

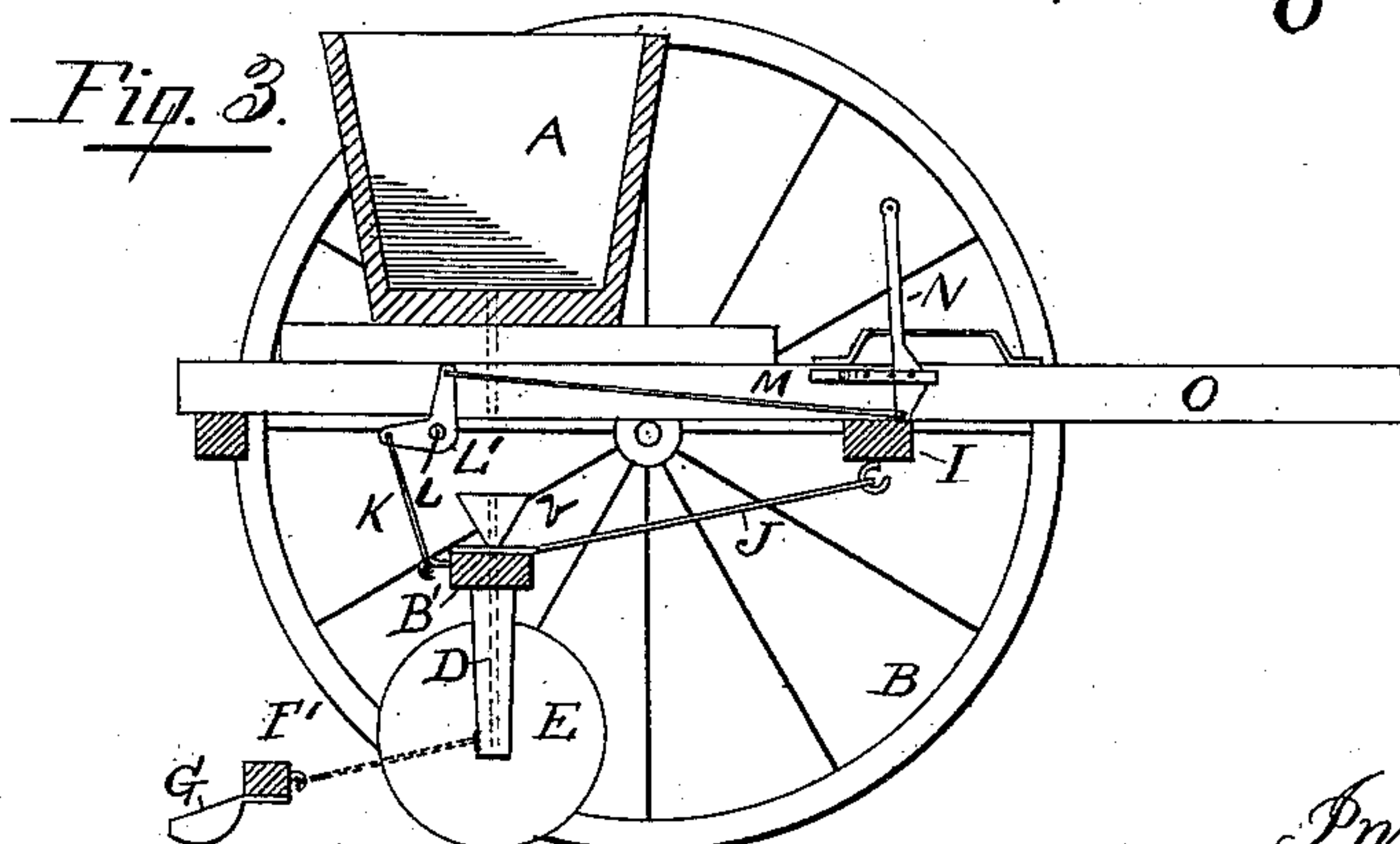
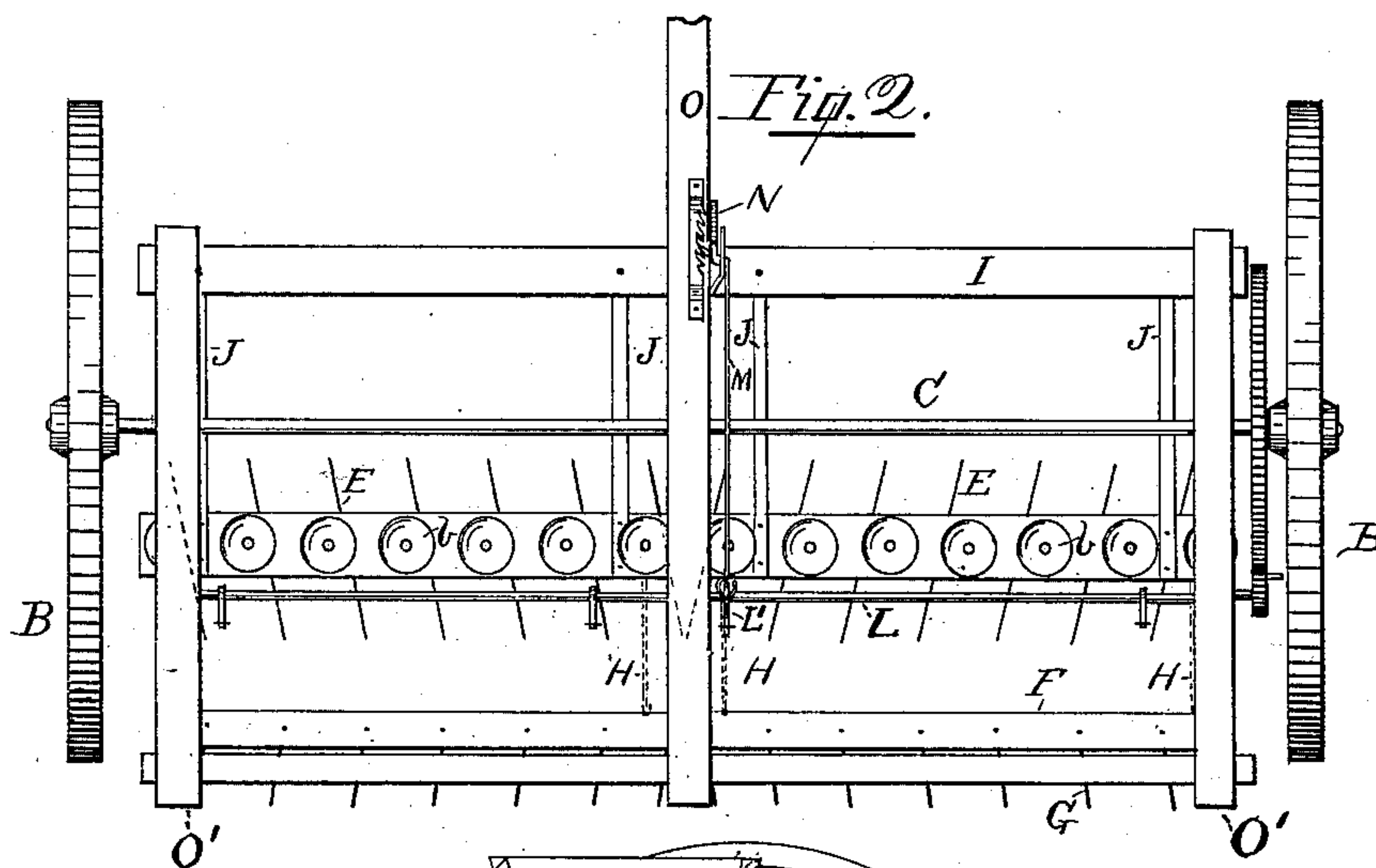
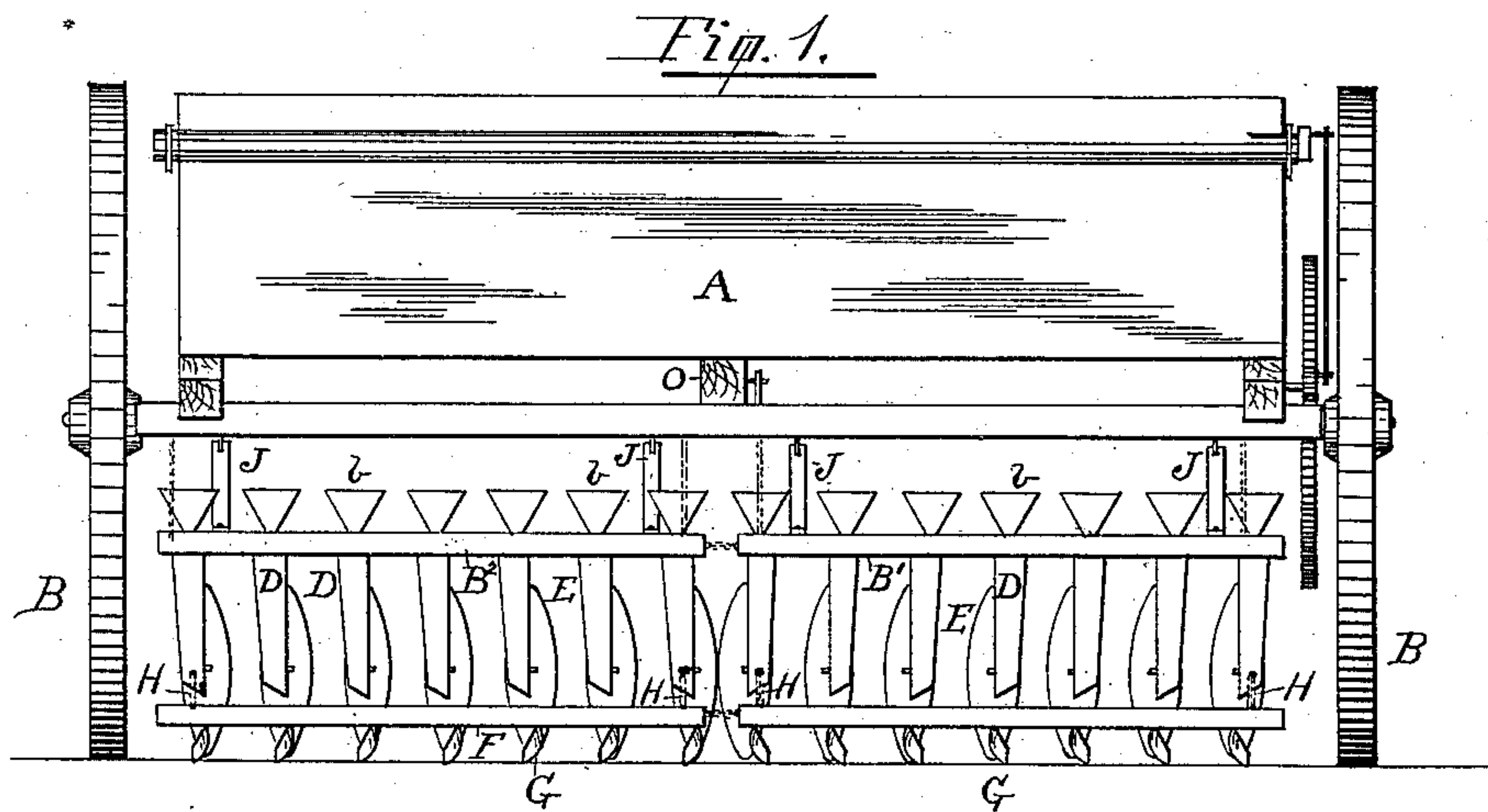
(No Model.)

F. REYNER.

SEED DRILL.

No. 359,470.

Patented Mar. 15, 1887.



Witnesses.
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UNITED STATES PATENT OFFICE.

FRANCIS REYNER, OF LATHROP, CALIFORNIA.

SEED-DRILL.

SPECIFICATION forming part of Letters Patent No. 359,470, dated March 15, 1887.

Application filed October 26, 1886. Serial No. 217,383. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS REYNER, a citizen of the United States, residing at Lathrop, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Seed-Drills; and I 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.

Figure 1 is a rear end view of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a vertical longitudinal section of the same.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a seed-drill that shall be convenient in use and effective in operation.

It consists in attaching a series of revolving disks and drag-teeth to the frame in sections, so that one portion of such disks and teeth shall be at an angle to the other portion, and in such other devices as will be more fully set forth hereinafter, and particularly pointed out in the claims.

The invention will be first described in connection with the drawings, and then pointed out in the claims.

B represents the carrying-wheels, and C the axle. To the axle C is attached the main frame, composed of I, a front beam, and of F, a rear beam. These two beams are connected together by side cross-beams, O'. Upon the above-described frame is mounted a seed-hopper, A, and a draft-pole, O. The wheels B, frame I F O', and pole O thus form the vehicle or cart.

A transverse shaft, L, is attached to beams O' near their rear ends. Upon this shaft L, at suitable location, are cranks L', from which are flexibly suspended straps K, connected at their lower ends to bars B' and B², which bars are connected by straps J with frame-beam I. Upon the top of the bars B' B² are attached funnel-shaped seed-receivers b, and beneath such bars are attached hollow standards D, to each of which is obliquely attached a revolving

disk, E, the disks upon the bar B' being set at an angle to those upon the bar B². The bars B' and B² are connected together by a chain. A drag-bar, F', having teeth G thereon, is attached by chains to the hollow standard D, such teeth being arranged one to follow each disk and at corresponding angles. The bars B' and B² may be lifted or lowered by means of a rod, M, attached, one end to the top of one of the cranks L', which is at the center of the shaft L, and the other end to a handle, N, on the side of the pole O, just in front of the hopper A.

No part of the seeder mechanism is shown or described, as that may be of any desired pattern, and operated from the wheels B and axle C by suitable gearing.

The seed is placed in the hopper A, from which it falls through any suitable opening into the receivers b, and passes downward through bars B' B² and hollow standards D upon the ground, falling into furrows made by the revolving disks E, which furrows are covered by the drag-teeth G upon the bar F'. The flexible connection of the bars F, B', and B² permits of the machine adapting itself to the inequalities of the land being sown. The disks E and drag-teeth G being one half their number at an angle to the other half thus prevents side draft, as would be the case were the entire number set at the same angle.

Any number of disk and drag-teeth bar-sections may be used in the same machine, provided that each section has one half of its disks and teeth set at an angle to the other half. The device composed of the crank L, straps K and J, and lever N permits of the bars B' and B² being raised, so that the disks will not be in operation when the machine is being transported.

Having thus described my invention, what I claim as new is—

1. The combination, with the vehicle composed of the wheels B, axle C, and frame I F O', the hopper A being mounted on such vehicle, of the seed-drill composed of the bars B' and B², suspended from the shaft L and beam I by means of the cranks L', straps K and J, the receivers b above and the hollow standards D below said bars B' and B², the standards D be-

ing provided with the furrow-turning revolving disks E, and the drag-bars F', attached by chains to the standards D and carrying the furrow-covering drag-teeth G, the disks E on the bar B' being set at an angle to those on the bar B².

2. The wagon composed of the wheels B, axle C, the frame I F O', the pole O, the seed-hopper A, mounted on such wagon, in combination with the raising and lowering device composed of the strap J, the rod M, the shaft L, the cranks L', the suspending-straps K, and the hand-lever N, and with the drilling and covering devices composed of the bars B' B², flexibly connected at their center and sus-

pended from the shaft L, as shown, said bars B' B² being provided with hollow standards D below them and with seed-receivers b above them, the revolving oblique disks E on the lower ends of the standards D and the furrow-covering oblique teeth G, attached to drag-bars F', the drag-bars being secured to the standards D by chains, all operating substantially as set forth.

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

FRANCIS REYNER.

Witnesses:

J. B. WEBSTER,

ELIHU B. STOWE.