

No. 695,612.

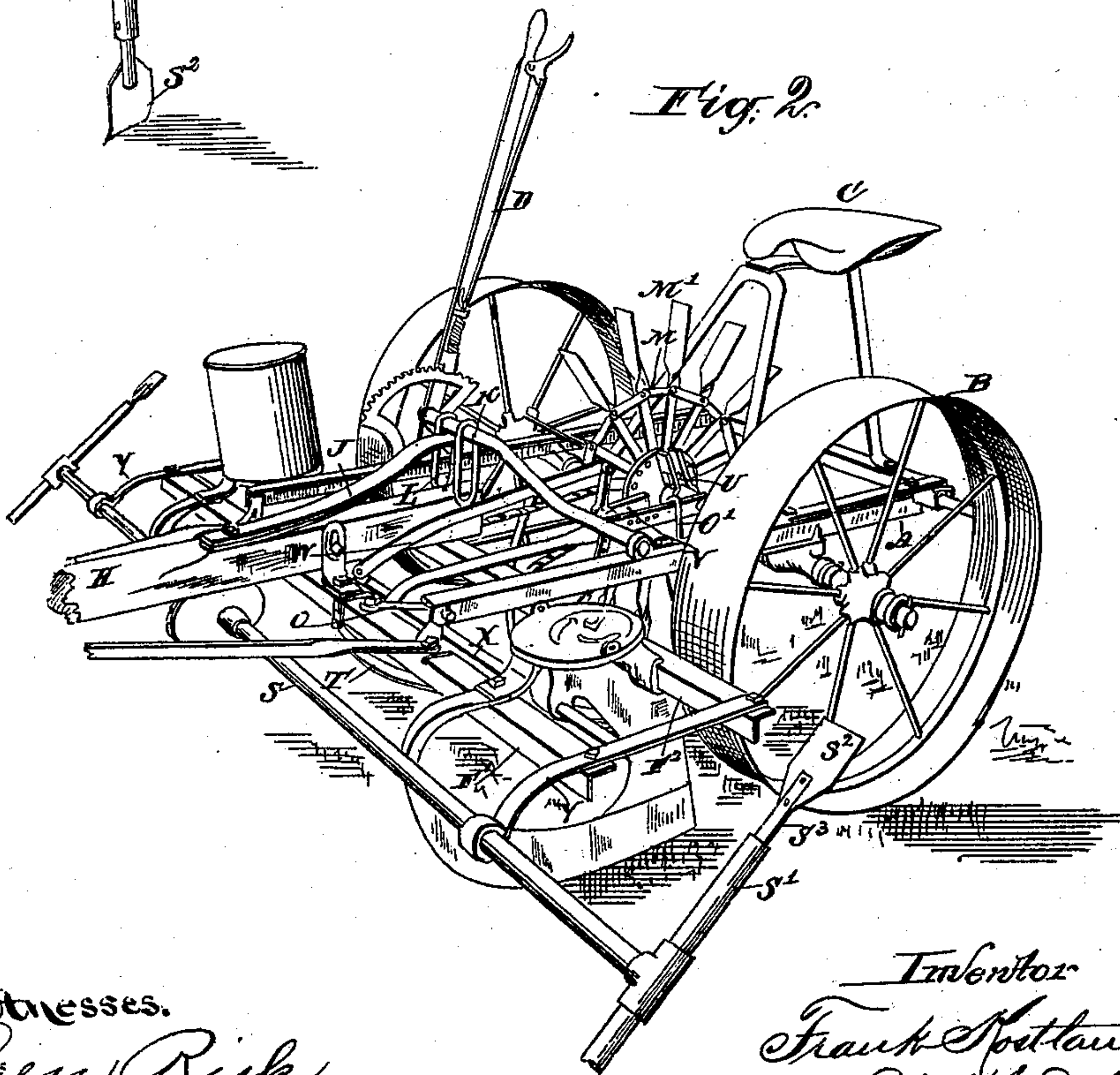
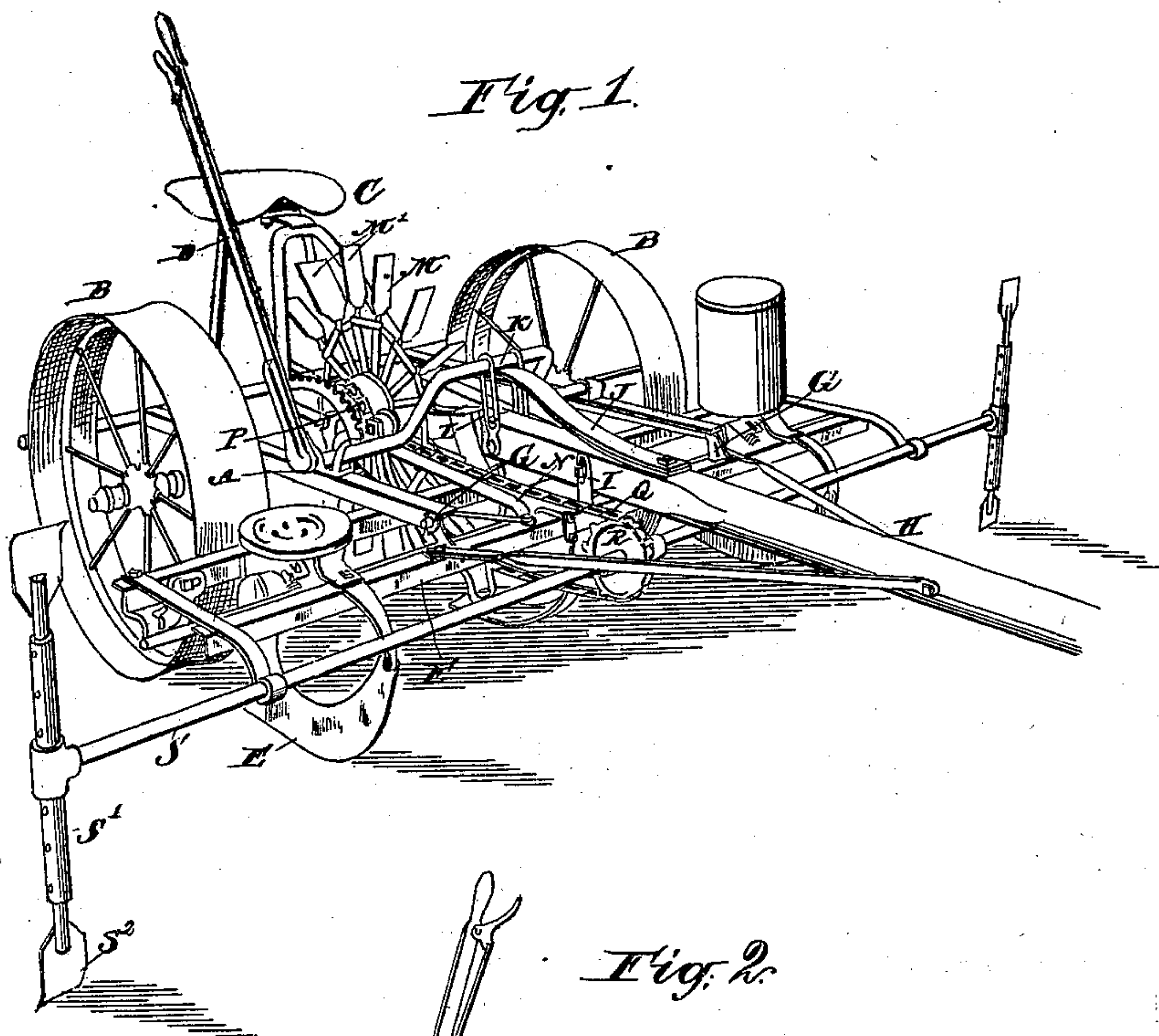
Patented Mar. 18, 1902.

F. KOSTLAU.
CORN PLANTER.

(Application filed July 5, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.
Green Bush
Harmon Smith

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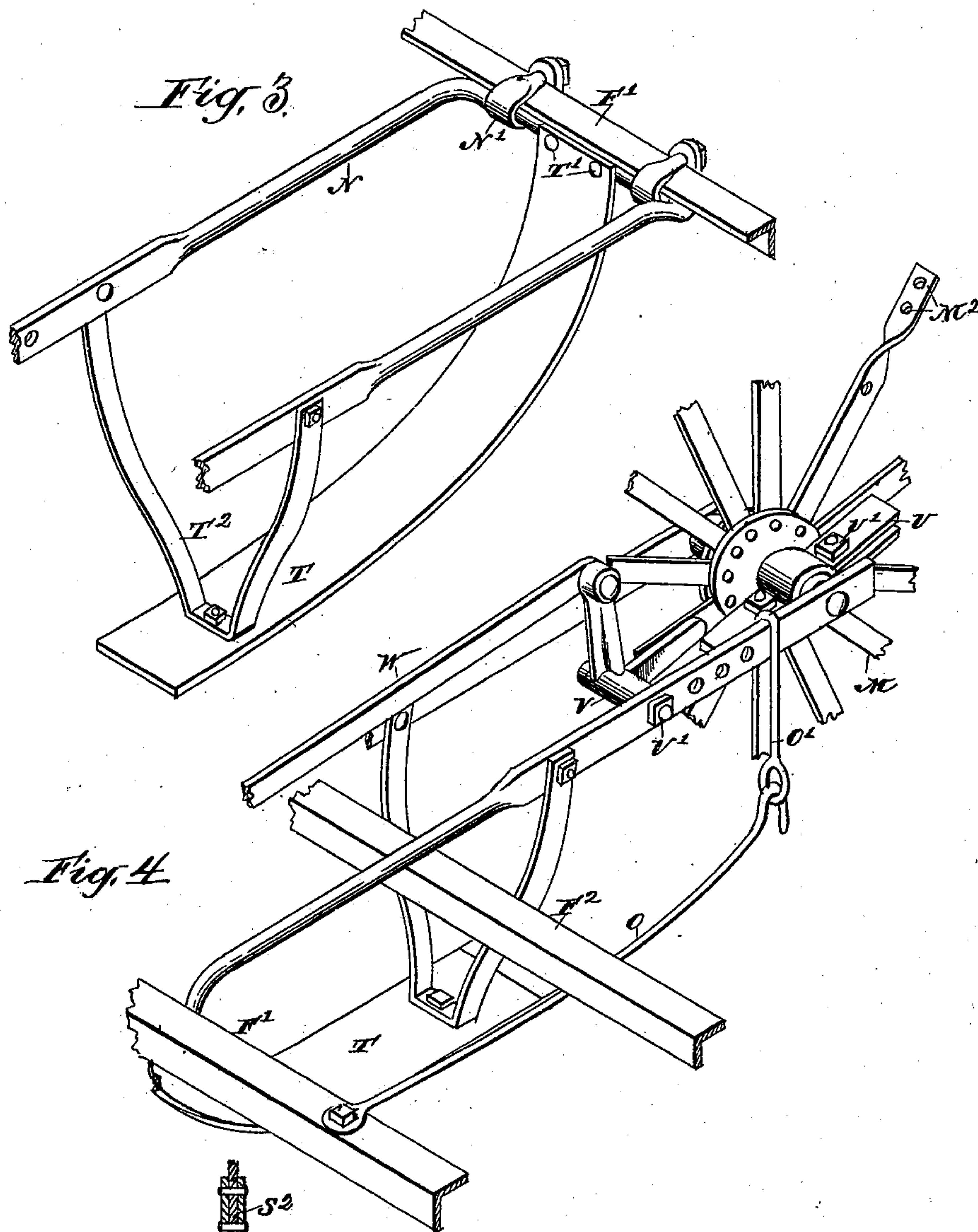


Fig. 4

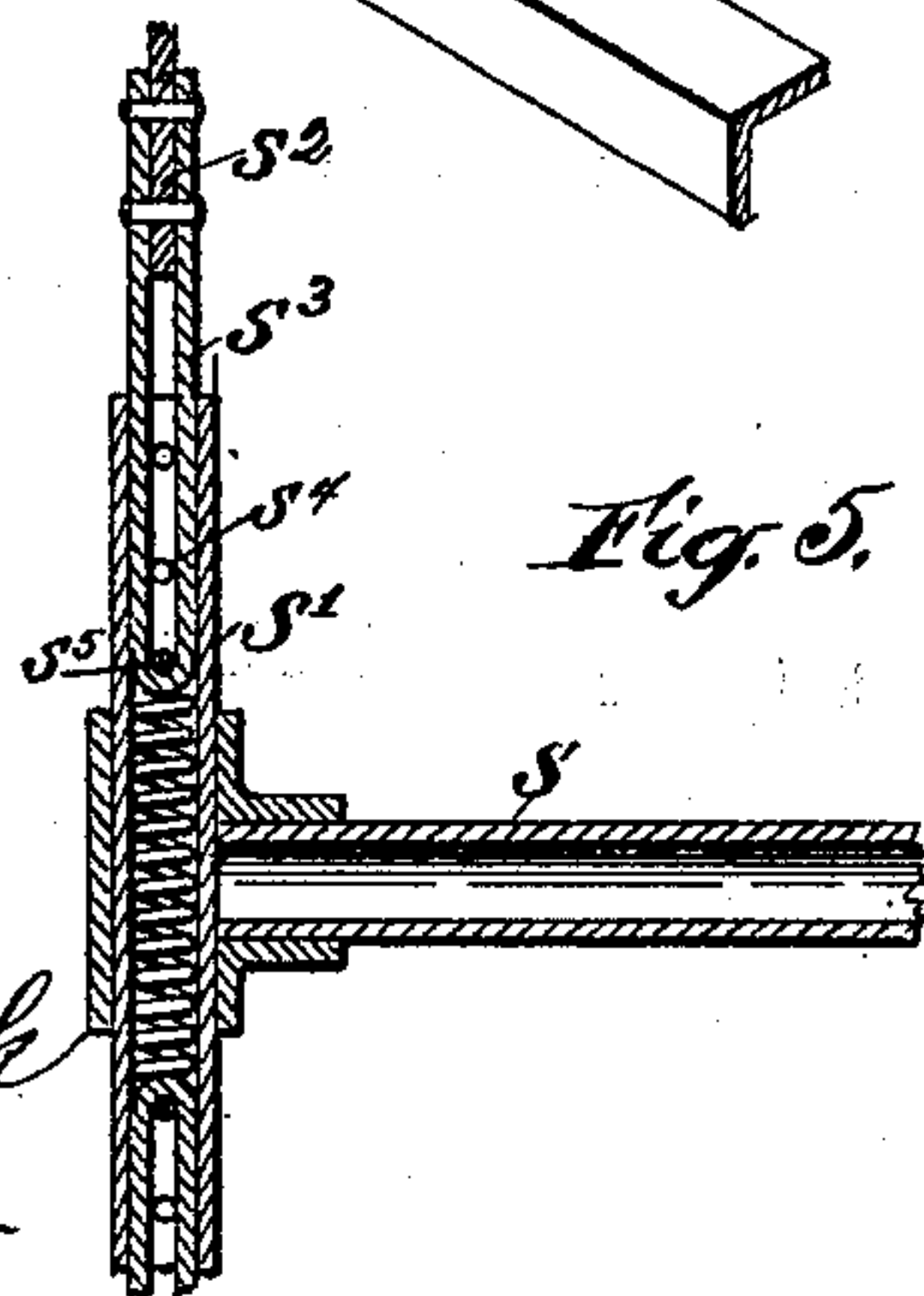


Fig. 5

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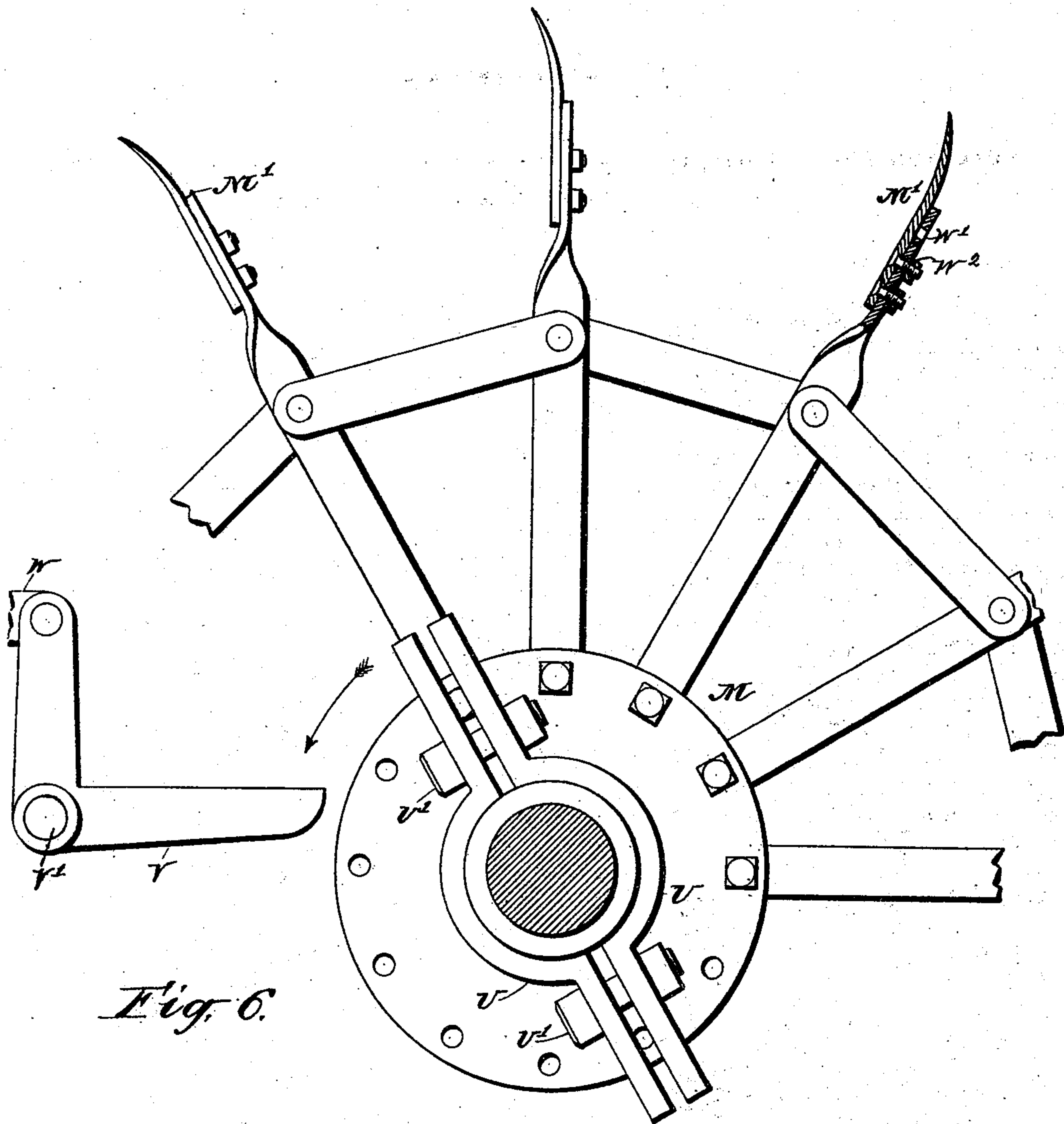
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(No Model.)

3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

FRANK KOSTLAU, OF TRAER, IOWA, ASSIGNOR OF ONE-HALF TO J. F. KLADIVO, OF TRAER, IOWA.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 695,612, dated March 18, 1902.

Application filed July 5, 1901. Serial No. 67,115. (No model.)

To all whom it may concern:

Be it known that I, FRANK KOSTLAU, a citizen of the United States, residing at Traer, in the county of Tama and State of Iowa, have invented certain new and useful Improvements in Corn-Planters; and I 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.

This invention relates to automatic corn-planters designed to operate without the use of a check-wire; and the object of the invention is to improve the construction of such planters so as to render them more accurate in the spacing of the hills and so as to enable the operator to manipulate and adjust the machine with ease and certainty.

The nature of the invention will fully appear in the description and claims following, reference being had to the accompanying drawings, in which—

Figure 1 is a front view in perspective of a planter embodying my invention as in use. Fig. 2 is a similar view, but from another point of observation. Fig. 3 shows a detail of the shoe or runner and its connections. Fig. 4 shows the same from the opposite point of view, together with part of the space-wheel and feed-operating mechanism. Fig. 5 is a central section showing the construction of the marking apparatus. Fig. 6 is a fragmentary side view, partly in section, showing the cam that operates the feed mechanism and the adjustment of the space-wheel blades.

The improvements forming the subject of this invention are shown applied to a planter of a well-known type, which need not be described in detail.

The following will serve to show the relation of the improvements herein to the old machine:

A is the wheel-frame of the traction portion of the planter, supported by the covering-wheels B. This frame is provided with a seat C and a lever D for raising and depressing the shoes or furrow-openers E, attached to the forward or runner frame F. This frame is jointed to the rear frame at G. H

is the tongue, which is hinged to the forward

frame at I, so as to have a limited movement independent of the frame. These parts are of well-known construction and common to most of the planters in general use.

In applying my improvements provision is made for a flexible connection of the tongue with the rest of the planter, and particularly the rear frame. To this end a strong spring J is secured to the tongue, its free end bearing on the under side of a bail K, to which the lever D is secured. Slotted links L, attached to the rear end of the tongue, hold the bail in contact with the spring, but allow a limited movement of the tongue and bail with respect to each other. It is evident that when the lever is thrown back the bail is elevated and through the medium of the links serves to elevate the rear end of the tongue. This in turn lifts the forward frame, which is held from tilting by means which will be hereinafter described. Near the middle of the rear frame and nearly in front of the driver's seat is mounted a space-wheel M in the nature of a spider, with terminal blades M', adapted to penetrate the ground a suitable distance. The diameter of the space-wheel is preferably such that it measures off two hill-spaces or cross-rows at each revolution. In practice I provide it with two blades M', diametrically opposite and considerably wider than the others, to denote the relative position of the hill. The space-wheel is mounted revolvably between the arms of a yoke N, pivotally attached to the forward beam F' of the front frame by clips N'. The arms of the yoke pass backwardly over the rear beam F² of the front frame. The space-wheel is forced into penetrating contact with the earth by a spring-rod O, whose forward end is attached to the front beam F', and its rear end connects with the yoke by a link O'. The spring-rod also supports the rear portion of the runner-frame F and prevents tilting, as above intimated. At one side of the space-wheel and revolving with it is a sprocket P, communicating by a link belt Q with another sprocket R, secured to a shaft S, running in bearings Y, attached to the runner-frame. This shaft projects a considerable distance each side of the planter,

and at its ends are arms S' , provided with blades S^2 , which in the revolution of the shaft and space-wheel are designed to register with the impressions made in the earth by the two broad blades of the wheel M. Should they not so register at any time, the operator knows that the planting is out of time and adjusts the space-wheel and its connections accordingly. This is easily done by elevating the machine-frame by means of the lift-lever and turning the space-wheel a little by hand, it being within easy reach of the operator. It is to be noted also that the action of the markers S^2 is at all times within easy range of the operator's eye, and any discrepancy between its marking and that of the space-wheel, which has previously passed over the same ground, may be instantly noted and corrected.

In practice the arms S' are made tubular, so as to take the shank S^3 of the markers. These are formed by folding over half-round iron and riveting the marking-blades between the ends. The tubular arms are provided with holes S^4 , and through these pass pins S^5 , also passing through the slot formed by looping the shank. This allows for a limited movement of the markers, so that in case they strike a stone or other hard obstruction they may yield without breakage or other disturbance. The blades are held normally to the proper position by a spring S^6 between the inner ends of the shanks. The spacing of the markers may be adjusted by means of a series of holes for the pins S^5 .

To prevent, as far as possible, the unevenness of the ground from throwing the space-wheel out of line with the previous planting, I provide a shoe T to run on the ground ahead of the space-wheel and flatten out a smooth track for such wheel. This shoe is secured to the yoke at T' in front and by a stirrup T^2 at the rear.

To the hub of the space-wheel is clamped a pair of iron straps U by bolts U' . In front of them and in their path as the space-wheel revolves is mounted a bell-crank lever V on a stud V' , secured to the yoke. The upper arm of the bell-crank engages a rod W, the front end of which connects with the rock-shaft X, that actuates the feed devices. In the revolution of the space-wheel the straps U engage the free end of the bell-crank, and so oscillate the feed-shaft, which is restored to normal position by a spring, (not shown,) this spring being a part of most planters of the check-row type to which my invention is applicable with little or no change in the

dropping mechanism as distinguished from the trip mechanism to actuate the dropper.

By a radial adjustment of the blades of the space-wheel the width between rows may be varied at pleasure. This may be done by providing two or more holes W' W^2 in the wheel-arm, as shown.

In practice it is found that the curving of the space-wheel blades in the manner shown tends greatly to insure uniform spacing, from the fact that the blades are thrust down nearly straight into the soil instead of entering it at an angle, as would be the case were they straight. In the latter case if the blade strikes a hard clod it rides over the clod instead of cutting through it, and this of course throws the space-wheel out of step with the preceding planting. It is found also that the construction is such that the operator may regulate the spacing by his foot within certain limits. If the space-wheel is overstepping, he has only to press down on the yoke carrying the space-wheel with his foot, whereby the spacing is shortened a little and the planting brought into line.

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

1. In a corn-planter, the combination with a pivotally-connected runner-frame and wheel-frame, substantially as described, of a tongue pivotally attached to the forward part of the frame, a spring secured to the upper part of the tongue, a bail mounted on the rear frame, a lever to tilt the same, and links attached to the tongue and embracing the bail, said links being slotted to allow movement of the bail toward the tongue, substantially as described.

2. In a corn-planter, the combination with a space-wheel and seed-dropping mechanism, substantially as described, of an adjustable tripping device clamped to the hub of the space-wheel, and adapted to engage the tripping-lever of the dropper.

3. In a corn-planter, the combination with the forward or runner frame of the planter, of a space-wheel yoke hinged to the forward beam and passing over the rear beam of said frame, a spring secured to the front beam and passing under the rear beam, and a connection of the rear end of said spring with said yoke, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK KOSTLAU.

Witnesses:

JOHN C. HEALD,
M. H. BURTON.