pin-and-slot connection as indicated at 11^a. Above the plow beam, the upper end of the lever 11 is connected to a shift-rod or lever 12, or other suitable device for manipulating the bolt. When, after disengaging the bolt from the slot 10^a at one side of the standard, the implement is reversed by swinging around the beam 2 to the opposite side, the bolt will automatically engage the opposite slot under influence of the spring, and can then be forced home by the lever, and the beam is again made as rigid as before for the return furrow.

The locking of the implement does not depend entirely upon the spring, as in other prior implements in which a spring bolt has been employed, and in which the use of only a spring (like the use of a gravity-latch in other implements) has proven impracticable and altogether insufficient to give the necessary rigidity and prevent lateral motion of the plow. Another objection in many previous implements has been that the latch has been too near the king or swivel bolt, which puts too much strain upon the spring bolt or latch when the plow is in operation. This objection is overcome in my implement by the arrangement described; and the spring is relied upon only for the purpose of making the bolt slightly automatic, that is to give the bolt sufficient force to find the notch 10^a and stop the movement when the beam is swung around for reversing; and thereupon, with the lever 11, the bolt is forced home and wedged tightly in the notch, making the implement rigid. In connection with the shift rod or lever 12, which may lie upon the rounds between the handles, there may be provided a locking-contrivance 12^a for securing the bolt against any possible accidental displacement.

A further feature of this implement is a device at its rear end for giving the plow more or less "land", it being indispensable to the practicability and efficiency of this type of plow (though usually lacking in previous such implements) that the plow should have land in going one way, and it has to be just the opposite going the other way. I provide for giving the "land" by the device shown more fully in Figs. 4 and 5. A lever 13 is fulcrumed on the rear end of the beam and has a lug or tooth 13^a for engaging a rack 13^b on the beam for adjusting purposes. Said lever engages the bolt 9, as shown in Fig. 5, and the bolt is allowed a lateral movement by an oblong opening 9^d in the rear guide 9^a. The lever can be shifted from side to side, which gives a throw of four inches or more at the clevis end of the beam. By this means the clevis end of the beam can be deflected to opposite sides, according to the direction in which the implement is working, and thus the proper land can be given to the plow in going either way; or the plow may be given more land or less land, as required, by the adjustment afforded by the lever 13 and rack 13^b.

The tendency of all plows of this type with a pin or swivel bolt is to pull up, and when much strain is put on the bolt it is liable to bend and become defective or useless. To overcome this tendency, I have inserted through the beam, in front of the swivel bolt, an ordinary machine bolt 14 with its head depending below the beam and with a square shank extending from the head and into the beam; so that when the bolt is driven into the wooden beam from its underside (or when the shank is fitted in a cast block if a steel beam is used) it is prevented from turning. The head of the bolt engages a corresponding slot 14^a in the top of the standard, one of such slots being provided at either side of the swivel pin; and thus relieves the swivel pin from lateral strains due to the pull up on the beam.

I thus provide a very practical and efficient implement, in which the individuality and perfect operation of each plow is retained the same as in a single plow, and the common defects of this type of implement are avoided.

I reserve the right to such modifications in details as may be made within the scope of my invention as defined in the following claims.

I claim as my invention and desire to secure by Letters Patent:

1. A reversible moldboard plow having, in combination with a swinging beam and locking means therefor, a yoke-like double standard upon which the beam is rotatably mounted for reversal, said standard having a horizontal bridge-piece joining the lower ends of its legs, and independent right and left hand plows arranged back to back and attached to the respective legs of said standard, each plow having a detachable land-

side fitted and secured thereto and to said bridge-piece, the two landsides mating to form a continuous landside between the plows; whereby the proper rigidity of the double implement is obtained while each plow retains its own individuality and the curvature of its landside face and bottom necessary for its gather and suck or dip.

2. In a reversible plow, the combination with the standard and beam rotatably mounted thereon for reversal, of a locking instrumentality carried by the beam for engaging and making a rigid connection with the standard, and adjusting means carried by the beam adapted to force said locking instrumentality laterally as required to increase or diminish the "land" of the ongoing plow, whereby the plow can be landed while it is locked.

3. In a reversible plow, the combination with the standard and swinging beam thereon, of a lock-bolt carried by the beam, the standard having its front and rear sides formed for engagement thereby, and a landing device on the beam engaging the lock-bolt and coöperating therewith to make a rigid connection between the beam and standard, said landing device adapted for shifting said lock-bolt laterally when engaged with the standard, for the purpose of landing the ongoing plow.

4. In a reversible plow, the combination of the beam and standard having a swivel connection, the upper portion of the standard having rounded front and rear ends provided with wedge-shaped notches, a lock-bolt slidably-mounted under the rear end of the beam and having a wedge-shaped head for engaging said notches, guides for said lock-bolt permitting lateral play of the rear end thereof, a landing lever fulcrumed on the beam and engaging said lock-bolt for shifting it laterally, and means on the beam for locking said landing lever and thereby holding it and the lock-bolt rigid.

5. In a reversible plow, the combination with the standard and swinging beam thereon, of a lock-bolt slidably-mounted on the under side of the beam and adapted to engage the rear side of the standard, guides for the lock-bolt permitting lateral play of the rear end thereof, a landing lever fulcrumed on the plow and engaging said lever for shifting it laterally, and a rack on the beam for locking said landing lever and thereby holding it and the lock-bolt rigid.

6. In combination with the standard, swinging beam thereon and connecting swivel pin, the T-headed projection 14 carried by the under side of the beam and the correspondingly under cut slots 14[a] in the standard at opposite sides of its swivel pin for engagement by said projection to relieve the swivel pin from the pull up strain on the beam.

7. In a reversible plow, the combination of the standard and swinging beam having a swivel connection, the standard having a flaring head portion made with rounded front and rear ends which are offset substantially from said swivel connection, said rounded ends provided with wedge-shaped notches, and a long lock-bolt slidably-mounted under the rear end of the beam and having a wedge-shaped head for engaging said wedge-shaped notches, guides for said lock-bolt, a spring acting on the lock-bolt to effect its automatic engagement with the rounded notched end of the standard when the beam is reversed, and a lever connected with said lock-bolt for disengaging it and for positively forcing it into tight engagement with the wedge-shaped notch in the standard.

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

JAMES R. ROSSETTER.

Witnesses:

B. R. STOUT,

F. C. BONHAM.