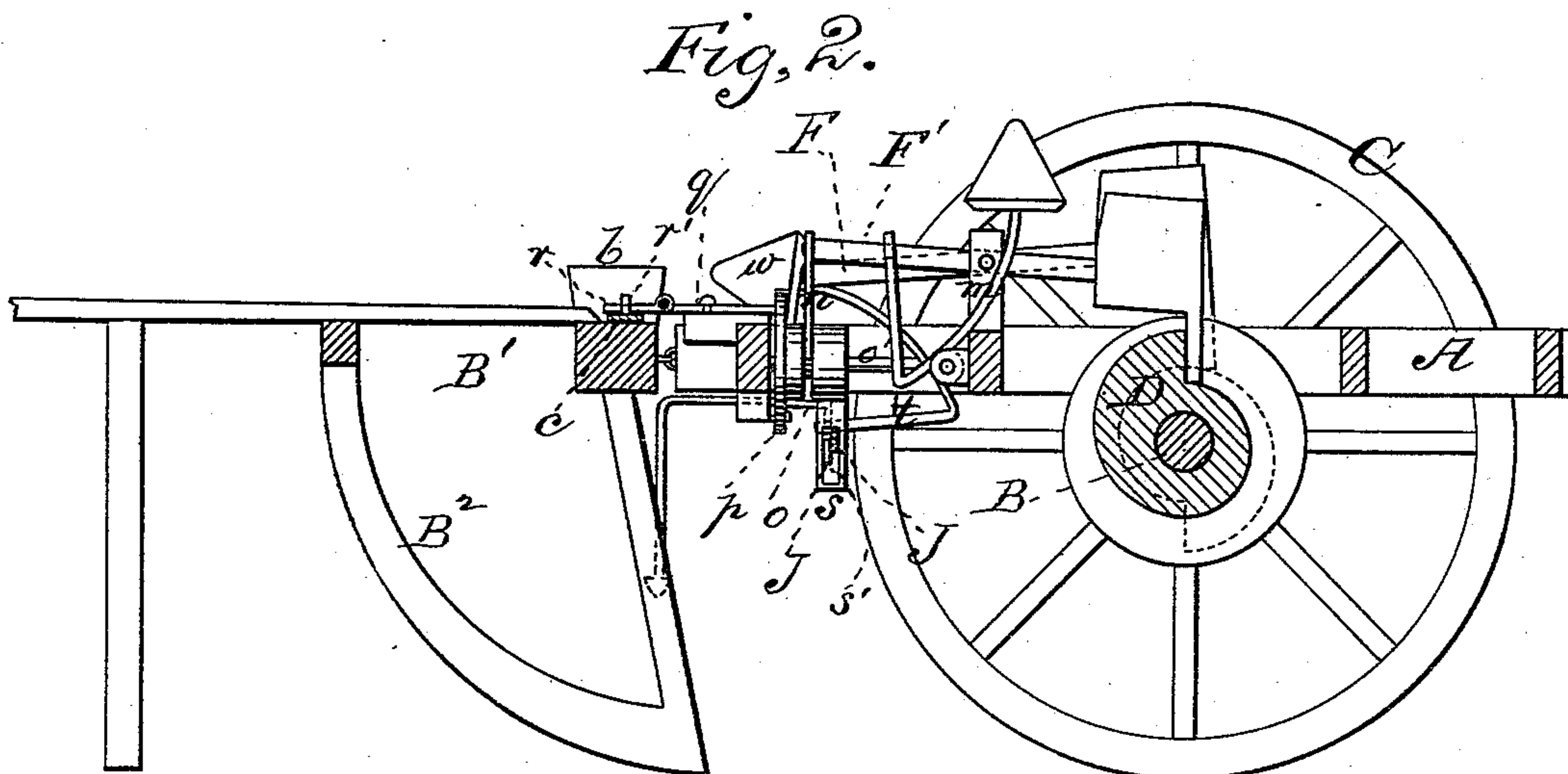
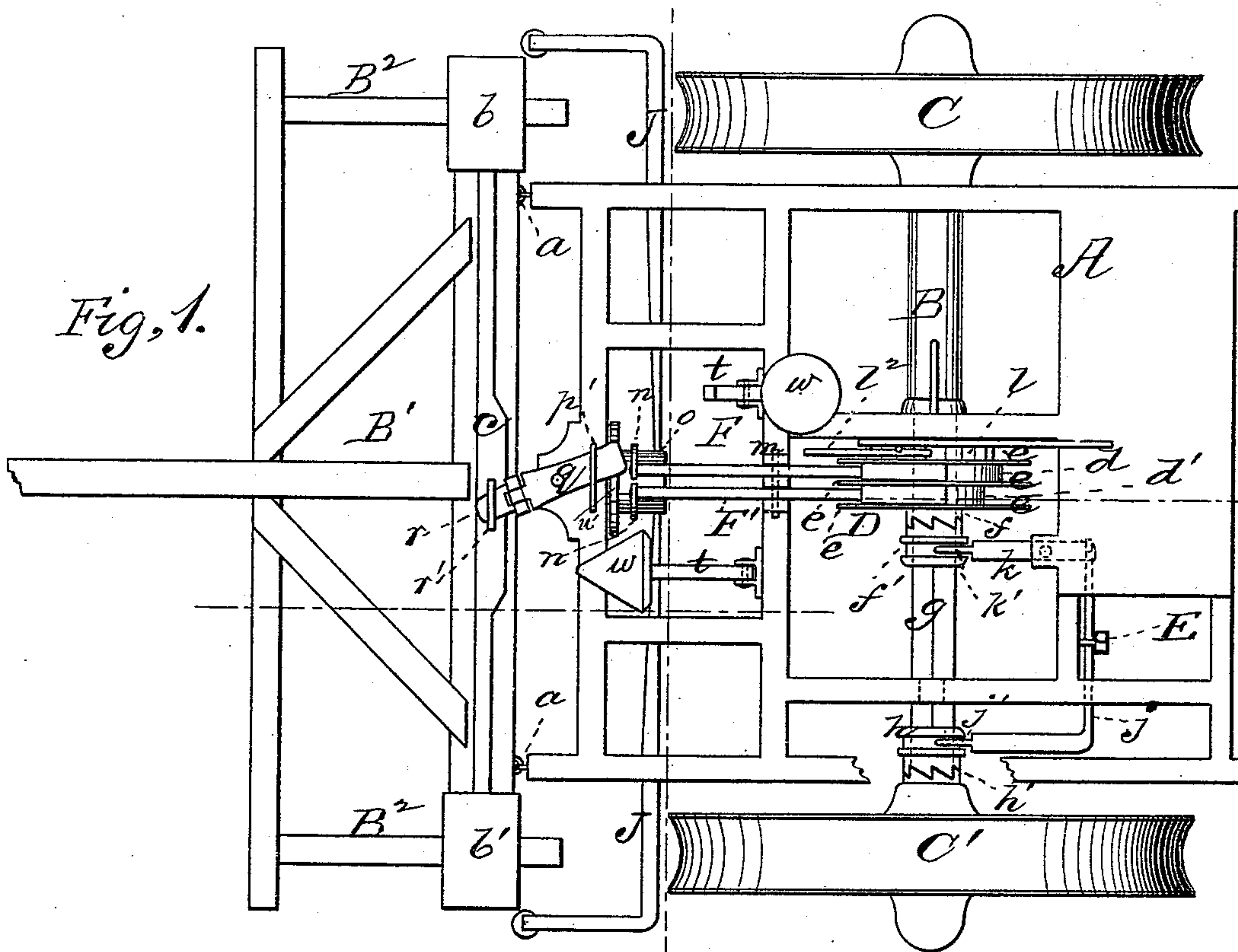


J. O. HALL.
Corn-Dropper and Check-Rower.

No. 211,994.

Patented Feb. 4, 1879.



WITNESSES

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Fig. 3,

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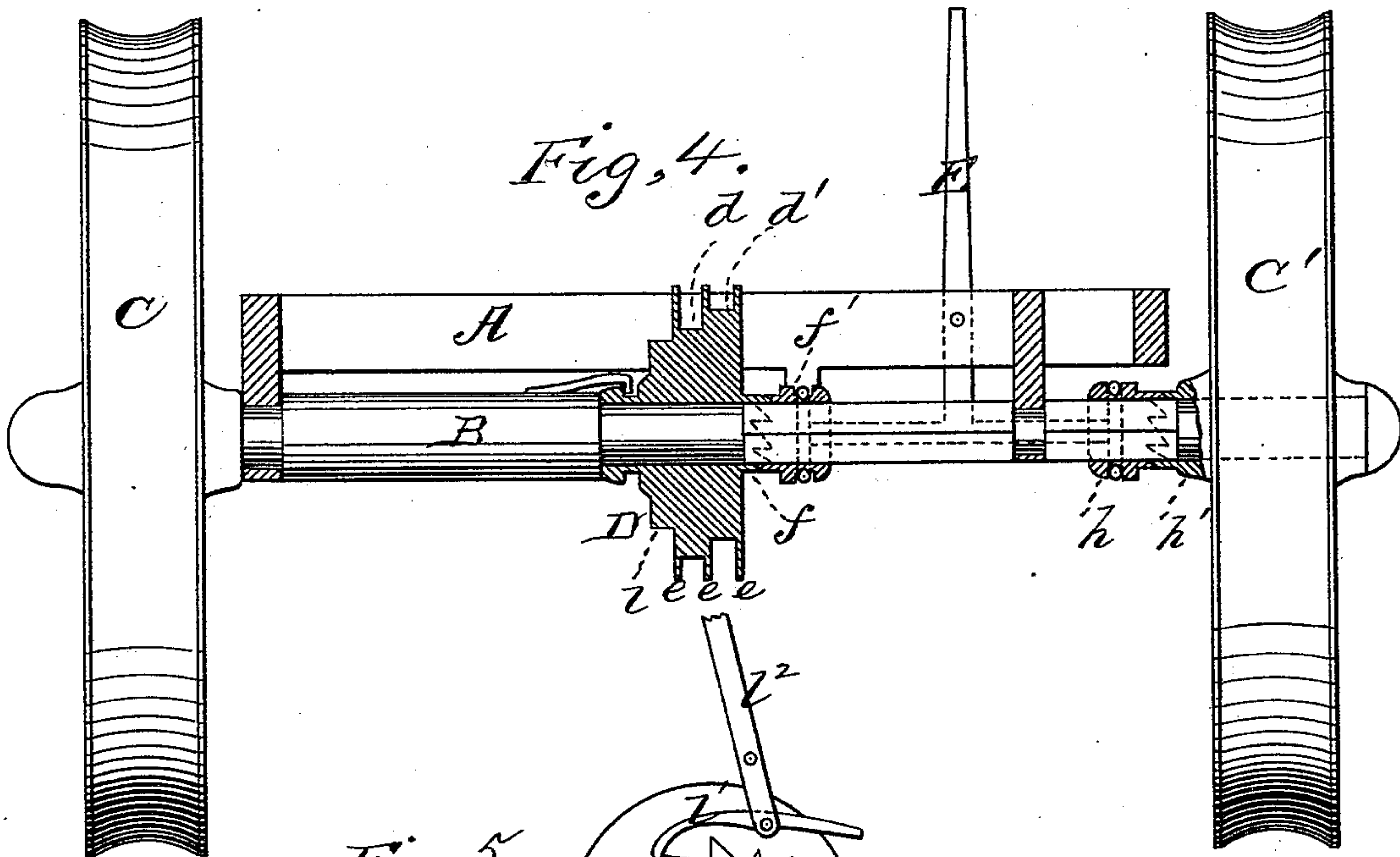
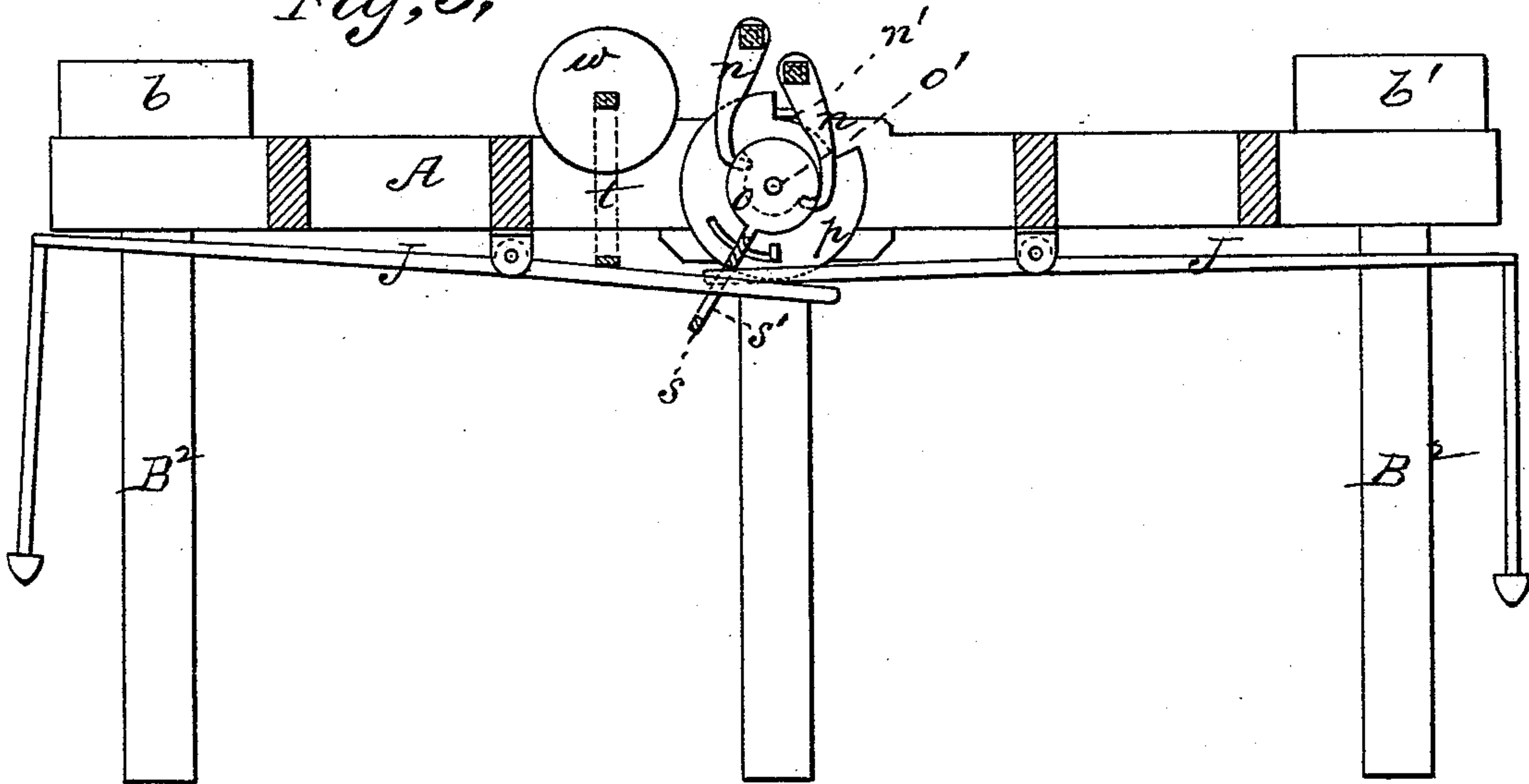
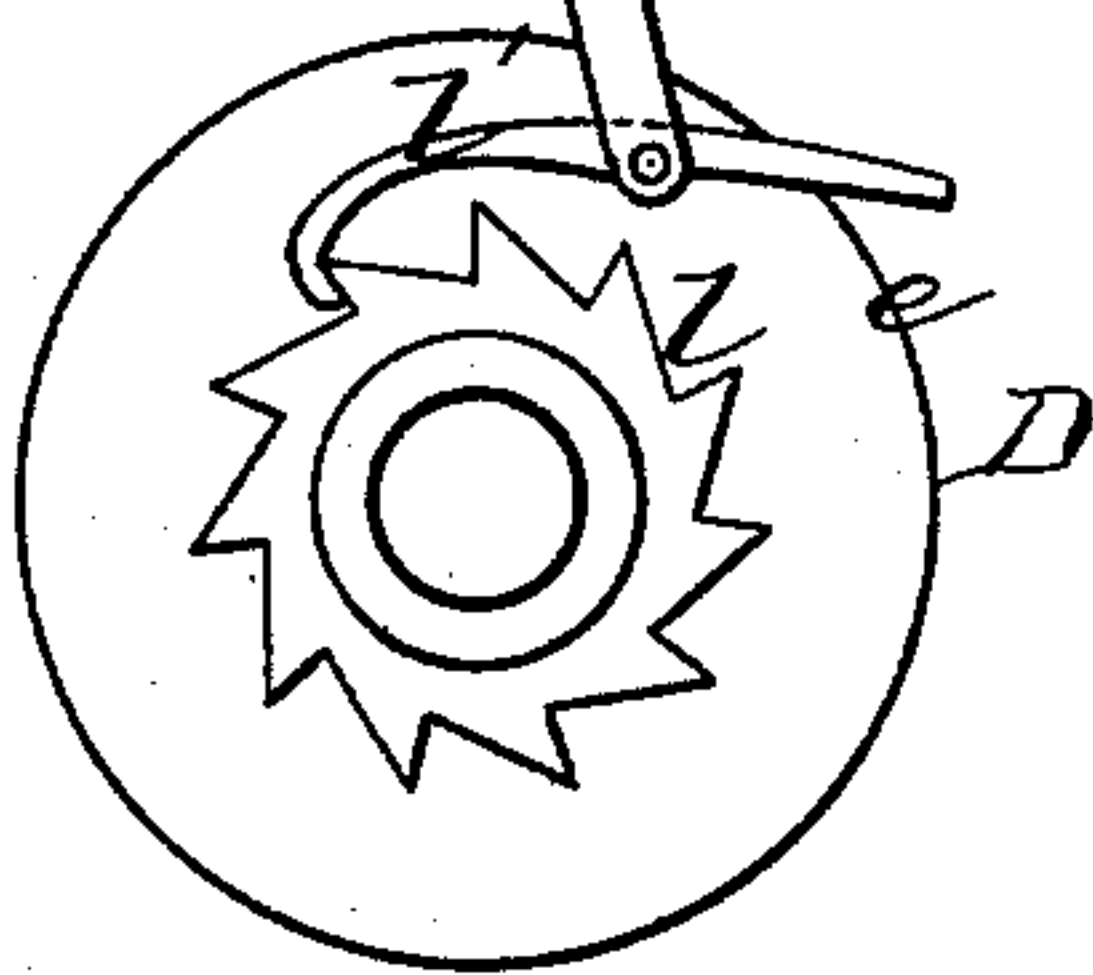


Fig. 5.



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JAMES O. HALL, OF PARIS, ILLINOIS.

IMPROVEMENT IN CORN-DROPPER AND CHECK-ROWER.

Specification forming part of Letters Patent No. **211,994**, dated February 4, 1879; application filed October 26, 1878.

To all whom it may concern:

Be it known that I, JAMES O. HALL, of Paris, in the county of Edgar and State of Illinois, have invented a new and valuable Improvement in Corn-Dropper and Check-Rower; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top view of my invention. Fig. 2 is a longitudinal section of the same. Figs. 3 and 4 are cross-sectional views, and Fig. 5 is a detail.

The nature of the invention consists in the construction and novel arrangement of parts, as hereinafter shown and described.

In the annexed drawings, the letter A designates a strong rectangular frame, affording bearings at or near the middle of its length to an axle, B, upon the ends of which are applied the transporting-wheels C C'. This frame is hinged at its front end, at *a*, to a shorter frame, B¹, carrying at each end, in line with the transporting-wheels, the seed-hoppers *b b'*, and provided with a slide, *c*, reciprocating through the said hoppers, and the usual runners B².

The draft-tongue is attached to the frame B¹, which, being flexibly connected to the main frame, accommodates itself readily to inequalities of the soil. D indicates a double cam, the sections *d d'* of which are arranged side by side, and are provided with guide-flanges *e*, the object of which will hereinafter appear. This double cam carries at its side, adjacent to the wheel C', a counterpart box, *f*, and is locked against rotating on the axle by a clutch-box, *f'*, sliding to and from the said double cam upon a squared portion, *g*, of the said axle. Upon this squared portion *g* is a second clutch-box, *h*, that engages a corresponding counterpart, *h'*, on the hub of wheel C', at the same time that box *f'* engages the counterpart *f*, thus locking the wheel to the axle and the axle to the cam simultaneously. This is accomplished by means of the lever E vibrating across the main frame and having its fulcrum thereon, the weight end of which is pivoted to a horizontally-arranged angular

rod, *j*, the forked end *j'* of which engages the clutch-box *h*.

The free end of rod *j* is pivoted to a horizontal lever, *k*, having its fulcrum on the main frame, and its forked end *k'* engaging the clutch-box *f'*. The object of this construction is to lock the wheel C' and the double cam that actuates the seed-dropper to the axle simultaneously, and to disconnect them in the same manner in turning at the ends of rows. The opposite side of the double cam has a ratchet-wheel, *l*, secured thereon, through which and a pawl, *l'*, and lever *l''*, fulcrumed on the main frame, the said cam is turned and a planting of seed deposited in the proper place at the end of the rows before starting.

F F' represent two vertically-vibrating angular levers, fulcrumed independently in an upright, *m*, in front of the double cam, and having their rear ends engaged, respectively, with the cam-sections *d d'*. These levers carry each upon its front end a vibrating pawl, *n*, that engages a ratcheted disk, *o*, rotating loosely upon a longitudinal shaft, *o'*. The cams *d d'* are so arranged that when the former is actuating the lever F' the latter is at rest, and the reverse; consequently they impart a rocking motion to the disk *o*. This latter has upon its front end a vertical flange, *p*, provided with a segmental notch, *n'*, in its perimeter, in which the rear end of a horizontally-vibrating lever, *q*, is engaged. This lever vibrates upon the front of the main frame, and is guided in its movements by a staple, *p'*. Its front end is provided with an extension, *r*, hinged thereto, that engages a raised staple, *r'*, upon the dropper-slide *c*. The oscillating movement of the disk *o* imparts to lever *q* horizontal vibration, that is converted into a rectilinear reciprocation of the dropper-slide, the effect of which is to drop a planting of seed from the hopper alternately.

From the under side of disk *o* depends a slotted arm, *s*, through which the inner ends of the marking-rods J extend. They are fulcrumed to the under side of the main frame, and extend out horizontally beyond the transporting-wheels. From this point they are carried to the front as far as the dropper-spouts, and then extended downward a sufficient distance, terminating in a knob. The excess of

weight upon the outside of the marker-rods holds their inner extremities in contact with the upper end of the slot of arm *s*; consequently as the said arm vibrates the said rods will be alternately raised and depressed, thus forming imprints in the ground to locate the hills. One only of these markers is used at a time, the other being thrown out of contact with the end of slot *s'* by means of a counterbalance-weight, *w*, upon the upper end of an angular vertically-vibrating lever, *t*, having its fulcrum on the main frame. The remaining end of this lever lies across the marker-rod inside of its fulcrum, and the power exercised by the weight causes the power-arm of the rod to be depressed out of contact with the end of the slot; consequently it is not actuated.

Usually I shall put a weight near the bend of the levers *F F'*, in order to insure their engagement with the cams *d d'*, the flanges *e*, before alluded to, serving to prevent a lateral disengagement therefrom.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the cams *d d'*, arranged side by side, of the guide-flanges *e* and

the angular levers *F F'*, engaging the said cams and actuating the seed-dropper, substantially as specified.

2. The combination, with the seed-slide *c* and the horizontally-vibrating lever *q*, engaging the said slide, of the ratcheted disk *o*, having the notched flange *p*, the vibrating levers *F F'*, having pawls *n n*, the double cam *D*, actuating said levers alternately, and the transporting-axle of a seed-dropper, substantially as set forth.

3. The combination, with the rocking disk *o*, having the downwardly-projecting slotted arm *s*, and a mechanism rocking the same, of the vertically-vibrating marker-rods *J*, extending through said slotted arm, and the weighted vertically-vibrating counterbalancing-levers *t*, substantially as specified.

In testimony that I claim the above I have herunto subscribed my name in the presence of two witnesses.

JAMES O. HALL.

Witnesses:

GEO. THILMAN,
GEORGE MORTON.