

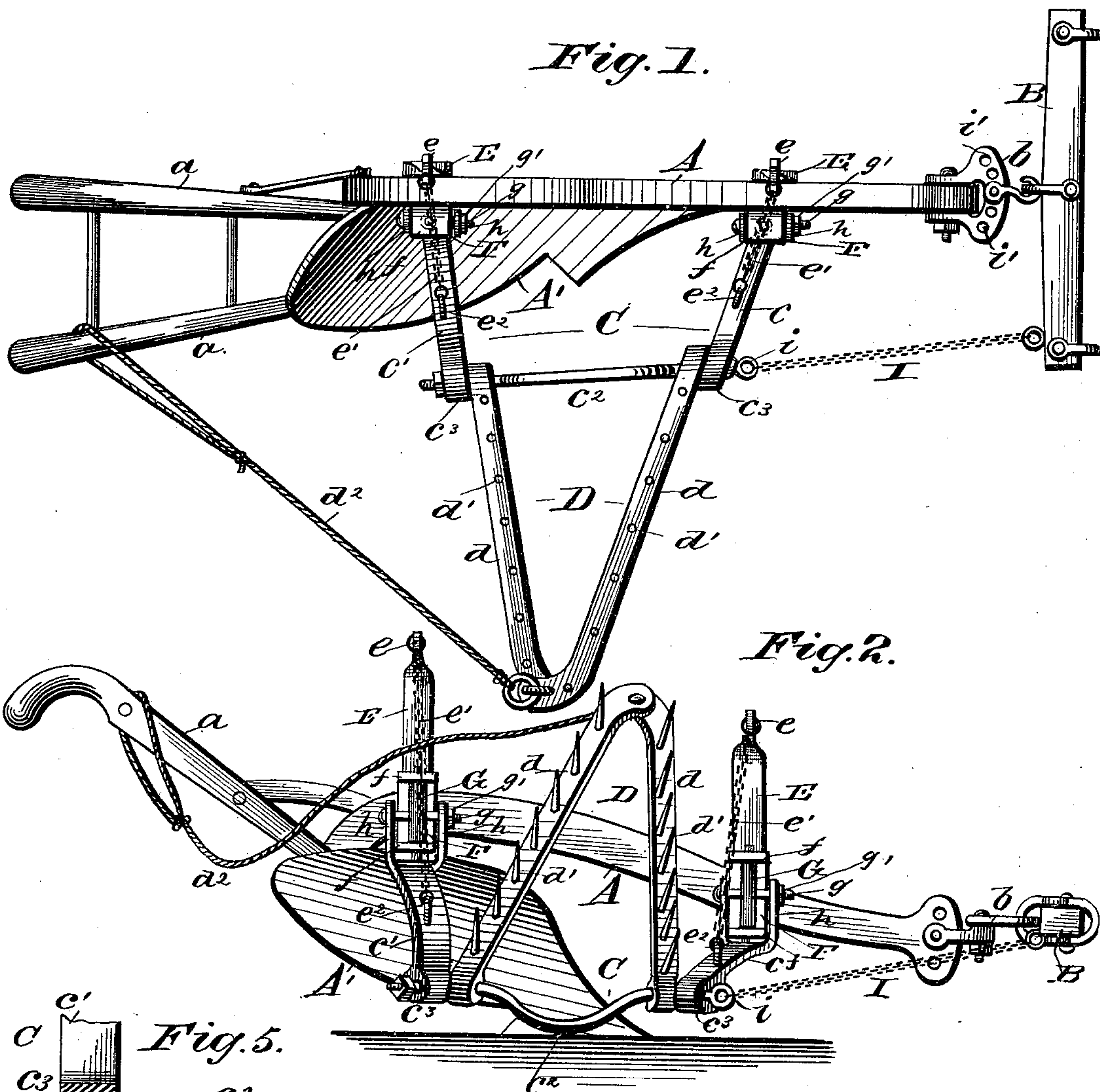
(No Model.)

G. W. SPENCER.

HARROW ATTACHMENT FOR PLOWS.

No. 336,023.

Patented Feb. 9, 1886.



WITNESSES

Phil C. Dietrich.

A. E. Dowell

Fig. 3.

Fig. 4.

INVENTOR

Geo. W. Spencer.

W. Alexander
Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. SPENCER, OF ST. JAMES, NEBRASKA.

HARROW ATTACHMENT FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 336,023, dated February 9, 1886.

Application filed December 19, 1885. Serial No. 186,183. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SPENCER, of St. James, in the county of Cedar and State of Nebraska, have invented certain new and useful Improvements in Harrow Attachments for Plows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a plan view showing the harrow in position for use. Fig. 2 is a side view with the harrow raised. Figs. 3, 4, and 5 illustrate various details of the parts of the invention.

This invention (which is an improvement on a patent granted to me on the 21st day of July, 1885, No. 322,760) is an improved harrow attachment for a plow; and it consists in the construction and novel arrangement of parts, hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings by letter, A designates the plow-beam, having the upwardly-curved portion, as shown, and the handles *a a*, secured to its rear end. A' is the plowshare. All of the above are of usual construction, and need no detailed description.

B is a double-tree swung to the front end of the plow-beam by means of the clevis *b*, of any desirable construction.

C is a frame, composed of the front and rear arms, *c c'*, respectively, the latter being curved upward to avoid the share, and the rod *c²*, which has its ends pivoted and turning in bearings in the outer ends of said arms. The inner ends of the arms *c c'* are connected to the plow-beam by means hereinafter described.

D is a harrow-frame, composed of the front and rear bars, *d d*, united at their outer ends, and having their inner ends so connected to the rod *c²*, adjacent to its bearings, that turning them will rotate the rod therein. The rod *c²* is curved between its ends, the said curve having its convexity upward when the harrow-frame is down, and having the same downward, so as to rest upon the ground, when the harrow-frame is up. The bars *d* of the harrow-frame are provided with the teeth *d'*, of usual construction. The bearings *c³ c³* of the rod *c²* in the outer ends of the arms *c c'* are not circular, but oval or slotted, so as to give

the rod sufficient play and prevent it from binding in any position in which the harrow-frame may be.

d² is a rope or cord, having one end attached to a ring at the junction of the bars *d* of the harrow-frame, and the other end formed into a loop and hung over the handle *a*. By pulling on the said cord the harrow-frame can be turned up on the frame C.

The manner in which the inner ends of the arms *c c'* are connected to the plow-beam being identical, the description of one only is necessary.

E is a standard having a forked or bifurcated upper end, *e*, which standard has its lower end resting against the plow-beam on the side thereof opposite the end of the arm *c* or *c'* of the frame C.

e' is a chain, having the link at one end attached to the bifurcated upper end of the standard E, and at its lower end connected to a loop or staple, *e²*, on the arm *c* or *c'*.

F is a plate, preferably of metal, and having the extensions *f f* at each end at right angles to its central portion. The said plate lies against the plow-beam on the side opposite the standard E, and is connected therewith by bolts *f' f'*, which pass, respectively, above and below the plow-beam into properly-threaded openings in the plate F, and are held thereto by proper nuts, so that the standards and pieces are both held firmly in place on the plow-beam.

G is a rod having its upper and lower ends pivoted in proper openings of the extensions *f f* of the plate F. The rod is kept in place by shoulders on the inner sides of its journals, but can turn freely in the same.

g is a horizontal rod passing through the center of the rod G from front to rear in respect to the plow, and H is the bifurcated upturned end of the arm *c* or *c'*, the arms *h h* of which bifurcation stand, respectively, on the front and rear sides of the journaled rod G. The arms *h h* are provided with similar slots, *h'*, through which the rod *g* passes, the said rod having a head on one end and a nut, *g'*, on the opposite threaded end. By these means the frame C is adjustable vertically on the plow-beam, so that the teeth of the harrow-frame can be set to various depths.

I is a chain, connected at one end to a ring

or staple, *i*, on the front end of the rod *c*², and at the other end to the nearest end of the double-tree.

i' i' are openings, into any one of which the pin of the clevis *b* may be passed, so that the draft may be regulated more to one side or the other.

The attachment of the chain *I* to the double-tree and harrow-frame causes the pull to be equalized, and not all in the line of the harrow-beam. The double-tree thus becomes a true equalizing-bar in connection with the openings *i'*.

The connection of the bifurcated ends of the arms *c c'* to the rods *g*, besides rendering the frame *C* vertically adjustable on the plow-beam, allows it to be turned up so as to lie upon the upper edge of the plow-beam. This is done by a pull on the rope *d*², and the bend of the rod *c*² is turned downward at the same time, so as to support the attachment and prevent it from dragging. The rods *g* can turn in their bearings in the plates *F*, so that the harrow attachment can adjust its angular position with regard to the plow-beam according to the varying pull of the horses.

The chains *e'* are for the purpose of raising or lowering the supporting-frame and harrow-frame, which is accomplished by engaging different links of said chain upon the bifurcated upper ends of the standard *E*.

Having described my invention, I claim—

1. The combination, in a plow, of the plow-beam, the supporting-frame vertically adjustable thereon, the harrow-frame pivoted on the outer end of the supporting-frame, and the rod *c*², having the central curve, which is turned downward when the harrow-frame is turned upward, and supports the attachment and pre-

vents the same from dragging, substantially as specified.

2. The combination, in a plow, of the plow-beam, the supporting-frame *C*, the harrow-frame pivoted to the outer end thereof, the standards *E*, and plates *F*, constructed substantially as described, the rods *G*, pivoted in the extensions *f f* of said plates, the horizontal rods *g*, and the bifurcated upturned ends *H* of the arms *c c'*, all constructed and arranged substantially as and for the purpose described.

3. In a plow, the combination of the plow-beam, the supporting-frame *C*, the harrow-frame *D*, pivoted thereon, the standards *E*, secured to the plow-beam, and the chains *e'*, connecting the upper ends of said standards with the supporting-frame, so that the said frame can be raised or lowered at will, substantially as specified.

4. In a plow, the combination of the plow-beam, the supporting-frame having a backward-and-forward and up-and-down motion thereon, the curved bar *c*², forming part of said frame, the harrow-frame pivoted upon said bar, the standards *E* and chains *e'*, the draw-bar *B*, the chain *I*, connecting the end of said draw-bar and the supporting-frame, and the rope *d*², by means of which the harrow-frame can be raised on the supporting-frame, all constructed and arranged substantially as shown and described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE W. SPENCER.

Witnesses:

T. H. ALEXANDER,
A. E. DOWELL.