

L. L. HAWORTH.
SEED-DRILL AND PLANTER.

No. 174,132.

Patented Feb. 29, 1876.

FIG. I.

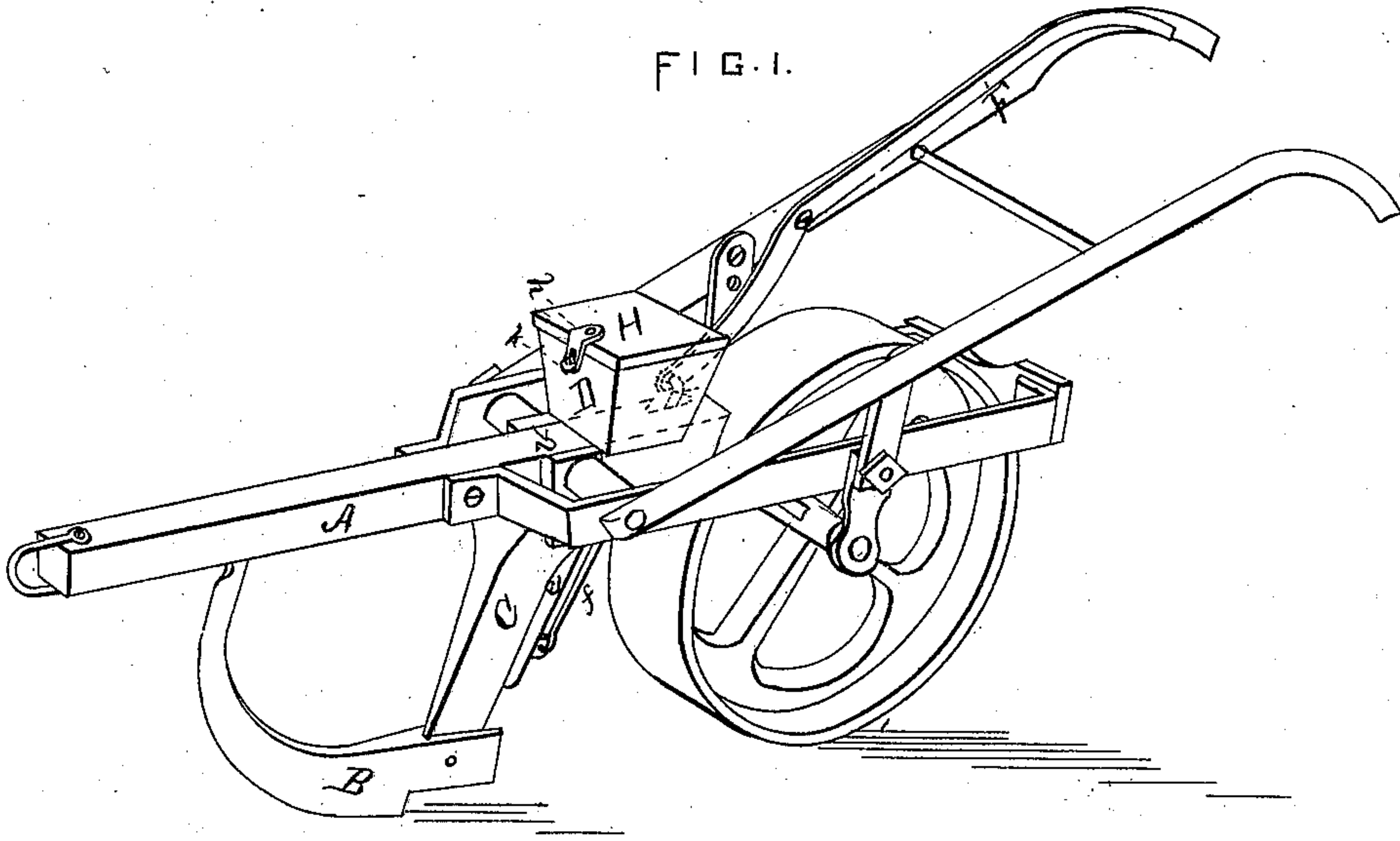


FIG. II.

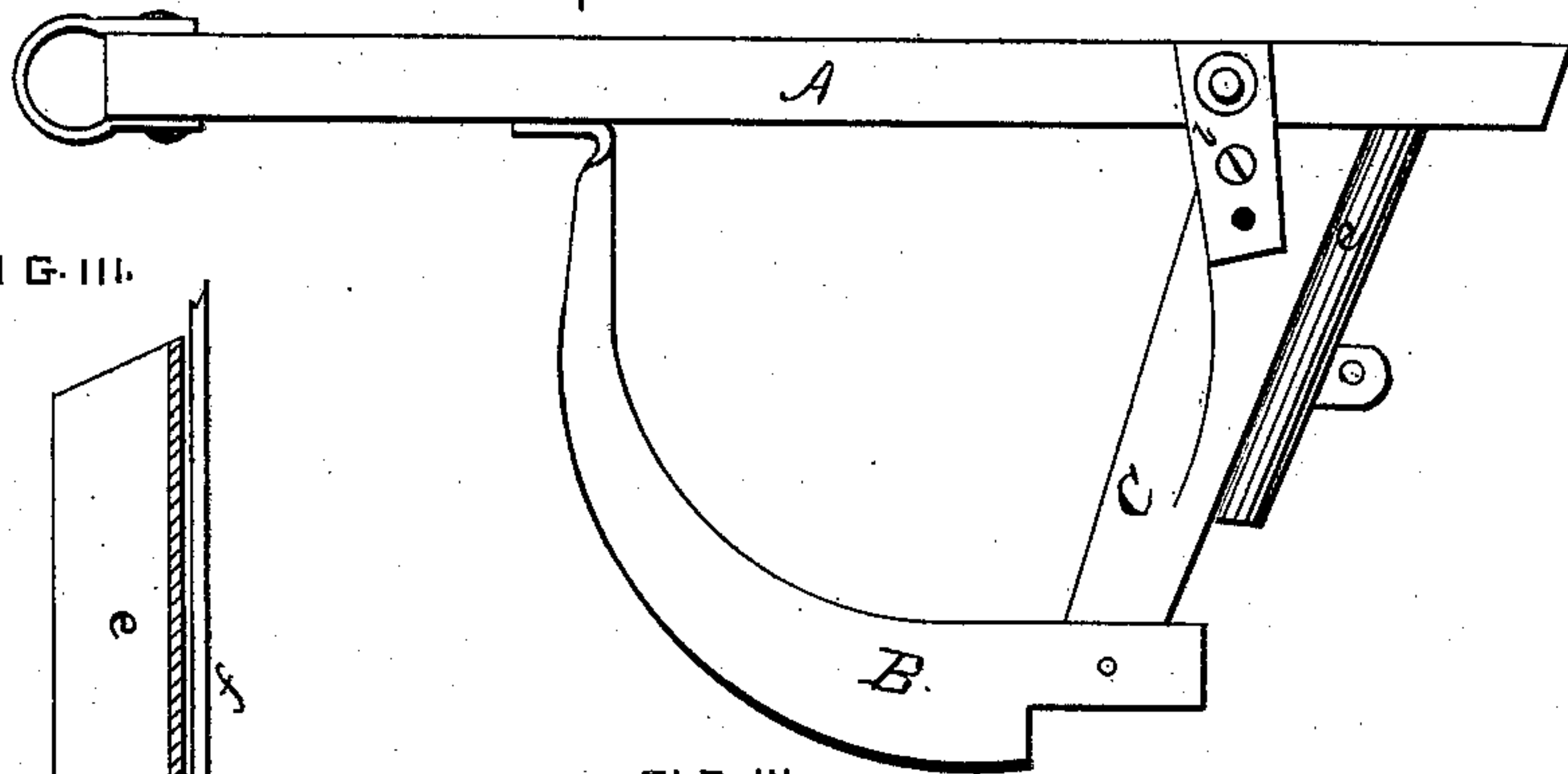


FIG. III.

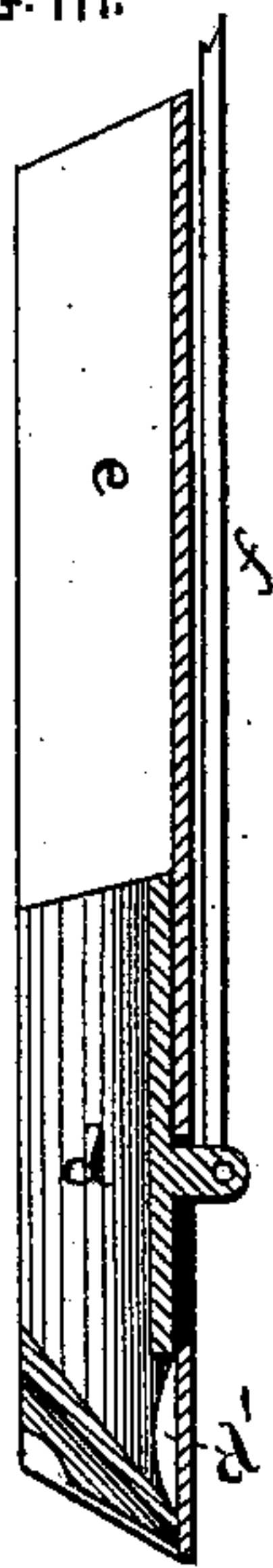
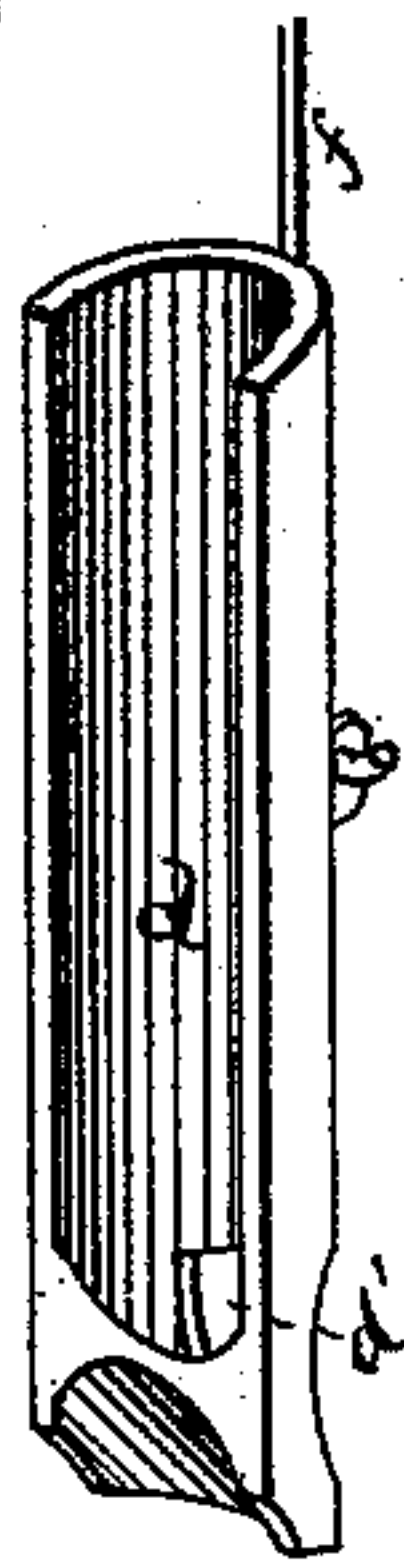


FIG. IV.



WITNESSES.

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LYSANDER L. HAWORTH, OF LONDON, OHIO.

IMPROVEMENT IN SEED DRILLS AND PLANTERS.

Specification forming part of Letters Patent No. **174,132**, dated February 29, 1876; application filed May 4, 1875.

To all whom it may concern:

Be it known that I, LYSANDER L. HAWORTH, of London, in the county of Madison and State of Ohio, have invented a new and Improved Seed Drill and Planter, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my invention. Fig. 2 represents a vertical section of beam and plow. Fig. 3 is a view of my dropper in position in the pipe. Fig. 4 shows the dropper detached.

My invention relates to walking-planters; and it consists in the several combinations and arrangement of parts hereinafter described and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents the plow-beam, to the forward end of which the draft is applied. B is a curved cast-steel runner, the heel of which is secured to the bottom of the plow C, which is adjustably attached to the beam A by means of the lugs *b*. By this arrangement of the runner it is evident that, by changing the angle of the beam relating to the runner, the latter is raised out of, or driven deeper upon its cutting-edge into, the soil. If, for instance, it be desired to have the runner two inches deeper into the ground, it is only necessary to adjust the point of the beam about four inches higher, and when the draft is applied the beam is brought down to its normal position, and the runner is forced upon its cutting-edge deeper into the soil.

I am aware that the curved runner is not of itself new, as the same has frequently been applied to two-horse check-row planters; but in all instances where they have been heretofore used levers or weights have been necessary to force them into the ground, as the heel or broad portion of the runner, instead of the cutting-edge, was the part brought in contact with the soil.

D is a seed-hopper, and H the hinged top to the hopper, provided with the spring-hasp fastening *h*, which catches over the lug *k*. This hasp is made of common strap-iron, and

forms a cheap and convenient fastening of the lid, and secures the seed against any possible accident in spilling and wasting. The loose end of the hasp is slotted and arranged with a sufficient spring to cause the slot to pass over the lug *k* when the door falls shut. It requires but a slight effort with the fingers to spring the clasp from over the lug, and thus allow the top to be raised. Below the opening in the hopper is a discharge-hole leading through the beam into the pipe *e*, which is secured to the rear of the plow C, and projects downward nearly to the rear of the runner B. Within the lower end of the pipe *e* is fitted the sliding hollow dropper *d*, to which is attached the rod *f*, as shown in Fig. 1. To the upper end of rod *f* is secured the short arm of the lever F, which is to be operated by the hand of the plowman. The lower end of the hollow dropper is closed, but is provided with a lateral opening, *d'*, which is covered by the pipe *e* when the dropper is raised within the pipe, but which is open when the dropper is allowed to fall below the end of the pipe.

The operation of the dropper is as follows: Seed being placed within the hopper, it finds its way, through the discharge-hole in the beam, into the pipe *e*, where it is arrested by the closed hollow dropper *d*. The plowman by a slight motion of his hand throws up the lever F, which, in turn, forces down the rod *f*, and allows the dropper *d* to fall sufficiently below the pipe *e* to expose the lateral opening *d'*, through which the seed passes to the ground.

It is evident from this description that the quantity of seed dropped, and the time of dropping, are completely under the control of the person handling the plow.

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

The slotted pipe *e* and dropper *d*, provided with the solid inclined bottom and the lateral-discharge opening *d'*, in combination with the rod *f* and lever F, substantially as and for the purpose set forth.

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Witnesses:

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