No. 692,000. Patented Jan. 28, 1902.

J. L. ASHURST.

FURROW OPENER FOR PLANTERS.

(Application filed Nov. 23, 1901.)

(No Model.)

Fig. 1.

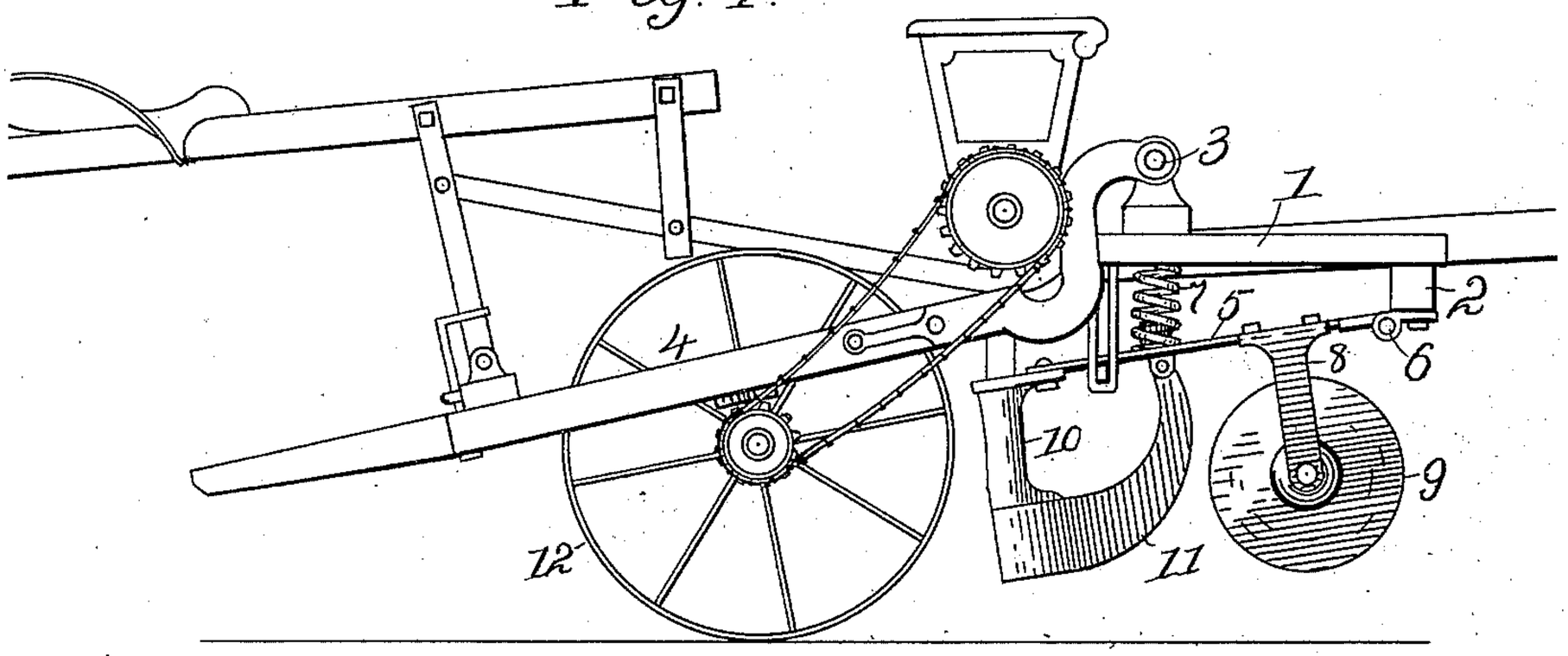


Fig. 2.

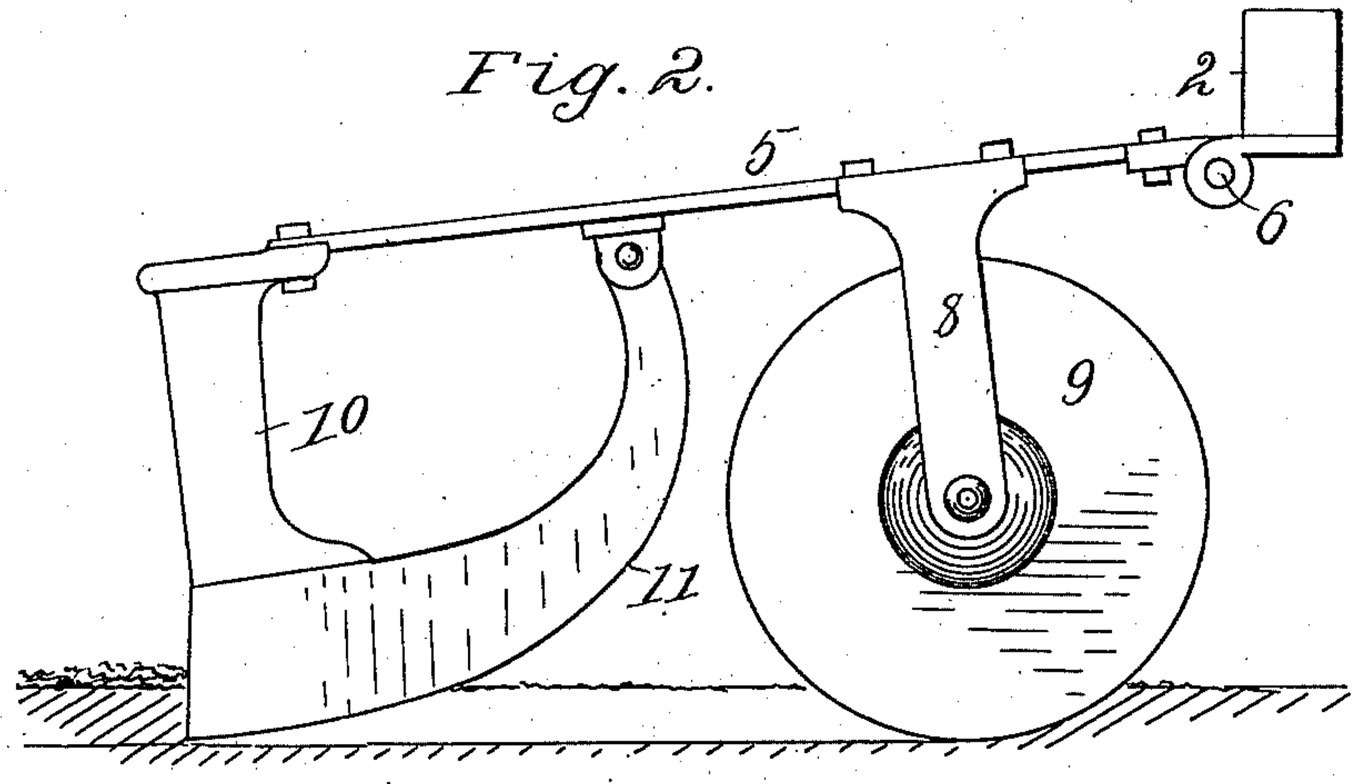
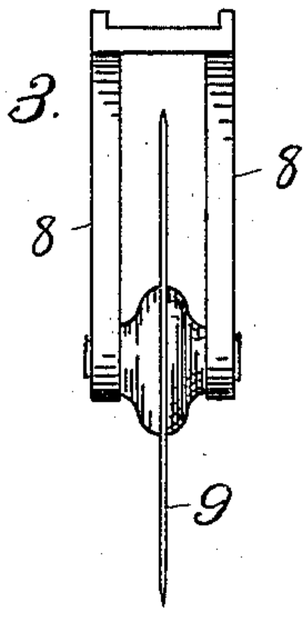


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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FURROW-OPENER FOR PLANTERS.

SPECIFICATION forming part of Letters Patent No. 692,000, dated January 28, 1902.

Application filed November 23, 1901. Serial No. 83,467. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. ASHURST, of the city of Havana, county of Mason, and State of Illinois, have invented certain new and useful Improvements in Furrow-Openers for Planters, of which the following is a specification.

This invention is particularly applicable to grain-drills, and to that class of grain-drills known as "press-drills;" but it may be used in any form of planter that deposits seed in a furrow. The invention is exemplified in the structure hereinafter described, and it is defined in the appended claims.

One object of the invention is to make a preliminary cut in front of a furrow-forming runner by means of a rolling cutter.

Another object is to depress trash not severed by the cutter, so that the runner will ride over the depressed trash.

Another object is to so dispose the runner and the rolling cutter that the weight of the front frame with which they are connected will be approximately balanced thereon; and still another object is to preclude the accumulation of trash or moist soil through the joint operation of the runner and the cutter.

I accomplish the desired result by pivotally connecting a draft-bar with the front cross-bar of the front frame of the drill or planter, attaching a seed-conveying shank to the rear end of the draft-bar in the rear of the center of weight of the front frame, connecting a winged runner at its front end with the draft-bar and at its rear lower end with the shank, and attaching a rolling cutter to the draft-bar in front of the runner and in front of the center of weight of the front frame. I also interpose a spring between the draft-bar and a part of the front frame above the draft-bar or provide other means for yieldingly imparting pressure from the front frame to the draft-bar.

In the drawings forming part of this specification, Figure 1 is a side elevation of a grain-drill in which my invention is embodied. Fig. 2 is a detail in side elevation of the draft-bar, the runner, and the rolling cutter. Fig. 3 is a detail of the rolling cutter and the hanger therefor, the view being an elevation taken endwise of the drill.

The front frame 1 is pivotally conjoined with the rear frame 4 at the point 3, which point is approximately on line with the center of weight of the front frame. The draft-bar 5 is hinged to the cross-bar 2 of the front frame, as shown at 6, and it extends rearward beyond the center of weight of the front frame. A hollow shank 10 is secured at its upper end to the rear end of the draft-bar. A winged runner of the ordinary construction is attached to the lower end of the shank, and its front end curves upward and connects with the draft-bar. A forked hanger 8 is attached to the draft-bar in front of the runner and to the rear of the pivot 6. A rolling cutter 9, preferably in the form of a circular edge flat disk, is journaled between the downward-extending ends of the hanger, out of contact therewith. Its position is directly in front of the cutting edge of the runner, and its pivot is at right angles with the direction of travel of the drill. A spring 7 has a seat on the draft-bar. It is fitted under a cross-bar of the front frame, and when the front frame is lowered it imparts yielding pressure from the front frame to the draft-bar. In a complete drill or planter there is a plurality of draft-bars, each equipped with a runner and a rolling cutter, as herein described.

When the front frame is lowered into an operative position, as shown in Fig. 2, the cutter 9 penetrates the soil at least as deeply as the runner, and as the drill travels along the cutter opens a thin preliminary cut in which the thin part of the runner runs, while the wings of the runner spread the walls of the severed soil sufficiently to form a grain-receiving furrow. Any trash that the rolling cutter is unable to sever is pressed down, so that the runner will pass over it, and the superior furrow-forming capabilities of the runner are combined with the superior soil-cutting capabilities of the rolling cutter without detracting from either. The runner extends upward, so that nothing can ride over its forward end, and its connection with the draft-bar insures stability. The rolling cutter is in front of the center of weight of the front frame. The runner is in the rear of such center of weight, and when the drill is at work the weight of the front frame is practically balanced on the runner and cutter, to the relief of the team. The cutter is out of contact with the runner and with the bars of the

hanger. Its axis is at right angles with the travel of the drill, and so it rolls along in front of the runner, making its preliminary cut and depressing trash without any possibility of becoming clogged. As the spring 7 expands and contracts to conform to uneven ground the runner and the cutter rise and fall together, maintaining constant operative correlation.

I claim—

1. In a furrow-former for drills and the like, the combination of a draft-bar hinged at its front end to permit vertical swing, a shank attached to the rear end of the draft-bar, a runner on the shank connecting at its front end with the draft-bar, and a rolling cutter journaled in a hanger attached to the draft-bar in front of the runner.

2. In a furrow-former for drills and the like, the combination of a draft-bar hinged at its front end to permit vertical swing, a shank attached to the rear of the draft-bar, a runner on the shank connecting at its front end with the draft-bar, and a rolling cutter journaled in front of the runner on a pivot carried by the draft-bar and extending at right angles with the travel of the runner; the cutter being in line with the edge of the runner, substantially as described.

3. In a grain-drill, or the like, the combination of a front frame, a draft-bar hinged at its front end to the front of the front frame and extended back of the center of weight of the front frame, a shank secured to the rear end of the draft-bar, a runner on the shank connecting at its front end with the draft-bar, and a rolling cutter journaled in front of the center of weight of the front frame in bearings attached to the draft-bar.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

JOHN L. ASHURST.

Witnesses:
CHARLES W. LACEY,
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