

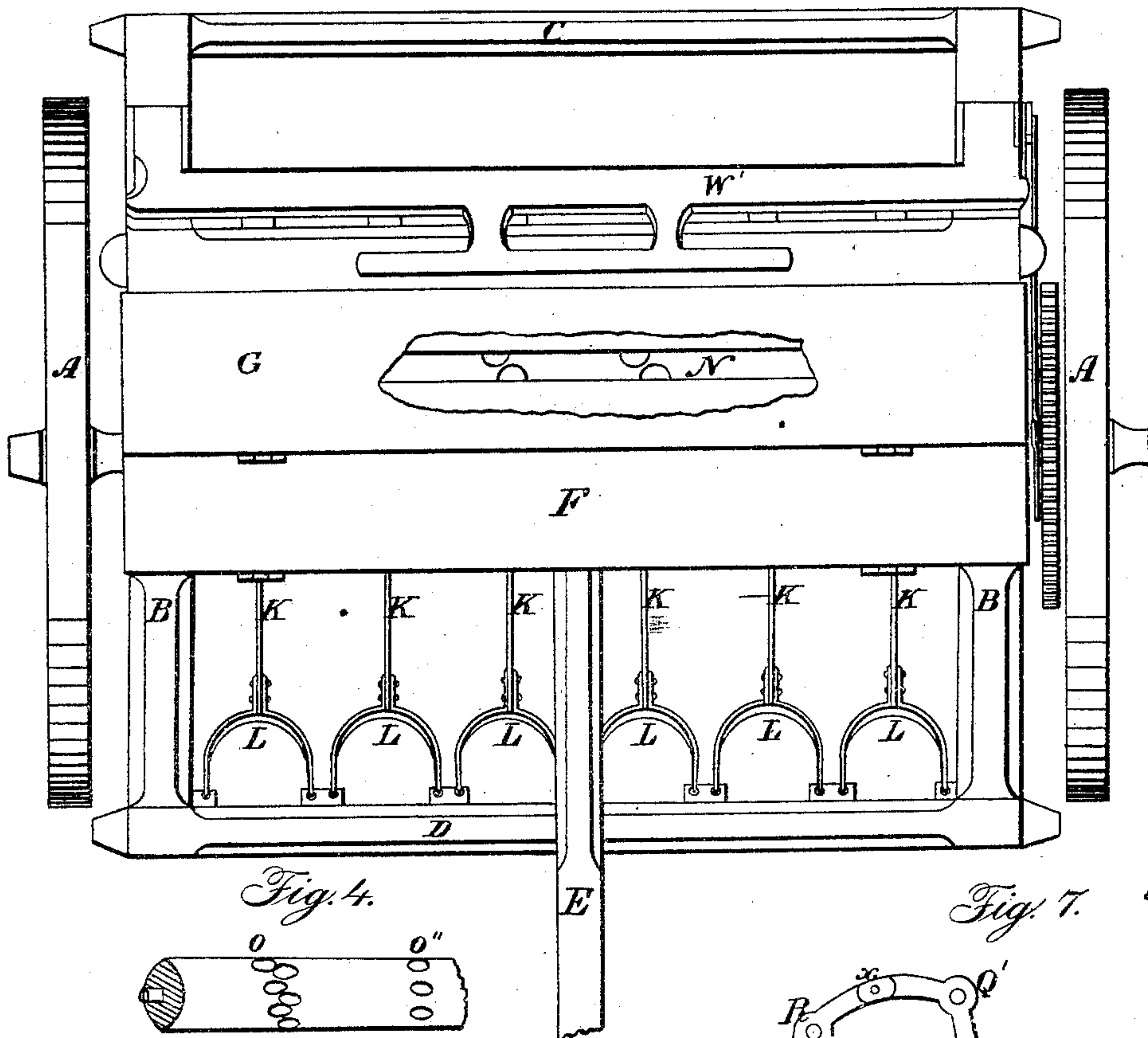
COGGESHALL & WARNER.

Grain-Drill.

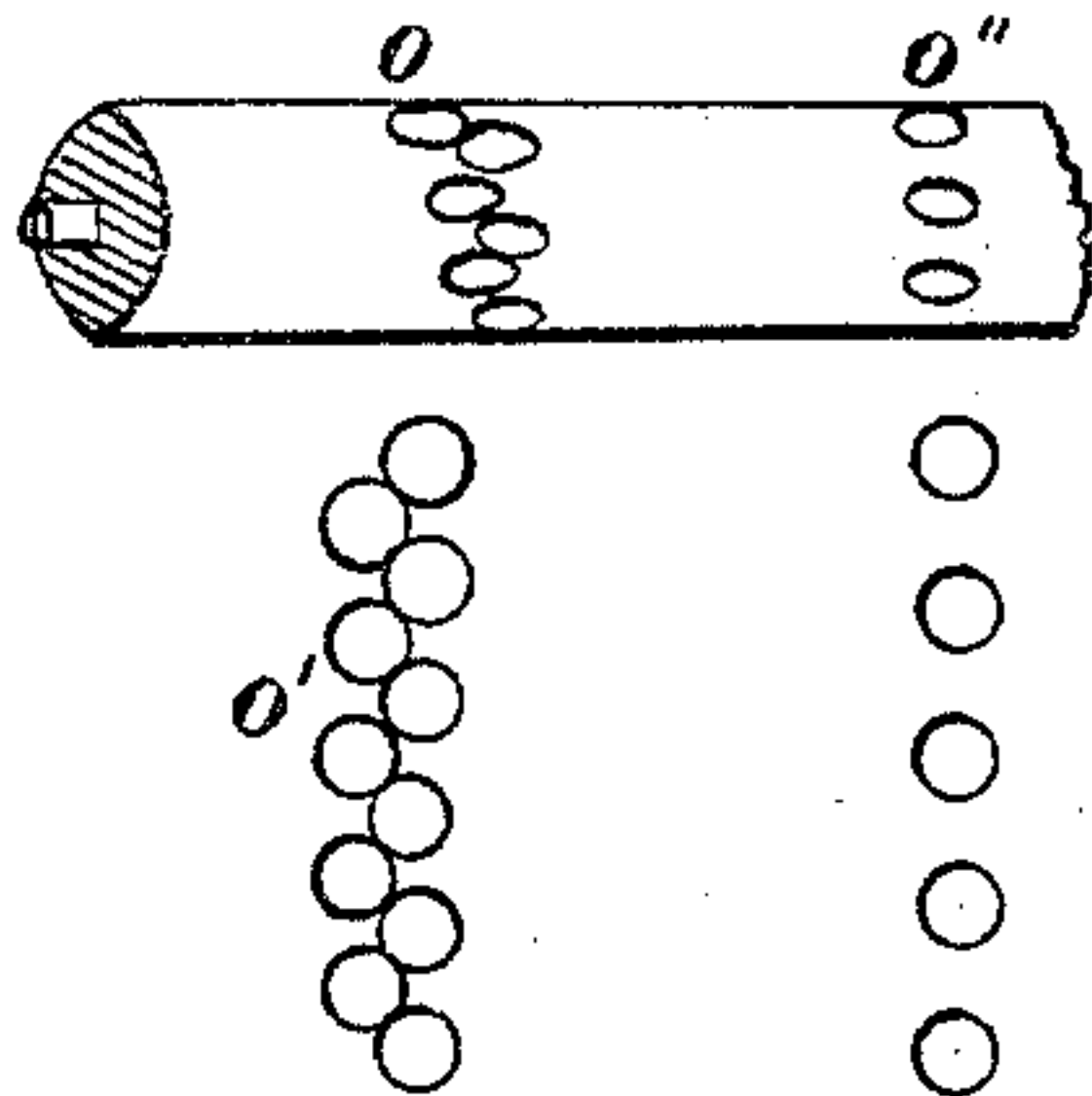
No. 18,959.

Patented Dec. 29, 1857.

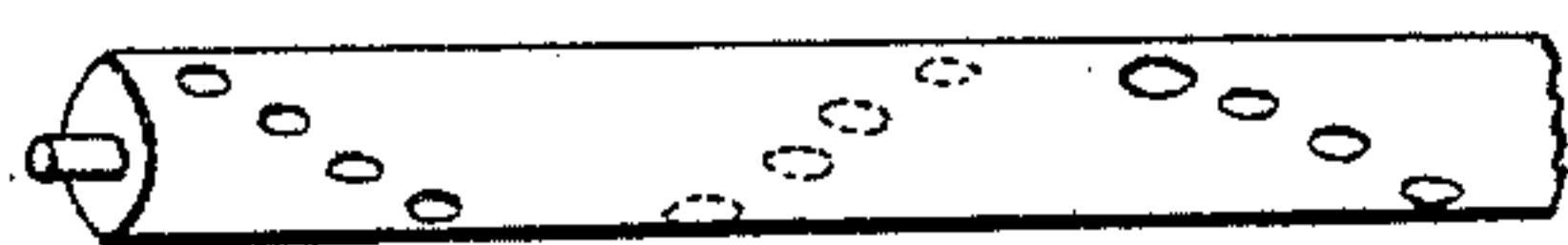
*Fig. 1.*



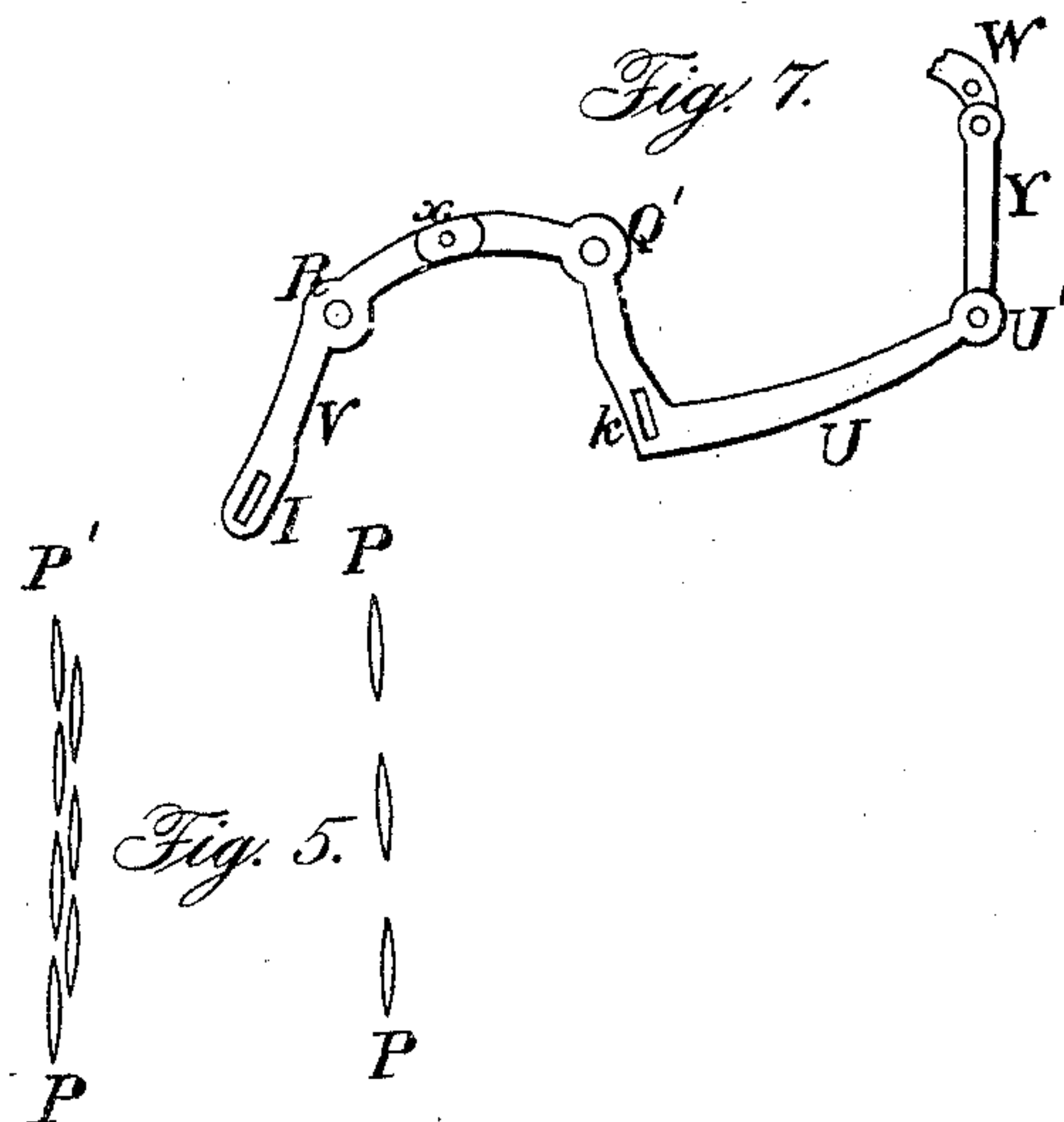
*Fig. 4.*



*Fig. 6.*



*Fig. 7.*



*Fig. 5.*

Inventors:

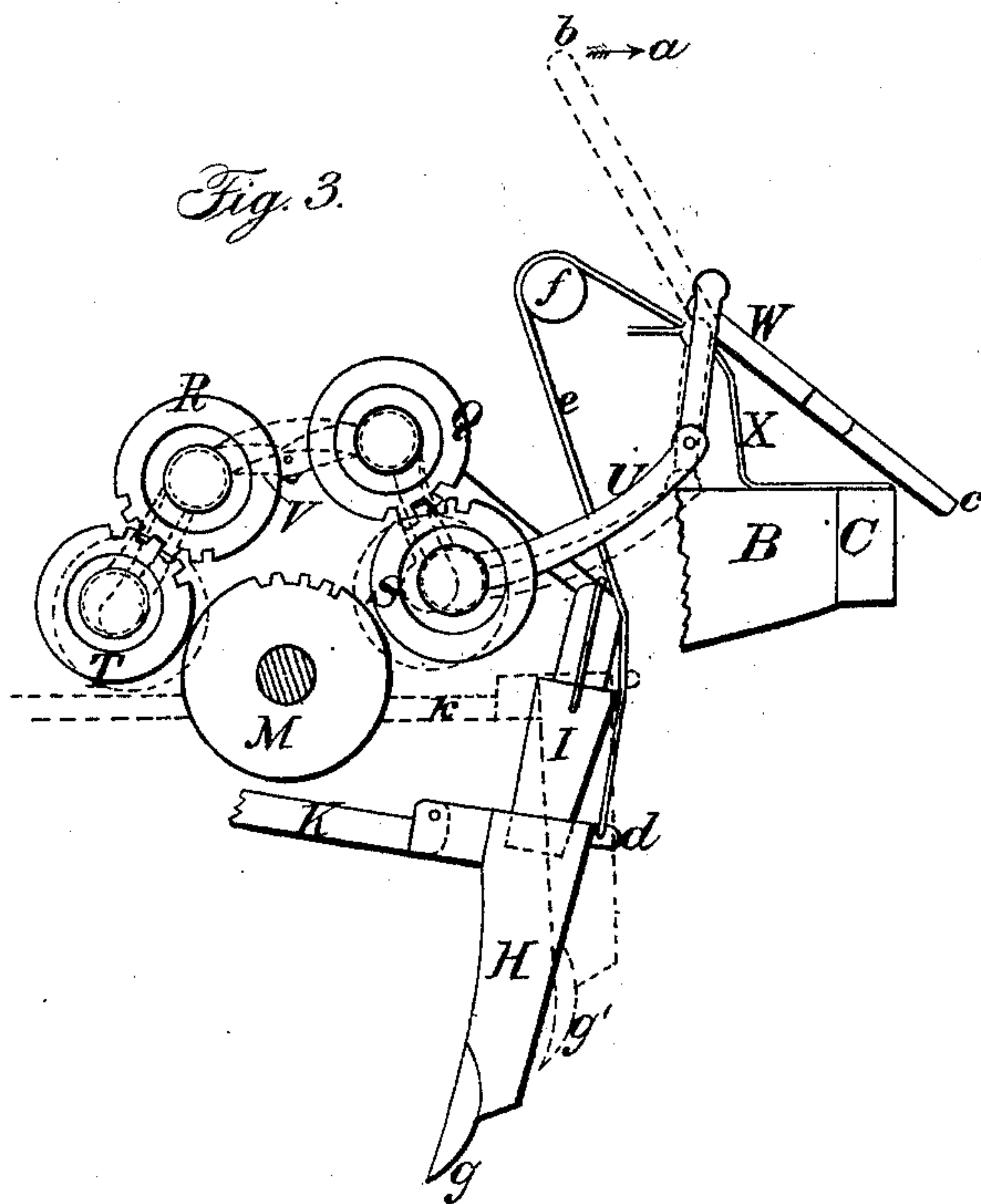
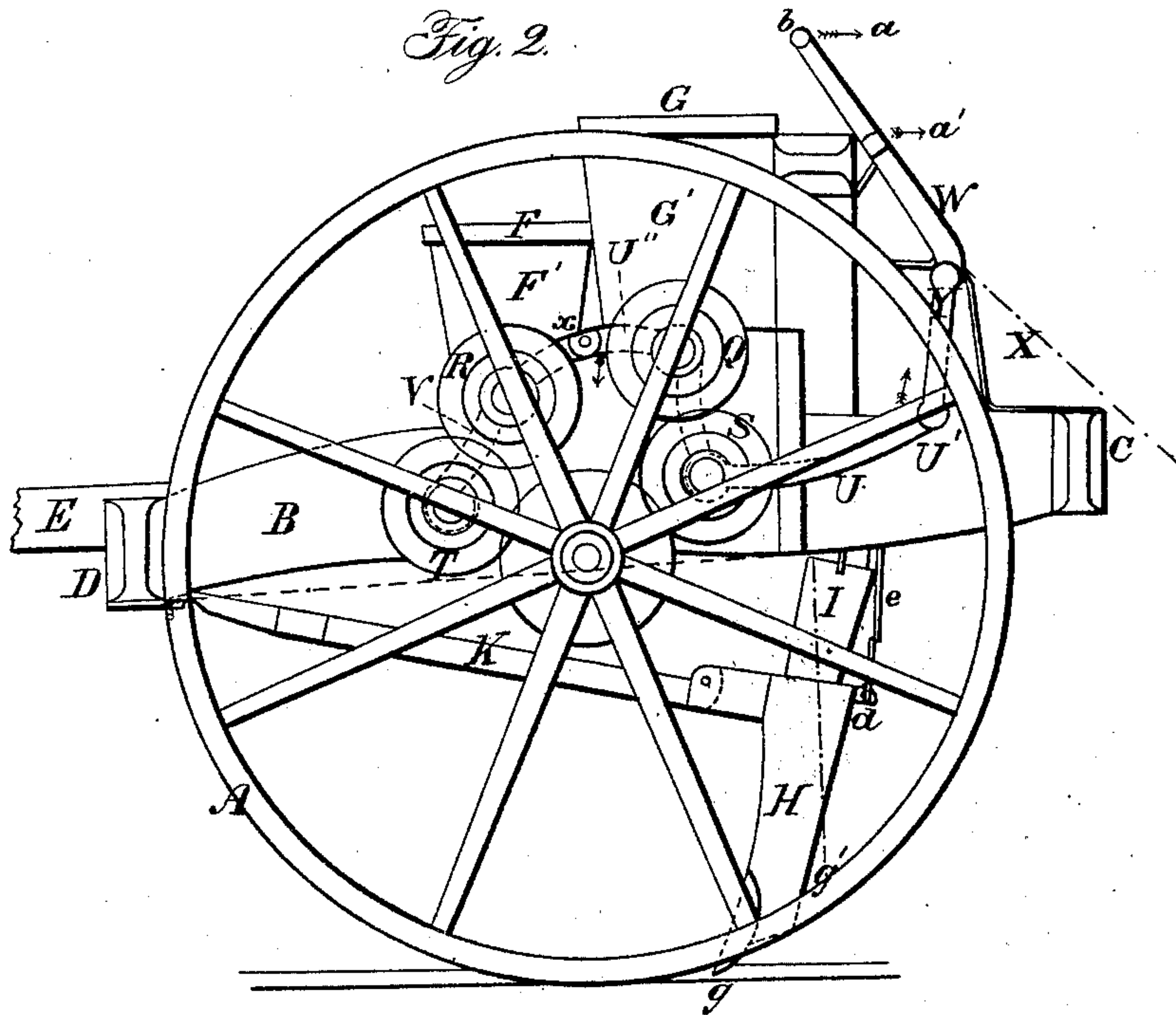
*Wm C Coggeshall*  
*B B Warner*

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Inventor:

*J. C. Coggeshall*  
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# UNITED STATES PATENT OFFICE.

WILLIAM COGGESHALL, OF MASSILLON, AND B. B. WARNER, OF WADSWORTH, OHIO.

## IMPROVEMENT IN SEEDING-MACHINES.

Specification forming part of Letters Patent No. 18,959, dated December 29, 1857.

*To all whom it may concern:*

Be it known that we, WILLIAM COGGESHALL, of Massillon, in the county of Stark and State of Ohio, and B. B. WARNER, of Wadsworth, in the county of Medina and State of Ohio, have invented new and useful Improvements in a Combined Grain-Drill and Grass-Sower; and we do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 represents a top view of the machine; Fig. 2, a side elevation; Fig. 3, a detached section, showing the gears and one drill-tube; and Fig. 4, sections which will be hereinafter explained.

Like letters refer to like parts in the different views.

The nature of our invention consists in such an arrangement that the seeds can be equally distributed along the drill, and also in such an arrangement and combination that two kinds of seed—say grass-seed or clover and wheat—can be sown at the same time or separately and uniformly.

In Figs. 1 and 2, A A represent the ground-wheels. These are four feet in diameter, and made in the ordinary manner of carriage-wheels. The axle-tree that passes from one to the other is concealed from view by the seed-boxes in Fig. 1 and by the gears and driving-wheel in Fig. 2.

The side pieces of the frame are four feet six inches long, and are seen at B B, Figs. 1 and 2, and the cross-bars that connect the back and front ends are seen at C C and D D, Figs. 1 and 2. These are five feet seven inches long, making the frame four feet six inches by five feet seven inches.

The pole or tongue is seen at E, Figs. 1 and 2. The covers of the seed-boxes are seen at F F and G G in Figs. 1 and 2. The ends of the two seed-boxes are seen at F' and G' in Fig. 2. The length of the seed-boxes is five feet four inches and a half and their height ten inches. Their width at top is eleven and a half inches and at bottom ten inches. These dimensions are for an eight-tubed drill of full size. In Fig. 1 a portion of the cover (marked G) is removed to show the seed-roller at the bottom. A single spout or tube is shown in each of the Figs. 2 and 3 at H H. The flexible jointed pipes that convey the seed from the seed-box

and roller are seen at I and I' in Figs. 2 and 3. These spouts or tubes are attached firmly to drag-arms K K, Figs. 1, 2, and 3, which extend forward under the axle-trees and are attached to the under side of the forward beam, D, by means of the braces L L, the ends of which hook into staples or their equivalents upon the under side of the cross-bar D. By this arrangement the seed-drill spouts can be raised entirely from the ground at pleasure by means hereinafter to be described. The driving-wheel M, Figs. 2 and 3, is firmly attached to the hub of the near carriage-wheel.

In the bottom of each seed-box F' and G' is a metallic cylinder, running the whole length of each seed-box. One of these is seen in part at N in Fig. 1, a part of the cover being removed for that purpose. These seed-rollers are about one and a half inch in diameter, and have upon their faces cavities, into which the seed falls while they are being revolved. These cavities are arranged alternately, as seen at O in Fig. 4—that is, the cavities, being round, are so arranged that the inner edge of every alternate cavity is nearly on a line with the centers of the opposite, as is further seen at O', Fig. 4. By this arrangement there is a continuous stream of seed discharged through the tubes H, whereas were these cavities arranged as at O'' a jet of seed would be discharged by each cavity, and the drill would present the appearance shown in Fig. 5 at P P, being much more numerous in the center of the discharge and diminishing in each direction.

In our improvement the discharge of seed is continuous, as seen at P' P', Fig. 5, by means of the cavities extending past each other, as seen at O'.

The cavities in the grass-seed roller in the bottom of the box F' are spirally arranged or otherwise, as seen in Fig. 6, and are of course smaller in diameter and depth. By this means the grass seed is distributed about equally over the ground in front of the seed-tubes, by the action of which these seeds are covered. The seed-rollers are put in motion by means of cog-wheels, which I will now proceed to describe.

The driving-wheel M, already referred to, is about one foot in diameter. This being attached to the hub of the ground-wheel, of course revolves with it. Each seed-roller is furnished with a similar wheel, Q R, Figs. 2 and 3, but



of less diameter, which are attached to the end of the journal of the seed-roller. These rollers, being stationary, as regards position, must be put in motion by an intermediate wheel, as seen at S T, Figs. 2 and 3. These intermediate wheels are supported by compound levers U and V, Figs. 2, 3, and 7, which have their fulcrums upon the journals of the seed-rollers. These levers are seen in detached section at Fig. 7, the fulcrums being at Q' and R', respectively. When the wheels are all in gear, as represented in Fig. 2, and by the red lines in Fig. 3, the levers occupy the position seen in Fig. 2, the seed-spouts H resting upon the ground, as in that figure. Now, it follows that if the long arm of the lever, U', is elevated or carried in the direction of the arrow in Fig. 2 the wheel S will be moved away from the driving-wheel M, and thus thrown out of gear at the same time the short arm of the lever (seen at U'', Fig. 2) is depressed in the direction of the arrow, and this acting upon the lever V by means of a pin-joint, *x*, the wheel T is also at the same time thrown out of gear, thus leaving the ground-wheel free from any connection with the seed-rollers. This compound lever being depressed at U' in the direction opposite that indicated by the arrow, the wheels are all again thrown into gear. This movement is accomplished by means of a short lever, (seen at W, Figs. 2, 3, and 7.) This lever is supported by a curved brace, X, Figs. 2 and 3. A bar (seen at W') passes from the long arm of this lever to the opposite side of the machine, and is secured to a curved brace in the same manner as the opposite end. The short arm of this lever W is bent at an angle of about sixty degrees, and is coupled to a connecting-rod, Y, that unites the short arm of the lever W with the long arm of the lever U at U'.

It will be observed that in carrying the long arm of the lever W in the direction of the arrow *a* the bar W' is brought backward and downward in the direction of the arrow *a'*. In this case the outer end of the lever W moves from *b* to *c*, by the action of which the wheels S and T are thrown out of gear, as before stated; but it is also necessary in order to move the machine from place to place to raise the hollow seed-spouts H from the ground. This is done by the movement of the lever W from *b* to *c* by means of a strap or cord, which is fastened to the back part of the upper end of the spouts H by a little projection (seen at *d*, Figs. 2 and 3.) This strap (seen at *e*) passes over a roller, *f*, and from thence it passes to the cross-bar W', Fig. 1, to which it is attached. There is a strap of this kind for every spout, all passing over the same roller. When the spouts rest upon the ground the lever W stands at *b*, Fig. 2, and the wheels are all thrown into gear. In Fig. 3 the spout is also represented as being upon the ground; but if the lever is moved from *b*, Fig. 3, as indicated by the red lines, to *c* the blade of the spout rises from *g* to *g'*, the latter position being indicated by the red line in Fig.

1. The wheels are also represented in Fig. 3 as being out of gear. There are connecting-tubes seen at I I', Fig. 3, that serve to convey the seed to the seed-spout, but which slide into each other when the spouts are raised.

In order to give a slower or quicker relative motion to the seed-rollers, the angle *k* of the lever U and the extremity *l* of the lever V are provided with a slot each, by which means a larger or smaller connecting-wheel can be introduced and adjusted so as to fit the different wheels. By this means the quantity of seed per acre can be accurately determined. By this means, also, the connecting-wheel T can be removed by taking out the screw-bolt that holds it in place in the slot *l* of the lever V, and by this means the grass-seed roller in the bottom of the box F' can be left at rest, or the connecting-wheel S can be in like manner removed and grass-seed alone sown broadcast; or both wheat or other grain and grass-seed may be sown at once.

The devices hereinbefore described are not claimed to be new, separately considered; but what distinguishes our improvement from all others is that by the peculiar arrangement of the seed-cups at O in Fig. 4 a uniform distribution of seed is produced along the drill, as shown at P' P', Fig. 5, whereas in the former method, as shown at P P, Fig. 5, the grain is deposited at intervals, as represented.

Our improvement is also distinguished from all others by the peculiar arrangement of the levers U V, the lever U, Fig. 7, acting upon the lever V by means of the coupling seen at *x*, Fig. 7, so that both seed-rollers can be thrown out of gear by the action of the lever W and the connecting-rod Y at the same time the seed-tubes H are raised from the ground, as before described; also, in the arrangement of the levers U and V, whereby the intermediate wheels can be removed, so that either seed-roller can be used separately. In this way seed can be sown broadcast separately or grain can be drilled separately, or both can be used at once.

We do not claim the alternate arrangement of seed-cavities in the seed-roller, so as to produce a corresponding deposit of seed in separate adjacent rows or drills, being aware that such is not new.

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

The levers U V, respectively bearing the removable and replaceable gear-wheels S T, when arranged, operated, and combined together, and in combination with the gear-wheels of two seed-rollers and the driving-wheel, substantially in the manner and for the purposes herein specified, disclaiming all other combinations of levers and gearing not essentially the same as herein set forth.

WM. COGGESHALL.

B. B. WARNER.

Witnesses:

SAMUEL SHOUP,

JOSEPH HECKMAN.