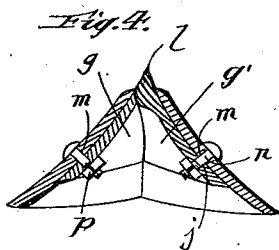
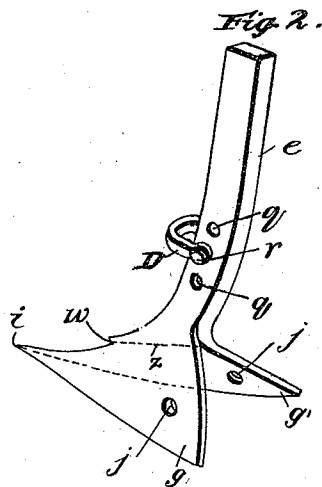
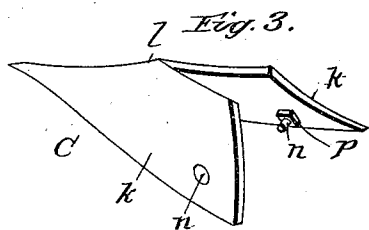
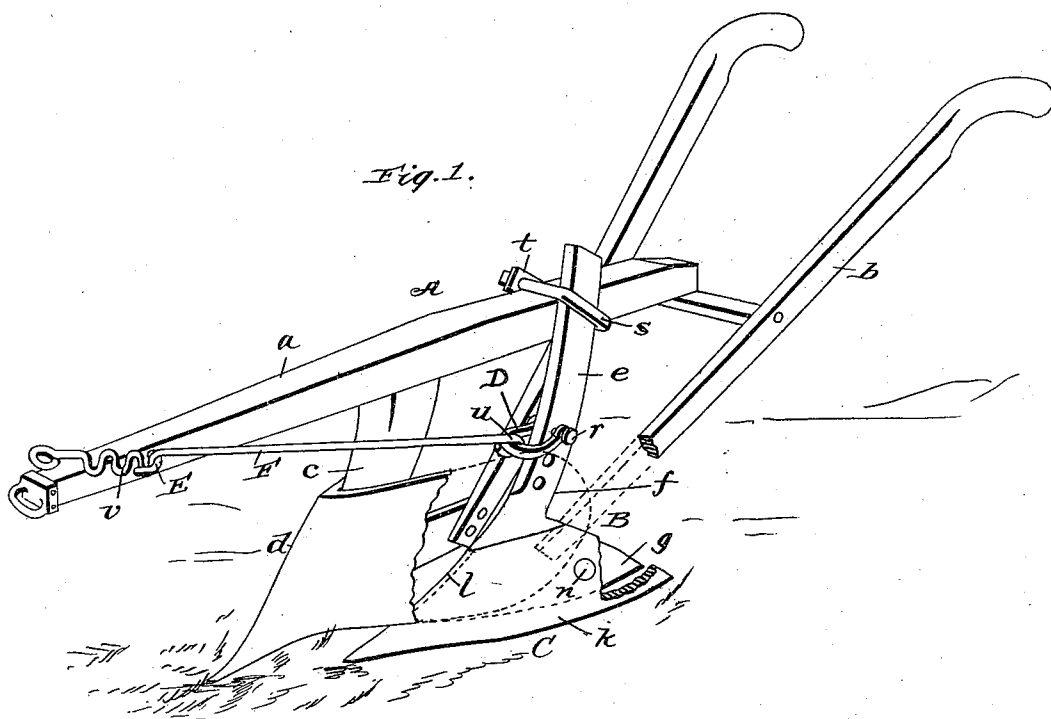


(No Model.)

C. J. & D. A. GIFFIN.
-SUBSOIL ATTACHMENT FOR PLOWS.

No. 556,463.

Patented Mar. 17, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

COLUMBUS J. GIFFIN AND DAVID A. GIFFIN, OF KNOXVILLE, TENNESSEE,
ASSIGNORS OF ONE-THIRD TO SAMUEL B. GIFFIN, OF SAME PLACE.

SUBSOIL ATTACHMENT FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 556,463, dated March 17, 1896.

Application filed April 16, 1895. Serial No. 545,924. (No model.)

To all whom it may concern:

Be it known that we, COLUMBUS J. GIFFIN and DAVID A. GIFFIN, citizens of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Subsoil Attachments for Plows; and we do 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 to subsoil attachments for plows, and it has for its object to improve such devices by simplifying the construction, increasing the efficiency, and adapting the parts for operation so as to adjust the point of the subsoiler, and to also adjust the share or plow-blade.

The invention will be fully understood from the following description and claim when taken in connection with the annexed drawings, in which—

Figure 1 is a perspective view of a plow with parts broken away and our improved subsoiler attached. Fig. 2 is a perspective view of the standard and shoe of the subsoiler. Fig. 3 is a perspective view of the plow or point removed, and Fig. 4 is a horizontal sectional view taken through the share or shovel and the shoe and standard of the subsoiler.

Referring by letter to said drawings, A indicates a plow, which may be of any ordinary or approved construction, having a beam *a* and handles *b* and also having a standard *e* and a plow-blade *d* connected in the usual manner.

B indicates the subsoiler. This subsoiler is of a peculiar construction. In forming the same we take a bar of iron or other suitable metal of a sufficient length and width and shape it to form the standard *e*, which we provide with a suitable number of holes *q* for the reception of a bolt *r*, by means of which a bail D is adjustably attached to said standard for a purpose which will presently appear. The forward edge of the standard *e* is curved downwardly and forwardly, as shown, and this curved portion is sharpened so as to form a cutter from the lower hole *q* to its lower terminal. On the lower end of this bar or standard we weld a foot *g*, which is disposed ob-

liquely or pitched rearwardly and outwardly from its forward end *i*, which is pointed, as shown. We then forge a similar wing *g'* on the opposite side of the standard, the point of connection being indicated by the upper dotted line *z*. Both wings of the foot meet at an acute angle, and the forward edge of the standard is provided with a shoulder *w* to form an abutment for the plow of the subsoiler.

C indicates the plow of the subsoiler, which comprises two wings *k*, which deflect rearwardly and meet at their forward ends in an acute angle *l*, and this plow is designed to fit snugly over the foot at the lower end of the standard. The wings *k* are provided with holes *m*, which are designed to register with the holes *j* in the feet or wings *g g'*, and bolts *n* take through the holes of the respective parts and are secured by means of nuts *p* or the like. The standard *e* of the subsoiler B is adjustably secured to the beam of the plow by means of a yoke *s* and a plate *t* and nuts or the like. This beam of the plow is provided on one side and near its forward end with a forwardly-directed hook E.

F indicates a rod or bar. This rod is connected at one end to the bail D of the standard of the subsoiler by a hook *u*, and the opposite end of the rod is adjustably attached to the hook E by forming bends or loops *v* in said rod to engage the hook, as shown.

By this construction it will be seen that we have the subsoiler capable of vertical adjustment on the plow-beam. The rod F is adjustably secured to the standard of the subsoiler, and the said rod is also adjustably attached to the beam, so that said subsoiler can be adjusted vertically on the beam and can be thrown on and off the point and that the rod is adjustably connected at both ends.

It will also be observed that the cutting-edge of the standard of the subsoiler is disposed in the same longitudinal plane as the point of the main plow, so that it, the subsoiler, will follow in the line cut by the plow-point and thereby ease the operation of the latter.

Having described our invention, what we claim is—

The combination with a plow; of the sub-

soiler B, comprising the standard *e*, curved
and having the forward edge of its curved por-
tion sharpened and also having the holes *q*, at
intervals in its length, the foot welded and
5 forged on the lower end of the standard and
comprising the wings *g*, *g'*, provided with
holes, the plow composed of the two blades *k*,
fitting snugly over the foot and having holes
to register with those in the wings of the foot,
10 bolts and nuts for securing the wings *g*, *g'*,
and the plow-blades *k*, together, the hook E,
on the plow-beam, the bail D, adjustably con-
nected to the standard *e*, by a bolt taking
through one of the holes *q*, in said standard,

the rod F, secured at one end to said bail D, 15
and having its opposite end capable of adjust-
able connection with the hook E, on the plow-
beam, and the yoke, plates and nuts for ad-
justably connecting the subsoiler-standard *e*,
with the plow-beam, all substantially as speci- 20
fied.

In testimony whereof we affix our signa-
tures in presence of two witnesses.

COLUMBUS J. GIFFIN.

DAVID A. GIFFIN.

Witnesses:

S. H. FORD,

HERBERT H. FORD.