

No. 614,223.

Patented Nov. 15, 1898.

B. GISH.  
SEED DRILL CLEANER.

(Application filed Feb. 7, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

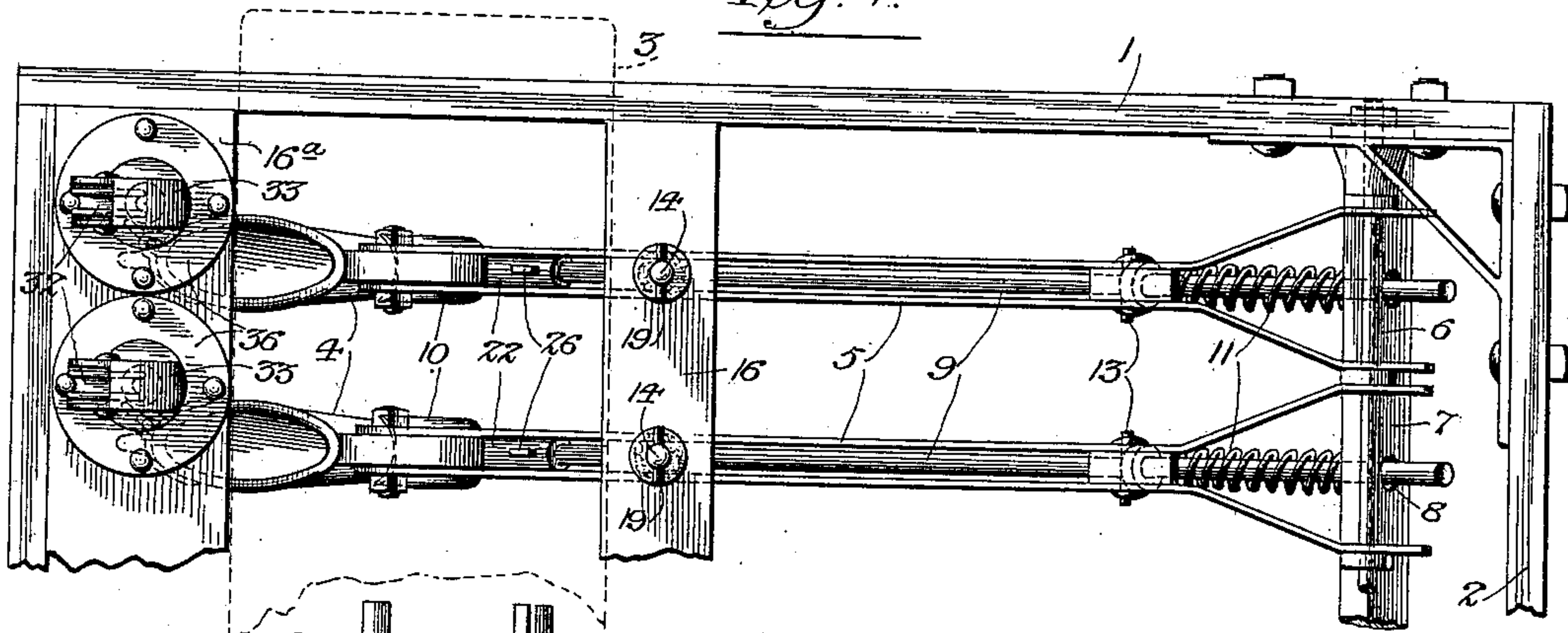
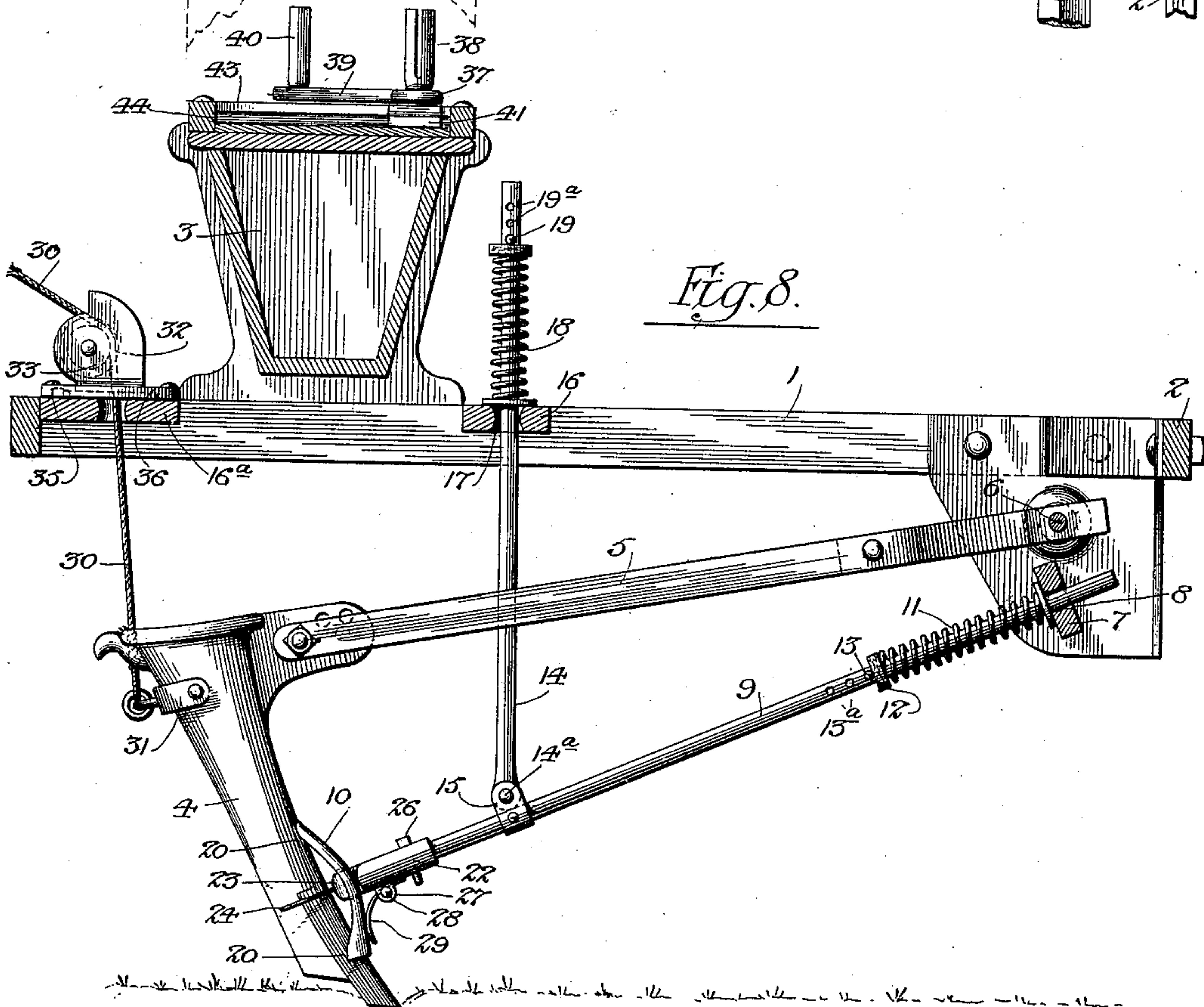


Fig. 8.



Witnesses:-

Louis W. Whitelhead

H. A. Deuker

Benjamin Gish Inventor:-

By His Attorneys,

Chas. Snow & Co.

No. 614,223.

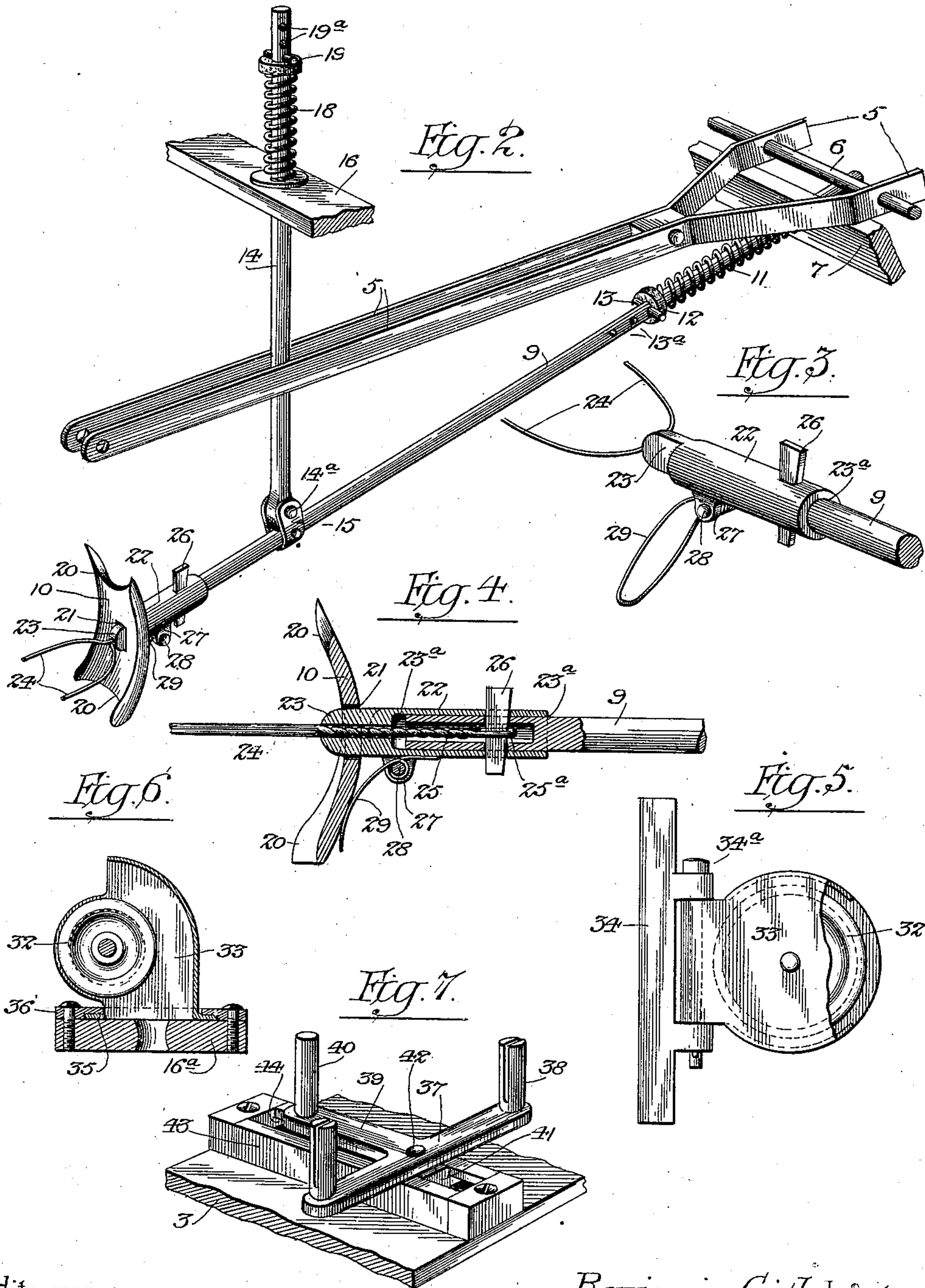
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2 Sheets—Sheet 2.



Witnesses:-  
*Louis M. Whitehead*

*H. J. Perkins*

By his Attorneys,

*Benjamin Gish* Inventor:-

*C. A. Snow & Co.*



# UNITED STATES PATENT OFFICE.

BENJAMIN GISH, OF ACME, KANSAS.

## SEED-DRILL CLEANER.

SPECIFICATION forming part of Letters Patent No. 614,223, dated November 15, 1898.

Application filed February 7, 1898. Serial No. 669,410. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN GISH, a citizen of the United States, residing at Acme, in the county of Dickinson and State of Kansas, have  
5 invented a new and useful Seed-Drill Cleaner, of which the following is a specification.

This invention relates to improvements in devices for cleaning the hoes of grain-drills; and the primary object that I have in view is  
10 to provide an improved cleaner which shall be simple and cheap in construction, efficient and reliable in operation, durable in service, and readily applicable to different types of grain-drills.

15 A further object of the invention is to provide a cleaning device in which the shoe or blade is held under yielding pressure in both horizontal and vertical planes, so as to allow the parts to give with the shoe when it strikes  
20 an obstruction, but which holds the cleaner in position when the hoe and its beam are raised to cause the hoe to scrape against the cleaner.

With these ends in view the invention consists in the novel combination of elements and  
25 in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings,  
30 forming a part of this specification, and in which—

Figure 1 is a plan view of part of an ordinary grain-drill, with a series of cleaning devices for the hoes constructed in accordance  
35 with my invention applied thereto. Fig. 2 is a perspective view of the cleaner appliance for one of the hoes and showing the mechanism by which the hoe may be raised. Fig. 3  
40 is a detail perspective view of the means for supporting the cleaner-shoe, and Fig. 4 is a longitudinal sectional view through the parts shown by Fig. 3. Figs. 5 and 6 are views of  
45 swiveled roller-carrying brackets for the adjusting cable or chain by which the hoe may be raised. Fig. 7 is a detail perspective view of the team-guiding device which I prefer to  
50 employ when my improvements are applied to a grain-drill, so that the operator may raise either of the hoes by one hand and drive the team by the other hand. Fig. 8 is a sectional  
elevation of a part of the grain-drill with

my cleaner mechanism embodied therein for service.

Corresponding and like numerals are used  
55 to designate like parts in each of the several figures of the drawings.

In order that others skilled in the art may understand the construction and operation  
60 of a drill-hoe-cleaning device embodying my invention, I have illustrated in the accompanying drawings so much of a grain-drill as is necessary to show the improvements, and in  
65 Fig. 1 the numeral 1 is employed to designate a part of a drill-frame. 2 is the front cross-bar thereof. 3 is the seedbox, 4 the  
70 hoe, and 5 the hoe-beam, which is pivoted, as at 6, to the front cross-bar 2 of the drill-frame. These parts are of the ordinary or any preferred construction, and it will be understood  
75 that no novelty therefor is claimed in this application, because my improvements reside in the construction of the hoe-cleaner, which may be applied to any ordinary kind of grain-drill.

In adapting my improvements to a grain-drill I provide a front guide-bar 7, which is  
80 arranged in a horizontal position below the plane of the drill-frame 1 in close relation to and parallel with the front cross-bar 2 of said frame. This guide-bar 7 is attached or secured  
85 to the drill-frame in any suitable way, and at intervals throughout its length said guide-bar is formed with transverse holes 8, that receive or accommodate a series of re-  
90 ciprocating carrying-rods 9. I employ one of the carrying-rods, a cleaner-shoe 10, and a vertical pressure-bar 14 for each of the hoes used in the grain-drill, and as each carrying bar or rod, the cleaner, and the pressure-  
95 bar are the same as every other corresponding part of the machine I will only describe the construction and arrangement of the devices for cleaning one hoe, it being understood that the cleaning devices for each of  
the hoes is the same as the one which I will describe.

The carrier-rod 9 is arranged in a longitudinal direction below the drill-frame, its front  
100 end being slidably fitted in one of the apertures 8 of the guide-bar 7, while its rear end terminates adjacent to the hoe. The cleaner 10 is attached to the rear end of the carrier-rod 9 in a manner which I will hereinafter



describe, so that the cleaning-shoe bears against the vertical face of the hoe 4, and around the carrier-rod 9 is fitted a coiled pressure-spring 11, one end of which is seated against the fixed guide-bar 7, while the rear end thereof is seated against a collar 12. This collar may be secured adjustably on the carrier-rod 9 in any suitable way—as, for instance, by a set-screw, which is mounted in the collar and impinges against the carrier-rod; but I prefer to employ a pin or key 13, adapted to fit in any one of the series of holes 13<sup>a</sup> in the carrier-rod, so that the collar may be adjusted lengthwise on said rod to regulate and vary the tension of the pressure-spring 11. The rear end of the carrier-rod is sustained against dropping downward under its weight by means of a vertical bar 14, which passes upwardly through the lengths or members of the hoe-beam 5 and which is attached at its lower end to the carrier-rod by means of a transverse pivot 14<sup>a</sup>, which passes through a clip 15, that embraces the carrier-rod and is suitably secured thereon. The vertical bar 14 passes through one of the series of holes 17 in a horizontal guide-bar 16, which is arranged in the plane of the drill-frame and is rigidly secured thereto in front of and parallel to the seedbox 3. The pressure-bar 14 is normally held in position by means of a coiled spring 18, which encircles said pressure-bar above the horizontal guide-bar 16, and one end of this spring is seated on said bar 16, while its other end presses against a pin or key 19, fitted in any one of the series of holes 19<sup>a</sup>, formed in the pressure-bar 14, whereby the pin 19 may be adjusted to regulate and vary the pressure of the spring 18.

The spring 11 on the carrier-rod tends to normally force the rod rearwardly for the purpose of pressing the cleaner-shoe against the drill-hoe, while the pressure-bar 14 and its spring 18 sustain the carrier-bar 9 and the shoe 10 in proper relation to the hoe. At the same time the spring 18 permits the pressure-bar to yield vertically with the carrier-rod and the cleaner-shoe, which is desirable when the hoe strikes an obstruction, such yielding of the pressure-bar and the carrier to the movement of the hoe being supplemented by the action of the spring 11 on the carrier-rod. As the hoe returns to its normal position the springs 11 18 restore the carrier-rod, the cleaner-shoe, and the pressure-bar to their normal operative positions, and the described construction and arrangement of parts reduces to a minimum the liability of injury and breakage to the working elements of the automatic cleaner which keeps the drill-hoes free from accumulations of dirt thereon.

In my improvement I employ a novel form of cleaning shoe or blade. As shown by Figs. 2 and 4, the blade or shoe 10 is curved longitudinally into substantially the bowed shape illustrated, and the end edges of the shoe or blade are preferably beveled or tapered to

provide the working edges 20 at the upper and lower ends of the shoe. To make the shoe or blade conform to the transverse curvature of the drill-hoe, I curve the working edges 20 of said shoe or blade, as illustrated by Figs. 2 and 4, and thus the blade or shoe is adapted to operate with efficiency in cleaning the hoe, because it has two working edges which closely embrace the face of the hoe which it is desired to clean. The blade or shoe 10 is provided at a point intermediate of its length, preferably at its middle, with a transverse slot or opening 21, which receives the tenon 23 on the rear end of the thimble 22. This thimble is fitted snugly on the extremity of the carrier-rod 9, and the thimble and its tenon are formed with a central bore 23<sup>a</sup>, which receives the shank 25 of a spring-fork 24. The spring-fork lies in rear of the shoe or blade 10 and is arranged to embrace the front and sides of the drill-hoe, and said fork 24 serves to confine the shoe or blade 10 loosely on the tenon of the attaching-thimble 22 and also as an auxiliary cleaner for the drill-hoe. The shank 25 of the spring-fork passes a suitable distance into the thimble, and its front extremity is formed with an eye 25<sup>a</sup> to receive a transverse key 26, which passes through the thimble and the carrier-rod 9 to secure the thimble to said rod and to hold the spring-fork in proper operative relation to the thimble and the blade or shoe of the cleaner.

As the blade or shoe 10 is in a vertical position in respect to the drill-hoe the lower working edge of said blade is called upon to perform the major portion of the work in keeping the hoe clean from accumulations of dirt, and to hold the blade or shoe in position where it will render a maximum efficiency I provide a supplemental spring 29, which is mounted on the thimble and adjusted to bear against the blade or shoe at a point below its connection with the thimble. This supplemental spring is bent from a single piece of wire to form the loop and the coil or eye, and said coil is arranged between lugs 27, which are rigid or integral with the thimble 22 on the lower side thereof. The lugs are perforated to accommodate a bolt or pin 28, which passes through the coil or eye of the spring 29, and thus the spring is securely mounted on the thimble in a manner to have its extended loop bear against the lower part of the cleaning blade or shoe 10.

To enable the operator to adjust the hoe in a vertical direction and thereby cause said hoe to scrape against the shoe or blade of the rod, I provide means for adjusting said hoe without requiring the driver to leave his seat on the machine. In the simplest embodiment of this part of the invention a cable, chain, cord, or other flexible connection 30 is attached at one end to the drill-hoe at the rear side thereof, and said flexible connection is led or carried through an adjustable guide-roller or sheave-bracket. The attachment of



the flexible connection to the drill-hoe may be effected in any suitable way—as, for instance, by a clip or band 31, which embraces said drill-hoe; but it is evident that the flexible connection may be secured to the hoe by other suitable means. The guide pulley or sheave 32 for the flexible connection 30 is mounted or journaled loosely in a swiveled bracket 33, which is attached to the drill in a suitable manner—as, for instance, on the seedbox or the transverse fixed bar 16<sup>a</sup>. In Fig. 5 of the drawings I have illustrated one form of the swiveled bracket in which a base-plate 34 is provided with lugs to receive a pin 34<sup>a</sup>, that passes through the pulley-bracket for the purpose of attaching the latter to the fixed base forming a part of the swiveled bracket. Another embodiment of the swiveled bracket for the pulley or sheave of the flexible connection is illustrated by Fig. 6, in which the pulley-bracket is shown as provided with a disk-like or annular base-plate 35, that fits in an annular guide-plate 36, which is fastened to the machine or drill in any suitable way and is recessed or grooved to accommodate the base of the sheave-bracket, whereby the sheave-bracket may turn and adjust itself to different positions according to the position and distance of the drill-hoe from the driver's seat.

In my machine the flexible connections between the series of drill-hoes and the driver's seat all lead or extend to the seat, so as to be within convenient reach of the driver, and I contemplate the provision of a team-guiding device by which the operator may use one hand in driving the team while the other hand may be engaged in adjusting any one of the drill-hoes of the series of drill-hoes for the purpose of cleaning the latter. In Fig. 7 of the drawings this guiding device is indicated as consisting of a cross-head 37, which carries the spaced slotted pins 38, that are adapted to receive the driving lines or reins. The cross-head 37 has an arm 39, to which is attached a handle 40, that may be grasped by the hand for the purpose of shifting the position of the cross-head, so that the rein-pins 38 may be adjusted to draw on one line and ease up on the other line, and vice versa. The shiftable cross-head is mounted on a sliding carrier-block 41 by means of a vertical pivotal bolt 42, which passes through the cross-head at a point centrally between the rein-receiving pins 38, and said guide-block is slidably fitted in the slot or guideway 44 of a base-plate 43, which is arranged in a horizontal position on top of the seedbox 3. The base-plate 43 may be cast in a single piece of metal, and it enables the guide-block 41 and the shiftable cross-head to move back and forth across the top of the seedbox, so that when the operator leans forward the shiftable cross-head is within convenient reach of the driver. The improved guide device may be adjusted or controlled by one hand only of the driver, and it provides a

simple and convenient means by which the team may be guided while the other hand of the driver is engaged in adjusting the drill-hoes or either of them.

In some styles of seed-drills, particularly in lister-drills, it is necessary to change the shape of the cleaner-shoe or to use a cleaner-shoe of different shape and dimensions than the shoe herein shown as embodying my invention; but it is evident that the shoe may be varied to meet the shape of the drill-hoe against which the shoe is to be pressed by the devices embodying my invention.

No claim is herein made to the construction of rein-holder hereinbefore described, as I reserve the right to file therefor a separate application.

It is thought the operation and advantages of my improvements will be readily understood from the foregoing description, taken in connection with the drawings.

I am aware that changes in the form and proportion of parts and in the details of construction may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications as fall within the scope of the invention.

Having thus described the invention, what I claim is—

1. In a drill-hoe cleaner, the combination of a spring-controlled carrier-rod, a shoe or blade mounted thereon, and a spring-controlled pressure-bar operatively connected with said carrier-rod, substantially as described.

2. In a drill-hoe cleaner, the combination of a fixed guide, a reciprocating spring-cushion carrier-rod slidably fitted in said guide, a cleaning shoe or blade mounted on said carrier-rod, and means for sustaining the carrier-rod and shoe in operative relation to a drill-hoe, substantially as described.

3. In a drill-hoe cleaner, the combination of a fixed guide, a slidable carrier-rod fitted loosely therein and provided with a spring-seat, a coiled spring seated against the fixed guide and said spring-seat on the carrier-rod, a cleaner shoe or blade mounted on the carrier-rod, and a device for sustaining the carrier-rod and shoe in operative relation to a drill-hoe, substantially as described.

4. In a drill-hoe cleaner, the combination with a carrier-rod and a shoe or blade mounted thereon, of a fixed guide in which the carrier-rod is slidably fitted, a collar adjustable longitudinally on the carrier-rod toward or from the fixed guide and provided with means for holding itself in fixed relation to said rod, and means for sustaining the carrier-rod and shoe in proper relation to a drill-hoe, substantially as described.

5. In a drill-hoe cleaner, the combination with a carrier-rod and a blade or shoe mounted thereon, of a fixed guide-bar having a vertical aperture, a pressure-bar passing through said guide-bar and connected to the carrier-



rod, and a pressure-spring seated on the guide-bar and connected to the pressure-bar, substantially as described.

6. In a drill-hoe cleaner, the combination with a carrier or support, of a double-ended blade or shoe mounted on said carrier or support, and means for holding said blade or shoe in operative relation to a drill-hoe, substantially as described.

7. The combination with a carrier or support, of a double-ended shoe or blade mounted loosely on the carrier or support, and a spring which holds the blade or shoe in proper relation to a drill-hoe, substantially as described.

8. In a drill-hoe cleaner, the combination with a carrier or support, of a blade mounted thereon, a spring-fork, and a spring to hold the blade or shoe in operative relation to a drill-hoe, substantially as described.

9. In a drill-hoe cleaner, the combination of a thimble, a cleaner shoe or blade mounted thereon, and a fork attached to said thimble to hold the shoe or blade in position thereon and to serve as an auxiliary cleaner for a drill-hoe, substantially as described.

10. In a drill-hoe cleaner, a blade or shoe provided at its opposite ends with the curved working edges, substantially as described.

11. In a drill-hoe cleaner, a blade or shoe curved or bowed longitudinally and having its working edges at opposite ends thereof curved transversely to conform substantially to the contour of the drill-hoe, in combination with a carrier connected centrally to said blade or shoe, and a pressure-spring acting against the blade or shoe, substantially as described.

12. In a drill-hoe cleaner, the combination

with a suitable support, of a double-ended blade or shoe mounted loosely on said support, and a pressure-spring supported on the support below the connection of the blade or shoe thereto and acting against the lower part of said blade or shoe, substantially as described.

13. In a drill-hoe cleaner, the combination of a thimble having a tenon, a centrally-perforated double-ended blade or shoe mounted on the tenon of the thimble, and a spring-fork having its shank passing through the thimble and held in place by a suitable detainer, substantially as described.

14. In a drill-hoe cleaner, the combination of a thimble, provided on its under side with the lugs, a double-ended cleaner blade or shoe mounted on said thimble, a spring having its coil fitted between said lugs and with its extended loop in contact with the blade or shoe, and a pin or bolt to attach the spring to the lugs of the thimble, substantially as described.

15. The combination with a drill-hoe, and a spring-actuated cleaner shoe or blade, of a flexible connection attached to said shoe for raising the latter vertically, and a swiveled bracket carrying a guide-sheave and receiving the flexible connection, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BENJAMIN GISH.

Witnesses:

THOMAS KIRBY,  
JOHN H. LOTT.