

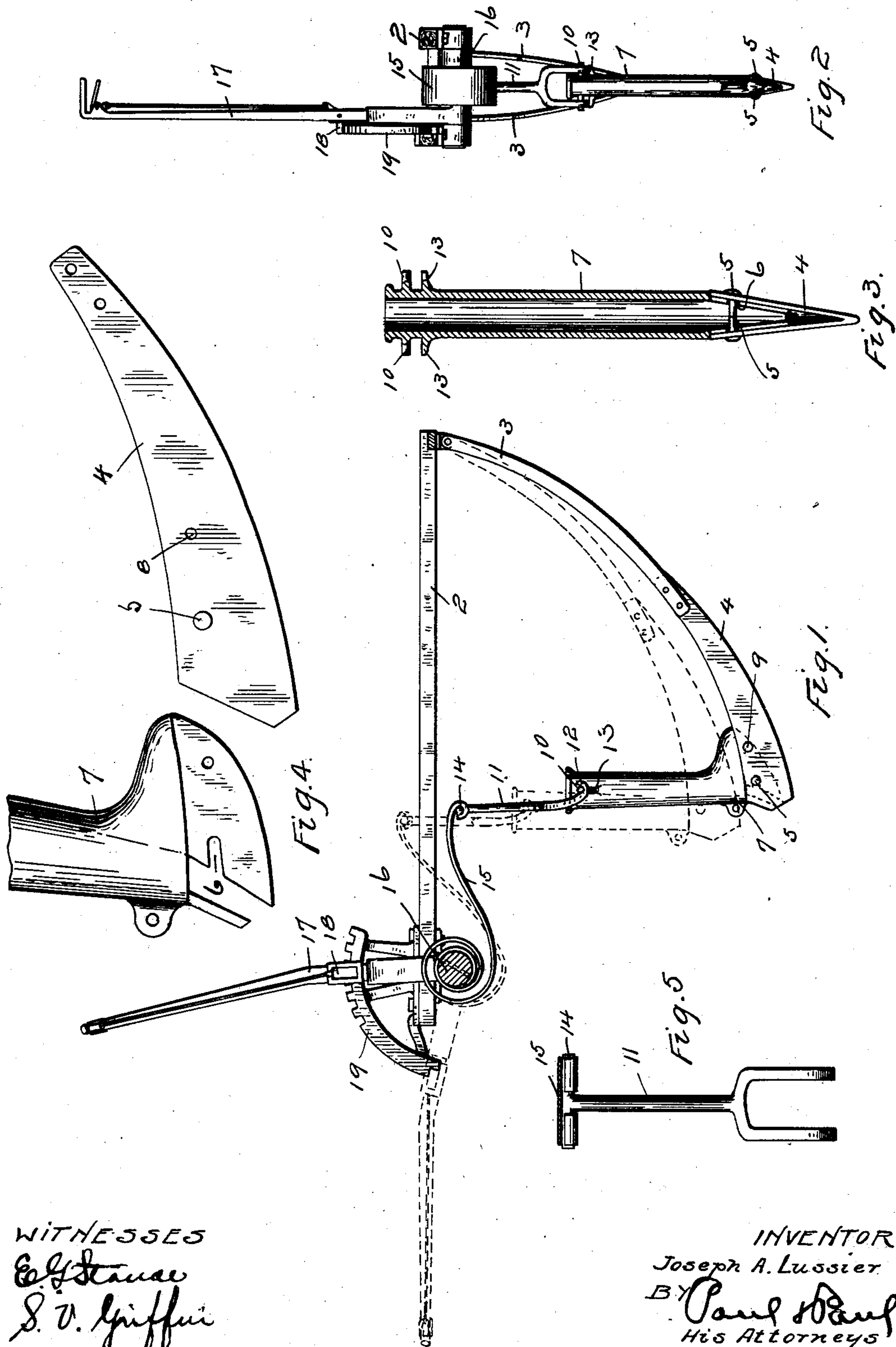
No. 744,375.

PATENTED NOV. 17, 1903.

J. A. LUSSIER.
GRAIN DRILL.

APPLICATION FILED MAR. 21, 1903.

NO MODEL.



WITNESSES
E. J. Stange
S. V. Griffin

INVENTOR
Joseph A. Lussier
BY Paul Stang
His Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH A. LUSSIER, OF MINNEAPOLIS, MINNESOTA.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 744,375, dated November 17, 1903.

Application filed March 21, 1903. Serial No. 149,001. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. LUSSIER, of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Grain-Drills, of which the following is a specification.

My invention relates to grain-drills, and particularly to that class known as "shoe-drills;" and the object of the invention is to provide improved means for yieldingly forcing the shoes into the soil and for allowing them to move upward independently in passing obstructions.

A further object is to provide means for securing the shoe and boot together.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a section of a grain-drill embodying my invention. Fig. 2 is a rear view of the same. Figs. 3 and 4 are details showing the manner of attaching the shoe to the boot. Fig. 5 is a detail of the connection between the spring and the boot.

In the drawings, 2 represents a portion of the frame of the machine, to the forward end of which the drag-bar 3 is pivotally connected. The drag-bar is secured to a shoe 4, that is provided at its rear end with a pin 5 to enter slots 6 in the boot 7, whose lower end is adapted to pass between the sides of the shoe at its rear end. The shoe 4 is provided with holes 8 in advance of the pin 5 to receive pins 9, provided on said boot in advance of the slots therein. I prefer to provide the slots in the boot and the pin to enter the same on the shoe, as the boot after the pins 9 are inserted into the holes 8 and the pin 5 enters the slot 6 will have two supporting-bearings to sustain any sudden shock resulting from the shoe striking an obstruction instead of only one bearing, which would be the case were the positions of the pin 5 and the slots 6 reversed. The boot is provided at its upper end on each side with lugs 10, and a fork 11 has bent ends 12, that are adapted to pass under said lugs and be held in engagement therewith by stops 13. This fork 11 extends vertically above the boot and is provided at

its upper end with a cross-bar 14, around which the end of a flat spring 15 is wound. The opposite end of the spring 15 is formed into a coil secured to a rock-shaft 16, mounted in the frame 2 and provided with an operating-lever 17. This lever has a locking-latch 18, that is adapted to engage the teeth of a quadrant 19 and lock the said lever in any desired position. The spring through the medium of the fork 11 will normally exert a direct downward pressure on the boot to force the shoe into the soil and allow it to adjust itself automatically to the different conditions of the soil and allow each shoe to pass over an obstruction independently of the other shoes. The stops 13, engaging the lower end of the fork, will prevent it from becoming detached from the lugs 10 when the pressure of the spring is exerted on the fork.

By means of the lever 18 the operator can lock the shaft 16 and raise the spring 15 and the fork to the position indicated by dotted lines in Fig. 1.

I am aware that spring mechanisms have been provided heretofore for applying a yielding pressure to the boot and the rear end of the shoe, and I do not, therefore, in this application make claim, broadly, to such construction, the essential features of my invention being the manner of applying such yielding pressure to the boot to bring about the desired direct spring-pressure longitudinally of the boot to force the heel of the shoe into the ground, the simplicity of the device resulting from the omission of many parts usually employed and the improvement in the manner of securing the shoe and boot together.

I claim as my invention—

1. In a grain-drill, the combination, with a drag-bar, of a shoe, a boot mounted on said shoe, a rock-shaft provided with an operating-lever, a spring secured at one end to said shaft and having a plurality of loose coils thereabout, the free end of said spring being pivotally connected with said boot and its path being unobstructed to permit the shoe to drop into depressions in the soil and accommodate itself to an uneven surface.

2. In a grain-drill, the combination, with a shoe and a boot mounted thereon, of a rock-shaft provided with an operating-lever, a spring secured at one end to said shaft and

having a pivotal connection at its other end with said boot, and the path of said pivoted end being unobstructed to allow said shoe to drop into depressions in the soil and accommodate
5 itself to an uneven surface.

3. In a grain-drill, the combination, with a frame, of a drag-bar pivoted thereon, a shoe connected to said drag-bar, a boot mounted on said shoe and having lugs 10 and stops 13,
10 a member having a fork at one end provided with bent ends that pass between said lugs and said stops, said member extending vertically above said boot, a flat spring loosely connected at one end to said member, and a
15 rock-shaft having an operating-lever and around which shaft the other end of said spring is coiled and secured.

4. In a grain-drill, the combination, with a boot, of an upright member pivoted thereon
20 in line substantially with its vertical axis, a rock-shaft, a spring secured at one end to said

shaft and having a series of coils thereabout and connected at its free end to said member and arranged to exert a vertical thrust there-
through upon said boot.

5. The combination, in a grain-drill, with a drag-bar, of a shoe secured thereto and having oppositely-arranged holes 8 in its sides, a pin 5 connecting said sides in the rear of said holes, and a boot adapted to pass between the
sides of said shoe and having pins 9 to enter
30 said holes, and forwardly-extending slots in the rear of said pins 9 to receive said pin 5, substantially as described and for the pur-
pose specified.

In witness whereof I have hereunto set my
hand this 7th day of March, 1903.

JOSEPH A. LUSSIER.

In presence of—

RICHARD PAUL,
S. V. GRIFFIN.