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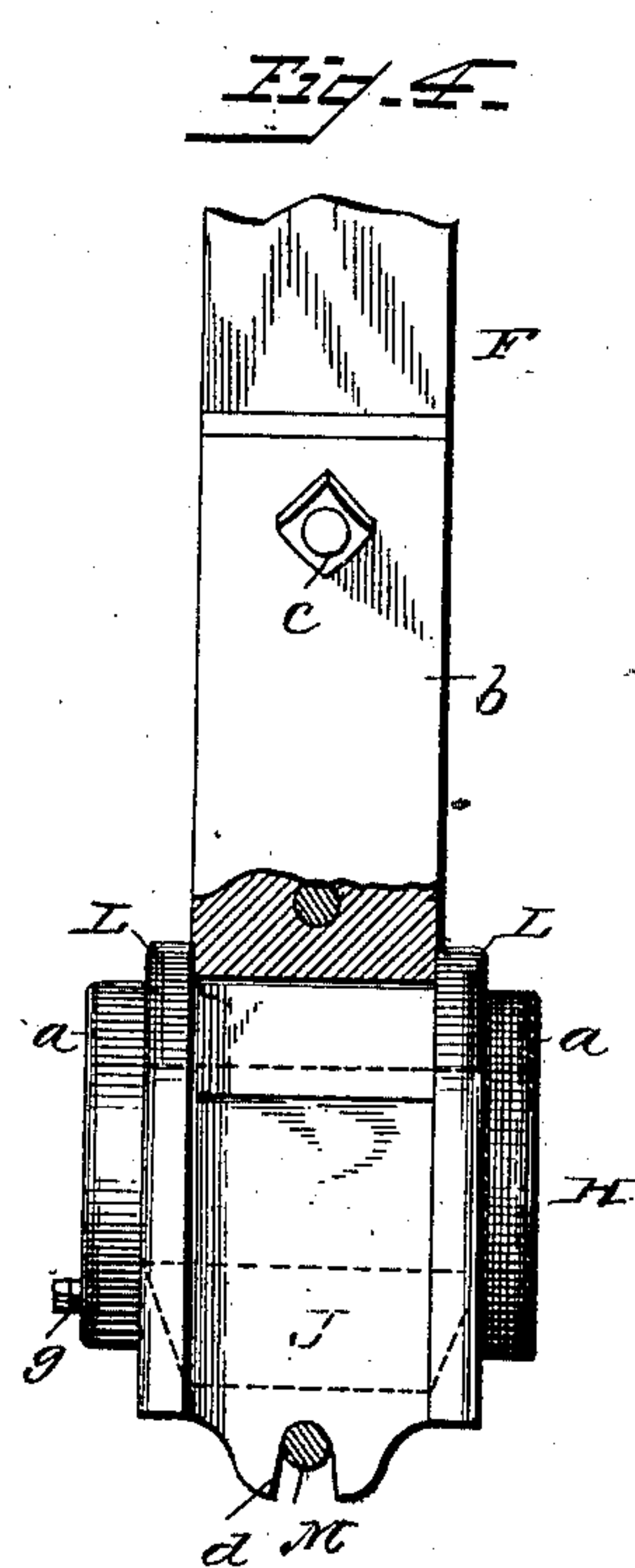
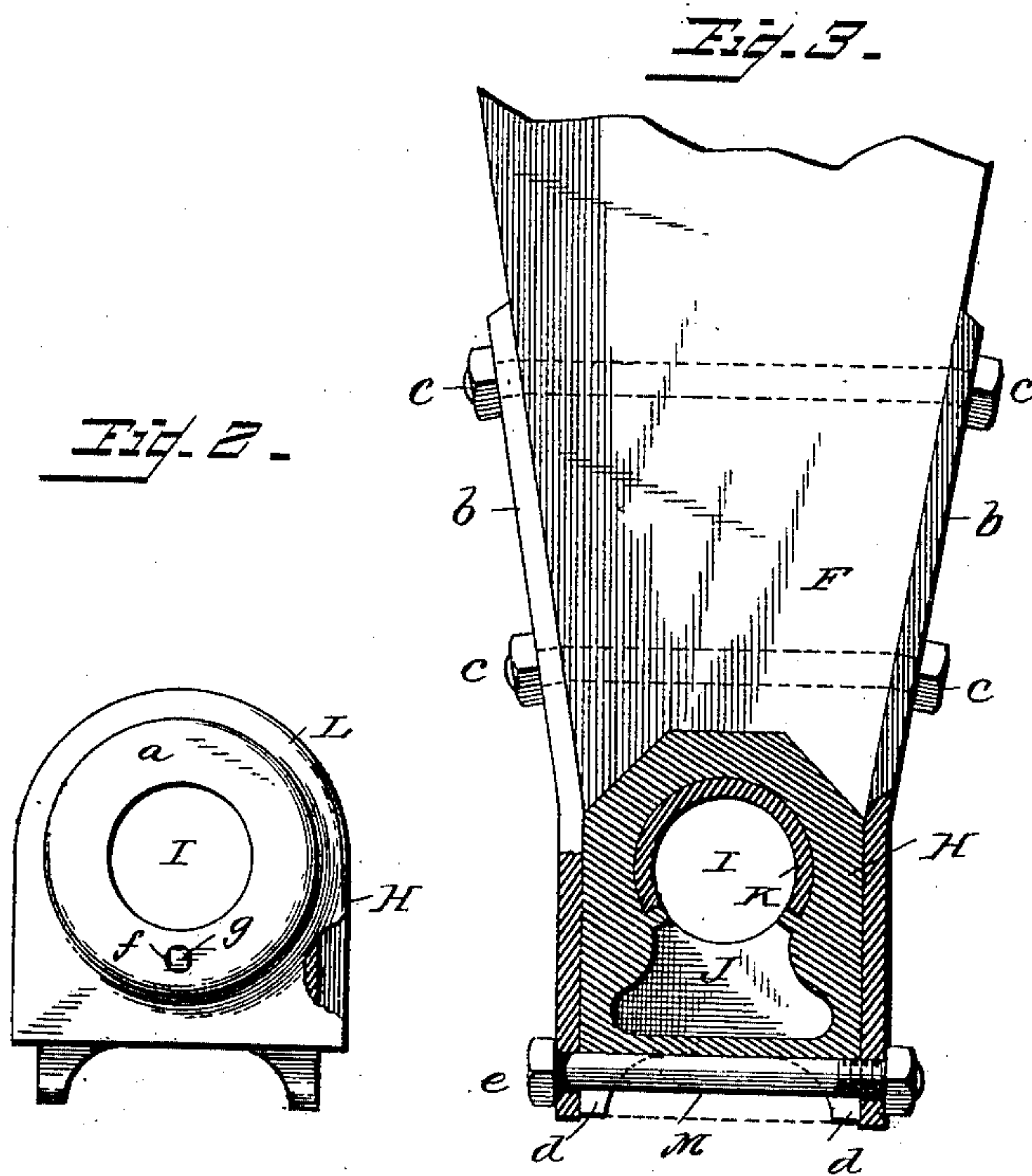
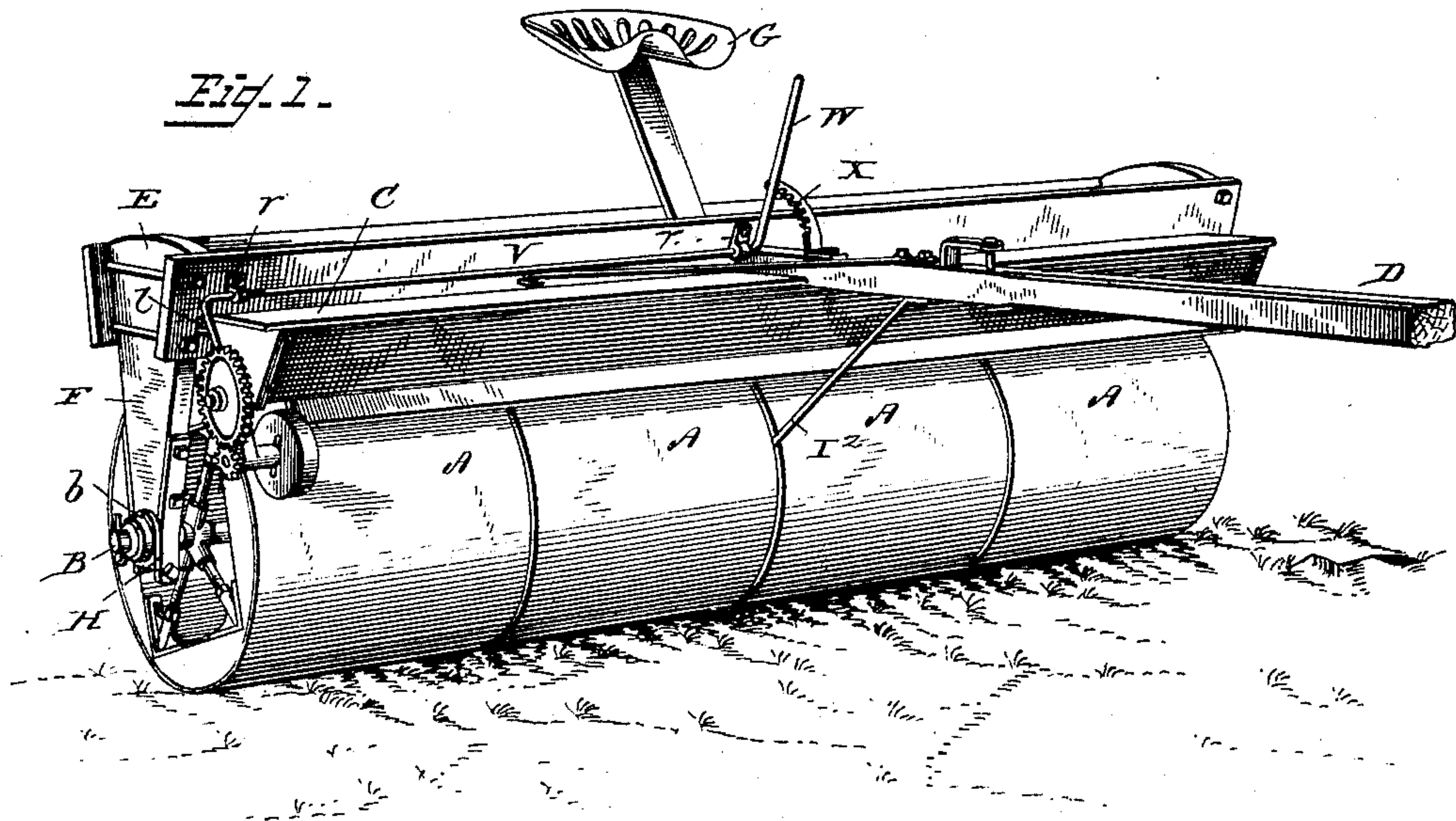
2 Sheets—Sheet 1.

G. R. THOMSON & J. B. JOHNSON.

LAND ROLLER AND SEED SOWER.

No. 390,417.

Patented Oct. 2, 1888.



Witnesses

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

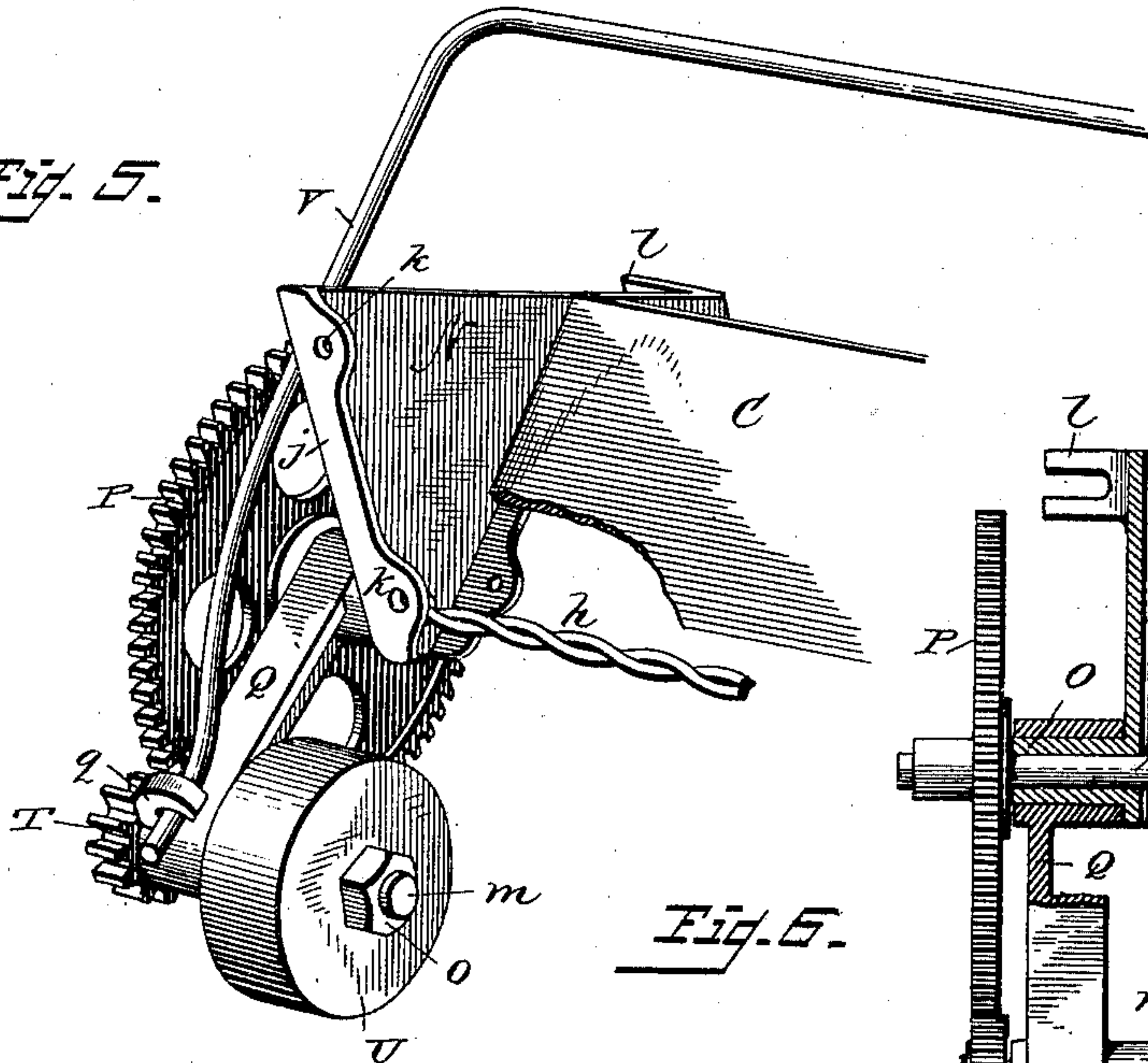


Fig. 6.

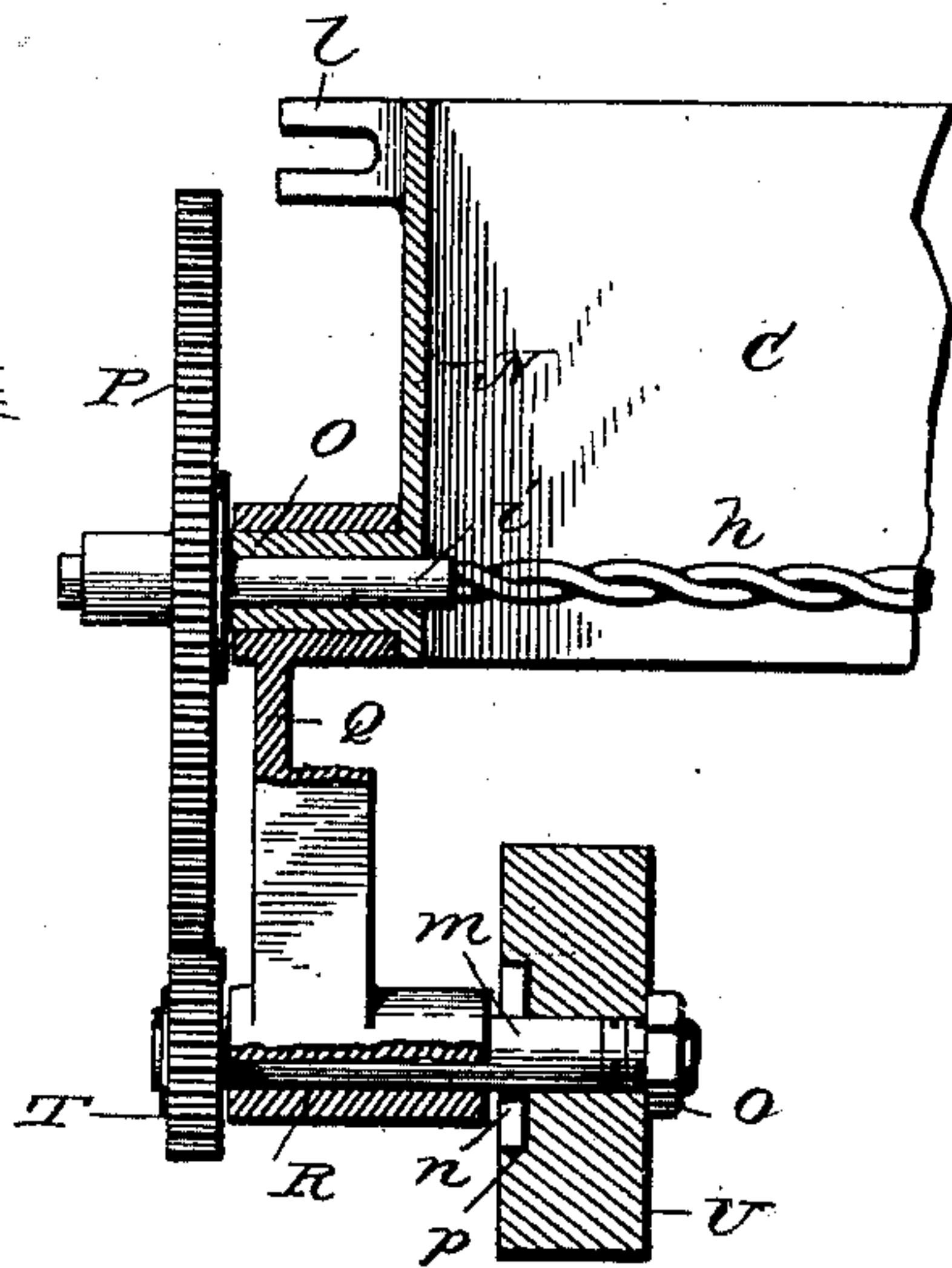
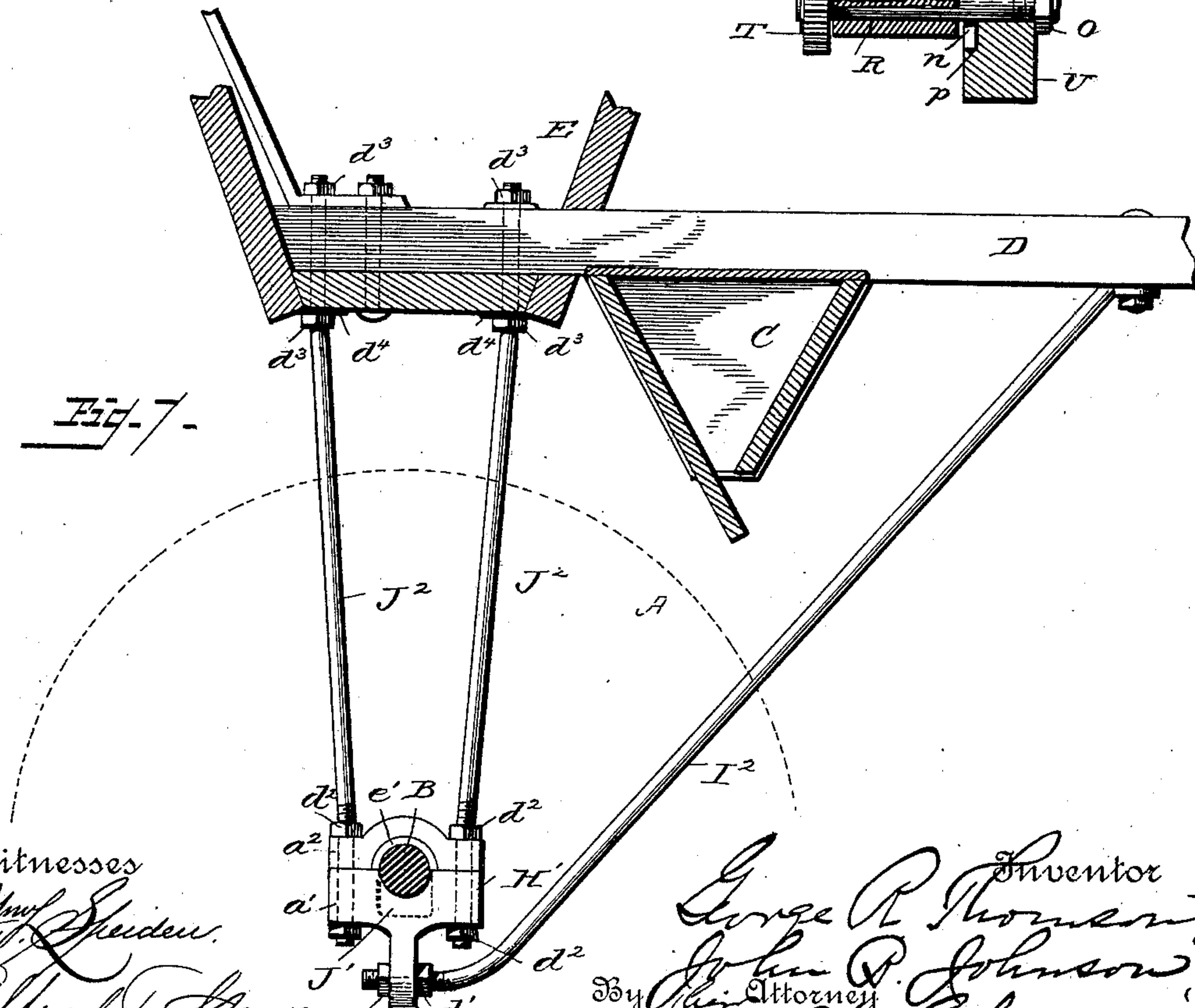


Fig. 7.



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UNITED STATES PATENT OFFICE.

GEORGE R. THOMSON AND JOHN B. JOHNSON, OF GOUVERNEUR, NEW YORK;
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LAND-ROLLER AND SEED-SOWER.

SPECIFICATION forming part of Letters Patent No. 390,417, dated October 2, 1888.

Application filed November 23, 1887. Serial No. 255,995. (No model.)

To all whom it may concern:

Be it known that we, GEORGE R. THOMSON and JOHN B. JOHNSON, citizens of the United States, residing at Gouverneur, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Land-Rollers and Seed-Sowers; and we do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to land-rollers and seed-sowers, and has, among other objects, first, to provide a journal-box for the shaft or journal which will be self oiling or lubricating, and which can be readily and firmly secured to the roller; second, to provide a support and bearing for the shaft or journal between its ends, as the shaft is long and should be supported intermediate of its ends, and, third, to provide means for uniformly driving the feed of the grass-seed box attached to the roller; also, for changing the speed of such feed when desired, and, further, for stopping the feed when desired, while the roller may continue to perform its work.

Other objects will appear in the following description.

To the accomplishment of the foregoing ends suitable and novel means will be hereinafter particularly described, and specifically defined by the claims, reference being had to the accompanying drawings, forming a part hereof.

Figure 1 is a perspective of the roller and seeder with our improvements applied. Fig. 2 is an end view of the axle-box. Fig. 3 is a side view of the end of the stone-box with the axle-box in section. Fig. 4 is an edge view of the same with part of the stone-box cut away. Fig. 5 is a perspective of the devices for revolving the wire feed of the seed-box. Fig. 6 is a front view of same with some of the parts in section. Fig. 7 is a cross-section through the seed and stone boxes and showing

in full lines the intermediate box and brace for the drum-shaft.

In the drawings, A designates the cylinders or drums of the roller; B, the shaft therefor; C, the seed-box; D, the tongue; E, the stone-box; F, the side or end standards, to which are secured the improved journal and lubricating boxes, and G the seat. The parts thus generally referred to and designated by letters of reference may be of any approved form, but preferably are of the construction particularly set out in the patent granted Thomson and Johnson and numbered 342,053.

The journal and lubricating boxes for the shaft B are designated by the letter H, and are cast or otherwise formed from iron or other suitable metal. Each of said boxes is formed with the bore I for the axle or shaft and a chamber or cavity, J, below said bore for the reception of cotton waste or other suitable material and oil or other suitable lubricant. The sides and upper portion of the bore are lined with Babbitt metal, K, set into a groove made in the wall of the bore; but the Babbitt metal may be omitted.

The lower side or bottom of the bore, inside of the end projection, *a*, is open, so that access may be had to the cavity J, and the lubricant therein may be carried into contact with the journal. The box near each end is formed with flanges L, extending along the sides of the box and preferably across the top, so as to form a recess to receive the lower end of the standard F and the straps *b*, which are secured to the standard by bolts *c*, as indicated in Fig. 3. When the parts are so connected, the flanges of the box lie against the opposite sides of the standard and opposite edges of the straps, so that the box cannot move laterally.

The top of the box is preferably curved, so as to fit snugly into a correspondingly-shaped recess made in the end of the standard. The box is held up to the standard by a bolt, M, passed through holes made in the lower part of the straps and under the box.

The box has formed in its bottom a recess or notch, *d*, for the bolt M to lie in. This notch may extend across the bottom, as indi-

cated by dotted lines in Fig. 3, or may be formed in projections depending from the sides of the box, as indicated by full lines in the same figure and Figs. 2 and 4. When the bolt is applied as described, and the nuts *e* thereon screwed up tight, the straps will be drawn closely against the sides of the box, and the box will be clamped tightly and immovably to the standard. The box is supplied with oil at any convenient point—for instance, through a hole at *f*, provided with a plug, *g*. The end projections, *a*, and flanges *L* also tend to strengthen the box. The box is not only strong, but easy of application and removal and very efficient in keeping the journal lubricated without waste of the lubricant.

The feeding device for the seed-box *C* may be of any approved form permitting the application thereto of our invention for producing a uniform feed, for changing the speed, and for stopping the feed; but the form preferred is that shown in the hereinbefore mentioned patent of Thomson and Johnson, and consisting of a strand of twisted wires, *h*. This wire-feed has at its end a collar or journal, *i*, which passes through the end plate, *N*, of the seed-box and through a sleeve or projection, *O*, on the outside of the plate, and has a gear or cog-wheel, *P*, keyed to its end, so that when the gear turns the wire-feed will turn with it. The plate is formed with flanges *j* and perforated ears *k* for its firm attachment to the seed-box, and is also formed with the slotted ear *l*. A swinging arm or hanger, *Q*, is journaled on the sleeve or projection *O*, so as to turn thereon, and at its lower end is cored and preferably formed with an inward extension, *m*, thus forming a box for the arbor or journal pin *R*, which has on its outer end a pinion, *T*, that meshes with the gear *P*, and on its inner end a sheave or friction-roller, *U*. This friction-roller is secured in any suitable manner to the journal *R*, so as to turn therewith—for instance, by a pin, *n*, which may pass through the journal and bear against the extension *m* to aid in holding the journal in place, and by a nut, *o*, screwed onto the outer end of the journal, the pin *n* entering a slot, *p*, in the friction-roller, so that the latter will be keyed to the journal to turn therewith. When the feed is to work to deliver seed, the friction-roller will bear against the cylinder or drum *A*, so that by frictional contact it will turn, and thus transmit motion to the pinion and gear-wheel, and through them to the wire-feed, so that the latter will be revolved at a speed uniform with and proportionate to the speed of travel of the roller or drum *A*.

The hanger being free to swing upon its journal, it will rise and fall to conform to the inequalities on the face of the drum, and thus avoid the binding and straining of parts. If it be desired to feed faster or slower, the friction-roller in use can be readily and quickly removed and a larger or smaller one substituted therefor to change the feed.

The swinging arm or hanger is preferably

under the influence of a spring, so as to insure a constant pressure of the friction-roller on the drum. The preferred form of spring is a bent rod or lever, *V*, which has its lower end slightly curved, as shown, and passes under a lip or hook, *q*, formed on the hanger *Q*, while the upper portion of the lever will pass through clips or clamps *r*, secured to the side of, say, the stone-box, and be provided with a handle, *W*, at one end within easy reach of the driver and engaging with a rack-bar, *X*, which will hold it to the desired adjustment. The pressure of the friction-roller on the drum can be controlled by the adjustment of lever *V*, and when the feed is to be stopped the lever is operated to lift the friction-roller from out of contact with the drum, so that the parts being thus thrown out of gear the feed will be stopped. The feed will be held out of operation by the handle to the lever engaging the rack-bar. This construction greatly reduces the number of parts, so that they are simplified, rendered less liable to get out of repair, cheapen the cost of manufacture, and made more satisfactory in operation.

In order to afford a support for the shaft of the drums between its ends, we provide an intermediate box, *H'*, which is made in two parts, *a'* and *a''*, as shown, the upper part having Babbitt metal, *e'*, applied thereto and the lower part, *a'*, having a cavity, *J'*, therein for the reception of the cotton waste, and also an apertured downwardly-extending lug, *e'*, for the passage of the threaded end of the brace *I'*, which is secured at one end by a bolt to the tongue and at the other end to the apertured lug by nuts *d'*, screwed onto the threaded end of the brace, one on each side of the apertured lug. The box *H'* is suspended by means of the hanger or bolts *J''*, having threaded ends passed through apertures in the two parts of the box, as shown in dotted lines in Fig. 7, and secured thereto by nuts *d''*, applied to the bolts or rods above and below the box, while the upper ends of the bolts or rods are passed through the stone-box *E* and secured thereto by the nuts *d'''*, applied to the threaded ends of the bolts above and below the bottom of the box, washers *d''* being interposed between the box and nuts, as shown in Fig. 7. The parts so constructed and applied afford additional support to the shaft *B*, which may need it because of its length, and they further brace and strengthen the parts with which they connect, and are simple and easy of application.

Having described our invention and set forth its merits, what we claim is—

1. The within-described journal-box and lubricator, consisting of the box formed with the lubricant-chamber *J*, the mouth of which opens into the bore *I*, and having the flanges *L* on its external surface near opposite ends to fit on opposite sides of a standard or support, substantially as described.

2. The journal-box and lubricator consisting of the box formed with the lubricant-chamber, flanges on its external surface near opposite

ends to fit on opposite sides of a standard or support, and a recess at its bottom to receive a bolt, substantially as described.

3. The combination of the standard, the box 5 formed with a lubricating-chamber, J, the mouth of which opens into the bore I, and with flanges near opposite ends and fitted to the lower end of the standard, the straps connected to the standard and lying against the sides of 10 the box between its flanges, and a bolt passed through the straps and across the bottom of the box, substantially as described.

4. The combination, with the seed box, feed 15 device therein, and a cylinder or drum, A, of a swinging arm or hanger carrying at its lower end a friction-roller in contact with said cylinder or drum below the bottom of the seed-box, and the gear P, connecting the pinion T 20 directly with the feed device in the seed-box, substantially as described.

5. The combination of the hanger Q, formed at each end with an eye to receive a journal, a journal, R, passed through the eye at the lower end of the hanger and provided at one 25 end with the roller U and at the other with the pinion T, and the gear P, meshing with pinion T and adapted to connect with a feed device to a seed-box, all substantially as and for the purposes set forth.

30 6. The combination, with the plate N, constituting one end of the seed-box and formed with the projection on its side, of the swinging arm journaled on said projection and the friction-roller journaled at the lower end of 35 said arm, substantially as described.

7. The combination, with the plate formed with the sleeve or hollow projection on its side,

of the swinging arm journaled on said sleeve, the revolving feed device having a part extending through said sleeve, a gear on the end 40 of said feed device, and a pinion and friction-wheel carried by the lower end of said arm, said pinion engaging with said gear, substantially as described.

8. The combination, with the swinging arm 45 carrying the journal and pinion at its lower end, of the pin projecting from said journal and the roller having a slot into which said pin enters to key the roller to the journal, substantially as described. 50

9. The combination, with the swinging arm carrying the roller at one end, of the lip or hook formed on said arm and the rod or lever entering said hook and serving as a spring to 55 act on the roller and as a means for adjusting the roller, substantially as described.

10. The combination, with the drum-shaft, of the two-part box $a' a^2$, through which the shaft passes, the depending bolts or rods J^2 , passing through both parts of the box on op- 60 posite sides of the shaft and uniting the two parts of the box together and suspending them, and the brace-rod connected at one end to the ear c' on the under part of said box and at the other end to a suitable support, substan- 65 tially as described.

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

GEORGE R. THOMSON.
JOHN B. JOHNSON.

Witnesses:

S. W. HARRIS,
J. J. NICHOLSON.