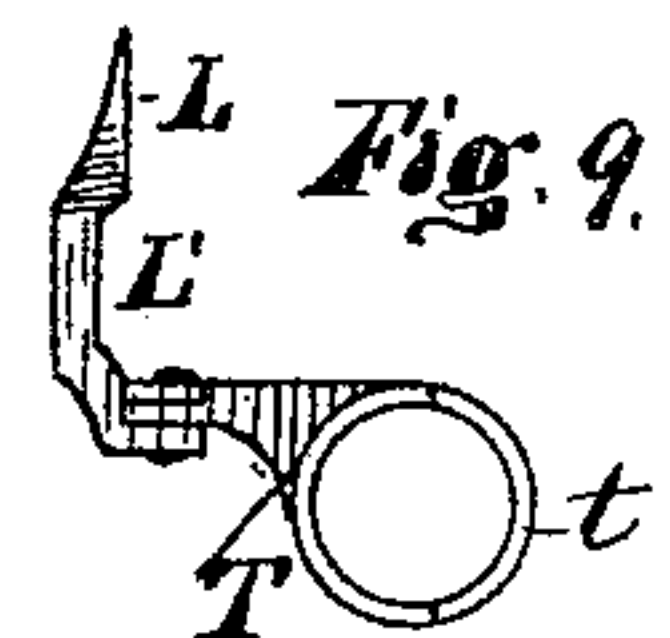
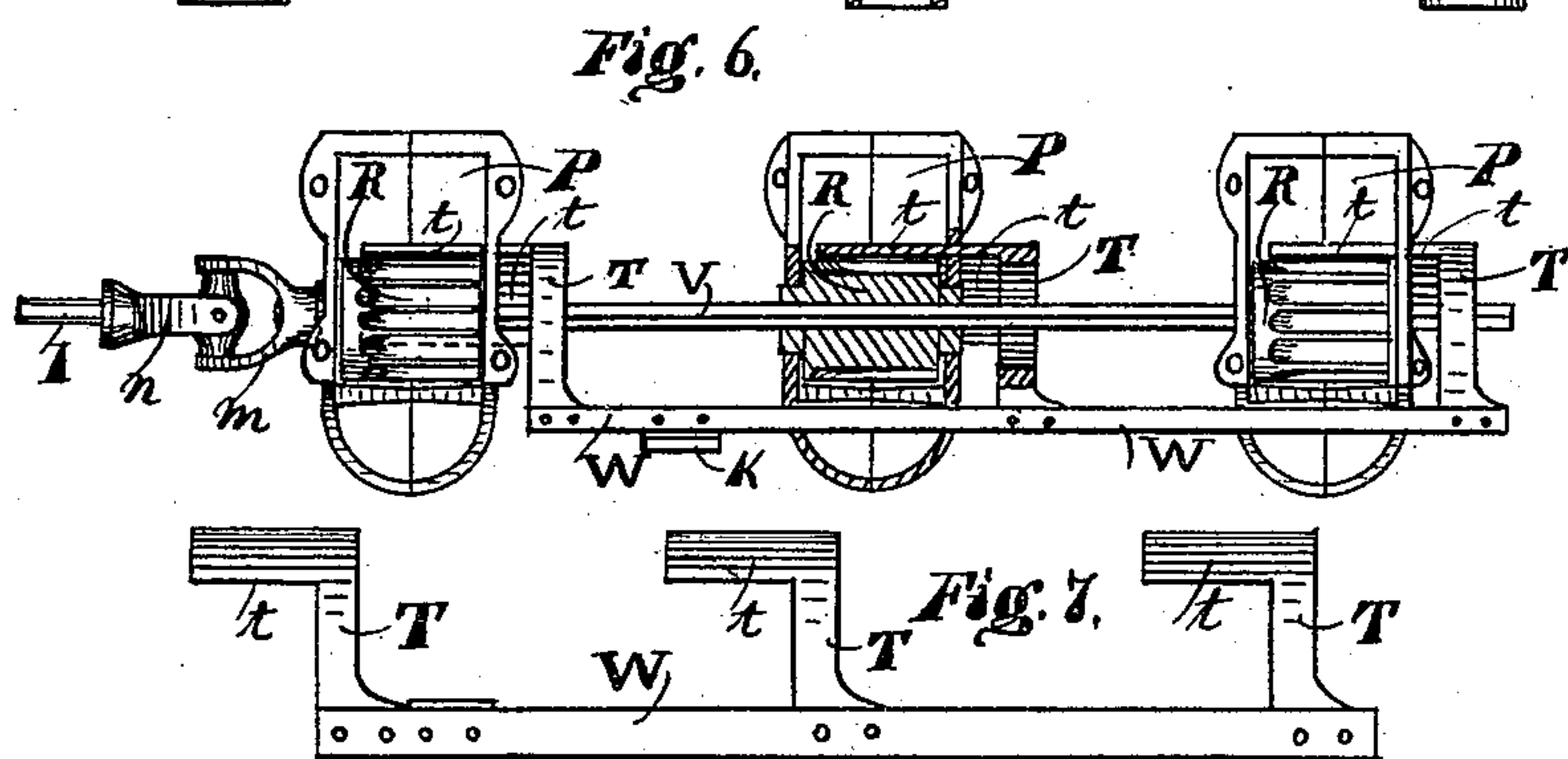
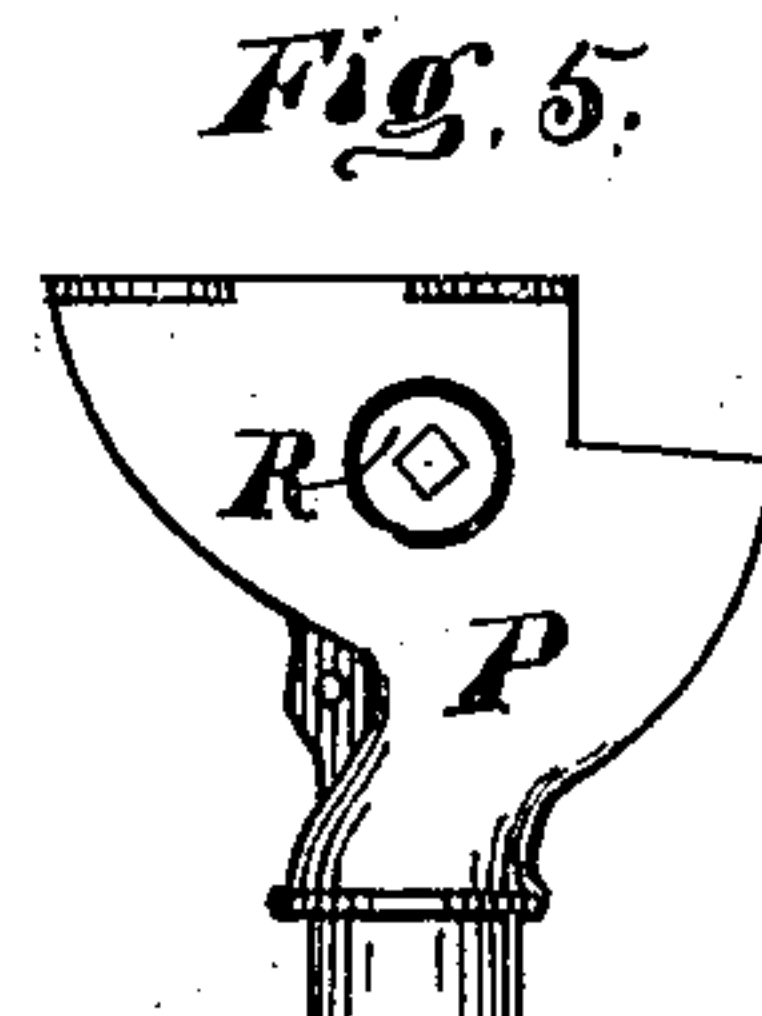
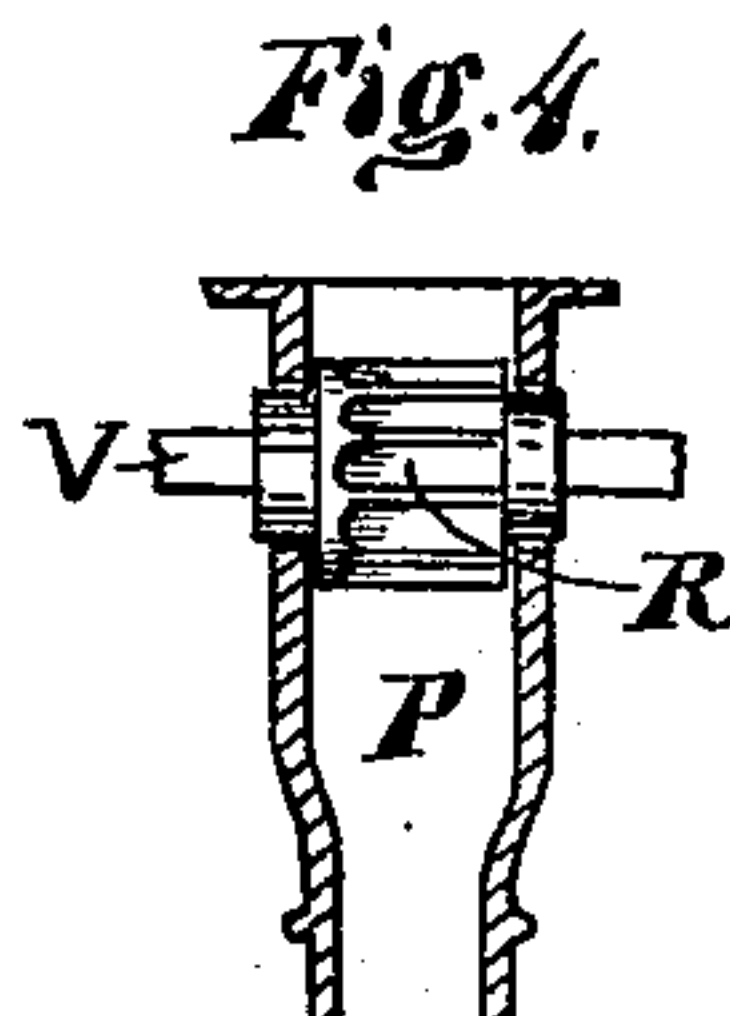
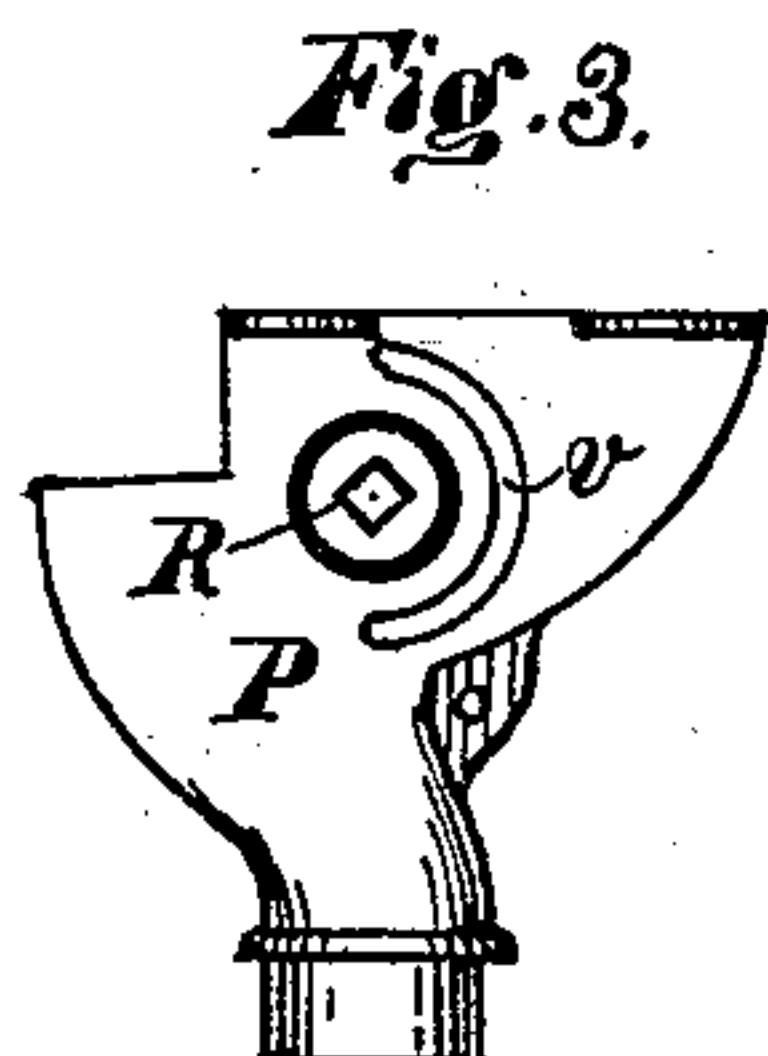
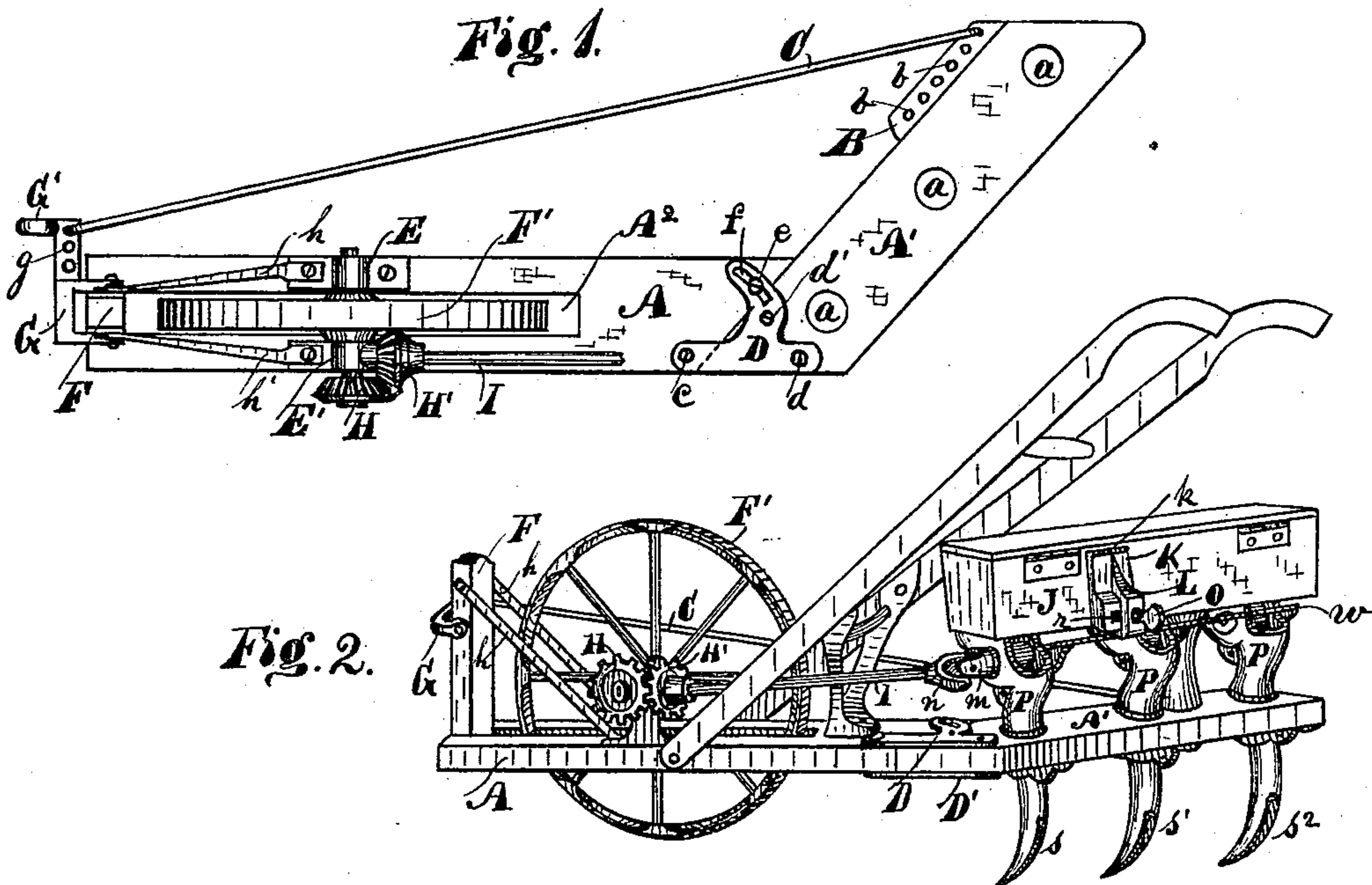


(No Model.)

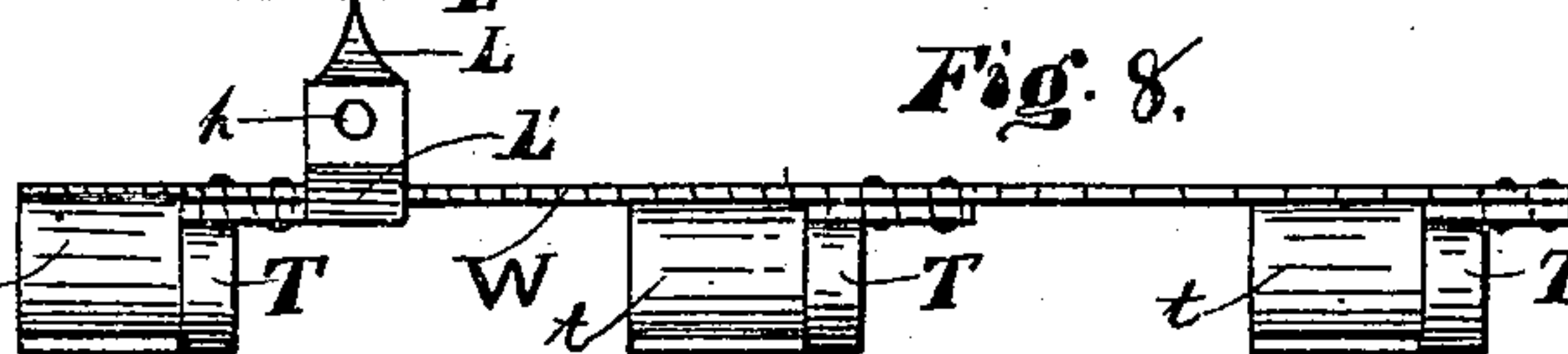
DeW. C. & A. N. NORRIS.
Side Draft Seed Drill.

No. 236,508.

Patented Jan. 11, 1881.



Witnesses;
Ira M. Shufz,
Geo. H. Remick.



Inventors;
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UNITED STATES PATENT OFFICE.

DEWITT C. NORRIS AND ALBERT N. NORRIS, OF RUSHVILLE, INDIANA.

SIDE-DRAFT SEED-DRILL.

SPECIFICATION forming part of Letters Patent No. 236,508, dated January 11, 1881.

Application filed May 21, 1880. (No model.)

To all whom it may concern :

Be it known that we, DEWITT C. NORRIS and ALBERT N. NORRIS, both citizens of the United States, residing at Rushville, in the county of Rush and State of Indiana, have invented certain new and useful Improvements in Side-Draft Seed-Drills, of which the following is a specification.

Our invention relates to improvements in side-draft three-hoed drills for drilling wheat, rye, oats, or barley; and the objects of our invention are, first, to provide the frame of a three-hoed side-draft drill with a hinged part and a means of adjusting said hinged part, whereby the hoes which are on the adjustable part may be adjusted to drill closer together or wider apart in the row, according to the various widths of the rows between the corn; second, to provide a feed-cup with a semicircular slit in one of its vertical sides, in which a curved cut-off operates, and with central holes in both sides to receive the journals of a non-adjustable feed-wheel, the ends of which abut against the inner smooth parallel walls of the feed-cup, which have no cheeks or grooves. These objects we attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a plan view of the frame of a three-hoed drill with the feed-box and feed-cups removed. Fig. 2 is a perspective view of the entire machine. Fig. 3 is a side view of one of the feed-cups, showing the semicircular slits in the side for the semicircular slide or cut-off to operate in. Fig. 4 is a vertical cross-section of the feed-cup, showing the feed-wheel mounted therein. Fig. 5 is a side elevation of the feed-cup, showing the opposite side from that shown in Fig. 3. Fig. 6 is a top or plan view of three feed-cups and the mechanism for operating the feed-wheels, also the devices for regulating the amount of grain fed by the feed-wheels. Fig. 7 is a top view of the three semicircular slides or cut-offs attached to their operating-bar, but detached from the feed-cups. Fig. 8 is a side elevation of Fig. 7, and Fig. 9 is an end view of Fig. 8.

Similar letters refer to similar parts throughout the several views.

The main frame is composed of the two parts A A', the part A having the usual opening or

slit A², to receive the driving-wheel F', said wheel being mounted in the boxes E E', and provided with the miter-wheels H H', all in the usual manner. The front standard, F, is also secured in the end of the slit A² and supported by the braces h h, also in the usual manner. The part A' of the frame is arranged at an angle to the part A, as shown in Fig. 1, and is united to the part A by the plates D D', one above and the other below the frame.

The plates D and D' are pivoted at c to the frame A, and firmly secured to the part A' by the bolts d d'. The plates D D' are each provided with an arm in which is formed the segment-slot f, in which fits a bolt, e, and all are arranged so that the part A' may be adjusted to the angle shown, or to an angle approaching more to a straight line with the part A, by means of which the hoes s s' s², which are attached to the lower part of the part A', may be adjusted so as to drill wide apart or close together.

On the front side of the part A' is secured a plate, B, having a series of holes, b b, as shown; and to the front standard, F, is secured the clevis G, with a side projecting arm provided with holes g, and a ring, G', projecting forward from its front side near its end.

The rod C is provided with hooks at each end, which fit into the holes b b of the plate B and into the holes g of the clevis G, as shown, by means of which the part A' of the frame may be adjusted open by inserting the hooked end of the rod C into the holes b closer to the inner end of the plate B, thus causing the drills to come more in line one with the other, and drill closer together. By attaching the rod C to the clevis close to the standard F a side draft is provided, and the closer the rod C is coupled to the standard F the more the drills are carried toward the right when draft is applied, and vice versa.

The feed-cups P may be of any ordinary form, having a semicircular slit, v, in one side, as shown in Fig. 3, for the semicircular slide t to operate in. The feed-wheel R may be of any ordinary form, although we prefer the corrugated wheel, as shown. Several of these feed-cups P are attached to the bottom of the feed-box J, and their lower ends inserted in the holes a a a of the adjustable frame A' over the

hoes $s s' s^2$. The square rod or shaft V passes through all the feed-wheels in the several cups, and one end of the rod is coupled to the rod I by the universal joint $n m$, by means of which and the driving-wheel and its gearing the feed-wheels R are rotated in the cups.

At the rear side of the feed-box J is secured a metal case, K, the upper part of which is provided with a graduated rib, k , and the lower part is provided with a slot, r , with a recess behind it, in which operates a nut, (not shown.) The thumb-screw O passes through the hole p of the indicator L, also through the slot r into the nut (not shown) contained in the recess behind said slot r , by means of which the indicator L may be moved laterally in either direction and made fast at any desired position. The lower end of the indicator L is firmly secured to the bar W, and to said bar, also, is secured the semicircular slides $t t t$, by means of the arms T T T, which are securely riveted or bolted to said bar, as shown in Figs. 7, 8, and 9. The semicircular slides $t t t$ are inserted into their respective semicircular slits v in the feed-cups, as shown in Fig. 6, and the indicator L is made fast to the case K, as before described.

The operation of our improved drills is as follows: If it is desired to throw the drills more to the right, then the rod C is hooked into one of the holes g nearer to the standard F. The draft being on the ring G' throws the rear end of the drill toward the right. This adjustment is regulated more or less, according to the hole in the clevis in which the rod C is hooked. If it is desired to drill the furrows nearer together, then the rod C is adjusted in the holes b of the plate B—that is, the nearer the rod C is to the inner end of the plate B the more the part A' is straightened out and the closer the furrows are made by the drills. The semicircular slides $t t t$ are operated by the indicator L and rod W to regulate the amount of grain fed. Thus, if but a small quantity of grain is to be planted, the indicator L is moved to the left until the indicator part indicates on the graduated rib k the desired amount of grain to be fed at each revolution of the driving-wheel F' . It is obvious, if more grain is to be fed, that by adjusting the slides $t t t$ farther out of the cups more grain will be presented to the action of the feed-wheels.

It will be observed that the semicircular slides $t t t$ fit very snugly around that side of the feed-wheel against which the grain ordinarily lies when in the cup, and that the lower edge of the semicircular slides are in close proximity to the bottom of the cup on the inside, and that the upper edge of the slide is above the top of the feed-wheel, so that the

grain cannot get to the feed-wheel only as it passes by the end of the slide, and that the slides can be perfectly adjusted to regulate the flow of grain to the feed-wheels.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a side-draft seed-drill, the frame A A', hinged by plates D D', the part A' provided with a plate, B, perforated with holes b , the part A provided with a standard and side projecting clevis, G, having holes g between the standard F and the ring G' , combined with the rod C, as and for the purpose specified.

2. The clevis G, having a side projection provided with holes g , and a ring or eye, G' , at its end, combined with the standard F, rod C, and frame A A', as and for the purpose specified.

3. The combination, in a side-draft seed-drill, of the side projecting clevis, G G', with holes g , the frame A, with hinged adjustable part A', the plate B, with holes b , and the rod C, substantially as described, for the purpose specified.

4. The frame A, with hinged part A', provided with the plate B, having holes $b b$, combined with the rod C, whereby the part A', with its drills, may be adjusted to drill furrows wide apart or close together, substantially as specified.

5. The feed-cup P, having a semicircular slit, v , in one of its vertical sides and central holes to receive the journals of the non-adjustable feed-wheel, and both its inner vertical walls at the ends of the feed-wheel formed parallel with each other, with no cheeks or grooves, in combination with the curved cut-off slide t , substantially as and for the purpose specified.

6. The combination, in an adjustable side-draft seed-drill, of the feed-cup P, having a semicircular slit in one of its vertical walls, and the inside surfaces of said walls formed straight, without any annular grooves or checks, the cut-off slide consisting of the curved part t , having a ring-bracket projecting at right angles from one end of the curved part, and further provided with an arm, T, which projects at right angles to the ring part on the opposite side from that of the slide, but parallel thereto, and the rod W, as shown and described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

DEWITT C. NORRIS.
ALBERT N. NORRIS.

Witnesses:

JESSE J. SPANN,
JOHN Q. THOMAS.