

(Model.)

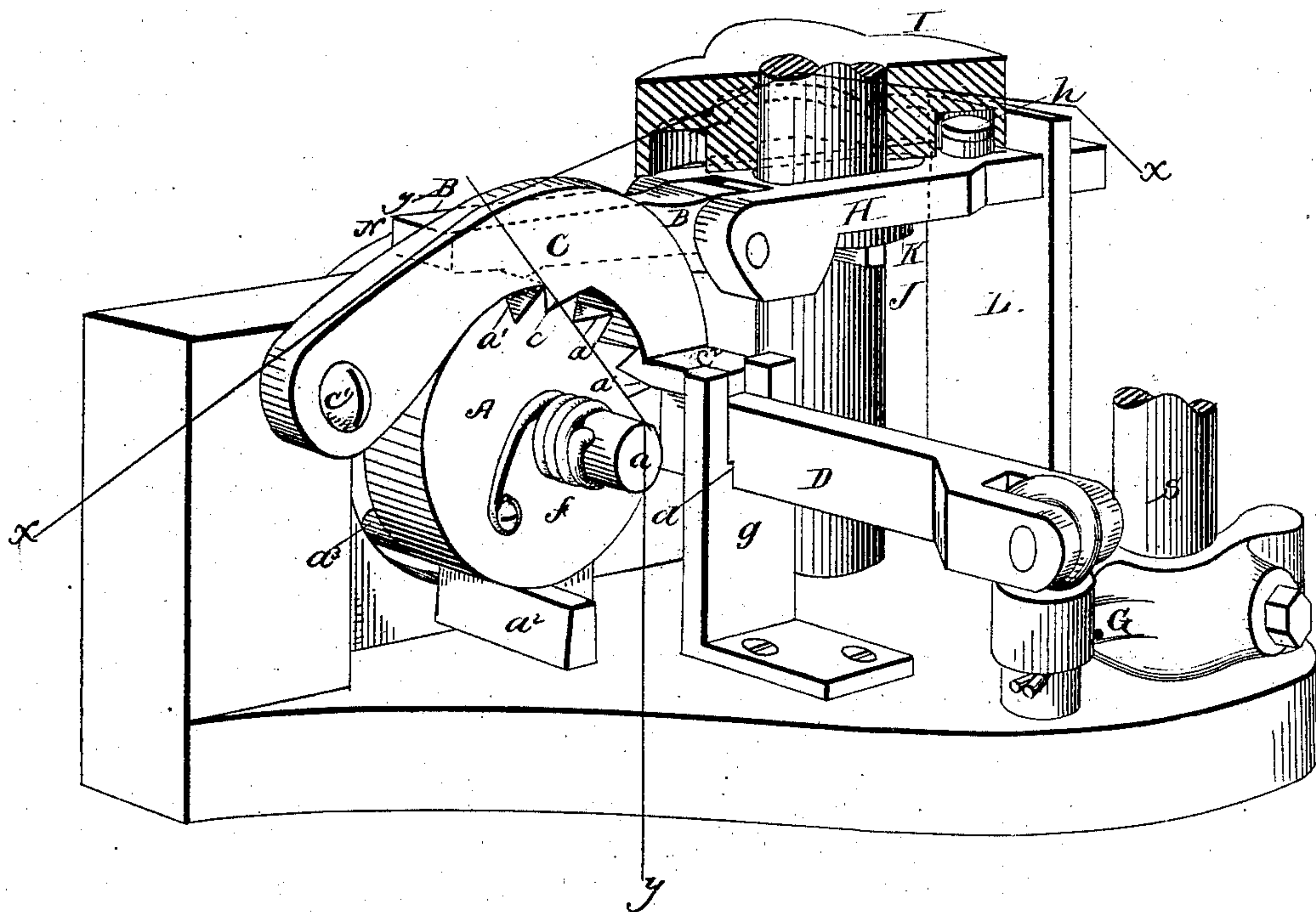
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E. PRIDMORE.
Tripping Device for Harvester Rakes.

No. 239,399.

Patented March 29, 1881.

Fig. 1.



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Fig. 2.

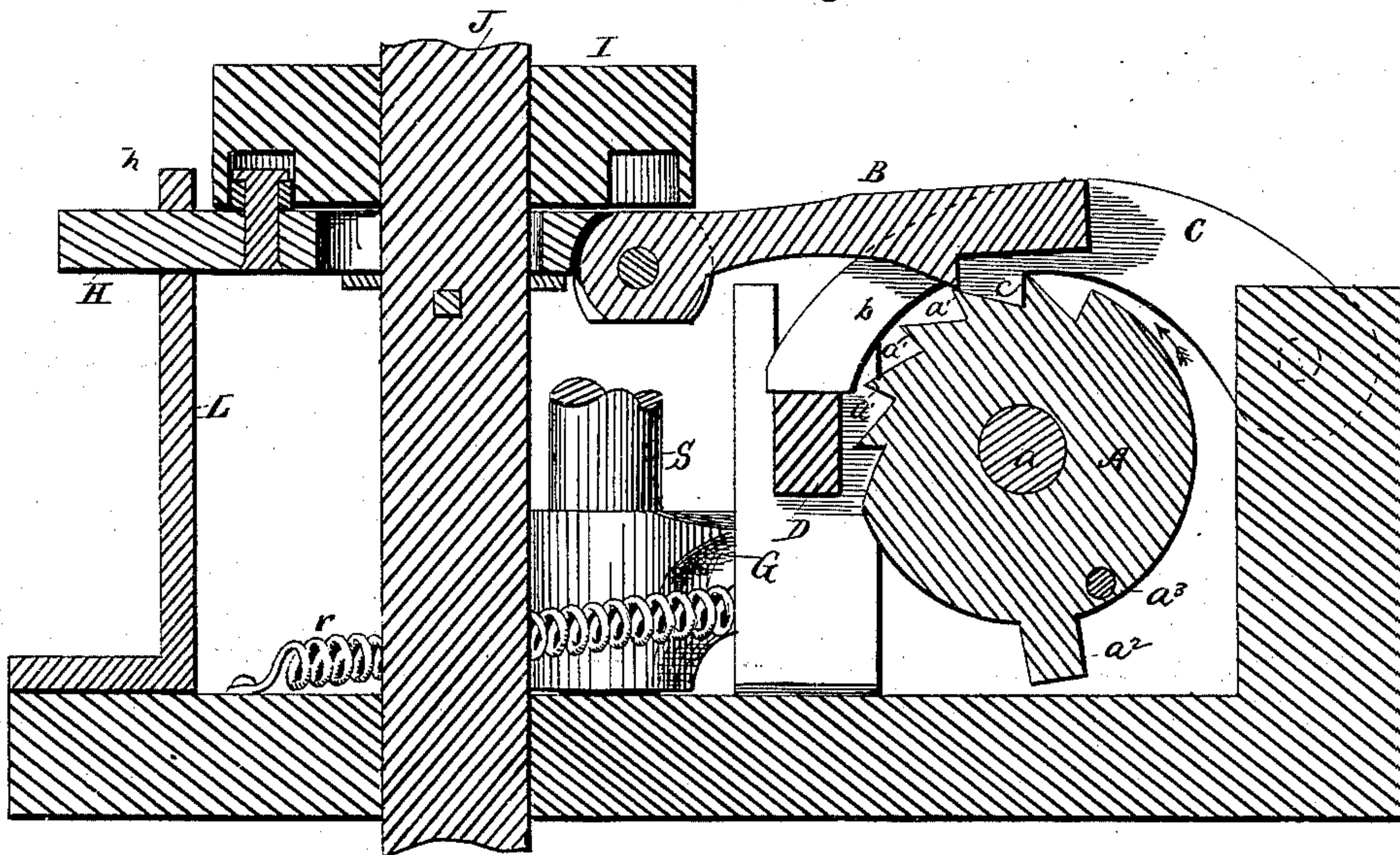
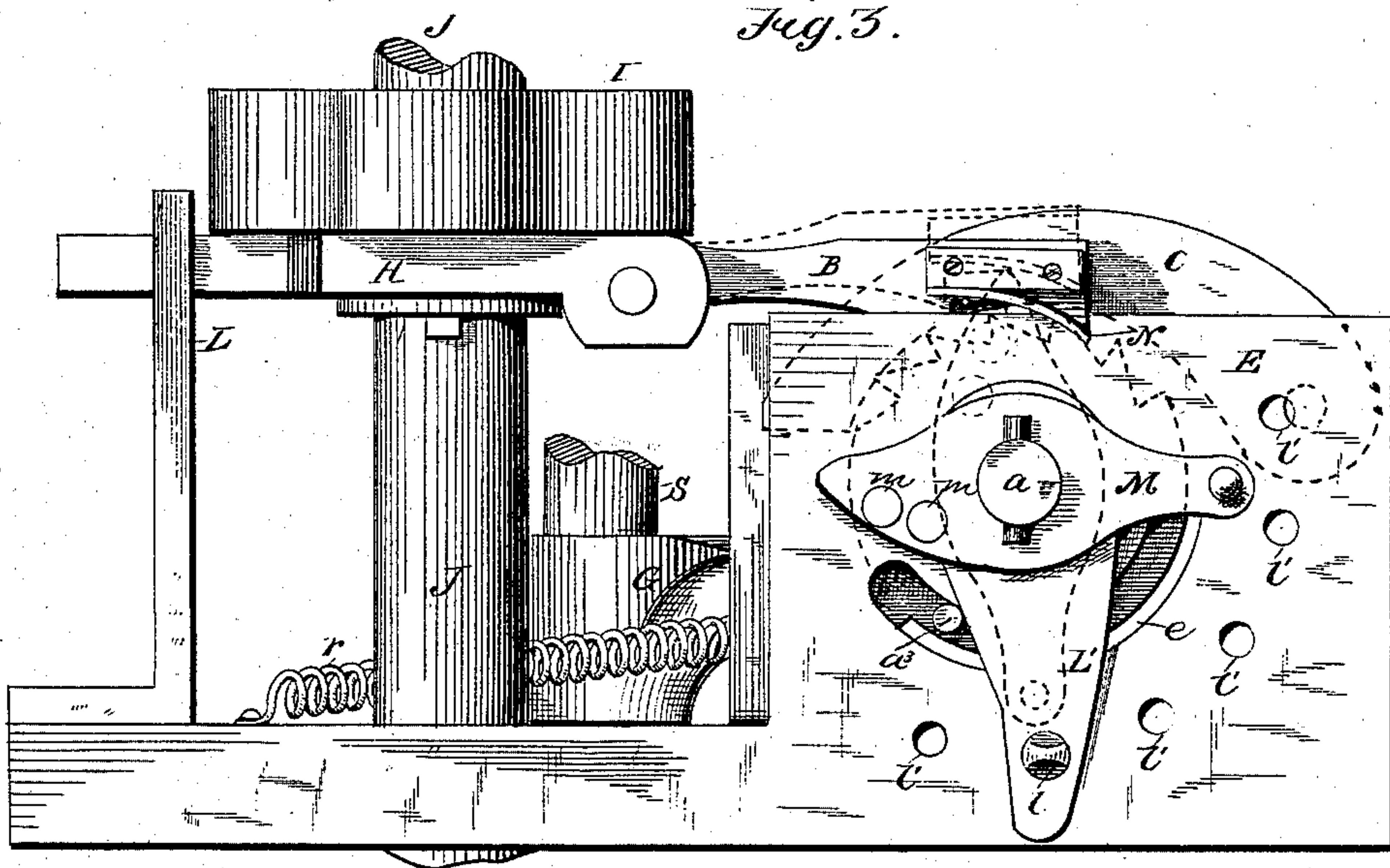


Fig. 3.



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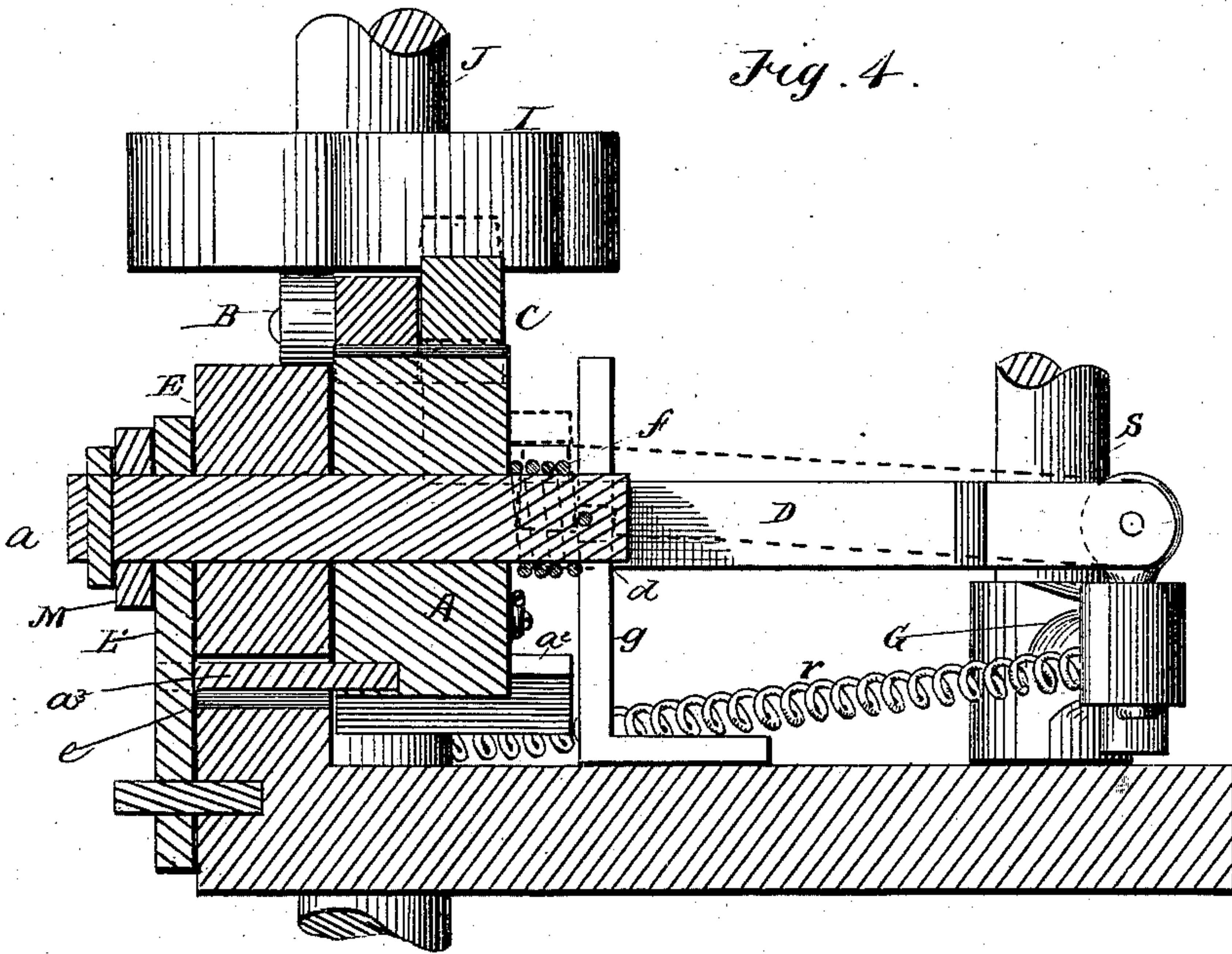
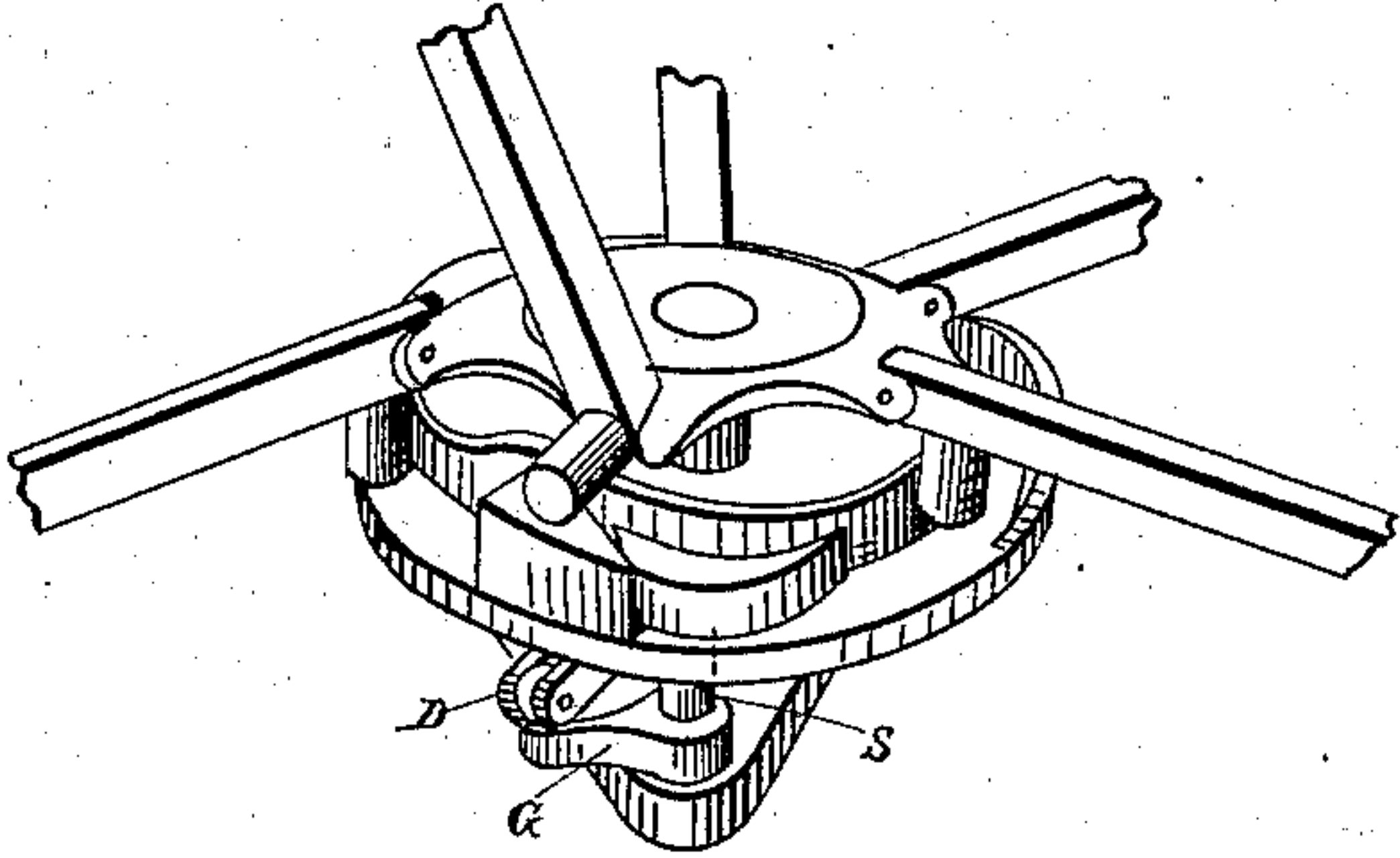


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD PRIDMORE, OF BROCKPORT, NEW YORK, ASSIGNOR TO THE
JOHNSTON HARVESTER COMPANY, OF SAME PLACE.

TRIPPING DEVICE FOR HARVESTER-RAKES.

SPECIFICATION forming part of Letters Patent No. 239,399, dated March 29, 1881.

Application filed November 17, 1880. (Model.)

To all whom it may concern:

Be it known that I, EDWARD PRIDMORE, of Brockport, in the county of Monroe and State of New York, have invented certain Improved Mechanism for Controlling the Operation of Harvester-Rakes, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a sectional view taken on the line xx , Fig. 1. Fig. 3 is a side elevation; Fig. 4, a sectional view taken on the line yy , Fig. 1; and Fig. 5, a view showing the application of the invention to a harvester-rake.

Similar letters of reference in the several figures denote the same parts.

This invention belongs to that class of devices which are employed to operate the switch or gate of a harvester-rake, so as to cause the rake-arms to sweep the platform more or less frequently at regular intervals, or at will, and it relates particularly to improvements upon the device for which an application for Letters Patent was filed by me on the 18th day of August, 1880, said improvements consisting in certain novelties of construction which I will now proceed to describe.

In the drawings, A represents a tripping-wheel; B, a laterally-moving pivoted pawl-arm by which the tripping-wheel is actuated; C, a pawl which engages with the actuating-wheel to prevent its forward rotation; and D the latch to be tripped.

The tripping-wheel A is mounted upon a fixed horizontal shaft or bearing, a , and is provided with a series of ratchet-teeth, a' , on its periphery, with which a tooth, b , on the pawl-arm B, and a tooth, c , on the pawl C, are adapted to engage. Said tripping-wheel is further provided on its periphery, opposite its toothed portion, with a laterally-projecting lug, a^2 , which is adapted to raise and release the latch, as will be presently explained, and it is also provided with an arm, a^3 , projecting laterally through a curved slot, e , in the upwardly-projecting flange E, which forms the support of shaft a . Coiled about one of the projecting

ends of shaft a is a spiral spring, f , one end of which is fastened to the shaft and the other end to the side of the tripping-wheel, as shown. This spring operates to throw the tripping-wheel forward in the direction indicated by the arrow, Fig. 2, when released from the pawl C.

The latch D is articulated at its outer end to an arm, G, which is secured to the shank s of the switch or gate of the harvester-rake, while its inner end plays through a slotted standard or guide, g , and is provided with a notch or shoulder, d , as shown. When the latch is set the notch engages with the standard or guide, and its extreme end projects beyond the standard into the path of the lug a^2 on the tripping-wheel.

The pawl B is hinged to a slide, H, to which a back-and-forth movement is imparted by means of a cam-wheel, I, on the rake-shaft J, and a stud or projecting pin, h , on the slide. The slide is provided with an elongated opening for the passage of the rake-shaft, and is preferably supported by means of a loose collar, K, on the rake-shaft, and a suitable fixed guide, L, as shown. The cam-wheel may be attached to the under side of the rake-head, if desired, or in lieu of it a cam-groove may be formed in the rake-head itself with the same effect. The stud which plays in the cam-wheel is preferably surrounded by a friction-sleeve, to reduce friction. Other means than the slide and cam-wheel may be devised for operating the pawl-arm back and forth from the rake-shaft, and I do not therefore desire to confine myself to such particular arrangement, though it is found to fully meet the requirements. The pawl-arm projects over the tripping-wheel, and its tooth b at each outward movement of the slide engages with one of the ratchet-teeth of the tripping-wheel and rotates the latter backward the distance of one tooth against the tension of the spring f , the return of the tripping-wheel being prevented by the engagement of the tooth c of the pawl C. On the reverse or backward movement of the slide the tooth of the pawl-arm drops in front of the next tooth on the tripping-wheel, and the wheel is rotated backward another step, and so on until all the

teeth of the wheel have been operated upon. As the wheel is rotated by the engagement of the pawl-arm with its last tooth the laterally-projecting lug a^2 on the wheel strikes the end of the latch-bar and raises it, so as to release its notch or shoulder d from the standard or guide g and permit the bar to be thrown forward by a spring, k , applied directly to the bar or to the arm G , to which it is connected, as shown in Fig. 1.

The pawl C is pivoted at c' , and is arranged over the tripping-wheel alongside of the pawl-arm B . As the tripping-wheel is rotated backward by the pawl-arm B , pawl C rises and its tooth drops in front of one of the ratchet-teeth and prevents the return of the wheel as the pawl-arm moves back to engage with the next tooth, as above explained. The outer end of pawl C is provided with a cross-bar, c^2 , which projects over and rests upon the end of the engaged latch-bar, so that when the latch-bar is lifted from engagement with its standard by the lug on the tripping-wheel, the latch-bar, in turn, lifts the pawl and disengages its tooth from the teeth of the tripping-wheel, thus permitting the coiled spring f to rotate the tripping-wheel forward, or, in other words, return it to its first position, ready for another operation. The latch-bar is reset by the closing of the gate or switch of the rake by the rake-arm in the usual manner, as will be readily understood. The device is thus made entirely automatic in its operation.

The frequency with which the latch is tripped, it will be observed, depends upon the number of ratchet-teeth on the tripping-wheel with which the pawl-arm is made to engage before the last or tripping tooth is reached, and it is evident that by adjusting the tripping-wheel so that the pawl-arm will engage first with any given tooth the frequency of the tripping can be regulated at pleasure. To effect this adjustment it is only necessary to provide an adjustable stop for the arm a^3 on the tripping-wheel to strike against when the wheel is thrown back to first position by its spring, so that the first, second, third, or any numbered tooth will be first presented to the pawl-arm upon its next movement. The device I preferably employ is a lever, L' , mounted loosely upon the fixed shaft a , and having a perforation in its outer end for the accommodation of a securing pin or bolt, l . A series of holes, l' , are made in the flange E , and the pin which passes through the lever is adapted to be engaged with any one of the holes of the series, according as the tripping is desired to be more or less frequent. If adjusted to the first hole, the lever will arrest the wheel-arm a^3 when the last ratchet-tooth is in position to be operated upon by the pawl-arm; and if adjusted to the second hole, the next to the last tooth will be presented, and so on. Instead of a pin, l , a spring-bolt may be employed.

For the purpose of tripping the latch at will, and regardless of the particular adjustment of

the devices designed to trip it automatically at regular intervals, I mount loosely upon the shaft a , outside of the lever L' , a second and shorter lever, M , to the lower end of which is connected a rod or cord leading to the driver. This lever when swung around strikes the tripping-wheel arm a^3 in whatever position it may be, and moves the tripping-wheel backward until its last tooth is brought into position to be at once engaged by the pawl-arm on its next forward movement. As the lever M is swung around its upper end strikes an arm or plate, N , projecting from the side of the pawl-arm and lifts the latter from engagement with the wheel. The pawl-arm can be held elevated out of engagement with the wheel as long as may be desired by keeping the lever M in a vertical position; but as soon as the lever is allowed to resume its normal or horizontal position, the pawl-arm engages with the last notch of the tripping-wheel, and the latter trips the latch at once. For the purpose of bringing the lever back to its normal horizontal position one side of it is preferably weighted, as shown at m .

I do not claim herein, broadly, the combination, with a latch, of the reciprocating tripping-wheel; nor, broadly, means for advancing such wheel step by step; nor the described means for returning said wheel to its normal position; nor the described means for regulating the frequency with which the latch is tripped automatically, as such matter is shown and made the subject of claims in a prior pending application before alluded to, filed August 18, 1880.

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

1. In a tripping device, the combination, with a tripping-wheel and latch-bar, of a pivoted pawl-arm having a backward-and-forward movement imparted to it from the rake-shaft, and adapted to engage with the tripping-wheel, substantially as described.

2. In a tripping device, the combination, with the tripping-wheel and latch-bar, of the pawl-arm, the operating-slide, and the cam on the rake-shaft, substantially as described.

3. In a tripping device, the combination, with the tripping-wheel and latch-bar, and actuating mechanism for rotating the tripping-wheel step by step to trip the latch, of means independent of the means which regulate the frequency of the automatic tripping for bringing at will the tripping-wheel from any position in which it may be into position to trip the latch-bar at once, substantially as described.

4. In a tripping device, the combination, with the tripping-wheel and latch-bar, of the pivoted pawl-arm having a back-and-forth movement, and means for bringing at will the tripping-wheel from any position in which it may be into position to at once trip the latch-bar, substantially as described.

5. In a tripping device, the combination, with the tripping-wheel having the laterally-

projecting arm, of the pivoted lever M, which is under the control of the operator at all times, and is adapted to engage with said arm to carry the tripping-wheel into position for at
5 once tripping the latch-bar, substantially as described.

6. In a tripping device, the combination of the pivoted pawl-arm, having the laterally-

projecting plate, and the lever for engaging said plate to raise the pawl-arm out of engagement with the tripping-wheel, substantially as described. 10

EDWARD PRIDMORE.

Witnesses:

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C. A. SHERWOOD.