

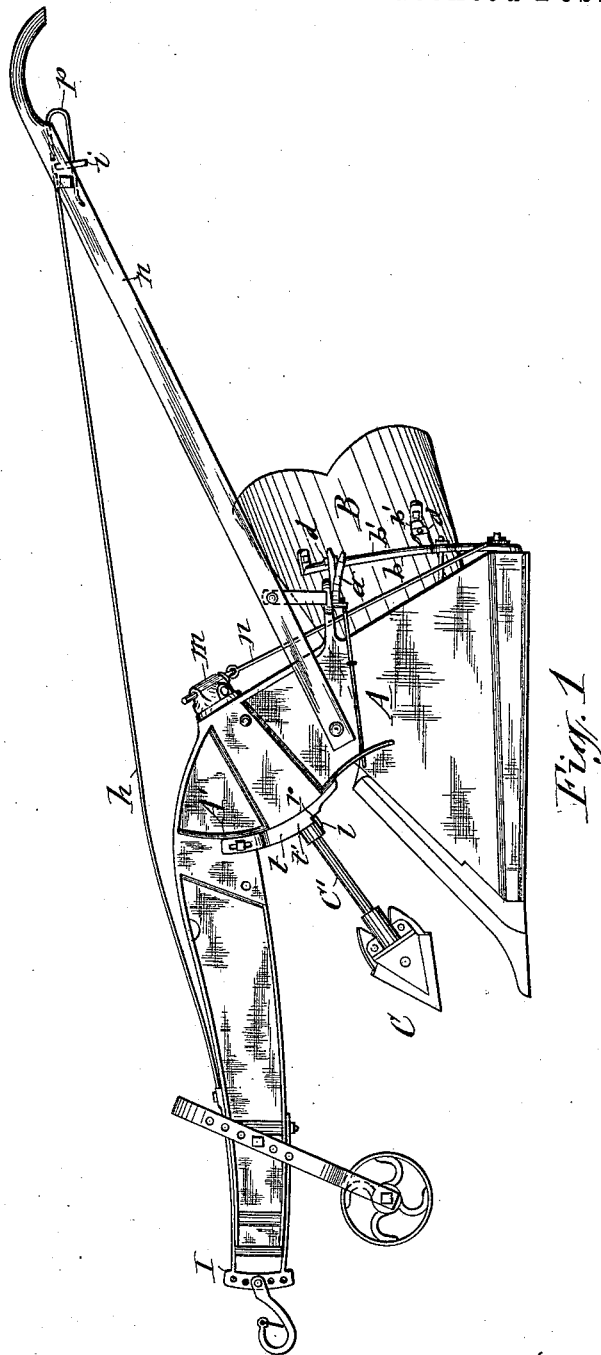
(No Model.)

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H. WIARD & J. L. JUDD.
SIDE HILL PLOW.

No. 420,647.

Patented Feb. 4, 1890.



WITNESSES :

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J. J. Laass,

INVENTORS:

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Harry Wiard
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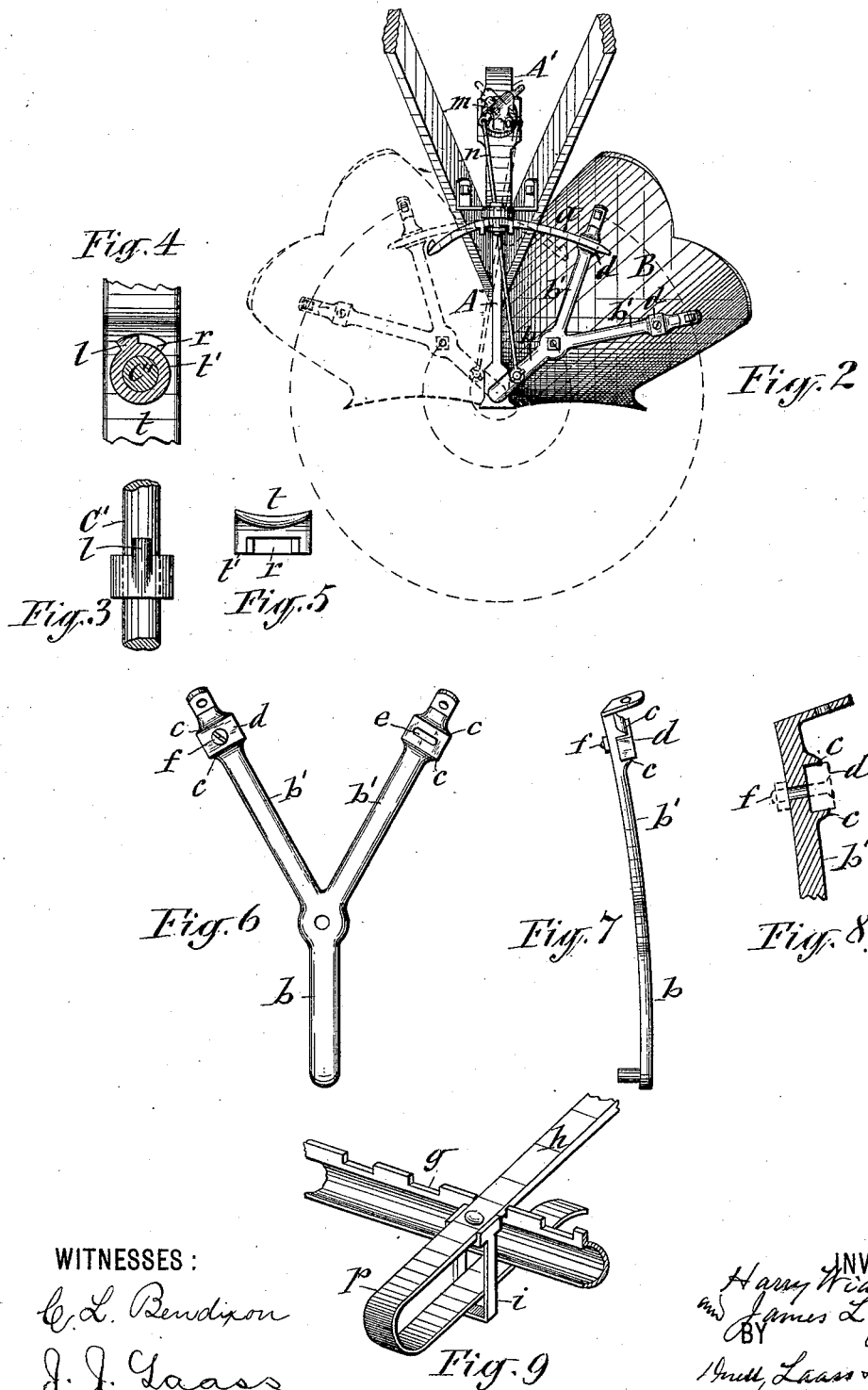
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UNITED STATES PATENT OFFICE.

HARRY WIARD AND JAMES L. JUDD, OF SYRACUSE, NEW YORK.

SIDE-HILL PLOW.

SPECIFICATION forming part of Letters Patent No. 420,647, dated February 4, 1890.

Application filed July 11, 1889. Serial No. 317,226. (No model.)

To all whom it may concern:

Be it known that we, HARRY WIARD and JAMES L. JUDD, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Side-Hill Plows, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of plows designated "reversible" or "side-hill" plows; and the invention consists in an improved construction and combination of certain auxiliary devices connected to the plow, as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a side elevation of a plow embodying our improvements. Fig. 2 is a rear end view of the same. Fig. 3 is an enlarged detached side view of that portion of the jointer-shank to which the stop is attached. Fig. 4 is an inverted plan view of that portion of the strap which is provided with the co-operating stops. Fig. 5 is an end view of said strap. Fig. 6 is a detached face view of the three-armed brace. Fig. 7 is a side view of the same. Fig. 8 is a further enlarged longitudinal sectional view of one of the portions of the three-armed brace to which one of the wear-blocks is attached, and Fig. 9 is a perspective view of the connection of the clevis-shifting lever with the notched cross-bar.

Similar letters of reference indicate corresponding parts.

A denotes the standard of the plow; B, the mold-board, which is adapted to be swung toward either side of the plow in the usual and well-known manner.

C represents the jointer, whose shank C' passes obliquely through the beam A' and is pivotally connected to the top thereof by means of a block *m*, pivoted to the beam and having secured to it the jointer-shank, said block being turned automatically with the reversing of the mold-board by a rod *n*, connecting said block with the usual three-armed brace *b b' b'*, as shown and described in our pending application for Letters Patent, Serial No. 307,819, filed April 19, 1889, or by other suitable and well-known means. By the aforesaid turning of the block *m* the jointer

is turned on its axis, so as to operate on the same side with the mold-board B.

In order to sustain the jointer more effectually in its said operative positions, we employ suitable stops, respectively, on the beam and directly on the jointer-shank, and preferably on the under side of the beam and adjacent side of the jointer-shank. Said stops we preferably form by providing the jointer-shank C' with a lug *l* on its side, which lug projects into a recess *r*, formed in the side of the eye *t'* in the strap *t*, through which the jointer-shank passes, said strap being adjustably secured to the under side of the beam, as shown and described in our prior application for Letters Patent hereinbefore referred to. The recess *r* is of sufficient length to allow the jointer-shank to be turned to bring the jointer into its requisite operative position, as hereinbefore stated, and when in said position the lug *l* rests against one of the end walls of the recess *r*, and thereby sustains the jointer-shank so as to hold the jointer C in its requisite angle in relation to the line of draft.

Practical experience with plows of the class to which our invention pertains has disclosed the fact that it is difficult to obtain and maintain accurate engagement of the duplex hook *a* with the three-armed brace *b b' b'*, so as to firmly hold the mold-board in its proper position, owing to the liability of warping of the casting while cooling the same, or some variations in the attachment of the several parts, and the wear and abrasion of the engaging parts. To overcome this difficulty we connect to the three-armed brace wear-blocks *d d*, with which the duplex hook engages, said wear-blocks being detachable and readily renewed when necessary, and we preferably arrange said blocks adjustable, so as to take up any play or lost motion between the engagements thereof with the duplex hook *a*. Said adjustable attachment consists in providing each of the arms *b' b'* of the three-armed brace with transverse shoulders *c c*, and with a transverse slot *e* between said shoulders and inserting the wear-block *d* between the shoulders *c c* and securing it in position by a bolt *f*, passing through said block and through the slot *e*, and provided with a head and nut,

by which to clamp the wear-block *d* in its requisite position. The attachment of the wear-blocks is shown in detail in Figs. 6, 7, and 8 of the drawings. The slots *ee* allow the wear-blocks *d d* to be shifted laterally on the three-armed brace, so as to engage with the duplex hook *a* at the proper time and firmly hold the mold-board in its position. It is obvious that in reversible or side-hill plows which do not employ the three-armed brace *b b' b'* the aforesaid wear-blocks *d d* are to be attached to such part of the plow with which the duplex hook *a* engages.

h represents the clevis-shifting lever, which is attached to a rearward extension of the top portion of the clevis *I*, and is extended rearward and lies across the top of the notched cross-bar *g*, which ties the free ends of the handles *nn* to each other. The rear end portion is attenuated to render it elastic, and is bent forward into a U-shaped spring-loop *p*, the free end of which lies across the under side of the cross-bar *g*, and serves to hold the lever *h* in its engagement with one of the notches of the bar *g*.

To turn the clevis *I* when desired the operator takes hold of the rear end of the lever *h*, above the loop *p*, and lifts said lever out of the notch of the bar *g*, and after swinging said lever laterally into its requisite position he allows it to drop into the proper notch of the bar *g*, which holds the lever in its adjusted position.

In order to guard against excessive strain on the spring-loop *p* in lifting the lever, as aforesaid, we employ a suitable stop *i*, which extends across the spring-loop, as best seen in Fig. 9 of the drawings, in which it is represented in the form of a clevis attached to the lever *h*, and receiving through it the forward extension or free end portion of the spring-loop, with sufficient vertical play between them to merely allow the lever *h* to be raised out of the notch of the bar *g*.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination with the beam and jointer pivotally connected to the top of the beam, the strap *t*, connected to the bottom of the beam and provided with the eye *t'* for the jointer-shank, and with the recess *r* in the side of the said eye, and the lug *l* on the side of the jointer-shank projecting into the recess *r*, substantially as described and shown.

2. In combination with the standard *A*, pivoted mold-board *B*, and duplex hook *a*, the three-armed brace *b b' b'*, formed with transverse shoulders *cc* and transverse slots *ee* between said shoulders, the wear-blocks *d d*, inserted between said shoulders, and bolts *ff*, passing through the wear-blocks and slots of the brace, substantially as described and shown.

3. The combination, with the notched cross-bar *g* and the lever *h*, having its rear end lying across one side of said notched bar and terminating with a forwardly-bent spring-loop lying with its free end across the opposite side of the notched bar, of a stop extending across the said spring-loop to protect the same from excessive strain in raising the lever out of engagement with the notched bar, substantially as set forth.

4. In combination with the standard *A*, pivoted mold-board *B*, and duplex hook *a*, wear-blocks detachably secured in position to engage with the said duplex hook and thereby sustain the mold-board in its adjusted position, as set forth.

In testimony whereof we have hereunto signed our names this 9th day of July, 1889.

HARRY WIARD. [L. S.]
JAMES L. JUDD. [L. S.]

Witnesses:

JOSEPH C. WILLETTS,
J. MANNING.