

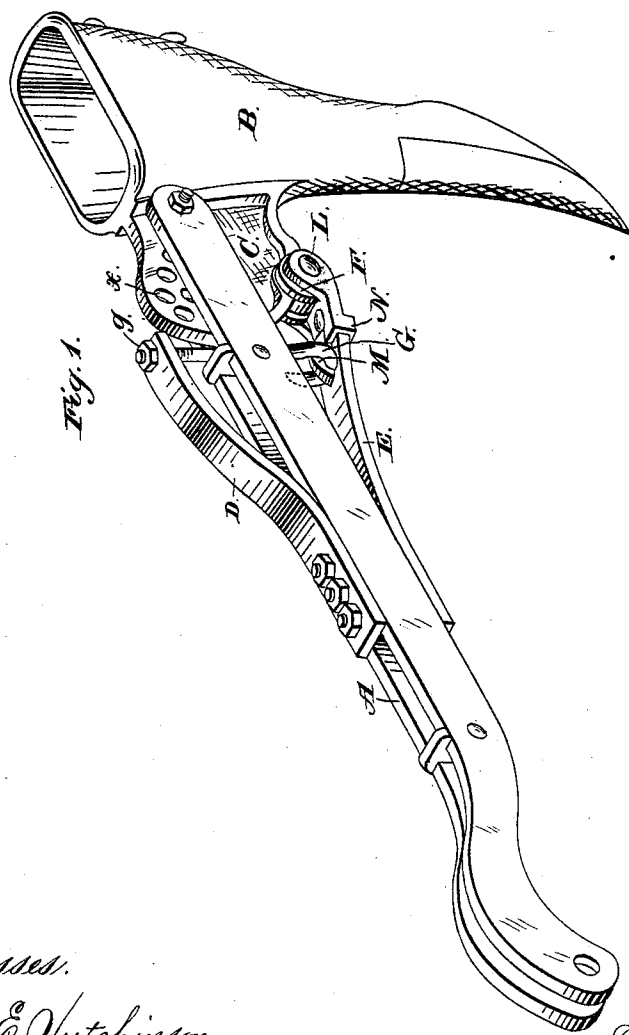
(No Model.)

2 Sheets—Sheet 1.

S. B. HART.  
GRAIN DRILL TOOTH.

No. 251,225.

Patented Dec. 20, 1881.



Witnesses.

Gas. C. Hutchinson.  
Albert C. Norris

Inventor.

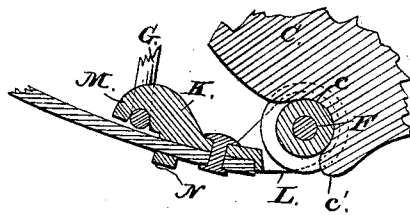
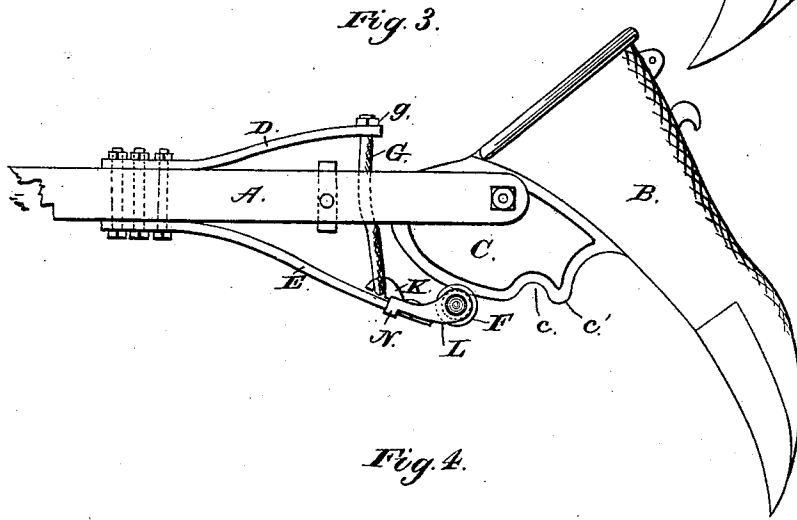
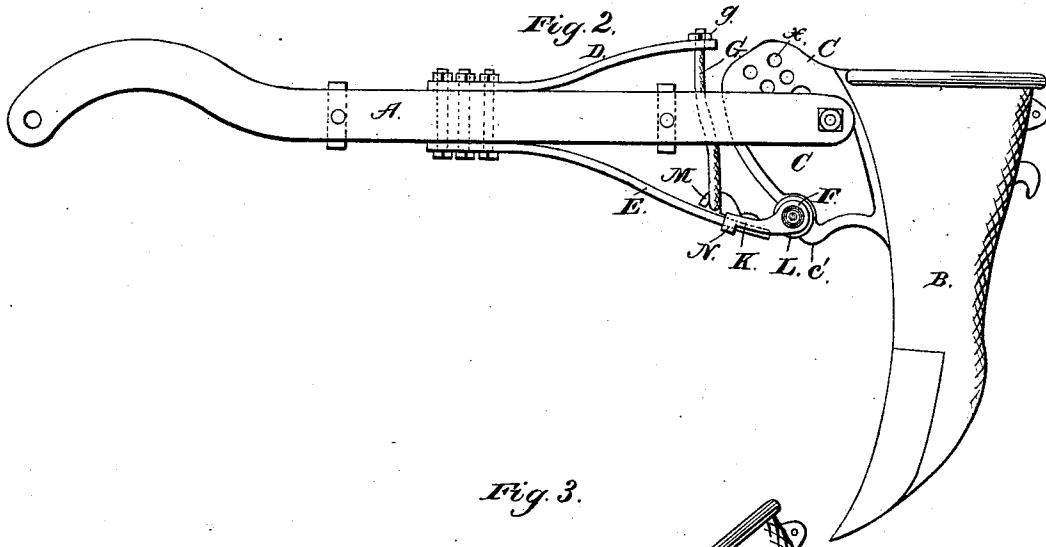
Stacy B. Hart.

by James L. Norris.  
att'y.

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# UNITED STATES PATENT OFFICE.

STACY B. HART, OF PEORIA, ILLINOIS.

## GRAIN-DRILL TOOTH.

SPECIFICATION forming part of Letters Patent No. 251,225, dated December 20, 1881.

Application filed September 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, STACY B. HART, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented new and useful Improvements in Grain-Drill Teeth, of which the following is a specification.

My invention relates to that class of teeth for grain-drills in which a flexible or spring connection is provided between the drill-tooth and the draft-bar, so that when an obstruction is met by the tooth it can yield rearwardly and thus pass or slip over it, and then be automatically returned to its normal working position by the force of the spring.

The object of my invention is to simplify the construction and render more efficient the operation of such drill-teeth.

In the accompanying drawings, Figure 1 is a perspective view of one of my improved teeth in its normal working position. Fig. 2 is a side elevation of one of my improved teeth in its normal working position. Fig. 3 is a similar view, showing it thrown back by an obstruction; and Fig. 4 is a sectional view, showing the shoe or bracket in which the roller is mounted and the manner of securing it to the end of the spring.

The draft-bar A is slotted at its rear end, or is formed of two strips bolted together, as shown.

The drill-tooth B is of the ordinary character, except that a cam plate or leaf, C, is formed upon its front near the top. The tooth is pivoted, through this projecting cam-plate, in the rear end of the drag-bar.

Two spring-arms, D E, are bolted respectively to the upper and under side of the drag-bar. The lower arm, E, has mounted in its end a grooved roller or spool, F, which normally rests in the notch *c* in the cam-plate and runs upon the inclined or curved edge of the plate when the tooth strikes an obstruction, as shown in Fig. 3, and as presently will be described. A screw or link, G, connects the upper and lower springs, D E, and has a nut, *g*, upon its upper end for adjusting the tension of the springs. The tension of the springs causes the roller to press upwardly with a strong force in the notch in the cam-plate, and as the pivot of the tooth

is to the rear of the notch the tendency is to throw the plate up and swing the tooth forward, but the lower spring-arm carrying the roller dogs it so that it cannot rise, the shape of the notch being such that its lower side or wall, *c'*, prevents the roller from riding out of it. Now, if in the passage of the machine over the field the tooth should strike an obstruction, it will turn on its pivot and give rearwardly, the cam-plate swinging down and throwing the roller out of the notch. The roller will then run on the inclined or curved edge of the cam-plate, as shown in Fig. 3. As the cam-plate is curved and inclined upwardly and forwardly from the notch, the tendency of the spring-arms will be still to throw the end of the plate up and swing the tooth forward to its normal position, so that as soon as the strain of the obstruction is removed the tooth is promptly returned to working position, the roller running on the edge of the cam and springing into the notch again.

It will be obvious that other forms of springs may be used, and that the upper arm may be rigid, or that the lower arm may be pivoted and the upper one only be made to spring.

The roller might be dispensed with, but the operation is of course much better and easier when it is used.

The holes *x* are formed in the cam-plate, so that by inserting a bolt or pin in any one of them the tooth will be held rigidly against rearward strains. This may be desirable under some circumstances—as, for instance, in case of breakage or disorder of the springs.

In Fig. 4 the shoe or bracket K, in which the roller F is mounted, is shown. It is preferably cast, and is formed with the lugs or ears L, in which the roller is mounted, with a hook, M, with which the hooked end of the link G engages, and with a loop, N, through which the end of the spring-arm passes. It is firmly secured to the end of the arm by a suitable rivet.

By the above-described construction and organization I obtain a very cheap, durable, and efficient drill-tooth, and one which is exceedingly simple in operation and construction, and which is not liable to get out of working order.

Heretofore a grain-drill tooth has been provided at its rear edge with a notch in which normally rests a roller carried by spring-arms con-

nected with the drag-bar; but such does not constitute my invention, and is not claimed by me.

What I claim is—

1. A drill-tooth having at its upper front edge a forwardly-projecting notched cam-plate, C, curved in an upward and forward direction, in combination with a drag-bar, a spring connected with the drag-bar, and a friction-roller connected with the spring below the drag-bar and normally resting in the notch of the cam-plate to dog the same, all substantially as and for the purpose described.

2. The combination of the drag-bar, the pivoted drill-tooth, the notched cam-plate, the upper and lower spring-arms, and the connecting-link, substantially as set forth.

3. The combination of the drag-bar, the pivoted drill-tooth, the cam-plate having a notch in front of the tooth, and an upwardly and for-

wardly inclined or curved edge, the spring-arm, and the roller thereon, substantially as set forth.

4. The combination of the drag-bar, the pivoted tooth, the notched cam-plate, the upper and lower spring-arms, the connecting-link, and the adjusting-screw, substantially as set forth. 25

5. The rollershoe or bracket herein described, having the roller-bearings, the hook, and the loop through which the spring-arm passes.

6. The combination of the roller-bracket, made as described, the lower spring arm to which it is riveted, the upper spring arm, and the connecting-link, substantially as set forth. 30

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses. 35

STACY B. HARE.

Witnesses:

FRANK HITCHCOCK,  
A. B. FINK.