

No. 607,600.

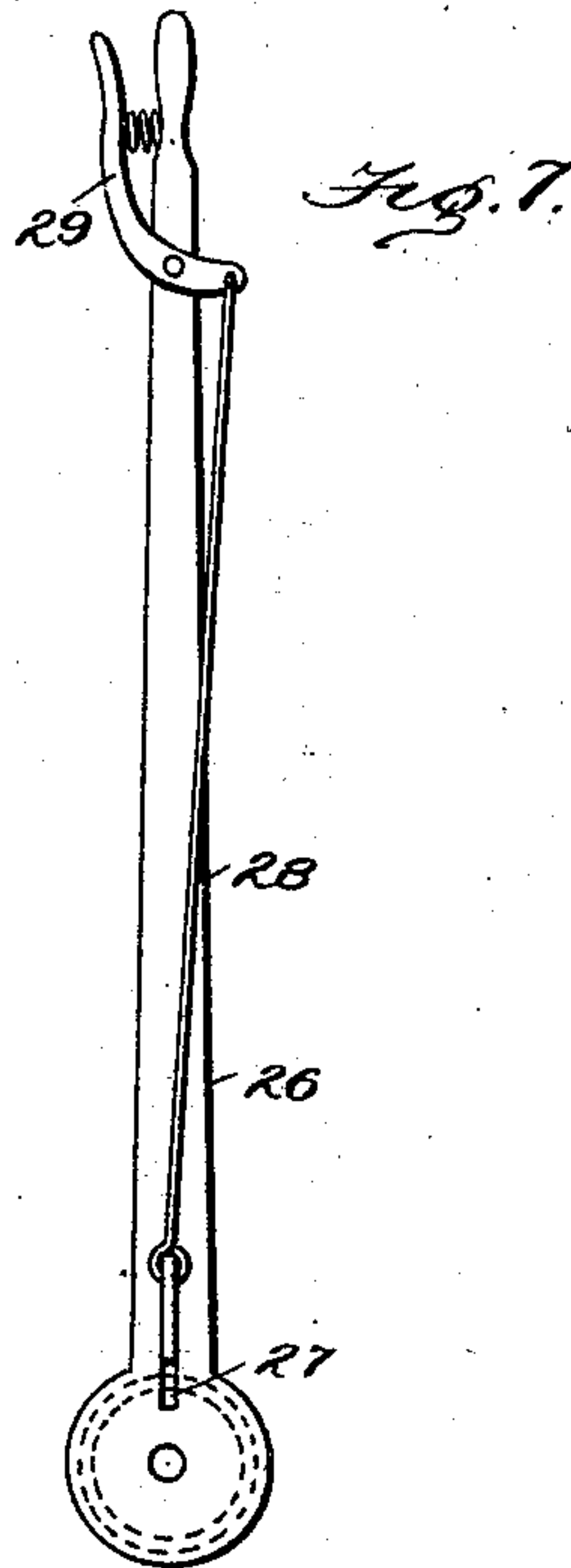
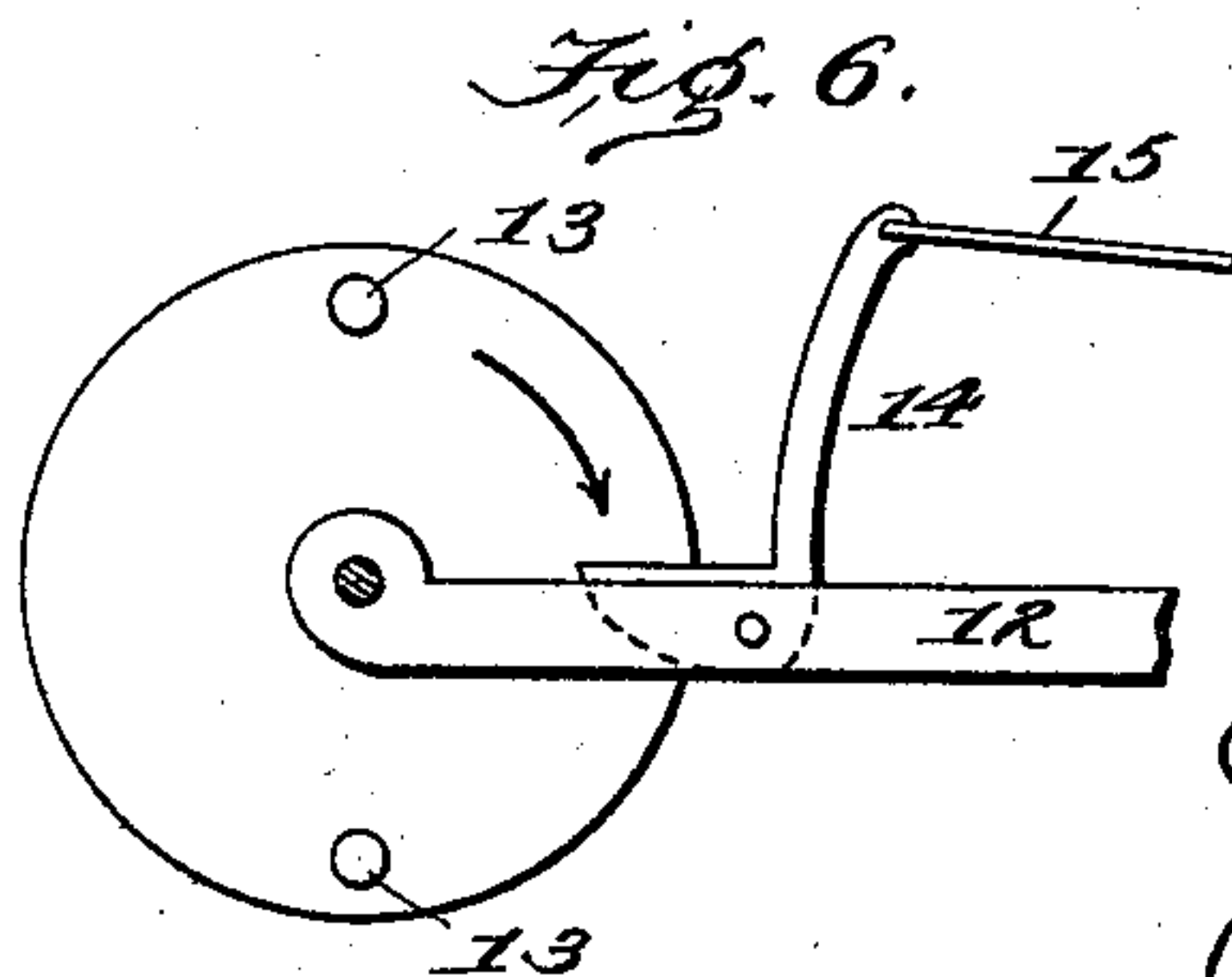
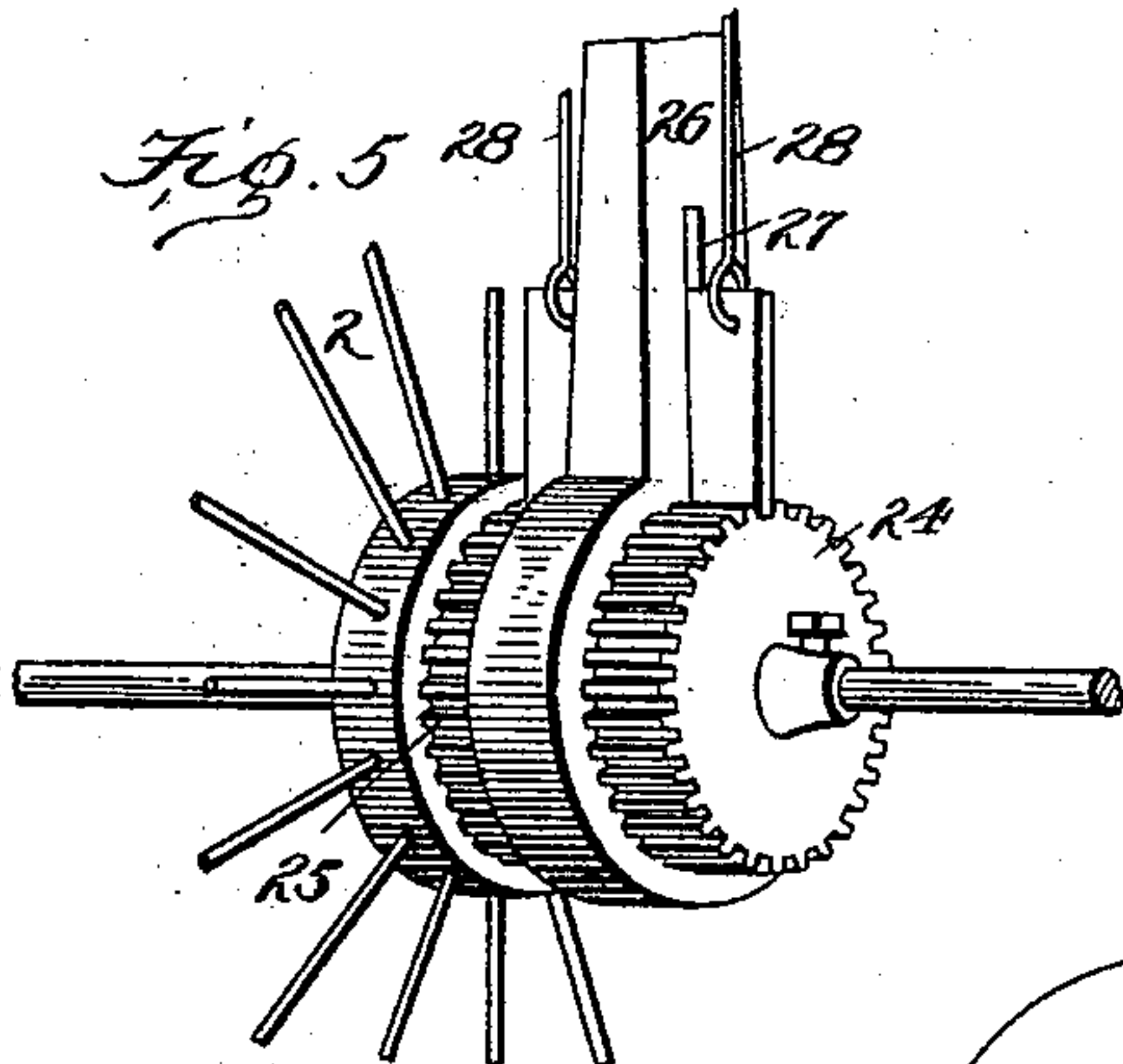
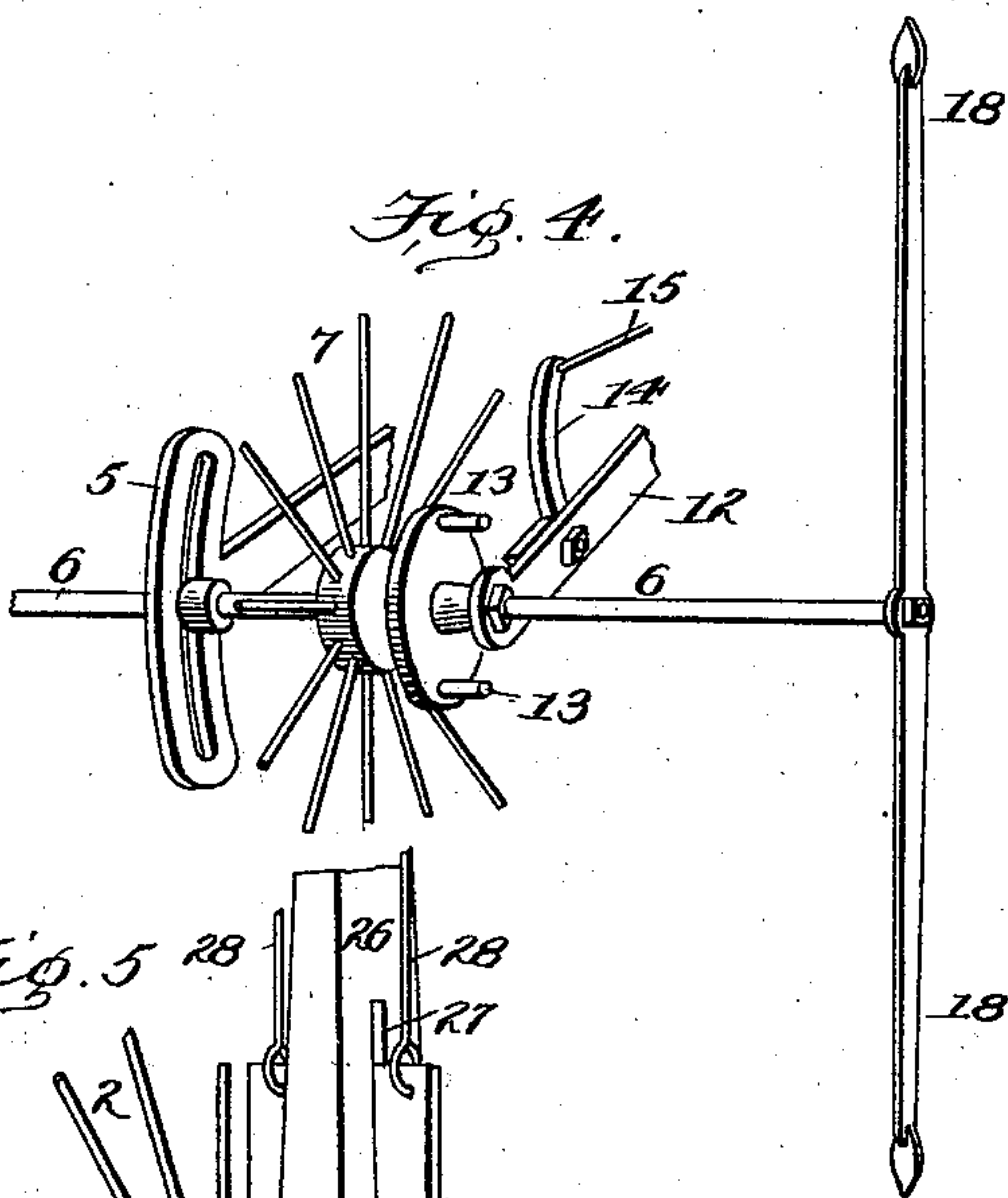
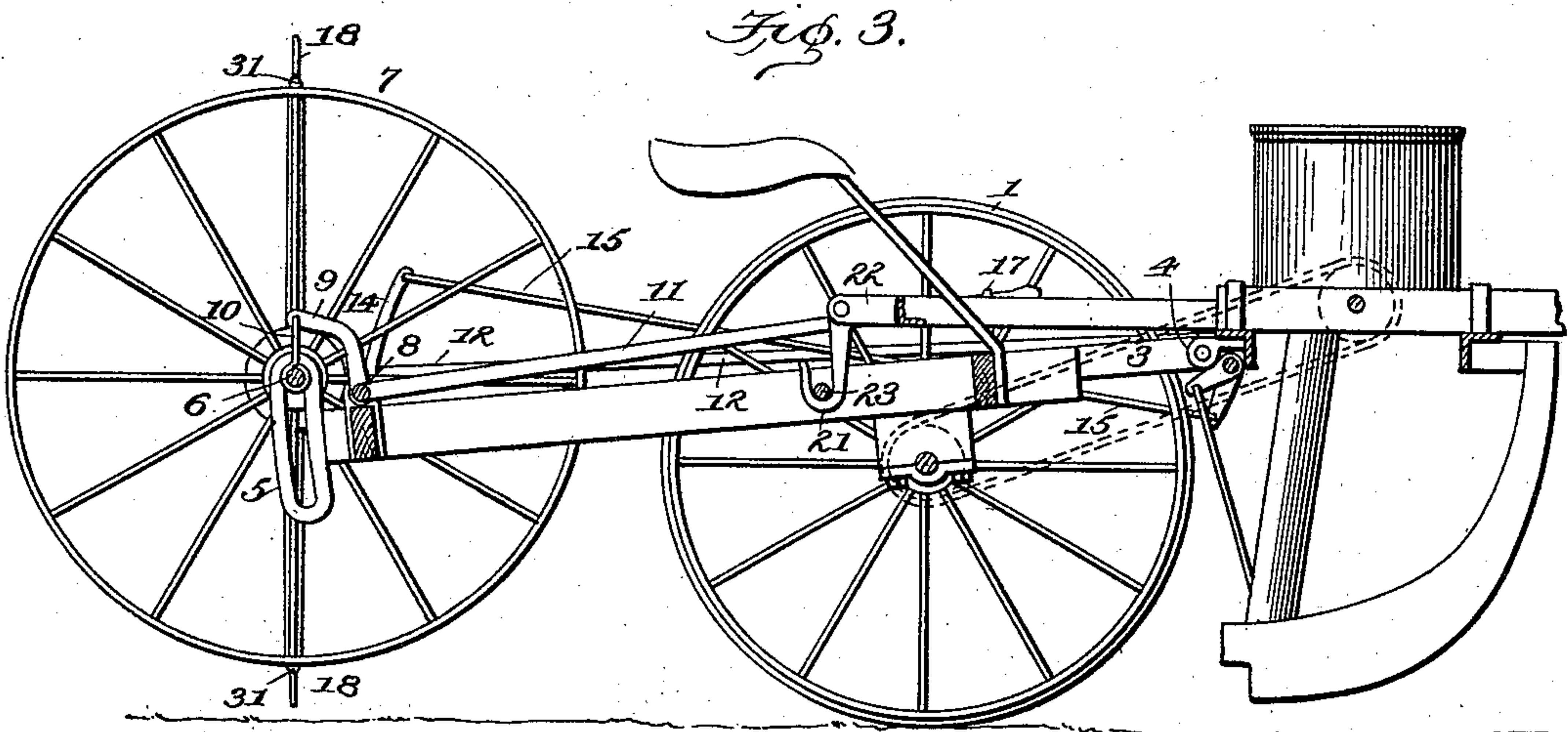
Patented July 19, 1898.

C. H. DILL.
CORN PLANTER.

(Application filed Dec. 20, 1897.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

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CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 607,600, dated July 19, 1898.

Application filed December 20, 1897. Serial No. 662,584. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. DILL, a citizen of the United States, residing at Danville, in the county of Hendricks and State of Indiana, have invented a new and useful Improvement in Corn-Planters, of which the following is a specification.

I have made certain improvements in that type of corn-planters in which the hill-dropping is controlled by check-rowing devices and in which machine forward furrow-openers of a seed-dropping frame having a corn-containing hopper at each end are hinged to a carrying-frame from which the driver controls the operation of the dropping device.

The improvements are illustrated in the accompanying drawings, and in the following description and claims they will be set out so as to be distinguished from what is old in the art.

Referring to the drawings, Figure 1 is a top view of the planter. Fig. 2 is a vertical longitudinal section of the same, the machine being shown with the furrow-openers and the rear wheels in the position when the dropping devices are in operation; and Fig. 3 is a like view showing the runners and the rear wheels raised from the ground when the machine is not planting. Fig. 4 is a perspective view of the hub part of one of the rear wheels for actuating the dropping devices and the provision for controlling the operation of the dropping-wheels. Fig. 5 shows in perspective the double ratchet device on the axle of the carrying-wheels for setting the machine at the starting of the line. Fig. 6 is the tripping device for dropping the corn. Fig. 7 is the ratchet-lever, and Fig. 8 shows one of the front pivotally-mounted hill-markers for indicating the starting-place of the machine at the end of the row.

The furrow-forming and seed-dropping parts may be of any suitable construction for running the furrows and dropping the corn for the hills of two rows, and for this purpose the construction shown is a front frame to which the draft-tongue is secured and having a corn-hopper at each end and a furrow runner or opener beneath each hopper with proper corn-dropping devices. This front draft part is hinged to a frame-carrying part,

on which the driver's seat is mounted and which has the carrying-wheels 1 2, the one 2 of which is loose upon the axle for a purpose which I will presently state. The hinging of the draft and carrying-frame parts is preferably made by plates 3, connecting lugs 4 4 at the junction of the two frames at the top thereof. The carrying-frame extends about two-thirds of its length back of the axle of the carrying-wheels, and to each side of said frame is secured a strong slotted bracket 5 5, the slots standing vertical and concentric with a circle of which the axle is the center and a short distance in the rear of said frame. Within these slots the axle 6 of a pair of wheels 7 7 is confined, so that it is free for vertical movement and adjustment within said slots. The carrying-wheels are the usual broad iron coverers following the runners for covering the dropped corn and leveling down the furrow and to form an even track for the dropping-wheels. The rear wheels are also of iron of greater diameter than the carrying-wheels and run in the smooth level paths of the coverers.

A cross-rod 8, loosely mounted at the rear end of the carrying-frame, has a crank-arm 9 9 at each end, and these arms are connected by links 10 10 to the axle near each slotted bracket, so that by means of a lever 11, connecting the cranked rod, the axle can be raised within the slotted brackets to clear the wheels of the ground for a purpose to be presently stated.

The axle 6 is braced and supported by a bar 12 at each side of the machine, pivotally connecting the ends of the said axle with lugs 30 on the front draft-frame, whereby the confining-brackets of the rear-wheel axle are relieved of the strain produced by the resistance of the travel of the wheels. At their outer ends the hubs of these wheels are provided with knockers, preferably two pins 13 13, diametrically placed on the face of a flange on the hub for engaging and actuating a trip device 14, pivoted to the bar connecting the said axle and the front draft-frame. Hill-markers 31 on the circumference of the wheels correspond to the trip-pins. A rod 15 connects this trip device with suitable valve connections of the hoppers, which are

operated by the knockers to effect the dropping of the corn in hills at the furrow-openers.

The slotted brackets are strong castings, and by means of collars on the axle the rear wheels are kept in line with the covering-wheels, while the pivotally-connected side brace-rods for the axle and the slotted brackets allow the wheels to be raised from the ground when it is desired to stop the dropping of the corn and to rise and fall to conform to the surface of the ground when dropping the corn without rocking the carrying-frame. The lever, 11 connecting the cranked rod, serves to raise the rear wheels when desired, and when so raised the lever is engaged with a catch 17 on the frame; but when the wheels are down the lever stands up within reach of the driver.

The ends of the axle 6, Fig. 4, are extended a sufficient distance beyond the hubs to carry fixed arms 18 medially mounted, which serve to mark the hills of corn dropped by the action of the knockers, and for this purpose these marking-arms are secured to the ends of the axle in coincident radial lines with the knockers and are of a length a little greater than the diameter of the wheels, so that as each knocker engages the corn-dropping trip the marker will stand vertical and make a hole in the ground as a hill-mark. As the knockers revolve each end of the arm will make such a hill-mark and the wheel-marks will correspond.

For indicating the starting-point of the hills the front corn-dropping part is provided at each end with markers, each marker being an arm 19, Fig. 8, pivotally mounted on a bracket 20 and carrying two pivotally-mounted markers, which when the carrying-arm 19 is extended hang down on the ground to indicate the starting of the machine at the end of the row and ready to drop the front hills in proper line with the two last hills dropped. In carrying the machine to the starting-point it will be understood that the rear wheels and the front dropping part are raised and held from the ground and prevent the operation of the dropping device and to allow the machine freedom for being turned and carried on the carrying-wheels, as shown in Fig. 3. For this purpose I provide means whereby the front dropping part is raised to carry its furrow-runners from the ground. This provision consists of a hook 21, pivotally hanging from the end of a support 22, firmly fixed to the front draft-frame at the middle of its length and crossing the hinged connection of the two frames, said hook being adapted to hang beneath a cross-rod 23 of the carrying-frame in position to automatically engage it, and thereby cause the front runner part to be lifted from the ground. This, however, can only be effected when the rear dropping-wheels are raised, and this effect is obtained as follows: The construction and mounting of the carrying-frame part and hinged-runner part is such as to make its front end the heaviest, so that when the rear wheels are down the front runner part will also be down, and in this position of these operating parts the hook will hang below the cross-rod and will not engage it, being for this purpose about six inches long, as in Fig. 2; but when the rear wheels are raised from the ground the rear end of the carrying-frame will be made the heaviest, and will thereby fall by its greater weight, and its hinged end will be correspondingly raised, and as the hook-support crosses the hinged joint it will also be raised, and thereby bring the hook into engagement with the cross-rod and hold the front runner part up from the ground, as in Fig. 3. The action of the hook therefore is made automatic to effect the lifting of the front runner part and to hold it when lifted when the machine is not planting.

When the front runner part is upon the ground, the hook hangs freely down out of engagement with the cross-bar, but in position to engage it when the rear wheels are raised. As the end of the tongue is held up by the horses, the hook and the tongue therefore co-act to raise and hold the runner draft part up, when the prepondering weight of the carrying-frame is free to act, and this is one of the features of my improvement and gives the advantage of greater ease in managing the machine for turning it in the field and for transportation, for if it was not for the hook the front runner part would drag, while the self-acting function of the hook saves the driver all trouble in controlling the machine in the field and in going to and from the field. The provision for raising the hind wheels being convenient to the driver, such provision, when brought into action, automatically brings into action the hook by which the front runner part is raised and lowered. As shown in the drawings, the hook hangs behind the axle of the carrying-wheels, and I prefer this arrangement; but it may be in front of the axle, so long as it will give the necessary lifting leverage in the way stated.

When the hook of the front runner part is engaged with the carrying part, the carrying-wheels and the runner part will be about equally raised.

The corn-dropping devices of the hoppers when of the rotary construction may be actuated in a well-known manner by a shaft driven by a sprocket-chain from the axle of the carrying-wheels, as shown in the top view.

An important feature of my improvement is the provision whereby the machine can be set to the starting-mark and by which, should the machine get out of line, it can be set in line with the hills. This provision consists of a double ratchet device mounted upon the axle of the carrying-wheels and is for moving the whole machine instead of using the team for this purpose. This double ratchet device is used with the loose carrying-wheel 2 and upon its axle, as in Fig. 5. One of the ratchet-wheels 24 is fixed upon the axle and

the other ratchet-wheel 25 is fixed upon the hub of the loose wheel, and between these ratchet-wheels a lever 26 is loosely mounted upon the axle and carries on each side a pawl adapted to engage the ratchet-wheels, as it may be desired to move the machine forward or backward to set it to drop at the hill-mark. The pawls are preferably fitted to slide in guide-grooves 27 in the lever, and each pawl is connected to a rod 28, which connects with a spring-pressed thumb-lever 29, the action of the spring constantly exerting force to lift and to hold the pawls out of engagement with the ratchet-wheels, so that in their normal positions the pawls are held out of the teeth of the ratchet-wheels. The lever is held in position within reach of the driver, and when it is necessary to set the machine he grasps it and pressing upon the thumb-lever forces down the pawls and engages them with their respective ratchets, and then moving the lever forward or backward he turns both wheels to get the machine in line with the last hills dropped.

When the machine is turned at the end of the hills to start back, it may be some little distance behind or in front of the two last hills dropped before the machine was turned and from which last hills the start must be made, and the moving of the lever will cause both wheels to carry the machine so that the heels of the shoes will be in line with the hills last dropped. This movement of the machine may be forward or backward. Without this lever the driver would have to depend on the team to put the machine to the line to drop the corn straight to the line and to the hills.

The placing of one of the ratchets on the loose wheels is to allow the wheel to run back on turning the machine, and then by causing the pawls to engage both ratchets locks the loose wheel to the shaft, so that the machine can be set by the lever to the mark.

The trip-lever is adapted to allow the rear wheels to turn back without operating the dropping devices of the hopper.

I may provide for renewing the acting end of the trip-lever by a suitable shoe-piece made adjustable by slot and set-screw.

The provision on the machine of the check-row hill-markers on the rear wheels and the provision of the line-markers on the front runner part makes it comparatively easy for the driver in handling the machine by the field-marks and hills, the front markers being raised and lowered to suit the turning of the machine.

It will be understood that when the machine is planting the front runner part is free to rise and fall to the surface of the ground. It will also be understood that a single pawl may be adapted for engagement with both ratchets and that a single tappet-bar may connect the valves of both hoppers by a cross-rod at the hinge.

I claim as my improvement—

1. The combination in a corn-planter of the

main frame and its carrying-wheels, the hinged front runner dropping part and the rear wheels mounted for vertical adjustment on the main frame, with a hook 21, supported on the front runner part and crossing the hinged connection of the said frame parts, is adapted to automatically engage a fixed part on the main frame when it is desired to raise the front runner dropping part and the rear wheels from the ground and means connecting the rear wheels and the hopper dropping devices, for the purpose stated.

2. In a corn-planter the combination of the main carrying-frame having the vertically-slotted brackets 5, 5 at its rear end, the rear wheels by their axle mounted within said bracket-slots, with means for vertically adjusting said wheels consisting of the cross-rod 8 having the cranks 9, 9, the links 10, 10, connecting said cranks with the axle and the lever 11, connecting said cross-rod, the front hinged runner dropping part, means for actuating the corn-dropping devices from said rear wheels and the longitudinal bars 12, 12 pivotally connecting the ends of said axle and the said hinged front runner dropping part at each side of the frame.

3. In a corn-planter, the combination of the main carrying-frame, the front runner dropping part hinged to said frame, and the rear wheels adapted to be raised from the ground, with a device carried by a support on the front runner part, in position to engage a fixed part of the main frame and thereby cause the said front runner part to be lifted free from the ground simultaneously with the lifting of the rear wheels and by their weight causing the rearward tilting of the main frame on its carrying-wheels.

4. In a corn-planter, the combination of the main carrying-frame having one of its carrying-wheels loose on the axle, a front runner dropping part hinged to said main frame, and the rear wheels, and means connecting them with the dropping devices of the front runner part, with a ratchet device mounted on the axle of the main frame, consisting of a ratchet fixed on the axle, a ratchet fixed on the hub of the loose wheel, and a lever loose on the axle and having ratchets normally held out of engagement with said ratchet-wheels whereby the machine may be moved upon its carrying-wheels to set it to the starting line or hills, in the way stated.

5. The combination in a corn-planter, of the main carrying-frame, a front runner dropping part hinged to said frame, the rear wheels and means connecting them with the dropping devices, with hill-markers on each end of the axle of the rear wheels and line-markers on each end of the front runner dropping part, whereby the hills are marked as the corn is dropped and the starting-line of the machine indicated at the end of the row.

6. In a corn-planter, the combination with the main carrying-frame, the front runner dropping part and the rear wheels having

knockers, slotted brackets on the main frame
confining the axle of the knocker-wheels, with
the longitudinal bars pivotally connecting
the ends of the axle of the rear wheels and
5 the front runner dropping part, and tripping
devices pivotally mounted on the said side
bar or bars and connecting the corn-dropping
devices.

In testimony whereof I have hereunto
signed this specification in the presence of 10
witnesses.

CHARLES H. DILL.

Witnesses:

GEORGE EASLEY,
CONRAD E. HARLAN.