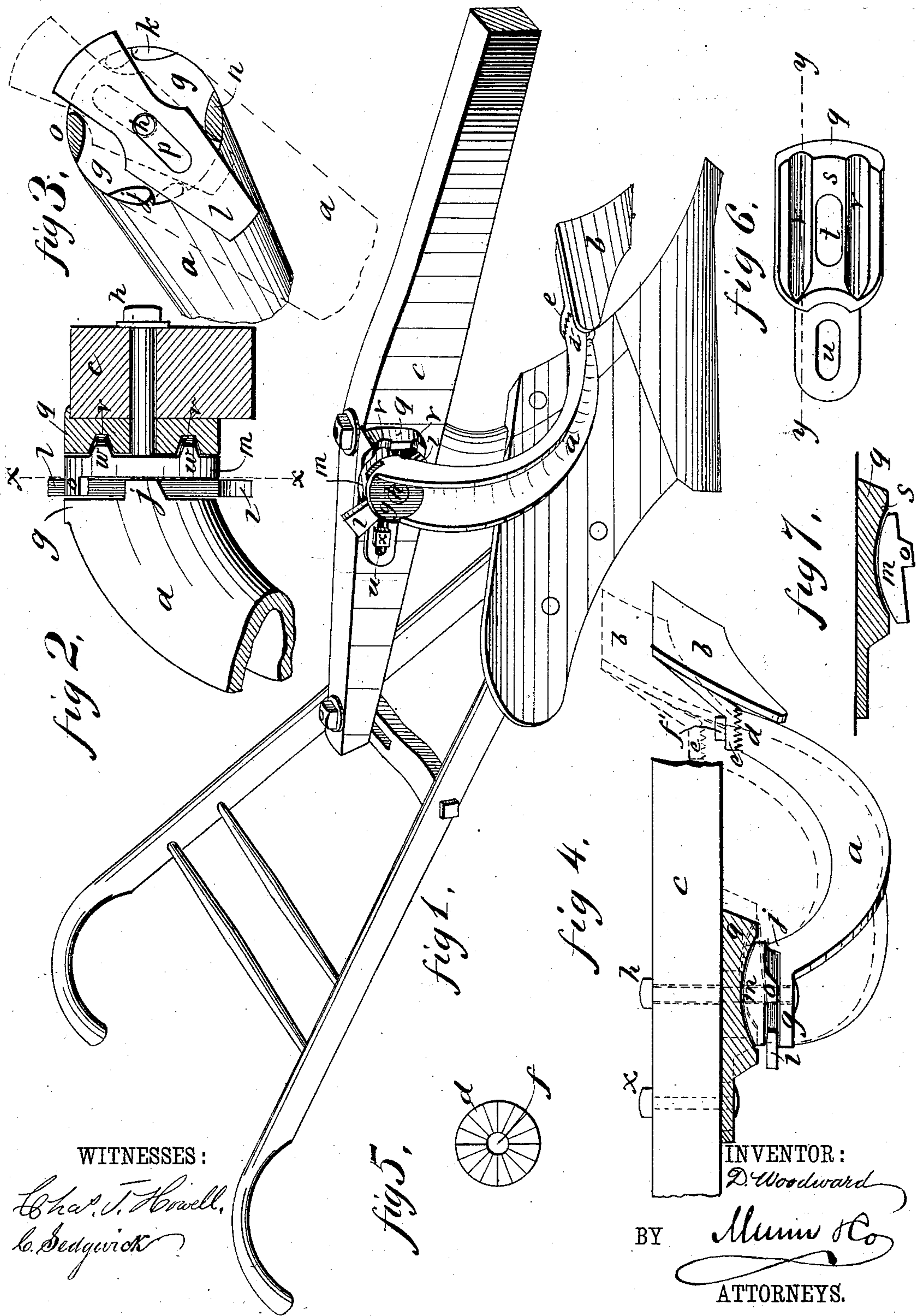


(No Model.)

D. WOODWARD.
PLOW JOINTER.

No. 281,817.

Patented July 24, 1883.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DAVID WOODWARD, OF CLINTON, MICHIGAN.

PLOW-JOINTER.

SPECIFICATION forming part of Letters Patent No. 281,817, dated July 24, 1883.

Application filed March 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, DAVID WOODWARD, of Clinton, in the county of Lenawee and State of Michigan, have invented a new and Improved
5 Plow-Jointer, of which the following is a full, clear, and exact description.

My invention consists of an improved contrivance for the connection of the plow-jointer to the plow proper, for facilitating the adjust-
10 ment of the jointer, and also for facilitating the discharge of the sward, manure, or rubbish into the furrow to be properly covered, and to cause the same to escape from the supporting-arm of the jointer and prevent clogging there-
15 on, as is common with jointers attached in the ordinary way, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate cor-
20 responding parts in all the figures.

Figure 1 is a perspective view of a plow having a jointer attached according to my invention. Fig. 2 is a transverse section of the plow-beam through the joint by which the support-
25 ing-arm of the jointer is attached to the beam. Fig. 3 is a section of Fig. 2 on line *xx*. Fig. 4 is a plan view of a portion of the plow-beam and the jointer-supporting arm, and a horizontal section of one of the joint-plates on
30 line *yy*, Fig. 6. Fig. 5 is a face view of part of a rose-clutch device by which the jointer is fitted to the arm which supports it, for being shifted thereon to alter its pitch. Fig. 6
35 is a side elevation of one of the joint-plates by which the jointer-supporting arm is connected to the beam; and Fig. 7 is a detail of the two joint-plates employed in connecting the arm to the beam, one being in section of line *yy*, Fig. 6, and the other being in top view.

40 I propose to employ a curved arm, *a*, for connecting the jointer *b* to the plow, so contrived, by connecting to the back of the mold-board of the jointer and curving therefrom toward the furrow side and thence upward to
45 the furrow side of the beam *c*, that any sward, straw, manure, and other matters rising up with the furrow-slice, raised by the jointer and tending to pass over the mold-board, will pass on to the arm, which is smooth and oval in form,
50 and is so curved that the said matters cannot lodge and clog on it, but will be drawn by the furrow-slice from said arm and discharged into

the main furrow, so as to be effectually covered up.

For enabling the jointer to be shifted to
55 raise or lower the point, the arm *a* is made to terminate in a rose-clutch end, *d*, the face of which is in the plane of the beam, and the jointer is provided with a counterpart, *e*, which
60 parts are bolted together through the axial holes *f* by bolt *f'*, making a substantial connection, not liable to shift when bolted up, but readily adjustable when the bolt is sufficiently
65 slackened.

To connect the arm *a* to the beam, so that it
65 can be readily shifted to swing the jointer up and down, and also to shift it laterally to the main plow, I make the arm *a* with a disk-head, *g*, for bolting to the side of the plow-beam by
70 a bolt, *h*, through the axis of said disk, and make the disk with two lugs, *j* and *k*, on its face, the lugs being at diametrically-opposite points of the margin of the face. The disk is
75 firmly bolted against a wedge, *l*, which is interposed between it and the flat face of a washer, *m*, having two other lugs, *n* and *o*, on the
80 margin of its face, and being about midway between the lugs *j* and *k*. The wedge has a slot, *p*, through which the bolt *h* passes, and allowing said wedge to be shifted up and down be-
85 tween lugs *j* and *n*, by which the arm *a* may be set for altering the position of the jointer *b* for height. At the same time these lugs, and the others, *o* and *k*, serve to form the bearing-points
90 between the arm and the washer, it being intended that they shall touch and bear at the same time that the wedge *l* binds fast between the disk and washer. The wedge is also of double contrivance, designed to fit between lugs *o* and *k*
95 in the upper part at the same time that it bears against lugs *j* and *n* in the lower part, thus taking the stress of the back pressure on the jointer both sides of the pivot-bolt, and affording substantial support to the arm. The dotted lines of Fig. 3 illustrate the manner of adjust-
100 ing the arm by the wedge.

For effecting the lateral adjustment of the jointer the back of the washer *m* is made convex, and it is fitted in a plate, *q*, having a concave front face, *s*, and being adjustable along
100 the plow-beam to alter the pitch of the washer, which is confined in its position by the bolt *h*. Plate *q* is slotted at *t* for the bolt *h*, and at *u* for another bolt, *x*, allowing it to be shifted

along the beam, and also along washer *m* to alter its inclination and thereby swing the jointer to right or left. The plate *g* has grooves *v* in its concave face *s*, and the washer *m* has 5 ribs *w* on its convex side to prevent the washer from being turned by the pressure of the earth against the jointer.

The dotted lines of Fig. 4 illustrate the manner of adjusting the jointer laterally to the 10 plow.

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

1. The jointer *b*, attached to the plow by an arm, *a*, connected to it back of its mold-board and curving to the furrow side, substantially 15 as described.

2. The jointer *b*, attached to the plow by an arm, *a*, curving from the said jointer to the 20 furrow side, and extending up to and connected to the furrow side of the beam, substantially as described.

3. The jointer-arm *a*, having disk-head *g*,

provided with lugs *j k*, in combination with the wedge *l*, and the washer *m*, having lugs *n* 25 *o*, said arm and washer being bolted against the side of the plow-beam, substantially as described.

4. The wedge *l*, constructed in duplex form and combined with the disk *g*, having lugs *j k*, 30 and the washer *m*, having lugs *n o*, substantially as described.

5. The washer *m*, having convex back, and the plate *g*, having concave face *s*, and being adjustable along the beam, in combination 35 with the arm *a*, supporting the jointer *b*, substantially as described.

6. The plate *g*, having grooves *v* in its concave face, and the washer *m*, having ribs *w* on its convex face, in combination with the plow- 40 beam and the jointer-supporting arm, substantially as described.

DAVID WOODWARD.

Witnesses:

DANFORTH KEYES,

GEORGE CONGER.