

(No Model.)

2 Sheets—Sheet 1.

N. HOFFMAN.
FODDER CUTTER.

No. 543,340.

Patented July 23, 1895.

Fig. 2.

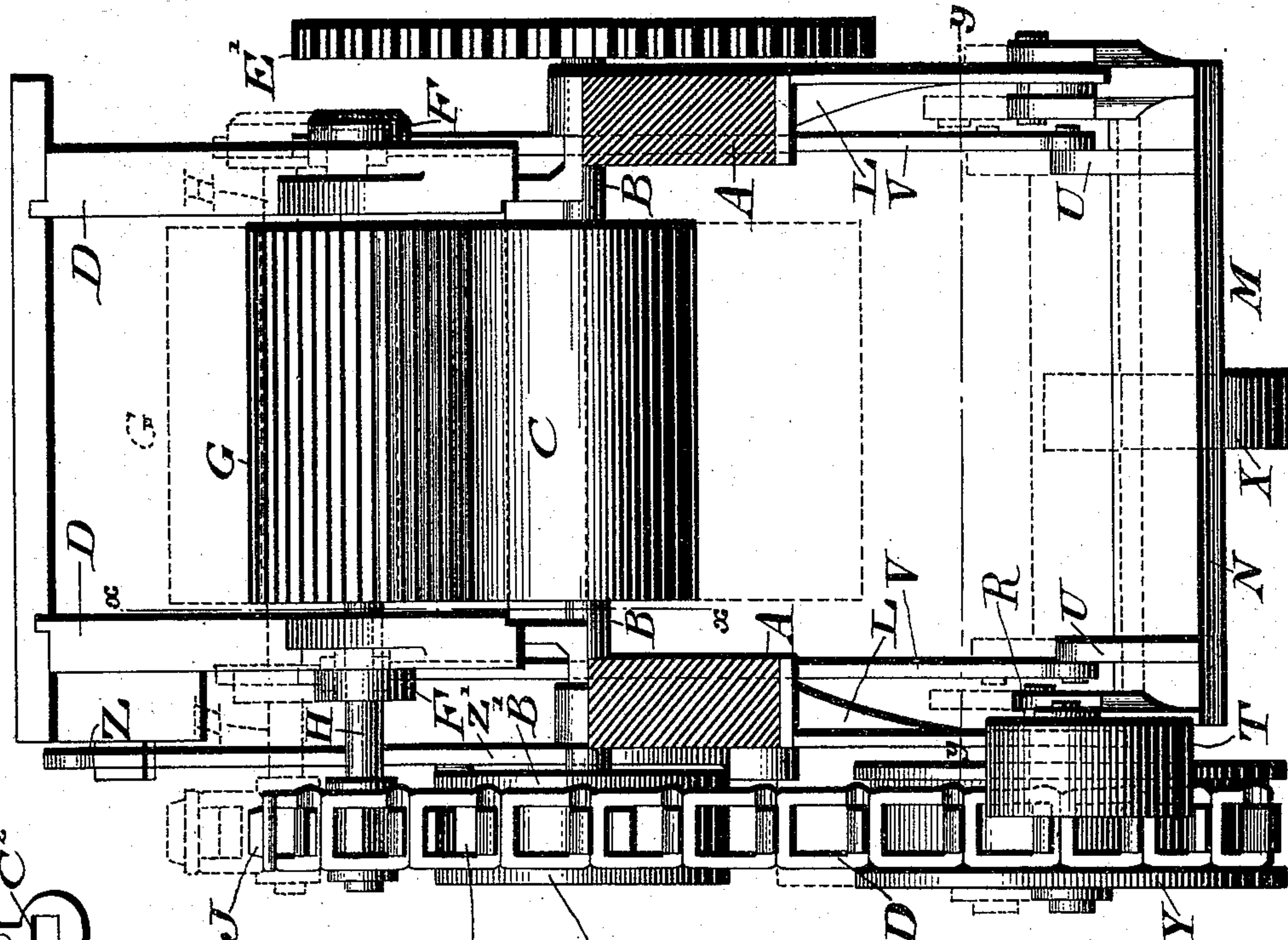


Fig. 7.

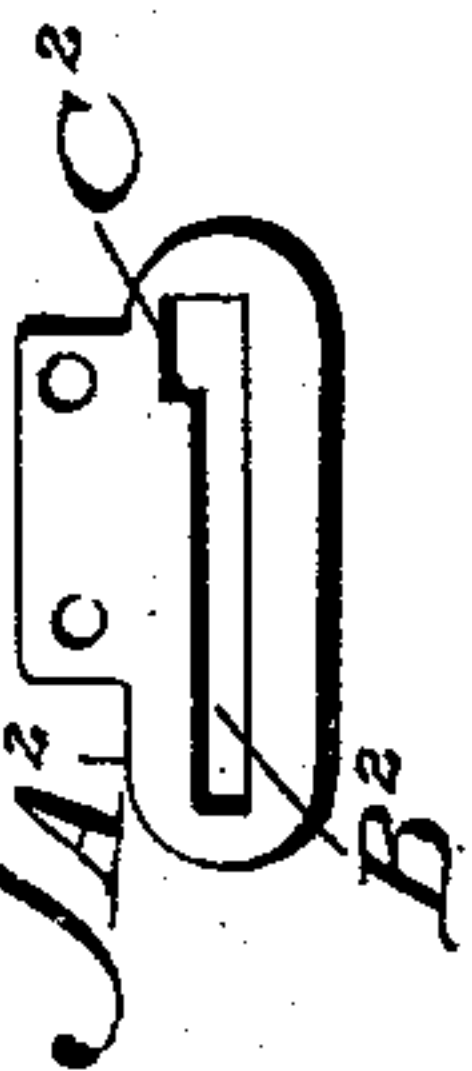
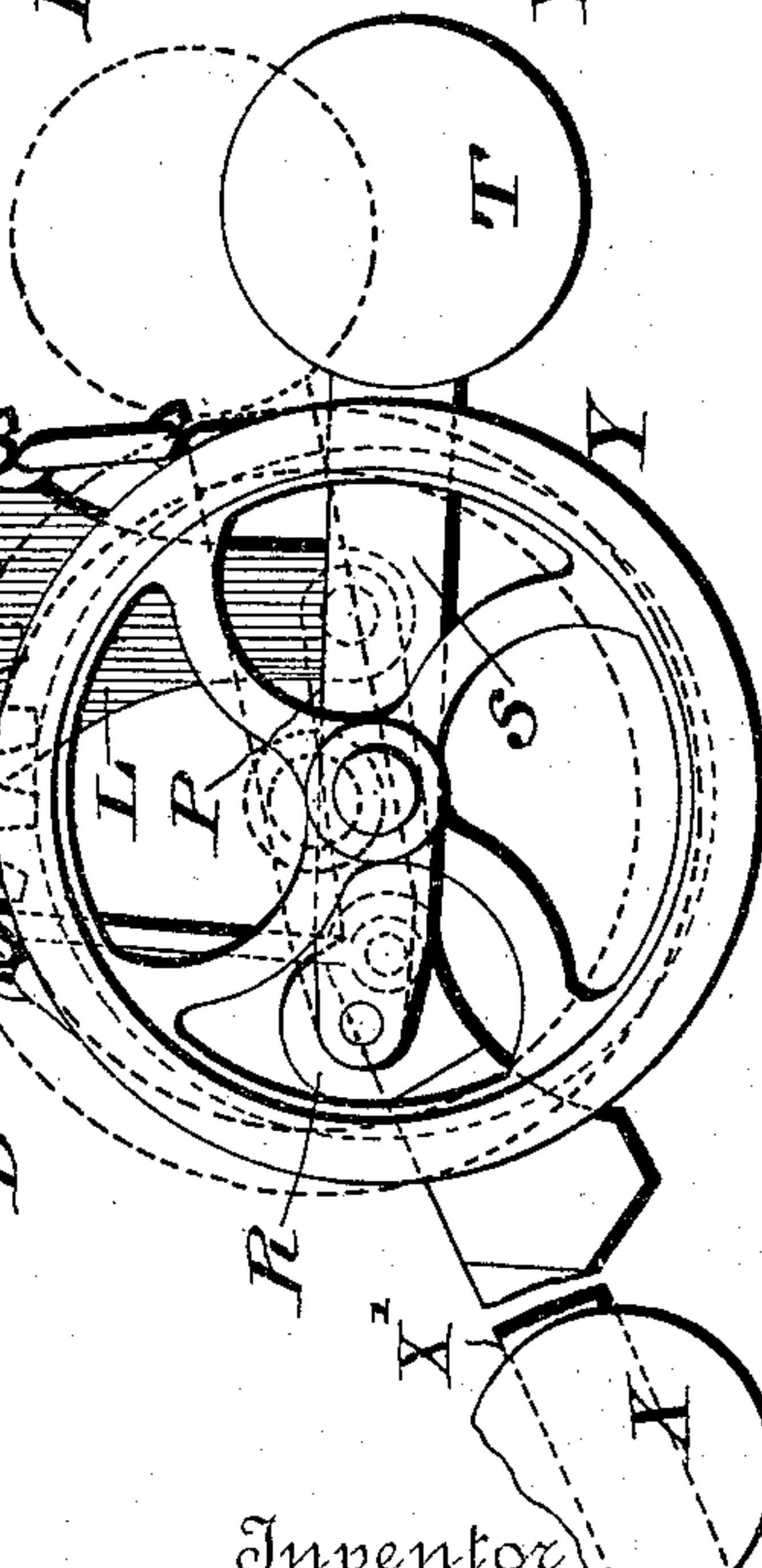
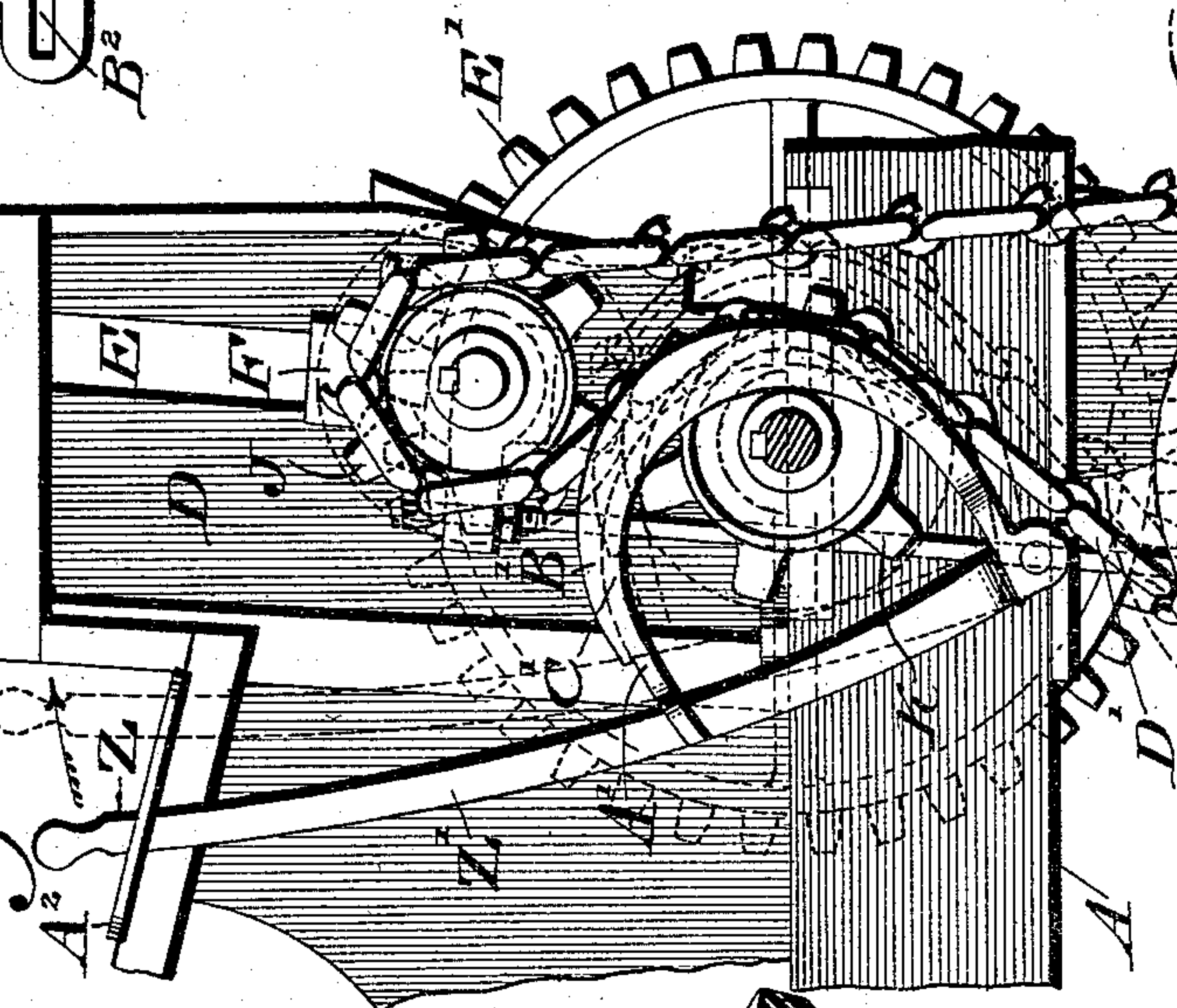


Fig. 1.



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Fig. 4.

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(No Model.)

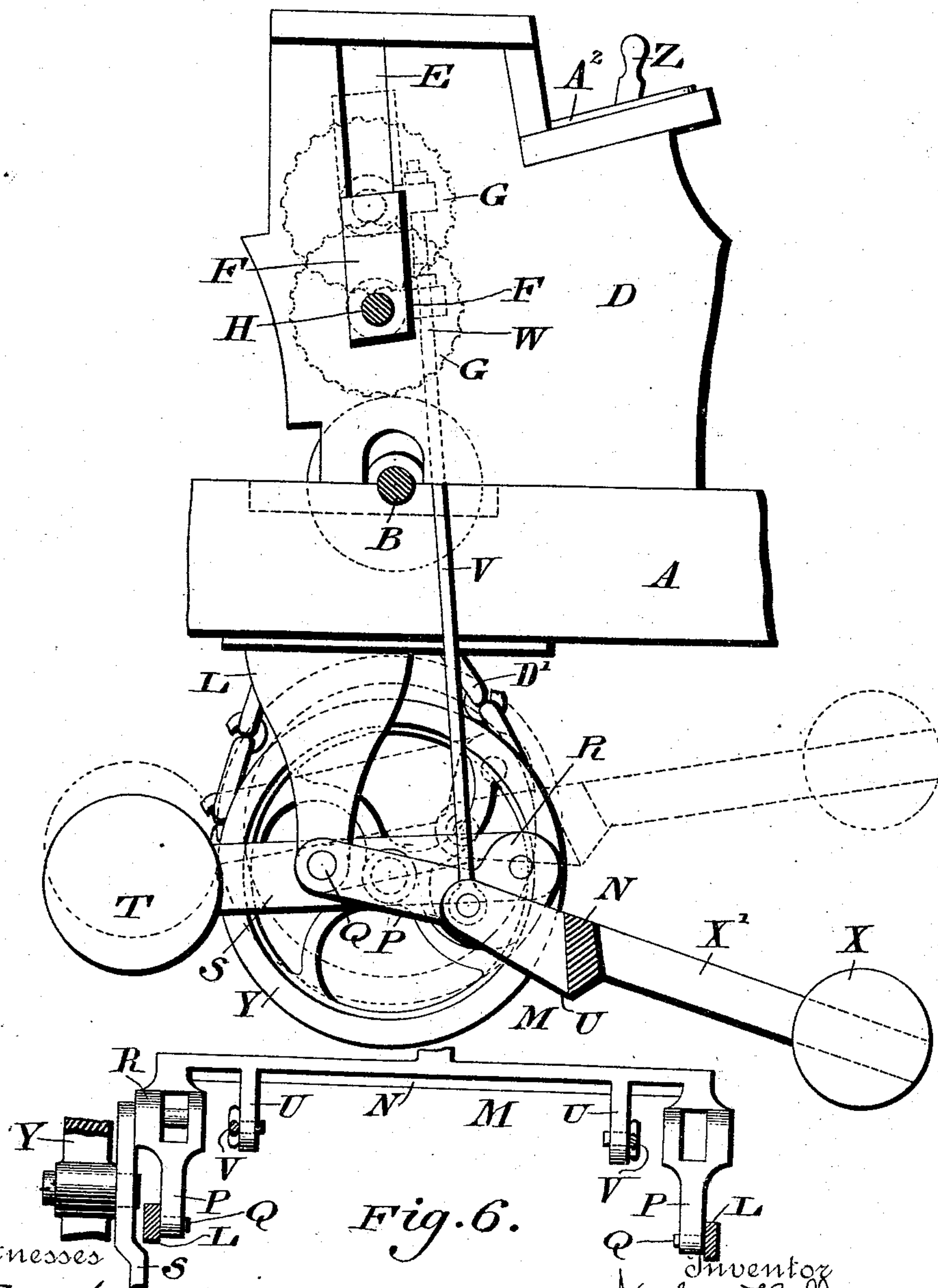
2 Sheets—Sheet 2.

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Fig. 3



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UNITED STATES PATENT OFFICE.

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FODDER-CUTTER.

SPECIFICATION forming part of Letters Patent No. 543,340, dated July 23, 1895.

Application filed December 14, 1894. Serial No. 531,757. (No model.)

To all whom it may concern:

Be it known that I, NATHAN HOFFMAN, a citizen of the United States, residing at Pottstown, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Improvement in Fodder-Cutters, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to fodder-cutters; and it consists of a novel construction and arrangement of the gearing for the feed-rolls, in which the latter are permitted to be automatically moved toward or away from each other while the machine is in operation, whereby the distance between them is adjusted for varying quantities of fodder according to requirements without necessitating additional attention upon the part of the operator.

It also consists of means for readily and instantly throwing one of said feed-rolls out of operation without necessitating a stoppage of the cutter.

It also consists of novel means for keeping the tension of the chain which actuates said feed-rolls uniform at all times and under all conditions.

It further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a side elevation of a portion of a fodder-cutter embodying my invention, the position which the parts assume when the feeding is stopped being shown dotted. Fig. 2 represents a rear elevation of the same. Fig. 3 represents a section on line $x\ x$, Fig. 2, the positions the parts assume when the upper roll is raised being shown dotted. Fig. 4 represents a perspective view of a portion of the apparatus to be hereinafter referred to. Fig. 5 represents on a reduced scale a portion of a lever and guard employed. Fig. 6 represents a section on line $y\ y$, Fig. 2. Fig. 7 represents a plan view of a stop employed.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates suitable supporting-beams, on which are mounted bearings for the journals B of the lower feed-roll C, which latter has a smooth periphery. D designates frames which are secured to the top of each of said beams A,

each of said frames being provided in its upper portion with a slot E therein, which extends in nearly a vertical line in the proper distance from the base of the frame.

F designates boxes, which have grooves therein whose sides contact with the walls of the slots E, whereby the said boxes are prevented from lateral displacement and are free to move vertically.

G designates the upper feed-roll, which is provided with longitudinal corrugations, and has journals H, which revolve in the aforesaid boxes F, which normally rest on the bottom of the slots E, the latter terminating at such a distance from the base of said frame D that the rolls C and G are normally nearly in contact with each other, the upper roll being slightly in advance of the lower roll. The journals B and H are extended to one side of their respective bearings—in the present instance to the left—and have the sprocket-wheels J and K mounted thereon in vertical alignment with each other.

L designates hangers, which are attached to the beams A and serve as supports for a frame M, an end portion of which is seen in Fig. 4, said frame consisting of a cross-bar N, which extends across the lower portion of the machine, as seen in Fig. 1, and has an arm P attached to each end, each of said arms being pivoted at Q to one of the aforesaid hangers L.

R designates ears which may project from either of said arms P, to one of which ears is pivotally secured one end of the lever S, the other end of the latter having a weight T attached thereto.

U designates a lug which projects from a point near each end of the cross-bar, and each lug has an end of a rod V pivotally attached thereto, the other ends W of said rods being attached to the vertically-movable boxes F, as is best seen in Fig. 3.

X designates a counterpoise attached to the cross-bar N and located on the side of said cross-bar opposite to the weight T, said counterpoise being adjustable along the lever X'.

Y designates a pulley mounted on the lever S at a suitable point intermediate the weight T and the other extremity of said lever.

Z designates the handle of a lever Z', whose

lower end is pivoted to some fixed point, and is provided with a curved cage or guard A', which partially incloses the lower sprocket-wheel, as seen in Fig. 1, said guard consisting of the flange B', having attached thereto the shelf C', as is best seen in Fig. 5, upon which the sprocket-chain D' rides, said chain passing around the greater portion of the upper wheel J and the pulley Y, but passing to the side of and contacting with only a portion of the wheel K by reason of the guard A', as is best seen in Fig. 1, the teeth of said sprocket-wheel K passing through the opening L' in the shelf C'.

A² designates a stop which is attached to a suitable portion of the framework, and is provided with a slot B², through which the handle Z passes, and a ledge C², which contacts with the upper portion of the lever Z' and holds the same in its forward position when the sprocket-chain is moved out of engagement with the sprocket-wheel K, as seen in dotted lines, Fig. 1, a plan view of said stop being seen in Fig. 7.

E' designates a gear which is mounted on the shaft B at the end opposite to the sprocket-wheel K, said gear meshing with the pinion on the main shaft which carries the knives. (Not shown.)

The operation is as follows: The shaft B, the sprocket-wheel K, and the smooth feed-roll C ordinarily revolve continuously, and when the parts are in the position seen in full lines, Fig. 1, it is evident that the sprocket-wheel J will be actuated, since the pulley Y and the weight T keep the chain D' always taut and in engagement with the wheel K. Should it be desired to suddenly stop the upper roll G for any reason the operator moves the handle Z of the lever in the direction of the arrow into engagement with the ledge C² of the stop A², as seen in dotted lines in Fig. 1, whereupon it will be seen that by reason of the contact of the shelf C' of the guard A' with the sprocket-chain D' the latter will be moved out of engagement with the wheel K, the chain thus being divested of power, whereby said chain, the wheel J, and the corrugated roll G will cease to move and the feeding will stop, although the wheel K, shaft B, and roll C continue their revolutions, the rotation of the feed-rolls always tending to propel the feed toward the knives, which, it will be understood, are located at the right of Fig. 1. When the handle is moved back, the parts assume the position seen in full lines, the weight T tending to pull the pulley Y downwardly, and to tighten the chain D', and thus force the handle back. If an unusually large quantity of the fodder or feed should be passed through the rolls, the upper boxes F, carrying with them the corrugated or fluted roll G, will move upwardly into the position seen in dotted lines in Figs. 2 and 3, and the frame M and its appurtenances will also move upwardly, as seen in said figures. When the feed has passed through and beyond the rolls,

the parts will assume the positions seen in full lines again by reason of the weight of the frame M and the counterpoise X.

It will thus be seen that by the above appliances the feeding function of the rolls can be instantly stopped, although the cutter proper may continue its operation and that the said rolls also instantly adapt themselves, by separating automatically, to feed the fodder in any desired quantities, since they approach and recede from each other without requiring any attention on the part of the operator, and it will be noted that the tension on the sprocket-chain D' is kept uniform at all times and under all conditions in whatever position the feed-rolls may be relative to each other, and that the tension-regulating device may be applied to either side of the cutter, and it will furthermore be evident that various changes may be made by those skilled in the art, which will come within the scope of my invention, and I do not therefore desire to be limited to the exact construction I have herein shown and described.

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

1. In a fodder cutter, two feed rolls having sprocket wheels, on their journals, the journals of one of said rolls, having fixed bearings and the journals of the other roll, having bearings in sliding boxes, a frame pivoted to a fixed support, a weighted lever pivoted to said frame and having a pulley mounted thereon, a sprocket chain engaging said pulley and sprocket wheels and means for disengaging said chain from said sprocket wheel on said feed roll having a fixed bearing, said parts being combined substantially as described.

2. In a fodder cutter, a set of rolls provided with sprocket wheels, and having a pulley attached to a weighted lever thereunder, a chain passing around said pulley and the upper sprocket wheel, the lower sprocket wheel being placed outside of said chain, but in contact therewith, and means for moving the chain out of contact with said lower sprocket wheel substantially as described.

3. In a fodder cutter, the frame M having the cross bar N, the arms P and the weighted lever S pivoted to one of said arms and carrying the pulley Y, a series of rolls, one of said rolls having adjustable bearings and connections from the latter to said cross bar and means for actuating said rolls, the above parts being combined substantially as described.

4. In a fodder cutter, a series of rolls and sprocket wheels therefor, a chain substantially encircling the upper sprocket wheel and passing to the side of the lower wheel, but in contact therewith, and means for keeping said chain taut, a lever provided with a cage or guard having a shelf C' upon which said chain rides, whereby the latter can be thrown out of engagement with the lower sprocket wheel, substantially as described.

5. In a fodder cutter, the beams A with the

slotted frame D thereon, the roll C journaled in said beams, and the roll G journaled in the sliding box movable in slots in said frame D, the weighted frame M pivoted to the hanger
5 L below said beams, the weighted lever X' having the pulley Y mounted thereon, the sprocket wheels J and K on the journals of said rolls G and C, the sprocket chain engaging said sprocket wheels and pulley, and the
10 rods V connecting said sliding boxes, and the frame M, said parts being combined substantially as described.

6. In a fodder cutter, the tension regulating devices consisting of the cross bar N, having
15 the arms P, which are pivotally attached to a suitable fixed point, a lever S having one end pivoted to one of said arms P, while its other end carries a weight T, a pulley Y journaled

to said lever S, and a chain encircling said pulley and adapted to communicate motion 20 to suitable feed rolls, substantially as described.

7. In a fodder cutter, the frame M having the cross bar N, and the arms P which are attached to some fixed point, the weighted lever 25 S and the pulley Y mounted thereon, said lever being pivoted to one of said arms P, the ears U attached to said cross bar, the upper and lower feed rolls, connections from said ears U to the bearings of said upper feed roll, and 30 means for actuating said feed rolls, substantially as described.

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