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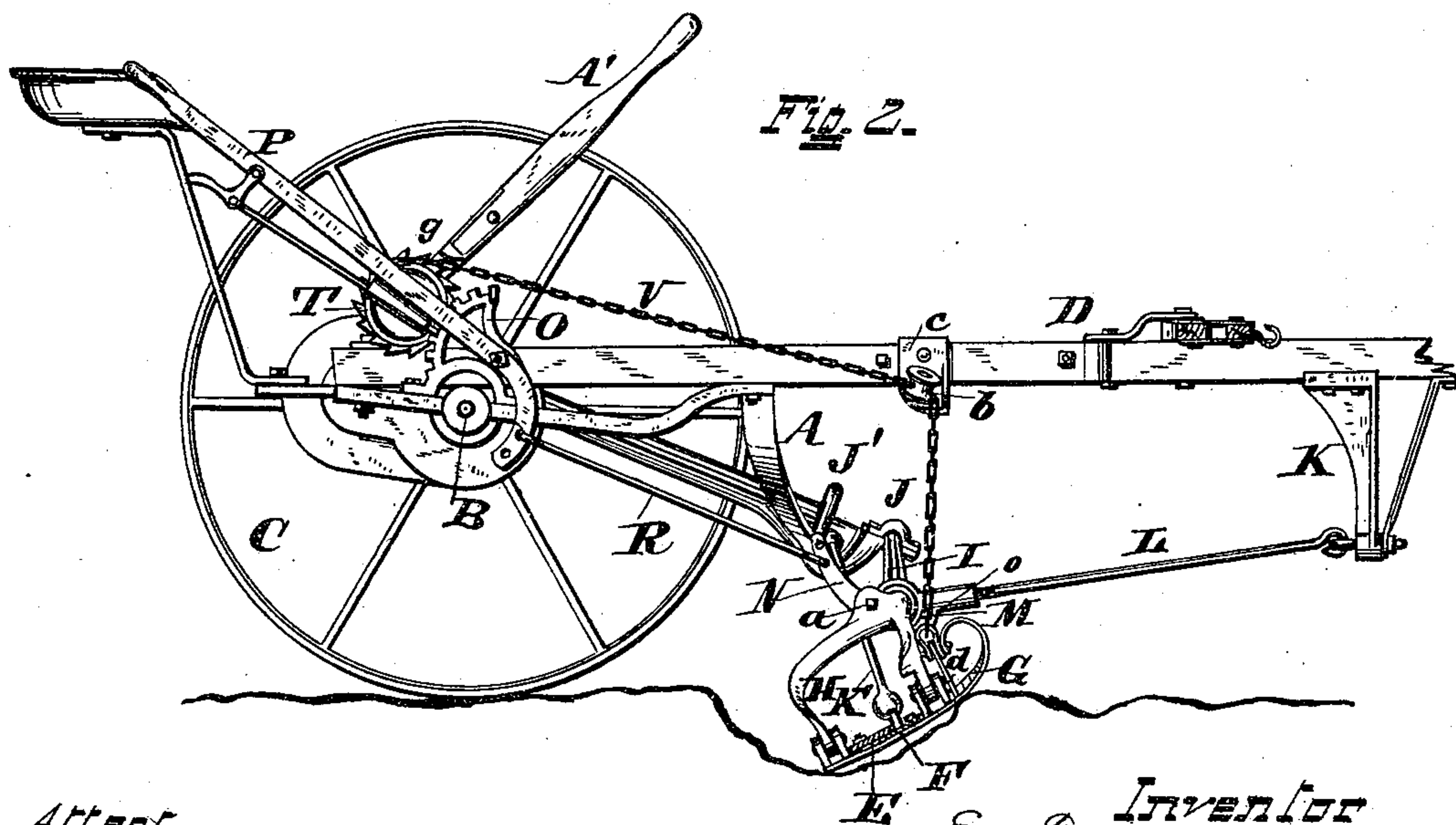
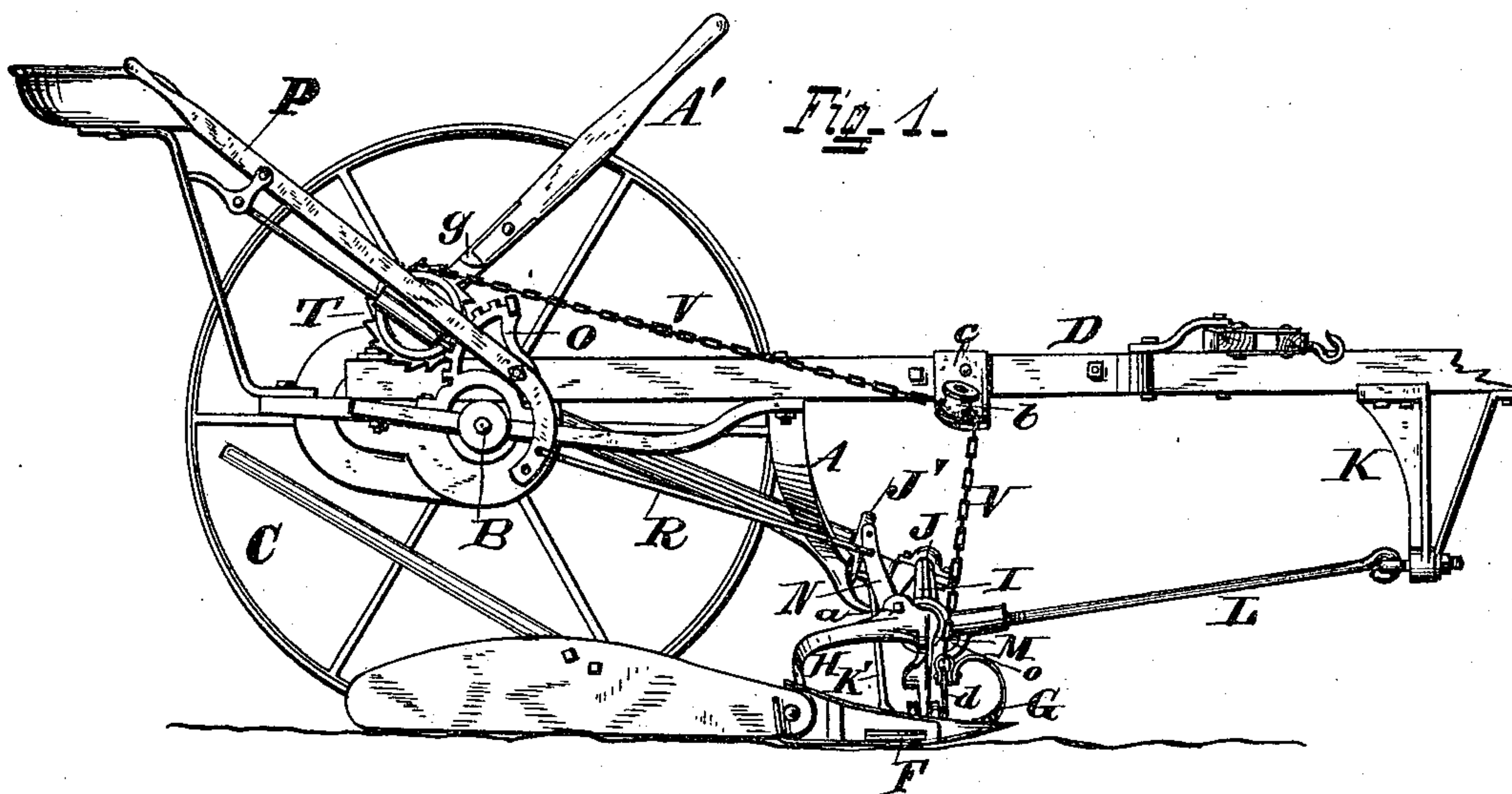
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E. F. STODDARD & J. McD. ROSSELL.

MOWING MACHINE.

No. 336,267.

Patented Feb. 16, 1886.



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By *Stoddard & Rosell* Att'y's.

(No Model.)

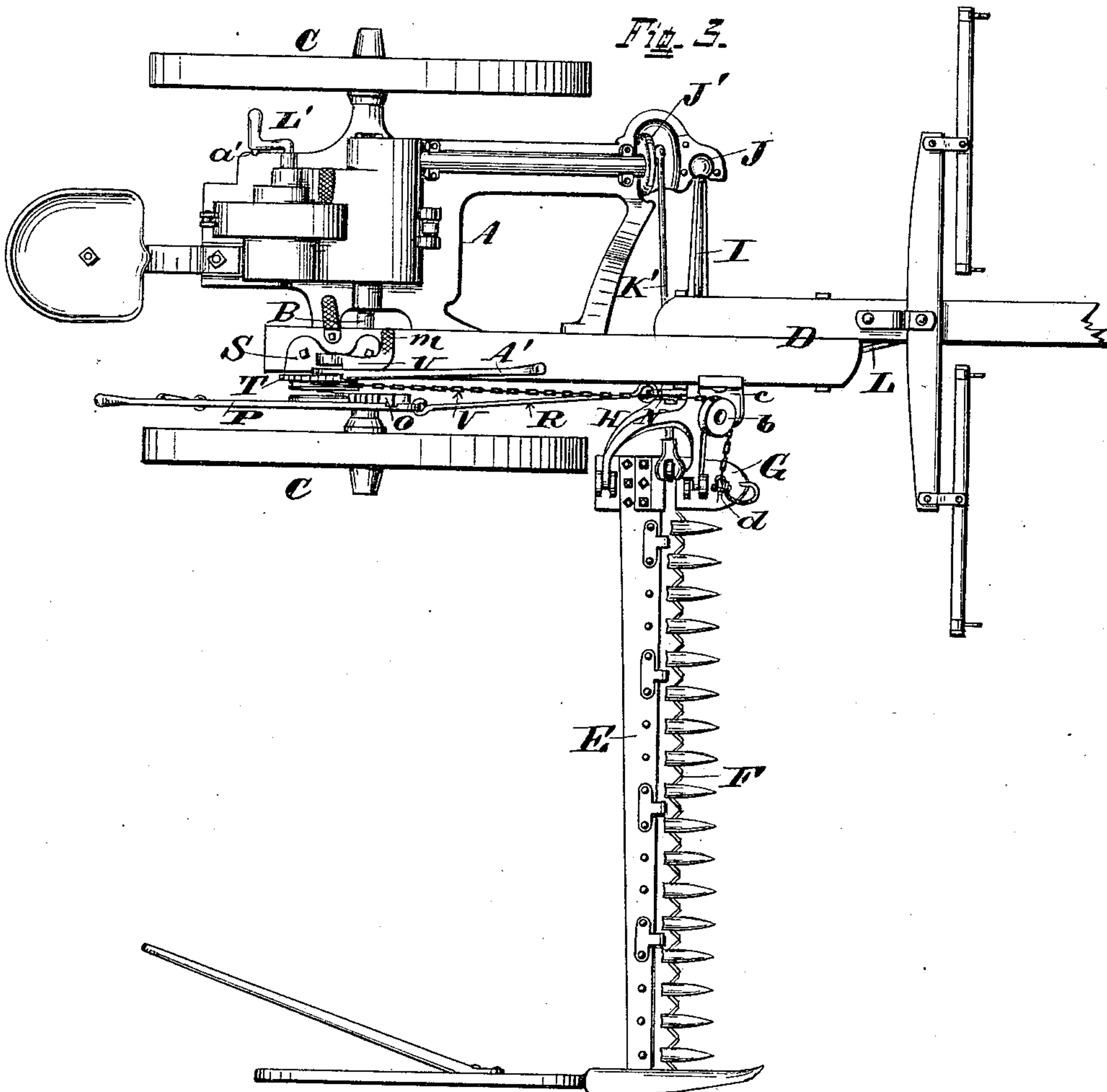
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4 Sheets—Sheet 3.

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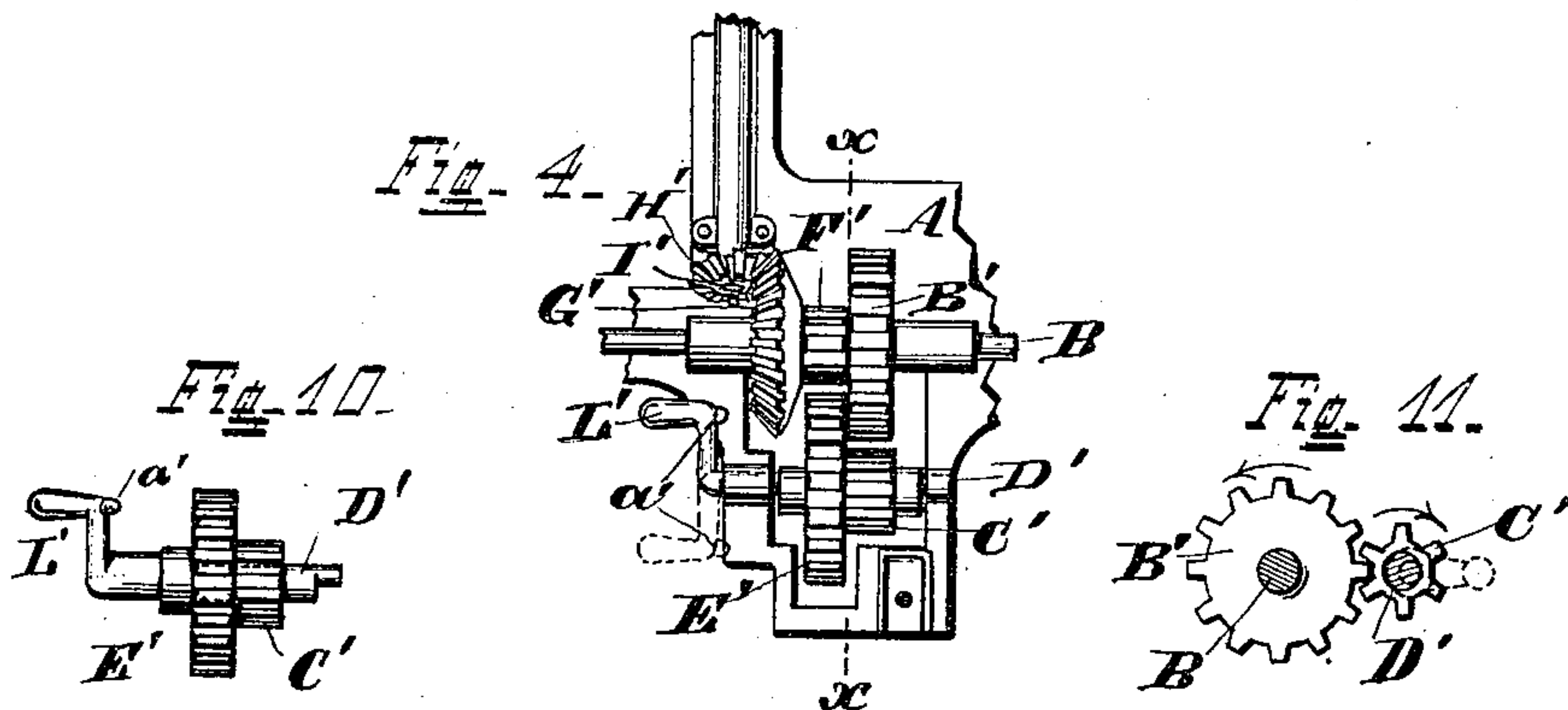


Fig. 5.

Fig. 6.

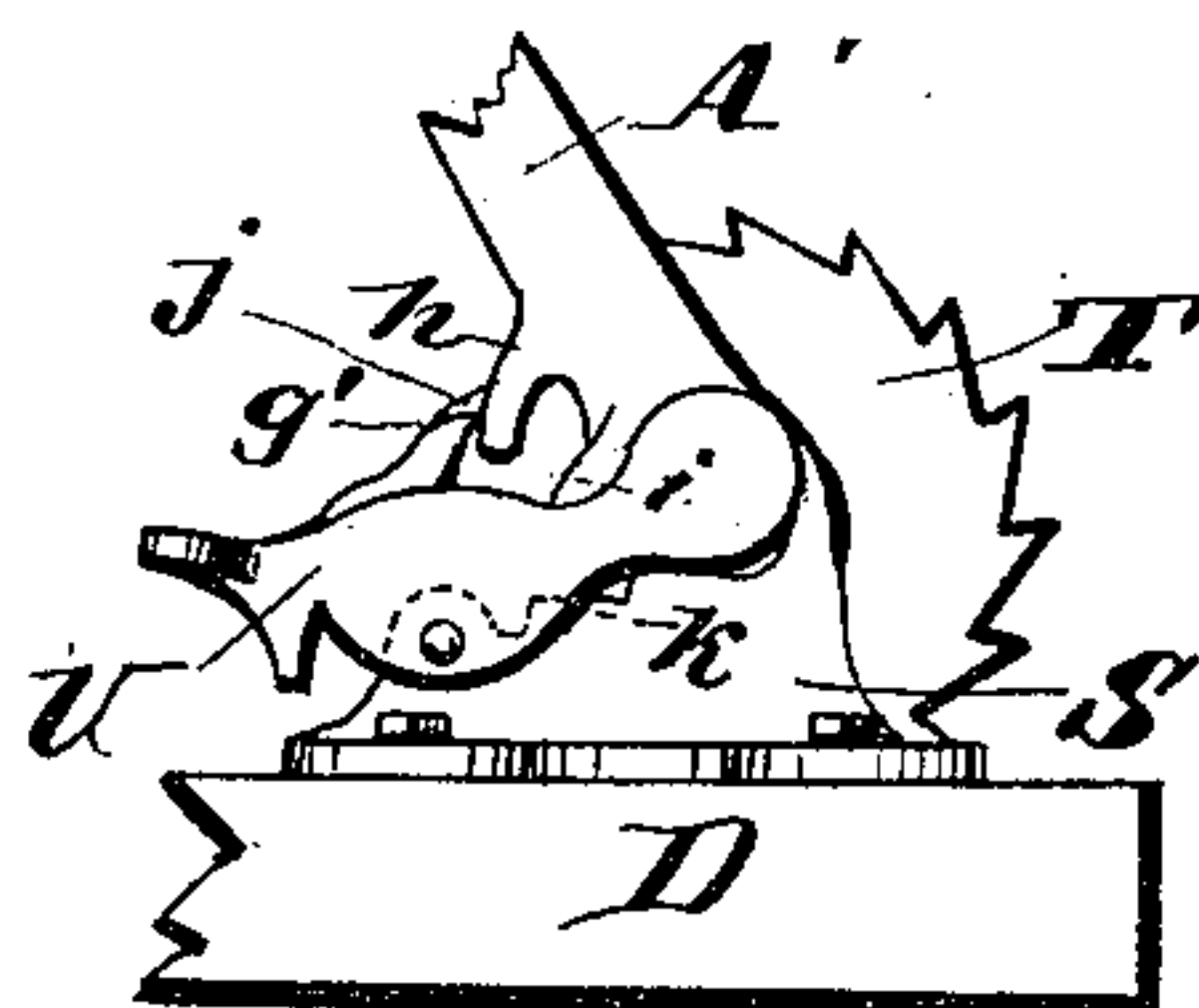
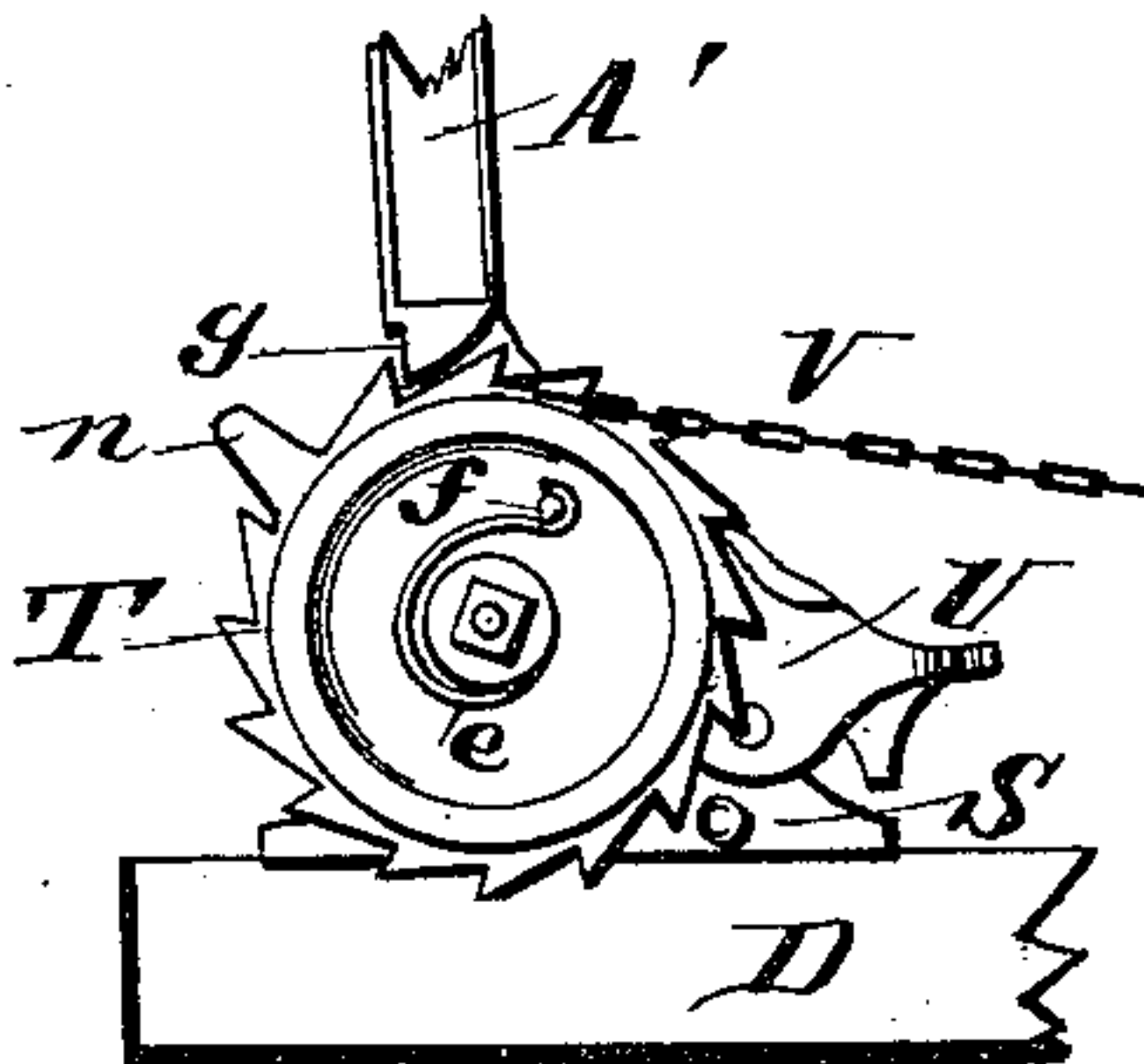


Fig. 7.

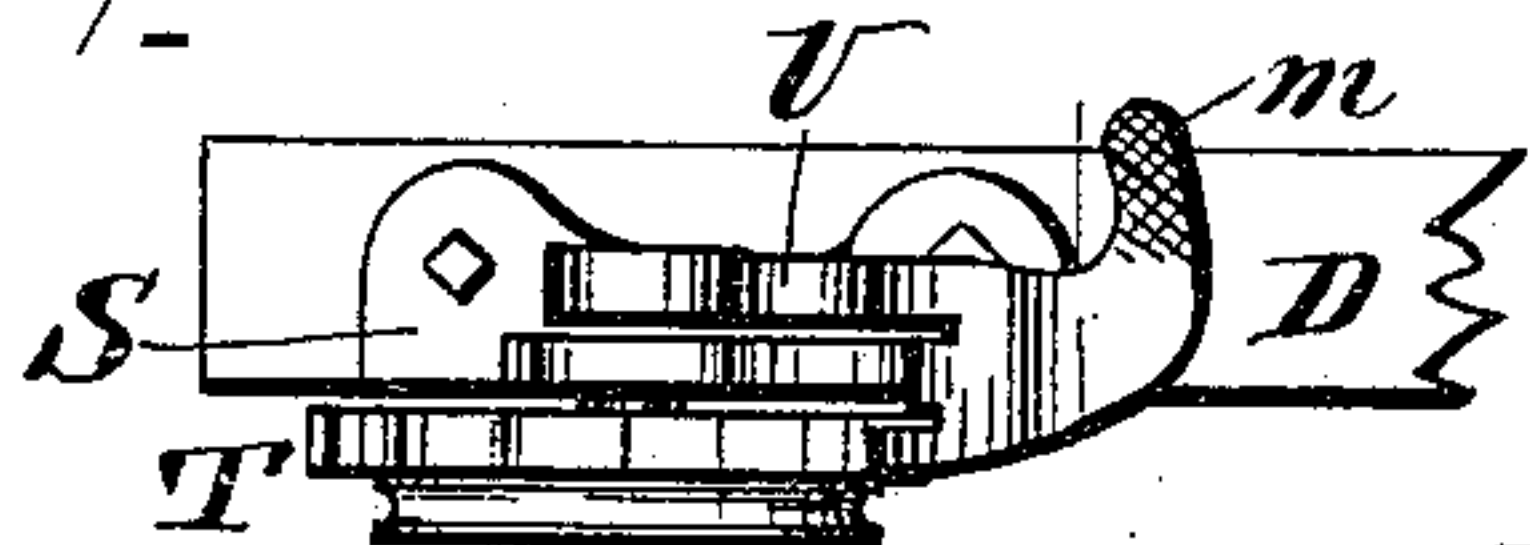
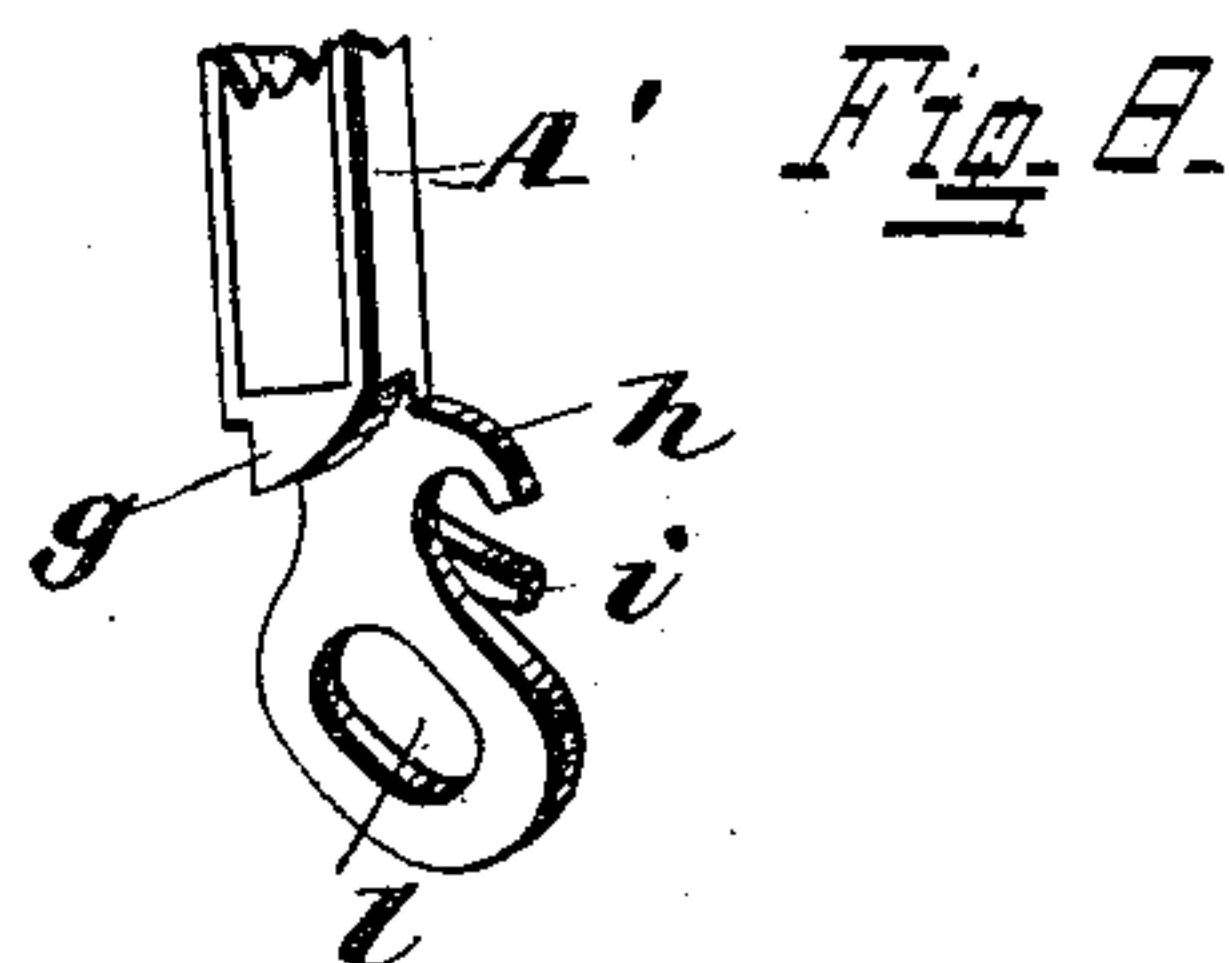
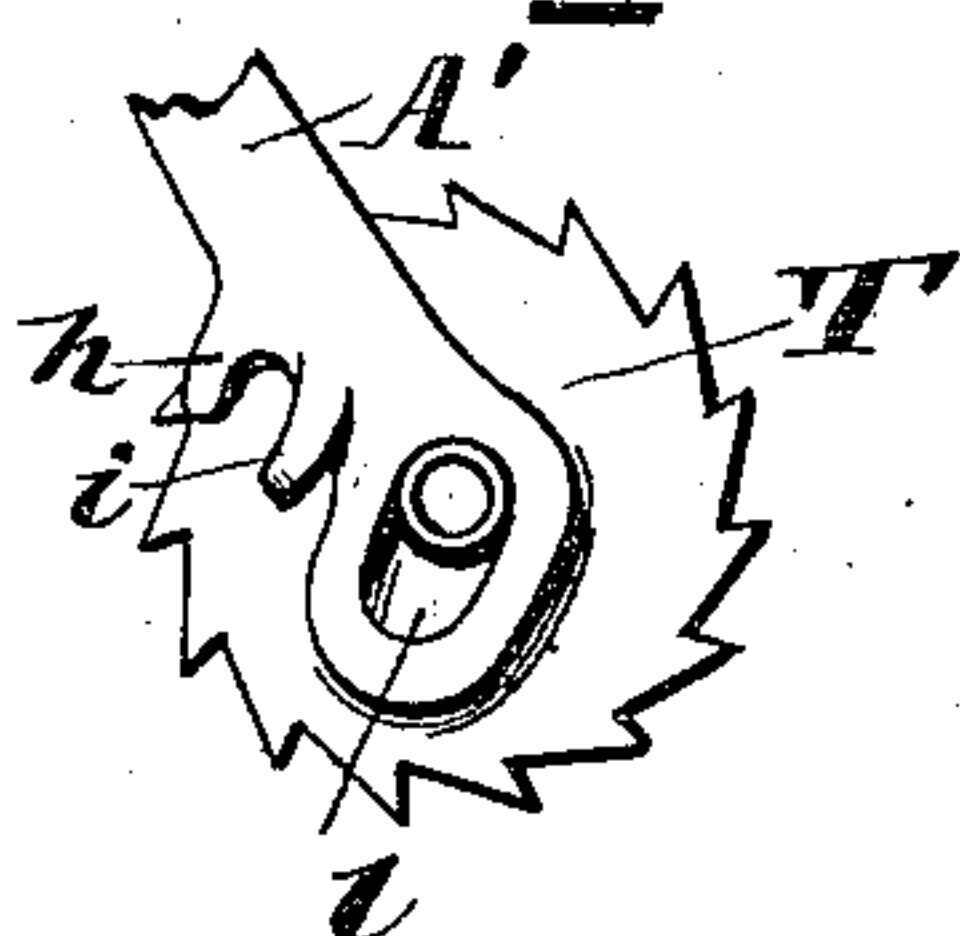


Fig. 8.



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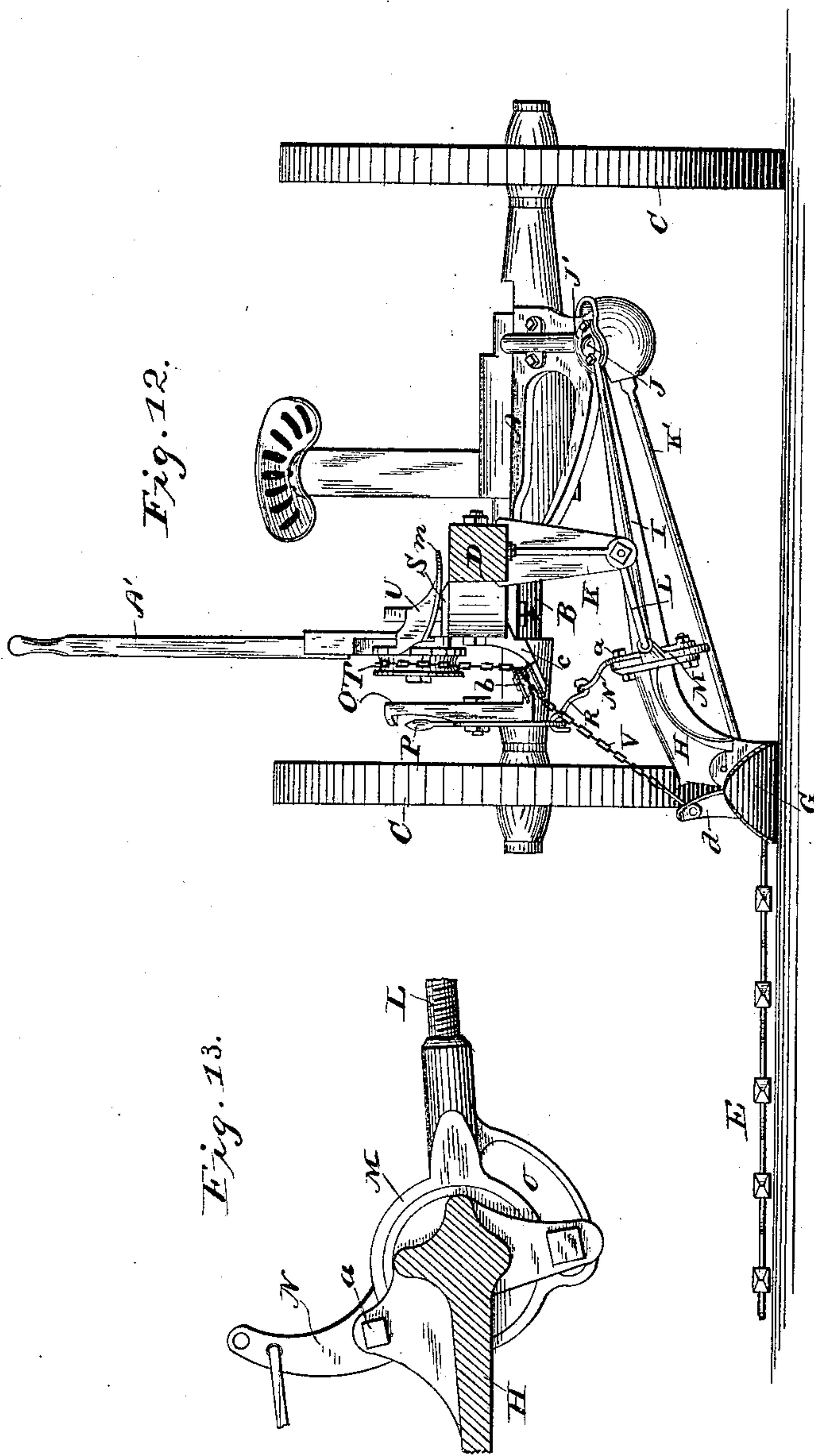
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UNITED STATES PATENT OFFICE.

E. FOWLER STODDARD AND JAMES McDAVID ROSSELL, OF DAYTON, OHIO,
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MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 336,267, dated February 16, 1886.

Application filed September 11, 1884. Serial No. 142,837. (No model.)

To all whom it may concern:

Be it known that we, E. FOWLER STODDARD and JAMES McDAVID ROSSELL, citizens of the United States, residing at Dayton, in the
5 county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Mowing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings,
10 forming a part of this specification.

Our invention relates to that class of mowing-machines known as "two-wheel front-cut" machines; and its novelty consists in the construction, combination, and arrangements of
15 the parts, as will be herein set forth and specifically claimed.

In the accompanying drawings, Figure 1 is a side elevation of our improved mower with the near wheel removed. Fig. 2 is a corresponding view showing the upward tilt taken
20 by the finger-bar when dropped into a hollow or dead furrow. Fig. 3 is a plan view of the machine. Fig. 4 is a detailed plan view of the gearing. Fig. 5 is a side elevation of the bar-lifting ratchet-sheave and its connections.
25 Fig. 6 is a reversed view of the same. Fig. 7 is a plan view of the same with the lever removed. Fig. 8 is a detail perspective view showing the construction of the lower end of the lifting-lever. Fig. 9 is an inside elevation
30 showing the manner of attachment of the hand-lever to the ratchet-sheave. Fig. 10 is a detailed plan view of the eccentric counter-shaft. Fig. 11 is a side elevation, partly in section, through the line xx in Fig. 4. Fig. 12 is a
35 front elevation of the machine. Fig. 13 is an enlarged detail view, partly in section, of the ring-coupling, draft-link, lever-arm, and coupling-bar.

40 The same letters of reference are used to indicate identical parts in all the figures.

A is the usual or any suitable main frame, supported upon the axle B, which is journaled therein, and which has the customary ratchet-
45 and-pawl connections with the supporting-wheels C.

D is the pole or tongue, in this instance of two pieces, bolted together with a lapped joint and bolted or otherwise secured to the main
50 frame.

The usual finger and cutter-bars, E and F, are connected to the machine in the following manner: I is a coupling-arm, whose extremity is connected by a ball-and-socket or universal
joint, J, to the extreme forward extension of 55 the main frame, and which is in a line slightly in advance of the finger-bar, but parallel therewith. The other extremity of this coupling-arm is joined with the yoke H, to the two
arms of which the inner shoe, G, is pivoted. 60 To the under side of the pole is secured a well-braced pendent bracket, K, from the lower end of which extends a drag-bar or draft-link, L, whose rear end is screwed, for purposes of
adjustment, into the socket of a ring-coupling, 65 M, which embraces the coupling-arm I just at the side of the yoke H. This ring-coupling is held from slipping laterally upon the arm I by a lever-arm, N, which, embracing the arm
I, is bolted at a to the yoke. The ring-coup- 70 ling has on its forward under side a lug having a curved slot, o , through which is passed a bolt secured to a lower extension of the yoke and to an extension of the lever-arm N, by
means of which the tilting of the finger-bar up 75 and down is limited. While I prefer this construction, the curved slot and the bolt passing therethrough may be entirely dispensed with.

Upon the main frame is secured a notched sector-plate, O, to which is pivoted a hand- 80 lever, P, provided with the usual spring-bolt, adapted to engage one of the notches in the plate O to keep the lever in position. The lower extremity of this lever P is bent or curved backward, and is connected by a link, 85 R, to the upper end of the arm N. Both the lower end of the lever and the upper portion of the arm have one or more perforations for attaching the ends of the link for the purpose of effecting different adjustments, if desired. 90
From this construction it will be seen that we obtain a direct draft upon the finger and cutter bars, which, while rigidly held in a constant draft-line, can yet follow the inequalities of the ground, forming what is known as a 95
"perfect floating bar." Furthermore, in case of the finger-bar dropping into a hollow or dead furrow the fingers will not dig down, but, owing to the manner in which the bar is hung, and to the link R, which in such case 100

would draw upon the arm N, they would be turned upward, as shown in Fig. 2. By means of the lever P the inclination of the finger-bar on its longitudinal axis may be regulated at will in either direction and in a comparatively small sweep of the lever.

Secured upon the rear end of the pole or tongue is a casting or bracket, S, having a lateral stud or pin, upon which is loosely journaled the ratchet-sheave T, with the teeth of which the toe g' of the pivoted gravitating dog U engages. This gravitating dog U is suitably pivoted to an ear of the bracket S, and has a rearward weighted extension, a forward lateral pedal, m , and an engaging-toe, g' , for the ratchet-sheave, and a second tripping-toe, with which the shoulder h of the lever A' engages. Secured in the groove of this sheave is the rear end of a chain, V, which passes forward around a small guide-sheave, b , journaled upon a bracket, c , secured to the side of the tongue, and thence downward, where its forward end is connected to a projecting arm, d , upon the shoe G. Upon the ratchet-sheave spindle is secured one end of a spring, e , whose opposite end is formed into a hook, which engages with a pin, f , projecting from the sheave, the purpose of which spring is to take up the slack in the lifting chain V, so as to keep the same taut when the cutter-bar is down, and to prevent loss of time and the repeated working of the lifting-lever, as would be necessary if there were slack in the chain. Between the ratchet-sheave and its bracket, and upon the extended hub of said ratchet-sheave, is loosely journaled the lifting-lever A', whose lower end is constructed, as shown in Fig. 8, with the ratchet-engaging shoulder g and tripping-shoulders h and i . The shoulder h engages with the locking-dog at j , and the shoulder i engages with a step, k , upon the bracket, as seen in Fig. 6. The bearing-aperture l is elongated, so that when the lever is thrown forward and the tripping-shoulder i bears upon the step k the lever is raised forward in such manner as to trip the locking-dog U, and at the same time lift the engaging-shoulder g' clear above the ratchet to permit the finger-bar to fall and the chain to be unwound from the sheave, as will be readily understood. One of the teeth n of the ratchet is sufficiently enlarged to form a stop by coming in contact with the shoulder g of the lever A' to limit the turning of the ratchet-sheave, and thereby limit the downward movement of the finger-bar. The locking-dog U has a lateral pedal, m , by means of which the driver can trip it with his foot without the aid of the hand-lever. Again, when it is not desirable to let the finger-bar fall suddenly the driver may press the dog out of engagement with his foot and retain his hold upon the hand-lever, thereby letting the bar down more than half-way before the lever would be automatically disengaged from the ratchet. Instead of letting the bar drop from this point, the dog may re-en-

gage with the ratchet, and the elongation in the lever-bearing would permit the lever to be thrown back clear of the ratchet to take a fresh hold, whereupon the dog could be again pressed out of engagement with the ratchet and the bar could be let entirely down by the hand-lever.

Referring to Fig. 5, it will be seen that the application of the spring e is such that when the sheave is rotated to wind up the chain the pin f simply moves away from the spring when the spring reaches its point of equilibrium. At the same time the spring, when under pressure—that is, when the bar is down—prevents any slack in the chain, for the reason before stated.

It is evident that instead of employing the elongated bearing in the lifting-lever to permit the disengagement of the engaging shoulder g from the ratchet, an ordinary gravitating or spring latch with a hand-hold, such as employed upon the lever P, may be used.

In Fig. 4 the driving-gearing is fully shown. Upon the axle, within the box of the main frame, is keyed or otherwise fastened the gear-wheel B', which meshes with the pinion C', loosely mounted upon the counter-shaft D', having eccentric journals held in bearings on the frame, which shaft also carries a gear-wheel, E', integral with the pinion C', if desired, that meshes with a loose pinion, F', upon the axle B. Integral with this pinion F', and also loose upon the axle B, is a beveled gear-wheel, G', which meshes with the beveled pinion H' upon the crank-shaft I', whose outer end is provided with a balance-wheel, J', having a wrist-pin to which the pitman K', which drives the cutter-bar, is attached. The essential feature of this gearing consists in the construction and arrangement of the eccentric counter-shaft shown in detail in Fig. 10, in connection with the locking crank-arm L', the construction of the counter-shaft being such that when it is oscillated downward and forward by throwing the crank L' over backward to the position indicated by dotted lines in Fig. 4 it carries the gears C' E' forward into engagement with the gears B' F', at which point the stop a' , coming in contact with the frame or box of the machine, prevents any further oscillation of the eccentric shaft in that direction, and, as seen in Fig. 11, the direction of the revolution of the gears serves to hold them in constant engagement without the liability or the possibility of their accidental disengagement, and without the necessity of any extraneous locking device, as will be readily understood. To unship the gears, it is merely necessary to raise and press forward the crank-arm L' to the position shown in solid lines in Fig. 4, by which means the eccentric counter-shaft is oscillated backward and upward to carry the gears apart.

Having thus fully described our invention, we claim—

1. In a front-cut mower, the combination, with the finger-bar and its inner shoe, of the

coupling-arm secured to the main frame by a universal joint, and provided with a yoke to which said shoe is hinged, and a draft-link loosely embracing the coupling-arm and directly connecting the latter to the pole or tongue, substantially as described.

2. In a front-cut mower, the combination of the finger-bar and its inner shoe, the coupling-arm secured to the main frame by a universal joint, and provided with a yoke to which said shoe is hinged, having a rearwardly-projecting arm, a draft-link connected to the tongue or pole at one end, and provided with a bearing at the other embracing the coupling-arm, and a lever and link connecting said coupling-arm to the main frame, whereby the finger-bar is held rigidly in a constant draft-line, and is adapted to tip upward upon falling into a depression or dead furrow, substantially as described.

3. In a front-cut mower, the combination of the finger-bar and its inner shoe, the coupling-arm connected to the main frame by a universal joint, and provided with a yoke to which the shoe is hinged, the front member of said yoke being arranged in substantially the plane of the coupling-arm, and a draft-link attached at one end to the pole or tongue, and provided at the other end with a ring or bearing embracing the coupling-arm, substantially as described.

4. In a front-cut mower, the combination of the coupling-arm connected to the main frame by a universal joint, and provided with a yoke to which the inner shoe is hinged, one arm of said yoke projecting in rear of the coupling-arm, a draft-link directly connecting the coupling-arm to the tongue or pole, and a lifting-chain connected to the shoe forward of the yoke on the coupling-arm, substantially as described.

5. In a front-cut mower, the combination, with the finger-bar and its inner shoe, the coupling-arm connected to the main frame by a universal joint, and provided with a yoke to which the shoe is hinged, having a rearwardly-projecting arm, a draft-link embracing the coupling-arm and connecting the latter directly to the tongue or pole, and the tilting lever mounted on the main frame and connected by a link to a lever applied to and pro-

jecting in rear of the coupling-arm, substantially as described.

6. In combination with the loosely-pivoted ratchet-sheave, its locking-dog, and operating-lever, the curved spring fastened at one end to the pivot supporting the said sheave, and provided with a hooked end to receive a pin on the side of the sheave, substantially as and for the purpose set forth.

7. The combination, with the loosely-pivoted ratchet-sheave, of a locking-dog, and an operating-lever provided with tripping-shoulders, substantially as described.

8. The combination of the locking-dog U, provided with a pedal, *m*, the hand-lever A', having the engaging-shoulder *g* and tripping-shoulders *h i*, the ratchet-sheave T, and the lifting-chain V, the parts constructed and arranged substantially as and for the purpose described.

9. The combination of the locking-dog U, provided with a pedal, *m*, a hand-lever, A', having the engaging-shoulder *g*, and tripping-shoulders *h i*, the spring ratchet-sheave T, and the lifting-chain V, the parts constructed and arranged substantially as and for the purpose specified.

10. The coupling-arm I, formed with the yoke H, and connected to the main frame by a universal joint, J, in combination with the adjustable draft-link L, lever-arm N, lock-lever P, and link R, substantially as described.

11. The ring-coupling M, in combination with the draft-link L, to which it is rigidly attached, the pole D, and coupling-arm I, substantially as described.

12. The ring-coupling M, having a curved slot, *o*, in combination with the draft-link L, and coupling-arm I, provided with a pin engaging said slot, substantially as described.

13. The ring-coupling M, in combination with the adjustable draft-link L and coupling-arm I, substantially as described.

14. The ring-coupling M, in combination with the coupling-arm I, draft-link L, tongue D, and bracket K, substantially as described.

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Witnesses:

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