

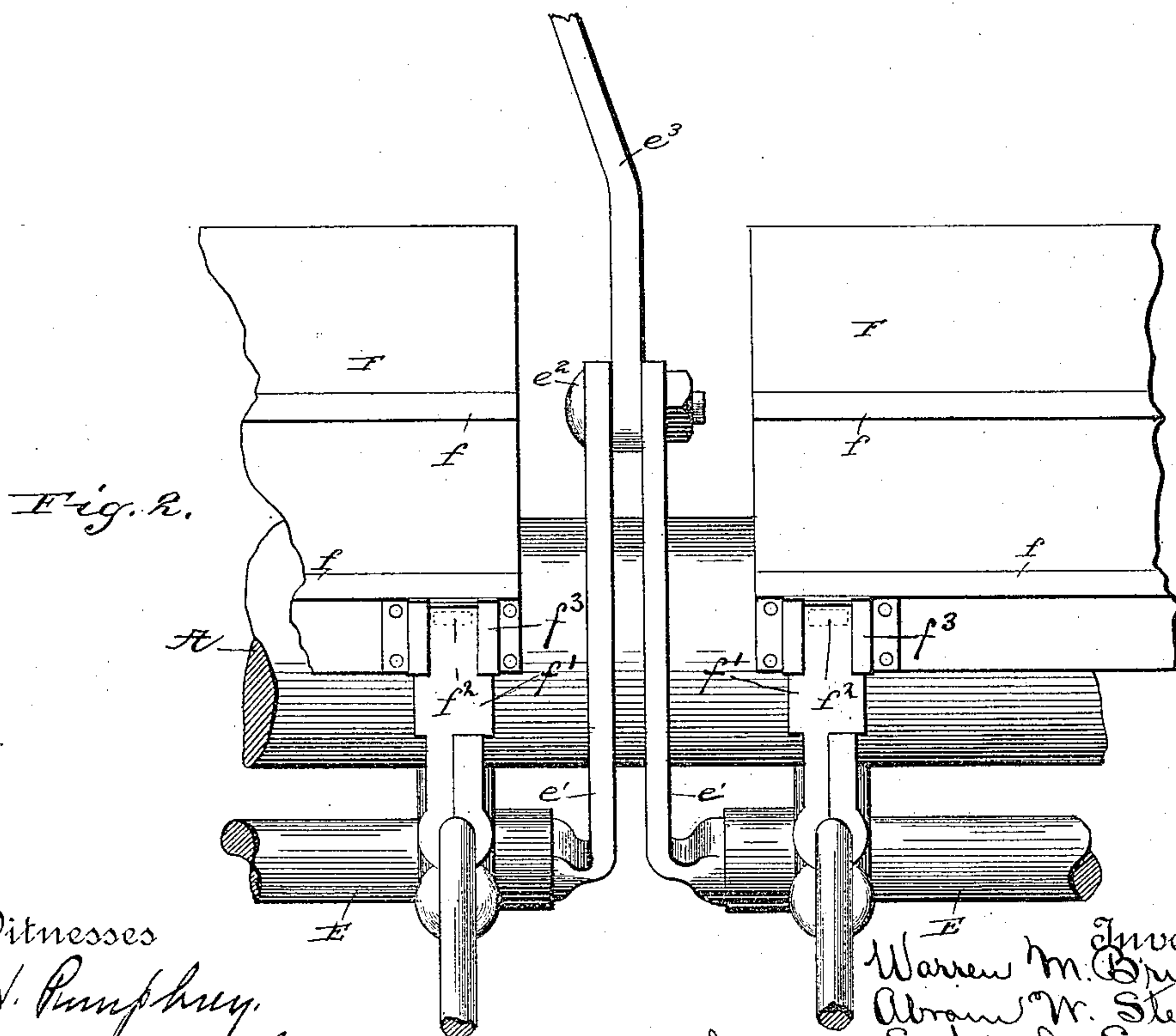
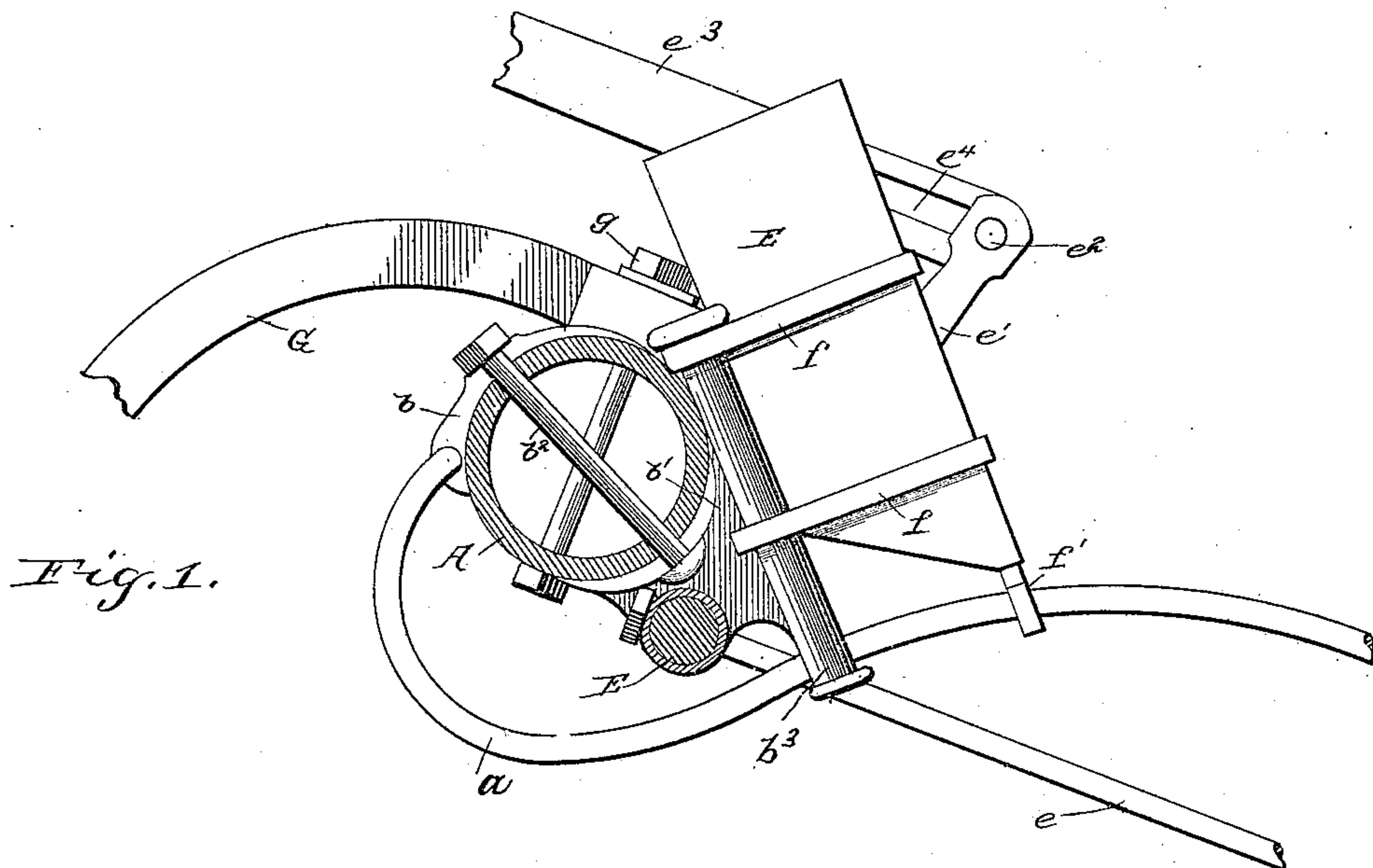
(No Model.)

4 Sheets—Sheet 1.

W. M. BRINKERHOFF, A. W. STEVENS & L. D. SWART.
SEEDER AND RAKE.

No. 442,795.

Patented Dec. 16. 1890.



Witnesses
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4 Sheets—Sheet 2.

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(No Model.) 4 Sheets—Sheet 3.

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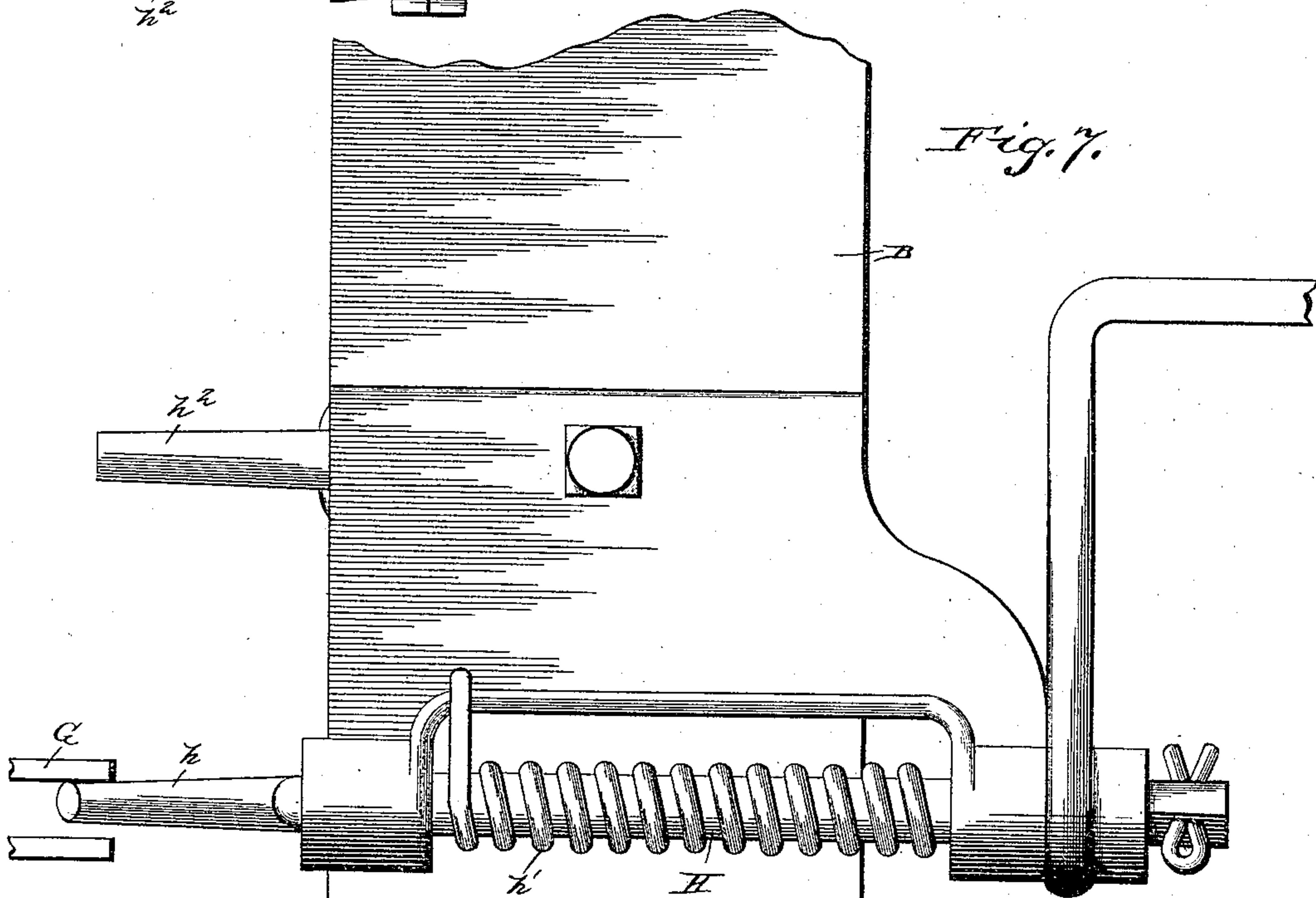
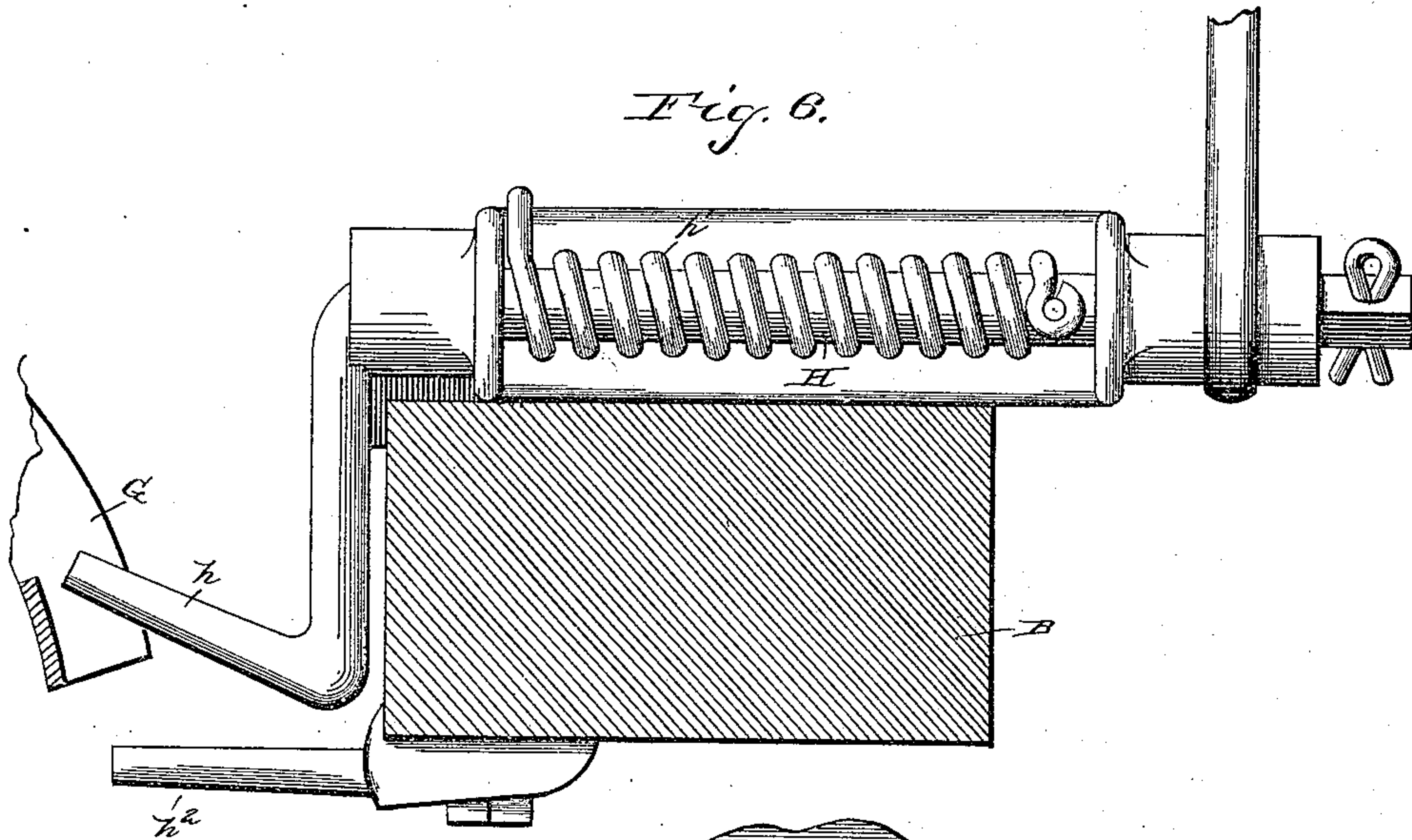
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UNITED STATES PATENT OFFICE.

WARREN M. BRINKERHOFF, ABRAM W. STEVENS, AND LESTER D. SWART,
OF AUBURN, NEW YORK.

SEEDER AND RAKE.

SPECIFICATION forming part of Letters Patent No. 442,795, dated December 16, 1890.

Application filed September 18, 1890. Serial No. 365,425. (No model.)

To all whom it may concern:

Be it known that we, WARREN M. BRINKERHOFF, ABRAM W. STEVENS, and LESTER D. SWART, citizens of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Seeders and Rakes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our present invention is an improvement in the class of seeders, and contemplates, among other things, the combination, with broadcast seeding devices, of mechanism for covering the seed, the said covering mechanism being of such improved character that it may be advantageously used for other purposes.

In the accompanying drawings we have illustrated the best method in which we have contemplated embodying our invention, and our said invention is fully disclosed in the following specification and claims.

Figure 1 is a partial section vertical through the spring-tooth shaft, showing the manner of attaching the seed-box. Fig. 2 is a partial rear view showing the adjacent ends of the divided seed-box. Fig. 3 is a vertical section through the spring-tooth shaft with seed-box removed to render the delineation of the parts more clear. Fig. 4 is a partial section of the spring-tooth shaft, showing the means for operating the cleaner-bars. Fig. 5 is a partial plan view, and Figs. 6 and 7 are enlarged side and plan views, of the tripping devices for the spring-tooth shaft.

In the drawings, A is the shaft, to which are attached the spring covering-teeth of the seeder.

B is the draft-frame, composed of the shafts B' B' and cross-bar. This frame is provided with a seat for the operator, as usual in this class of machines. The shaft A in this case forms the axle upon which are mounted the supporting-wheels, one of which is shown at D. The machine may, however, be constructed with an axle other than the shaft A, if preferred.

The shaft A is preferably of metal and formed from a pipe or tubing, as shown in the drawings. The spring-teeth *a a* are secured to the axle by two-part clips *b b'*, which are secured to the axle by a single bolt *b²*. The part *b* of the clip is provided with a socket to receive a portion of the tooth, which is turned at right angles to the main body of the tooth in a well-known manner. The part *b'* of the clip is provided with a spring-socket *b³*, the lower end of which is slotted, and the tooth passes through the slot, the walls of which serve as a guide to prevent lateral movements of the tooth, limiting this portion of the tooth to movements in a vertical direction only. In order to enable the shaft A to be partially rotated to raise the teeth from the ground to move from place to place and for other purposes depending upon the use to which the machine is applied, as hereinafter explained, the shaft is provided with an arm A', rigidly secured thereto. To the outer end of this arm is pivoted a link *c*, which is in turn pivoted to a hand-lever C, pivoted to the draft-frame of the machine.

The machine is adapted to be used as a rake, and in order to perform its work when so employed in the best manner is provided with the usual cleaner-bars *e e*. These cleaner-bars project from a cleaner-bar shaft E, which is mounted in brackets secured to the spring-tooth shaft A. The shaft E is formed from a metallic pipe. It is in this instance shown as divided, and each part is provided with an arm *e' e'*, formed by bending a portion of the pipe at right angles and then flattening the same. The outer ends of these arms are provided with apertures for the reception of a bolt *e²*, which forms a pivot for a link *e³*, which is at its opposite end pivotally secured to the seat-support, as shown, or to some part of the draft-frame. The rear end of the link is provided with a slot *e⁴*, which permits the cleaner-bars to rise in case of the materials gathered by the teeth rising against them. It will be seen that in case the shaft A is rotated and the teeth *a a* raised the link *e³* will serve to partially rotate the cleaner-bar shaft in a reverse direction, which will move the rear ends of the cleaner-bars downward to assist in freeing the teeth from gathered materials.

The lowest position reached by the cleaner-bars is shown in dotted lines, Fig. 3.

The seed-box F is divided into two parts, as shown in Fig. 2, to permit the free action 5 of the arms e' of the cleaner-bar shaft. It is secured in the position shown by straps or clips f , engaging the spring-sockets of the shaft A, and is provided with a series of sliding valves f' for discharging the seed, corresponding in number to the spring-teeth of the 10 shaft A. Each of these valves is provided on its forward side with a groove or recess f^2 , (shown in dotted lines in Fig. 2,) which is normally below the bottom of the seed-box. In 15 Fig. 1 these valves are shown as sliding within the box and in Fig. 2 as sliding within guides f^3 on the outside of the box. In the latter case the box is provided with an opening corresponding in dimensions with the recess in 20 the valve, and is so placed that a slight upward movement of the valve causes the two to register, when the the recess of the valve will be filled with seed, and a slight downward movement of the slide will cause it to dis- 25 charge the seed held in the recess. As the teeth are in constant motion when engaging the ground, a simple and effective discharge of the seed is thus secured, and the seed when discharged falls just in front of the ends of 30 the spring-teeth, whereby it is most efficiently covered by the same.

The machine is, as heretofore stated, adapted to be used as a rake when desired, and we provide a trip of peculiar construction by 35 which the shaft A is rotated to raise the teeth by causing it to be momentarily engaged with the wheels. This construction is best shown in Figs. 5, 6, and 7. In Fig. 5 the details at one side of the machine are shown; but as 40 these features are not new the corresponding parts at the opposite side are omitted. The wheels D are provided on their inner sides around their hubs with a notched disk d . On the axle or shaft A is pivoted a dog d' , 45 adapted to engage the notches of this disk. Rods d^2 connect these dogs with parts located centrally of the shaft and within easy reach of the operator for effecting the movement of the dogs when desired. The disks, dogs, and 50 connecting-rods are all old and well known in the art. To effect the movement of the dogs through the rods, we employ a quadrant G, which is pivoted at g to the shaft A. The rods d^2 pass through the quadrant on oppo- 55 site sides of its pivot and are provided at their ends with nuts. On the opposite side of the quadrant each rod is provided with a spring g' , engaging the side of the quadrant and held to this engagement by a pin or other 60 means secured upon or in said rod. These springs hold the nuts against the opposite sides of the quadrant and receive the force applied to the quadrant when turned on its pivot to force the dogs into engagement with 65 the notches of the disks. The portion of the quadrant G extending forward of its pivot is slotted, as shown, and is moved to effect the

engagement of the dogs d' with the disk d by a crank-pin h on rock-shaft H, mounted in suitable bearings on the draft-frame. This 70 rock-shaft is provided with a hand-lever or treadle by which it may be operated. In the drawings it is shown as provided with the treadle I. The rock-shaft H is provided with a spring h' , which tends to maintain the 75 shaft and quadrant in such position that the dogs d' are held out of engagement with the notched disks. This spring also serves to return these parts to this position when pressure on the treadle is removed by the operator. 80 In order, however, to automatically effect the releasing of the dogs and to prevent the operator through inadvertence from carrying the movement of the shaft A beyond the proper point to discharge the teeth, the quad- 85 rant is provided on one side with the lugs g^2 , and the draft-frame is provided with a trip h^2 in the path of the projection g^2 of the quadrant. When the shaft A has been turned such distance as to raise the teeth to their highest 90 position, the lug g^2 comes in contact with the trip h^2 , and the further rotation of the shaft A turns the quadrant in the proper direction to free the dogs from the disks, when the teeth will descend to the ground by their own 95 weight and all accident to the dumping or discharge devices is avoided.

In case the dogs d' should be forced against the projections between the notches on the disks, the springs g' will yield; but the full 100 force of the springs will be exerted against the dogs and force them into engagement with the succeeding notch, thus avoiding jar and insuring the action of the discharging devices.

When the machine is used as a rake, if pre- 105 ferred, the seed-box may be removed.

What we claim, and desire to secure by Letters Patent, is—

1. In a seeder, the combination, with the seed-box and delivery-valves, of spring cover- 110 ing-teeth connected with said valves, substantially as described.

2. In a seeder, the combination, with the seed-box having independently-operated delivery-valves, of spring covering-teeth, each 115 valve being connected with a single covering-tooth, substantially as described.

3. In a seeder, the combination, with spring covering-teeth connected with a common axle or center for joint movement into and out of 120 operative position, a seed-box rigidly mounted in connection with said axle, having delivery-valves connected for operation with said spring covering-teeth, and means for partially rotating said axle for raising the teeth and 125 throwing the seeder out of operation, substantially as described.

4. In a seeder, the combination, with spring covering-teeth, of guides therefor preventing lateral movement of the teeth, and a seed-box 130 having delivery-valves operative by vertical movement connected with said teeth, substantially as described.

5. The combination of an axle, spring-teeth

connected therewith, and supporting-wheels on said axle, with said wheels to turn said axle and raise said teeth, controlled by a slotted quadrant pivoted to said axle, and a trip mounted on the draft-frame operatively engaging said slotted quadrant, substantially as described.

6. The combination, with a pivoted shaft with spring-teeth attached thereto, of a cleaner-bar shaft pivoted to the said spring-tooth shaft and adapted to move therewith, devices for partially rotating said tooth-shaft to raise the teeth, and devices limiting the rotation of the cleaner-bar shaft, whereby the rotation of the tooth-shaft to raise the teeth will effect a downward movement of the cleaner-bars, substantially as described.

7. The combination, with a pivoted shaft having spring-teeth attached thereto, of a cleaner-bar shaft pivoted upon said tooth-shaft, an arm attached to the cleaner-bar shaft, a link connecting said arm with the draft-frame, and means for rocking or partially rotating the tooth-shaft to raise the teeth, whereby the act of raising the teeth depresses the cleaner-bars, substantially as described.

8. The combination, with a pivoted shaft having spring-teeth attached thereto, of a cleaner-bar shaft pivoted upon said tooth-shaft, an arm attached to said cleaner-bar shaft, a link connecting said arm with the draft-frame, the connection between said arm and link permitting the upward movement of the cleaner-bars, and means for partially rotating the tooth-shaft to raise the teeth, substantially as described.

9. The combination, with a pivoted shaft having spring-teeth attached thereto, a draft-frame, and supporting-wheels, of devices adapted to be moved longitudinally of said shaft to engage with the wheels and rotate said shaft, a slotted quadrant pivoted to said

shaft and connected with said wheel-engaging devices, a rock-shaft mounted on the draft-frame and having a crank-pin engaging said slotted quadrant, and an actuating-arm for said rock-shaft, substantially as described.

10. The combination, with a pivoted shaft having spring-teeth attached thereto, a draft-frame, and supporting-wheels, of devices adapted to be moved longitudinally of the shaft to engage the wheels and rotate the shaft to raise the teeth, a slotted quadrant provided with a tripping projection pivoted to said shaft and connected with said wheel-engaging devices, a rock-shaft mounted on said draft-frame and having a crank-pin engaging said slotted quadrant, an actuating-arm for said rock-shaft, and a trip on said draft-frame located in the path of the tripping projection of the quadrant, whereby the movement of the said rock-shaft effects the movement of the quadrant in one direction to rotate the shaft and the trip effects the movement of the quadrant in the opposite direction to release the shaft, substantially as described.

11. The herein-described cleaner-bar shaft or head, formed of a pipe or hollow cylinder, and having an arm projecting therefrom formed from a portion of said pipe turned at right angles and flattened.

In testimony whereof we hereby affix our signatures in presence of two witnesses.

WARREN M. BRINKERHOFF.

ABRAM W. STEVENS.

LESTER D. SWART.

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O. D. BAKER.

Witnesses as to Abram W. Stevens and Lester D. Swart:

L. W. STEVENS,

CHAS. B. QUICK.