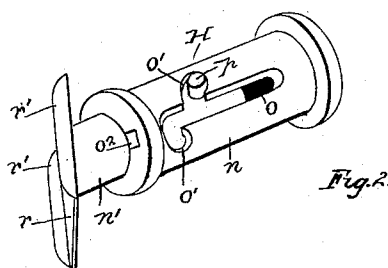
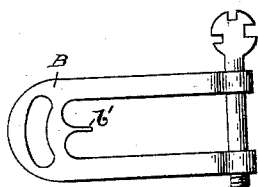
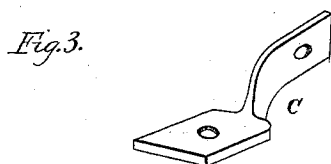
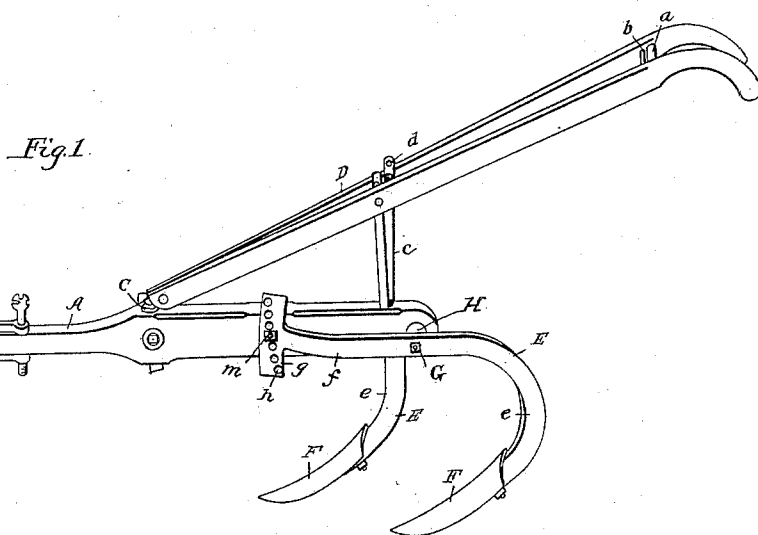


(No Model.)

W. S. DUGGAN.
 PLOW.

No. 466,668.

Patented Jan. 5, 1892.



Witnesses;
Jonas B. Kelley -
A. L. Evans.

Inventor:
Wilson S Duggan
By his Attorney.
W A Redmond

UNITED STATES PATENT OFFICE.

WILSON S. DUGGAN, OF VERONA, TENNESSEE.

PLOW.

SPECIFICATION forming part of Letters Patent No. 466,668, dated January 5, 1892.

Application filed January 19, 1891. Serial No. 378,298. (No model.)

To all whom it may concern:

Be it known that I, WILSON S. DUGGAN, a citizen of the United States, residing at Verona, in the county of Marshall and State of Tennessee, have invented certain new and useful Improvements in Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates, generally, to plows, and particularly to double-shovel plows or cultivators; and it has for its main object to provide a simple, durable, and adjustable plow or cultivator of few parts, which may be readily and easily adjusted to penetrate the ground to any desired depth without changing the parallel position or height of the beam and without changing the height of the handles and the standards or sheths of which may be adjusted to regulate the distance apart of the furrows; and it consists in the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of my improved plow; Fig. 2, a detail perspective view of the opener; Fig. 3, a detail perspective view of the angle-plate, and Fig. 4 a side view of the clevis.

Similar letters refer to similar parts throughout the views.

A represents the beam of the plow, made, as usual, of wood and of the shape desired, on one end of which the clevis B is secured by a pin having its upper end formed like a wrench and its lower end screw-threaded, passing through the perforated ends of the clevis and an opening or perforation in the end of the beam, the clevis being prevented turning on said pin by a projection *b'* thereon entering the end of the beam. The clevis is, as shown, formed with but a single opening therein to receive the open ring of a single or double tree instead of three, as is usual, one opening being sufficient because of the unchangeable position of the beam in adjusting the plow.

Near the forward end of the beam, at the point where it usually commences to taper, I bolt an angle iron or plate C, which, as shown

in Fig. 3, is formed of one piece of metal formed with one half of it turned at right angles to the other half, and to the vertical or standing half I secure the ends of the handles D by a screw-bolt and nut, said ends being placed one at each side of the angle-plate and having their under sides tapered off to make a close joint with said plate. The handles D extend from the beam at the desired angle to suit the user and are held apart by a rung *a* and held firmly together by a brace-rod *b*, adjacent said rung.

To the rear end of the beam a V-shaped metal bar *c* is secured by a bolt, the ends of which bar are formed with a series of perforations *d*, by which the bar is secured to the handles and by which the angles of inclination of said handles may be changed or adjusted by simply removing the bolts from one perforation to another, while the bar *c* will hold the same rigidly in its adjusted position.

E represents the standards, which are formed of a single piece of metal having one end curved or bent sharply forward to cause the plow to stick to the ground and run level, as at *e*, and having its opposite end bent laterally, as at *f*, and terminating in a cross piece or bar *g*, in which is formed a series of perforations *h*, formed on a curving line beginning at or near the inner edge of the cross-piece at its lower end and terminating at or near the outer edge at its top, as clearly shown in Fig. 1. The object of this perforated cross-piece is to enable the standard to be bolted to the beam and to regulate the pitch of the plow or the depth the plow penetrates the earth without changing the horizontal position of the beam, which is parallel with the ground, thus doing away with the regulation of the depth of the plow by changing or adjusting the clevis, as is commonly practiced. By this arrangement of the standards the height of the beam from the ground remains the same throughout its length and the height of the handles or set position of the same remains unchanged, no matter to what pitch the plows are adjusted. I am also enabled to make the standards much shorter than the length of those commonly employed, and thus secure greater strength with the use of the same or even a less quantity of metal. The

standards for each side of the beam are similar in construction, excepting that one is bent to the right and the other to the left, and are secured in the same manner to said beam, and the standard on the right side of the plow is set forward on the beam a sufficient distance to enable the plows to work in harmony and without interference with each other. To the lower ends of the standards the shovel-plows F are secured in the usual or any desired manner. A bolt G is passed through a perforation in the rear standard E at a point about central between the bends of the same and into and through the beam near its rear end, and the bolt *m*, which secures the forward end of said standard to the beam, also passes through the beam and through the standard on the opposite side. These bolts are long enough to permit of a varied and wide adjustment of the distance between the plows and are retained in their set position by the openers H, arranged on said bolts between the beam and the standards. The openers are formed of two headed cylinders or tubular pieces *n n'*, the latter being of less diameter than the former and adapted to telescope therein. The tubes or cylinders *n* are formed at one end with a flat or straight head adapted to rest squarely against the sides of the beam, and the opposite end is formed with slots *o*, having in each side thereof a curved opening or notch *o'*, adapted to receive the projecting pins *p*, secured on the tube *n'*, said pins entering said slots through openings *o²* formed in the end of the tube, so that the standards E will be firmly held at any desired distance from the beam, according to the distance apart it is desired to form the furrows, and at the same time the standards may be readily and easily adjusted to a narrower or wider distance apart by simply loosening the bolts and setting the pins on tube *n'* in one of the notches in tube *n*. The tube *n'* is formed with an inclined or beveled head *r*, having flanges *r'* at each side, in order to fit snugly against the sides of the standards, which in-

cline or extend from the beam at an angle, as shown.

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

1. In a plow, an opener or spacing-block consisting of tubes, one sleeved upon the other, one formed with longitudinal slots with curved terminals, and the other with projecting pins working in said slots and with radial flanges, substantially as and for the purposes specified.

2. The combination, in a plow, of the beam, the standards adjustably secured thereto at one end, the openers consisting of the cylindrical tubes, one of which is formed with notched slots and the other having pins formed thereon, and bolts passing through said openers, substantially as described.

3. The opener for adjusting and holding the standards of a plow at any desired distance from the beam, which consists of a cylindrical tube having a flat head at one end and openings at the other end and slots having notches formed therein, and a tube adapted to telescope above-named tube and having an inclined flat head and pins formed on its body adapted to fit within the notches, substantially as described.

4. The combination, in a plow, of the beam and standards and connecting bolt, of an opener upon the said bolt comprising two tubes, one sleeved upon the other and telescopic, with provisions for holding them in their adjusted positions, one of the tubes having a flat head and an opening *o²* and the other provided with beveled head and oppositely-extending flanges, substantially as and for the purpose specified.

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

WILSON S. DUGGAN.

Witnesses:

I. A. WOODS,
W. D. CATHEY.