(No Model.)

A. G. CHRISTMAN.

PLOW JOINTER.

No. 345,770. Patented July 20, 1886.

Fig. 1.

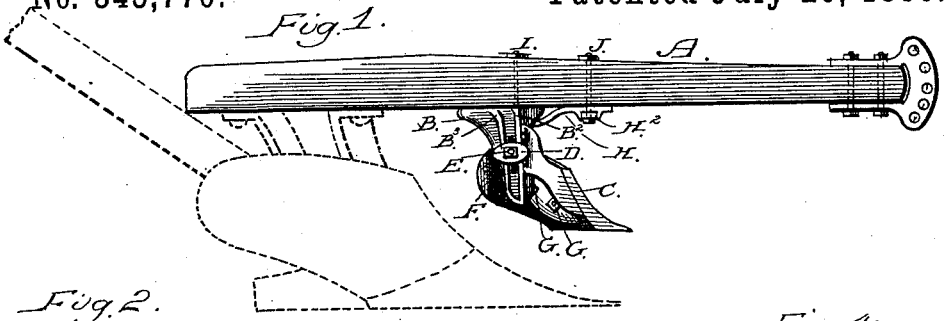


Fig. 2.

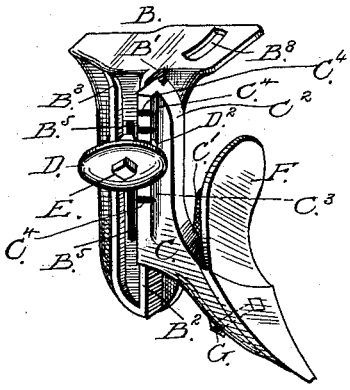


Fig. 3.

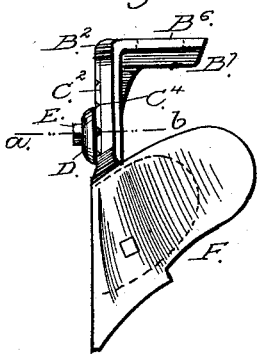


Fig. 4.

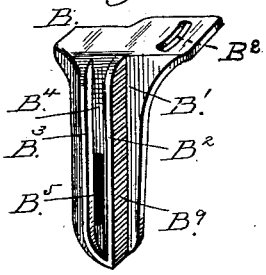


Fig. 5.

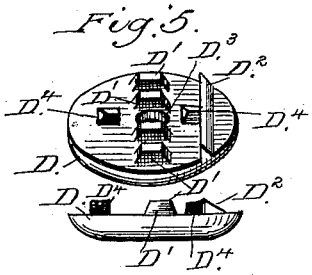


Fig. 6.

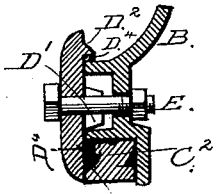


Fig. 7.

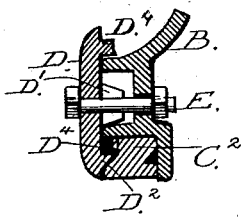


Fig. 8.

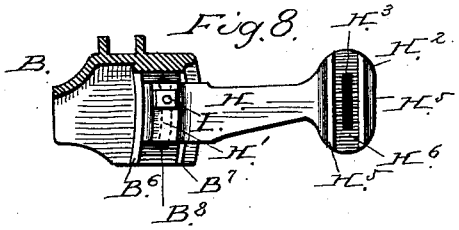
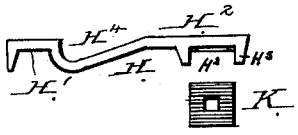


Fig. 9.



Witnesses
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UNITED STATES PATENT OFFICE.

AUGUSTUS G. CHRISTMAN, OF READING, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO NATHAN S. ALTHOUSE, OF SAME PLACE.

PLOW-JOINTER.

SPECIFICATION forming part of Letters Patent No. 345,770, dated July 20, 1886.

Application filed November 11, 1885. Serial No. 182,414. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS G. CHRISTMAN, a citizen of the United States, residing at the city of Reading, county of Berks, State of Pennsylvania, have invented a new and useful Improvement in Plow-Jointers, of which the following is a specification.

This invention pertains more particularly to an improvement upon the plow-jointer, patented to myself as No. 275,354, April 10, 1883.

The object of the improvement is to simplify the construction of the jointer, to make its adjustment more readily, and to make the connection with the main standard positive or frictional, at the will of the operator by a reversal of the the position of the button relative to the groove in the lower standard.

The above objects are secured in the use of a jointer constructed as shown in the accompanying drawings, in which similar letters of reference indicate similar parts.

Figure 1 represents in elevation a plow with my improved jointer attached thereto; Fig. 2, an elevation of the main standard, the jointer-standard locked thereon by the reversible button; Fig. 3, an edge view of the same; Fig. 4, a front elevation of the main standard. Fig. 5 represents the reversible button in perspective plan and in side elevation; Fig. 6, a section of the main standard, lower standard, and reversible button on the line *a b* of Fig. 3, showing the frictional application of the button; Fig. 7, a section of the same parts upon the same line, showing the grip or lock application of the button; Fig. 8, a reverse plan of the foot of the main standard with body and ribs in section, showing the clamp or angle regulator in combination therewith. Fig. 9 is a side elevation of the clamp or angle-regulator together with a plan of the corrugated washer.

A represents the plow-beam; B, the main standard, which is provided with a seat, B′, to receive the lower standard, with guides B^2 B^3, whose outer face is level with the thickness of the lower standard arm, C^2, the face B^4 between the guides being sunk below the face of the same, to receive and form a channel for the pads D′ of the button D, an oblong slot, B^5, between said guides, permitting the securing-bolt E of the button D to rise or fall with the vertical adjustment of the jointer F, which is secured by bolts G to the lower standard. A deep rib, B^6, upon the foot, and a shallow rib, B^7, at the outer edge of the same serves as a lock to the foot H′ of the angle-regulator, and an oblong slot, B^8, for the bolt I permits the angular adjustment of the jointer, while teeth B^9 on the seat B′, interlocking with similar teeth upon the back of the lower standard, prevent vertical displacement. An oblong slot, H^3, in the head H^2 of the angle-regulator H, permit a parallel transverse movement of the jointer relative to the beam A; or the main standard may be swung around upon the fulcrum-bolt J. The raising of the face B^4 above that of B′, the thickness of metal being retained, as shown in the sections Figs. 6 and 7, form pockets in the rear for the bolt-heads, and prevents the same from turning. The lower standard, C, is provided with a seat, C′, to which the jointer F is secured by bolts G. The arm C^2 has a longitudinal groove, C^3, of saw-tooth form, sunk upon its face about three-eighths of an inch from its back edge, said groove being vertical to a depth of about three-sixteenths of an inch, and flaring off to nothing at about three-fourths of an inch from the back edge of the same, while the outer face is provided with tapered recesses C^4, which interlock with corresponding tapered lugs D^4 upon the face of the button, and thereby prevents vertical displacement, yet leaves it free to give way to impact when held by frictional contact with the button D, as described.

The reversible button D is preferably made of an oval form, having upon its face, in the line of its shortest diameter, a series of pads, D′, and parallel with the same line, at such distance therefrom as will correspond with the groove C^3, (the pads lying between the guides B^2 B^3, which takes the strain off of the bolt E,) a saw-tooth ledge, D^2, corresponding therewith, a central bolt-hole, D^3, and two opposite and equally-distant tapered lugs, D^4, which interlock with the tapered recesses C^4 of the lower standard for vertical adjustment.

The angle-regulator H may be a light malleable casting having a foot, H′, with the body raised at H^4 to fit over and lock the same upon

the rib B^7 of the main standard foot, the head H^2 being provided with a transverse slot, H^3, and light ribs H^5, with corrugated face H^6 between the same. A square-hole washer, K, similarly corrugated, plays between the ribs H^5, and securely holds the angle-regulator in place beneath the beam by the bolt J. By this means the fulcrum-point of the main standard may be changed at will.

The several pieces, as described, being provided, the main standard B is bolted through the angle-regulator foot, and through the slot B^8 to the beam A by the bolt I, the head H^2 of the angle-regulator being secured to the beam by the bolt J. The lower standard, C, is then laid upon the face B′, against the guide B^2, and, if the ground to be plowed is heavy and encumbered by stumps or stones liable to catch and disarrange the jointer, the button D is placed in contact with the jointer-arm C^2, in the position shown in Fig. 6, and the bolt E tightened up, the standard-arm in this case being held in place by friction alone; and should an obstruction be met the jointer will give to the same, and draw out from the frictional grip of the button and drop upon the ground without breaking, and is readily replaced when the obstruction is passed; but should the ground be free from obstructions and the soil light, the attachment of the lower standard to the main is made in the manner shown in Fig. 7, in which case the jointer becomes an integral portion of the main standard.

To raise or lower the jointer, the button is released, the change made as desired, and the button again secured, which retains the jointer at the point set. To swing the jointer at an angle with the center line of the beam, the nut of the bolt I is loosened, and the main standard gripped by the foot of the angle-regulator, is swung around upon the bolt J of the head H^2 until the desired angle is secured, the nut of the bolt I tightened, and it is ready for work. Should it be desirable to move the jointer transverse to the beam and parallel with its center longitudinal lines, both bolts I and J are loosened, and the change is readily made. By this means of adjustment the operator is enabled to so arrange his jointer as to avoid the danger of breaking it in rough land. At the same time he can also arrange it so as to possess all the advantages without the disadvantages of a jointer firmly locked to its standard or beam.

Having shown the construction and described the use and advantages of my improved plow-jointer, I desire to secure by Letters Patent the following claims thereon.

1. As an improved construction of plow-jointers, a main standard provided with a seat for the lower standard, and guides with a recessed face parallel therewith, an oblong bolt-hole at the lower end of the same, a foot having an oblong transverse bolt-slot therein with guiding-ribs parallel with the same, in combination with the beam A, angle-deflector H, and bolts I J, substantially as and for the purpose described.

2. As an improved construction of plow-jointers, an angle-regulator or grip of the general form shown, having a foot adapted to pass over the outer rib of the main standard-foot, and to lie between the parallel ribs of the same, a bolt, I, securing it together with said standard to the plow-beam, the head provided with an oblong bolt-slot, ribs parallel therewith, a corrugated face, and a corrugated washer with a central hole adapted to interlock therewith, a bolt, J, securing the same to the plow-beam, and forming a fulcrum-point for the combined angle-regulator and standard, as and for the purpose set forth.

3. In combination with standard B and colter-holder C, a button, preferably of an oval form, having pads adapted to slide freely between the guides of the main standard, a saw-tooth ledge near one end of the same, adapted to interlock with the saw-tooth groove of the lower standard, and two equidistant taper lugs adapted to interlock with the tapered recesses C^4 of the lower standard for vertical adjustment, a bolt, E, common to the button and main standard, securing the button with the saw-tooth and groove interlocked as a positive connection, or with the button reversed as a frictional connection, for the lower standard and jointer, as and for the purpose set forth.

4. An improved plow-jointer consisting, essentially, of the following elements, in combination: an independent main standard, B, with seat B′, guides B^2 B^3, the foot provided with an adjusting-slot, B^8, and ribs B^6 B^7, an angle-regulator, H, lapped over rib B^7, and with its foot between ribs B^6 B^7, its head H^2 secured to the beam A by bolts J, and its foot H′ with that of the main standard to the beam A by bolt I, a lower standard, C, with the jointer F secured thereto and held in place upon the main standard B by a reversible grip or friction button, D, by bolt E, and lugs D^1, interlocking with recesses C^4 of the lower standard, substantially as shown, described, and for the purpose set forth.

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Witnesses:

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