

I. W. STUART & J. G. ALLEN.
Ditching-Plow.

No. 207,993.

Patented Sept. 10, 1878.

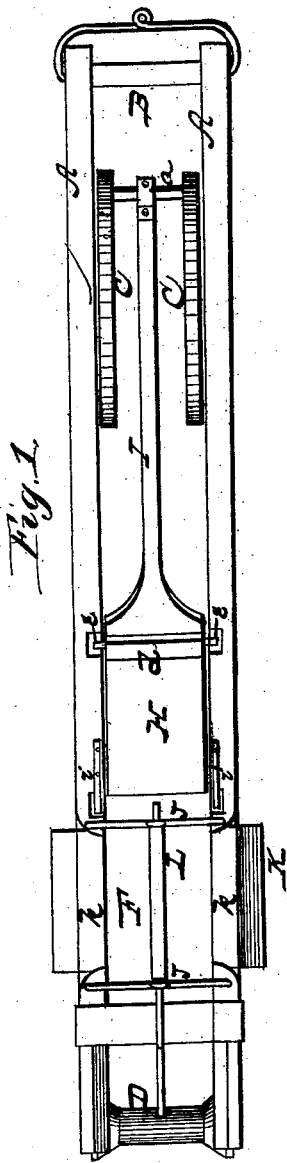


Fig. 1

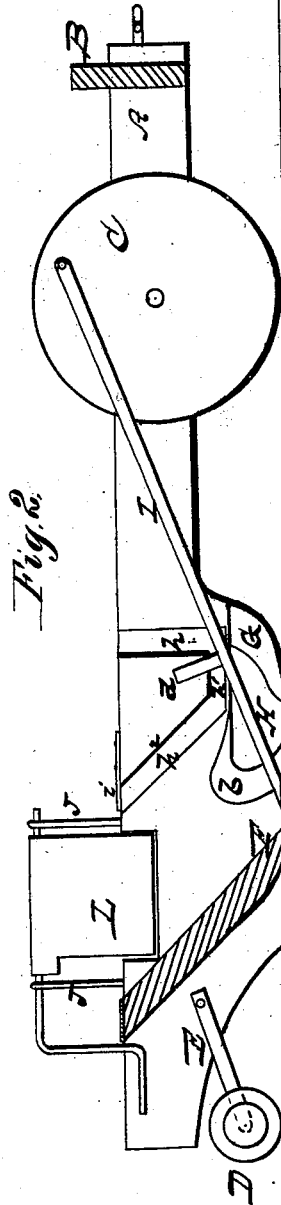


Fig. 2

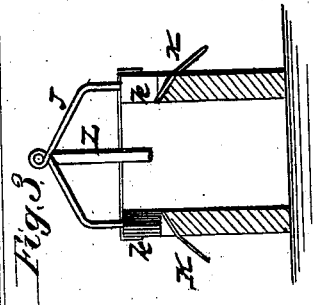


Fig. 3

Witnesses:
A. J. Arthur,
John D. Rogers.

per

Inventors:
Ithamar A. Stuart
& James G. Allen.

J. H. Abner & E. L. Allen
Attorneys.

UNITED STATES PATENT OFFICE

ITHAMER W. STUART AND JAMES G. ALLEN, OF HOLLIDAY STATION,
ILLINOIS, ASSIGNORS TO SAID J. G. ALLEN.

IMPROVEMENT IN DITCHING-PLOWS.

Specification forming part of Letters Patent No. 207,993, dated September 10, 1878; application filed July 29, 1878.

To all whom it may concern:

Be it known that we, I. W. STUART and J. G. ALLEN, of Holliday Station, in the county of Shelby and State of Illinois, have invented certain new and useful Improvements in Ditching-Plows; and we 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.

The nature of our invention consists in the construction and arrangement of a ditching-plow, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of our ditching-plow. Fig. 2 is a longitudinal vertical section, and Fig. 3 a transverse vertical section, of the same.

A A represent two parallel side beams, connected at their front ends by a cross-bar, B, upon which the driver's seat is to be supported. In rear of this cross-bar, between the two side beams, are mounted two wheels, C C, upon separate spindles, which are in a straight line, and the two wheels are connected by a pin, *a*, thus forming a crank for operating the shovel, hereinafter described.

E E represent two arms, which are secured to the inner sides of the beams A A near the rear end, said arms extending rearward and having a roller, D, mounted between their rear ends, which roller is to run on the bottom of the ditch. The arms E E will, in a full-sized machine, be made adjustable, so that the roller D can be raised or lowered, as required, to regulate the depth at which the plow is to work.

F represents the plow, secured between the side beams A A in front of the roller D, as shown, the beams A A being at this point extended downward to form, as it were, side pieces for the plow both in front and rear of the same, these side pieces forming cutting-edges *b* at the front. In front of these cutting-edges are secured curved cutters G G, one to each side beam. Between the cutters G G,

in front of and against the plow, works a shovel, H, having a handle, I, which is placed on the crank *a* between the wheels C C.

The shovel H is at its base provided with a cross-bar, *d*, from the ends of which project pins *e e* into grooves in the side beams A A. These grooves are in each side beam arranged as follows: A vertical groove, *h*, extends downward from the upper edge to near the lower edge, and from the bottom of this groove a horizontal groove, *h*¹, extends rearward for a suitable distance. From the rear end of this groove a groove, *h*², extends up to the upper edge of the beam, said groove *h*² running inclined parallel with the shovel. At the top of the groove *h*² is a spring, *i*, as shown.

During the operation of the machine as the wheels C revolve, the shovel is guided by the pins *e* in the grooves *h* downward, and then by the grooves *h*¹ rearward toward the plow, cutting and taking up a portion of the earth. Then, by the grooves *h*², it is guided upward, taking the dirt with it to the top, where the dirt is thrown to either side. At the top of the grooves *h*² the pins *e* pass over the springs *i*, which prevent the pins from going back into said grooves *h*². The shovel then rides on top of the side beams forward till it reaches the grooves *h*, when it drops down again to go through the same operation.

Over the plow on the side beams are secured frames J J, in which is hung a valve, L, said valve above the center between and parallel with the side beams, and opposite spaces *k k* cut out in the side beams. In these spaces are inclined chutes K, as shown. The valve L is operated by a suitable crank or handle by the operator, seated on a seat in rear of the plow, so as to remove the dirt from the shovel to either side when the shovel reaches the top.

We may provide the wheels C C with circular rows of cogs on their inner sides about twelve or eighteen inches from the rim. The crank *a* is then to work in two smaller wheels which are placed in the beams of the plow, so as to work in the cogs on the inner sides of the large wheels, which gives the shovel a quicker revolution, cleaning the dirt sufficiently fast to prevent the plow from choking up.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The cutting-edges *b b*, formed on the side beams *A A*, in combination with the curved cutters *G G*, substantially as and for the purpose set forth.

2. The crank *a* and pitman *I*, provided at its rear end with shovel *H* and cross-bar *d*, in combination with the vertical grooves *h h* and horizontal grooves *h' h'*, the shovel being arranged to operate substantially as and for the purposes herein set forth.

3. In a ditching-plow, the combination of side beams *A A*, constructed to form cutting-edges *b b*, curved cutters *G G*, wheels *C C*, crank *a*, pitman *I*, and shovel *H*, all constructed and arranged to operate substantially as described.

4. The combination of the side beams *A A*, having grooves *h h' h''*, the plow *F*, wheels *C C*, with crank *a*, shovel *H*, with handle *I* and pins *e e*, and the springs *i i*, all constructed substantially as and for the purposes herein set forth.

5. The swinging valve *L*, in combination with the plow *F*, shovel *H*, and frame, with side chutes *K K*, substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

I. W. STUART.
J. G. ALLEN.

Witnesses:

W. C. MCARTHUR,
PERRY DANIEL.