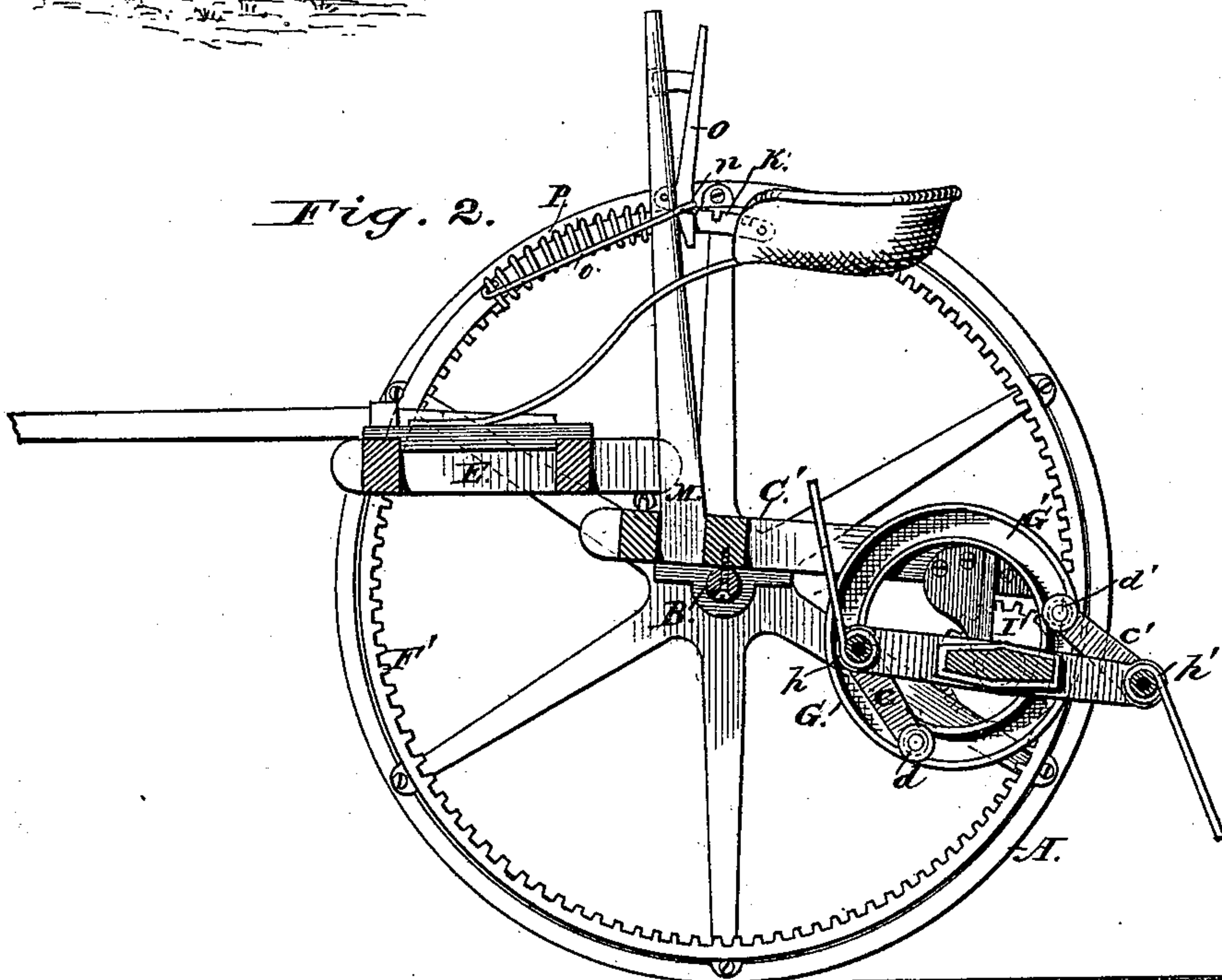
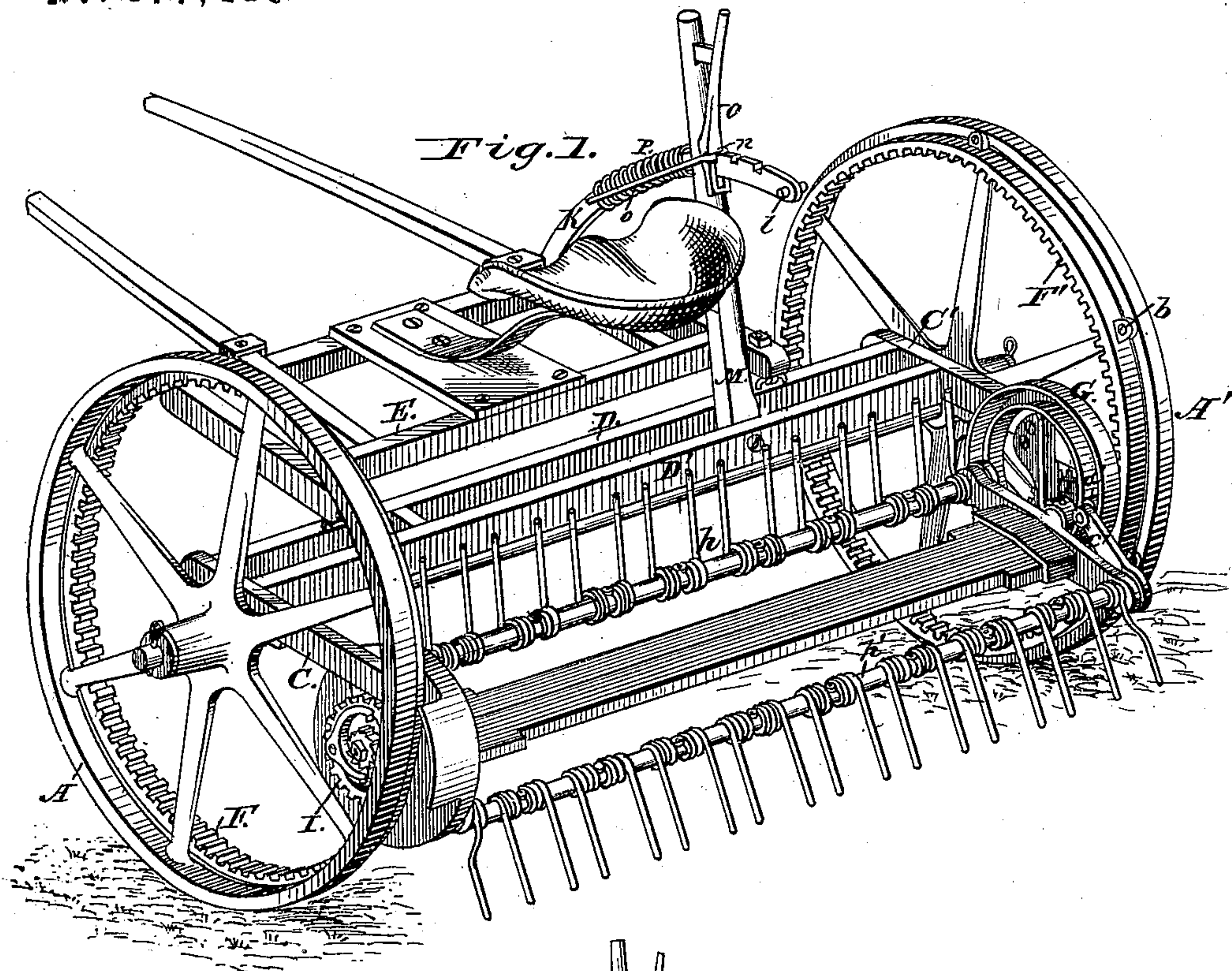


S. PERRY.
HAY-TEDDER.

No. 177,418.

Patented May 16, 1876.



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Fig. 3.

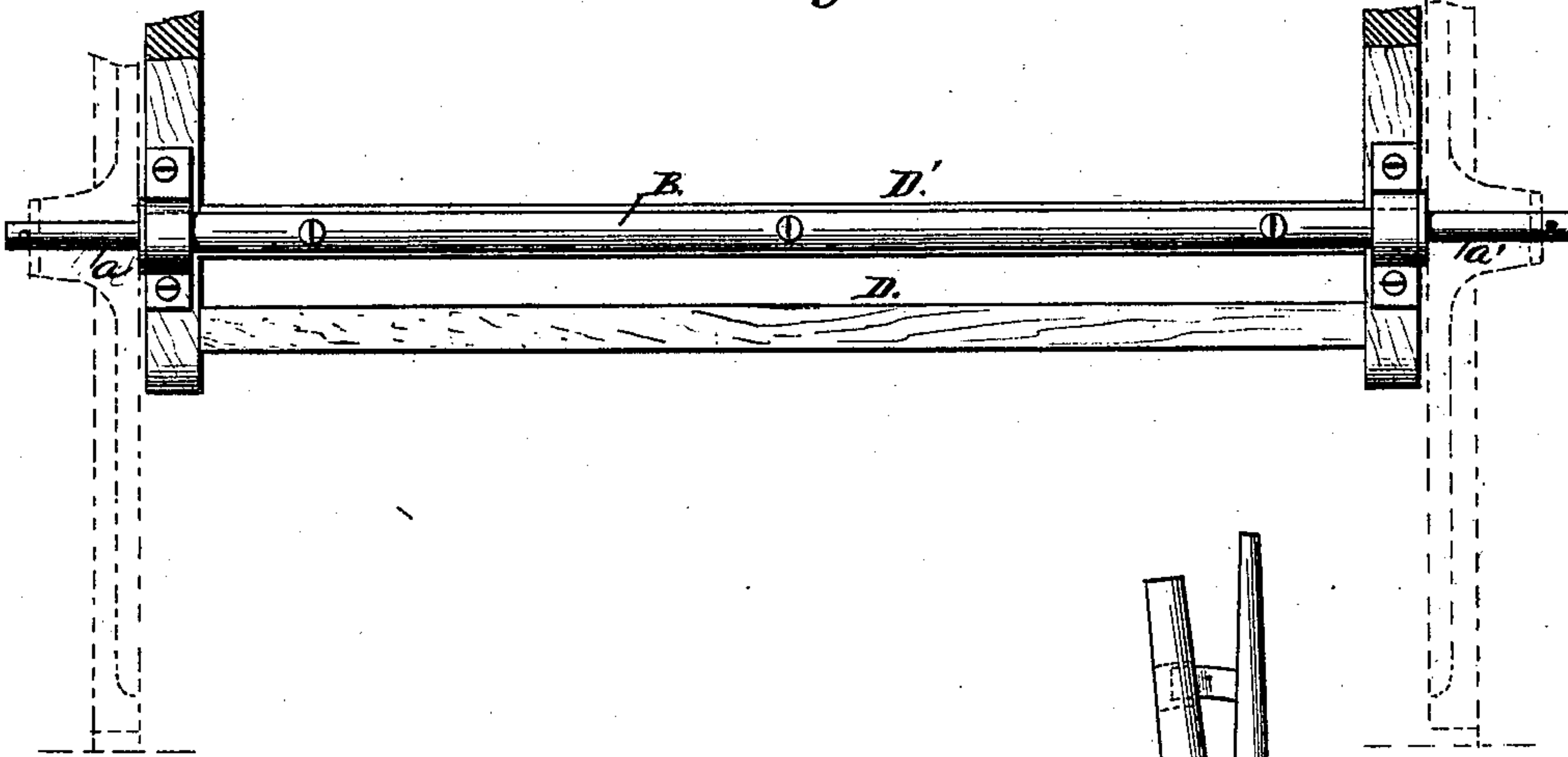


Fig. 5.

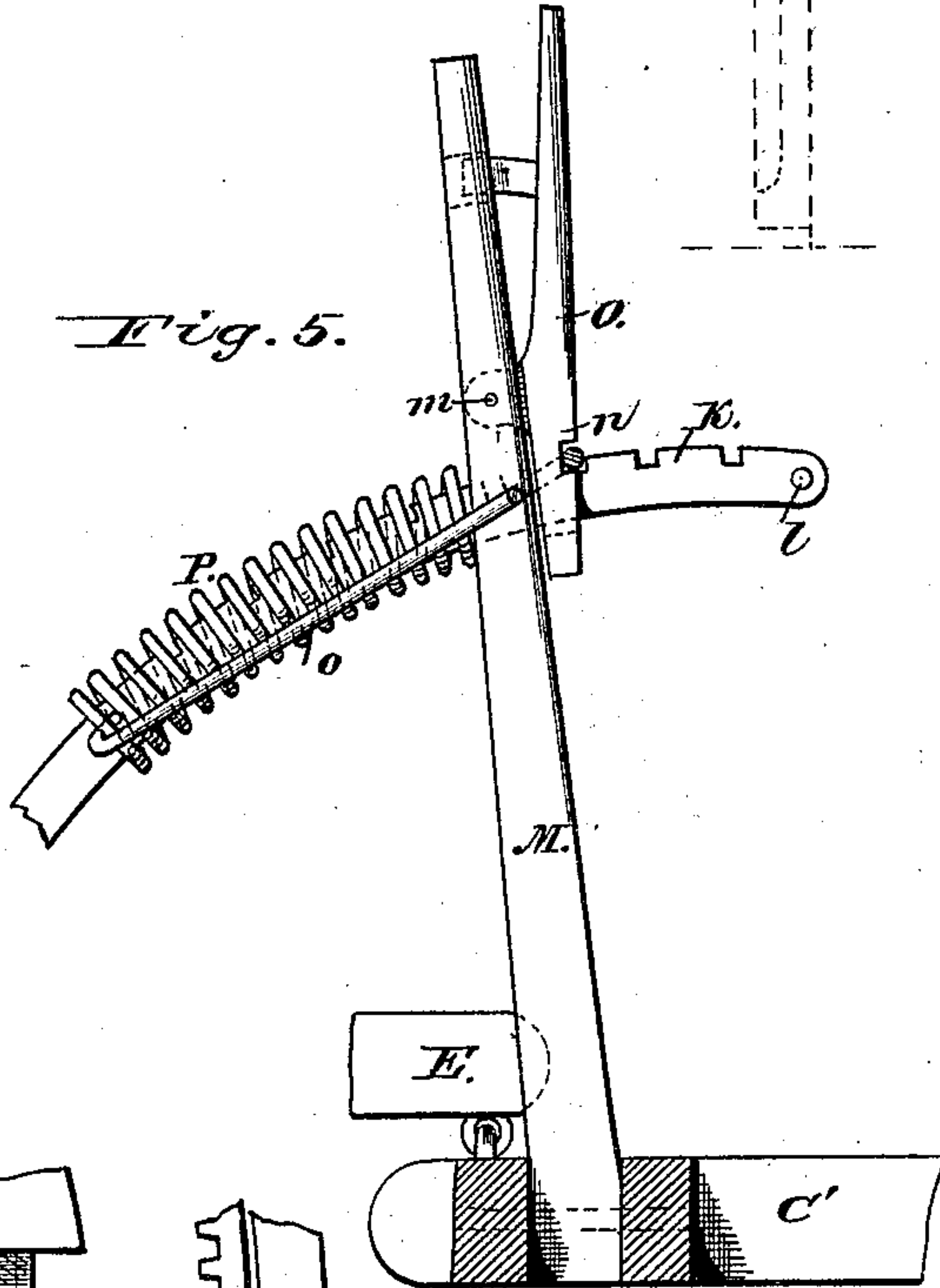


Fig. 4.

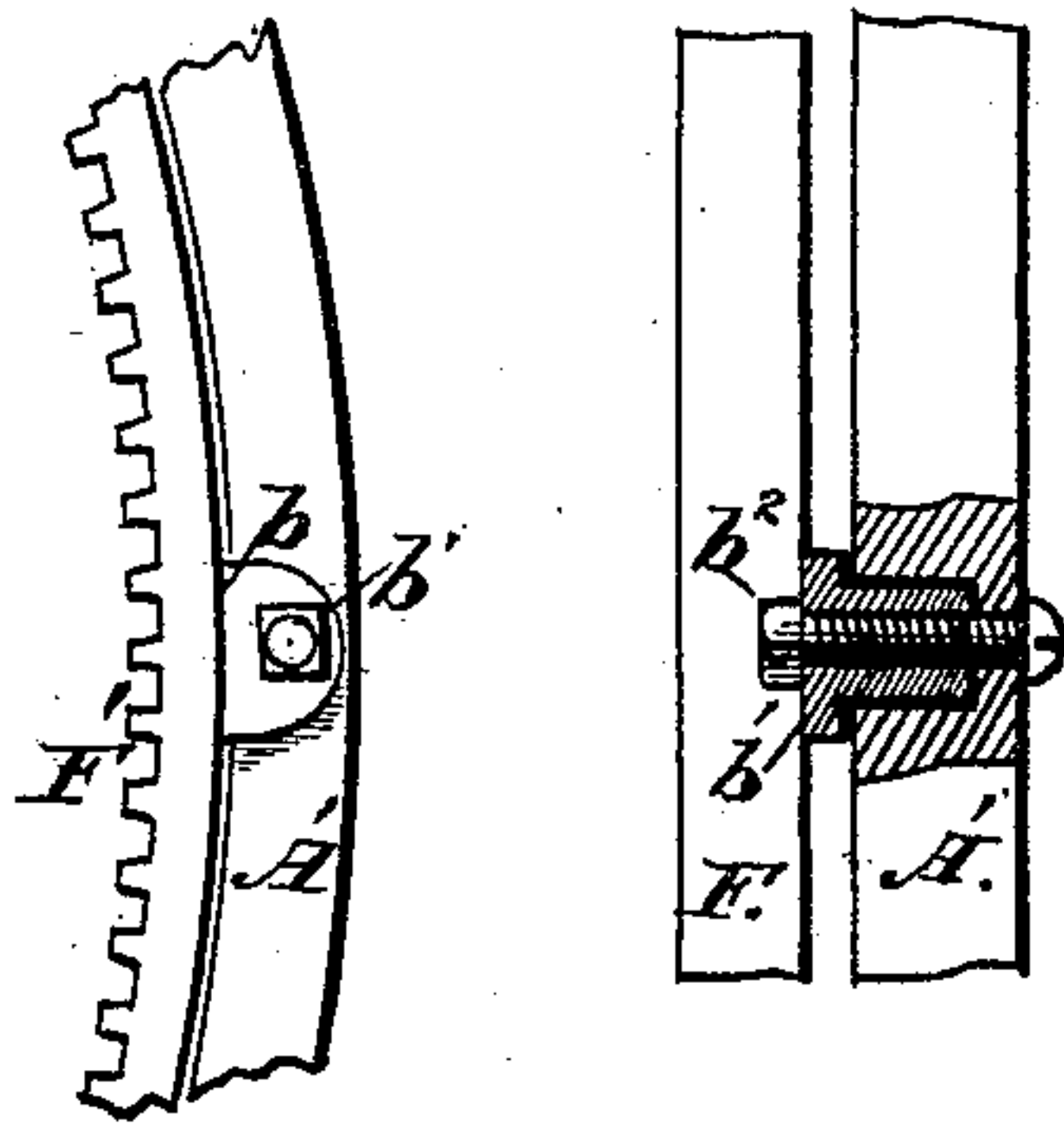
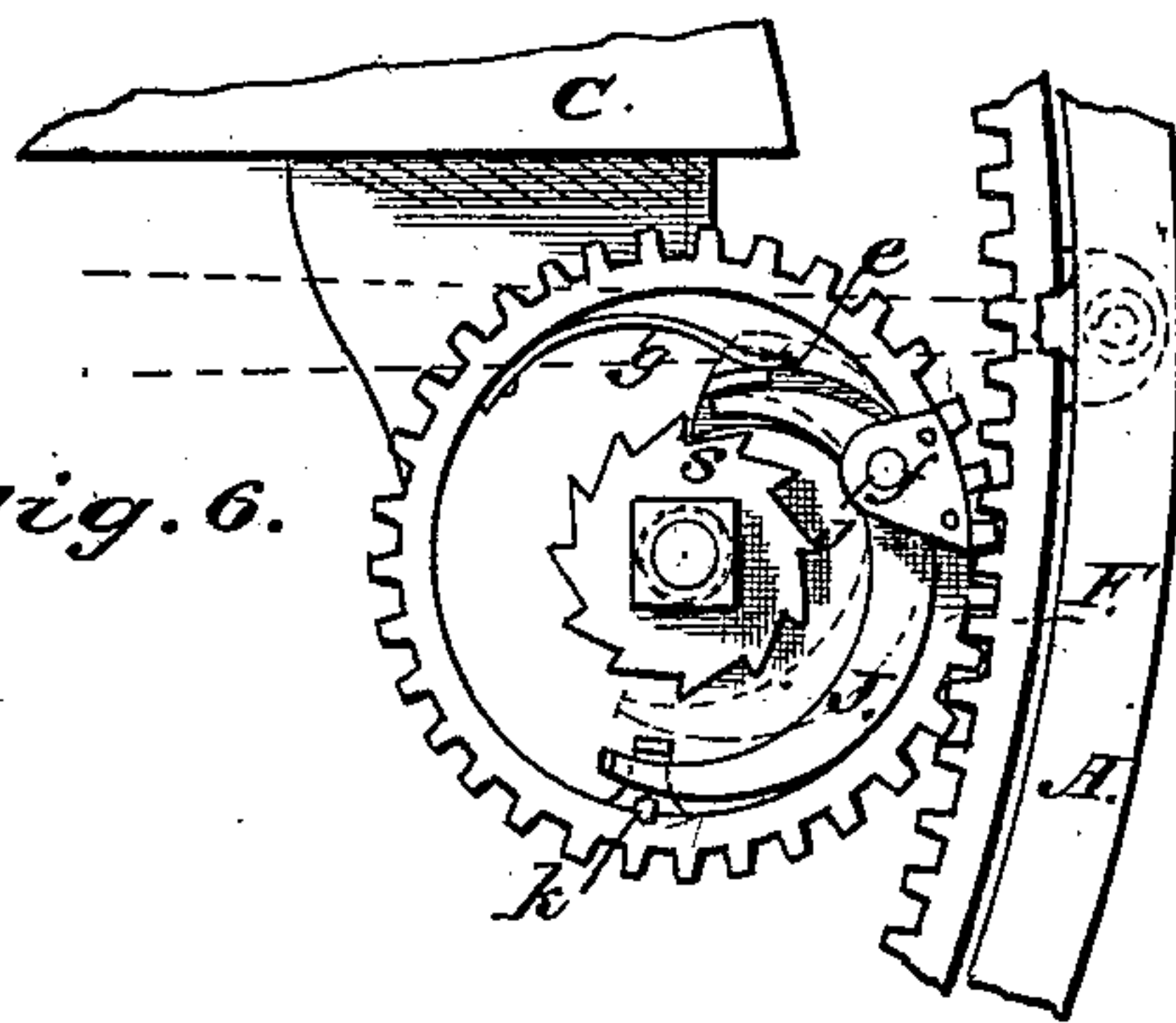


Fig. 6.



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UNITED STATES PATENT OFFICE

STUART PERRY, OF NEWPORT, NEW YORK.

IMPROVEMENT IN HAY-TEDDERS.

Specification forming part of Letters Patent No. **177,418**, dated May 16, 1876; application filed February 12, 1876.

To all whom it may concern :

Be it known that I, STUART PERRY, of Newport, in the county of Herkimer, and State of New York, have invented certain new and useful Improvements in Hay-Tedders; and I do hereby 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 pertains to make and use it, reference being had to the accompany drawings, which form part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a sectional view of the same. Fig. 3 shows the through-axle and the reel-frame secured thereto. Fig. 4 represents the gear-wheel and road-wheel detached, showing the means employed for effecting their attachment to each other. Fig. 5 represents an enlarged view of the reel-frame-adjusting device. Fig. 6 represents an enlarged view of one of the reel gear-wheels, showing the manner of pivoting the pawl thereto, and also a spring-lever to throw the pawl out of mesh with the ratchet.

This invention relates to the construction and arrangement of parts in a rotary tedder; and it consists, first, in the combination, with a reel-frame constructed without a cross-bar in rear of the axle, and arranged to carry the reel between the road-wheels, of the through-axle and the rocking tine-shaft, whereby the tine-shafts are allowed to work in close proximity to the axle; secondly, in rigidly attaching the cross-bar of the reel-frame directly to the through-axle by axle clips, bolts, or in any suitable manner, thereby imparting strength to the axle without recourse to a separate wood backing, as has heretofore been employed in this connection; thirdly, in the combination, with a reel-frame rigidly secured to a through-axle, of a draft frame hinged to the front portion of the reel-frame, for the purpose of wholly or partly counterbalancing the weight of the reel-frame by the weight of the driver on the draft-frame; fourthly, in the combination, with the fellies of the road-wheels, of the driving-gear constructed with perforated horns, the same provided with offsets to enter corresponding recesses in the fellies; fifthly, in combination, with the draft-

frame and reel-frame, of a hand-lever, serrated or notched bar, lock-bar, and an adjustable spring-actuated pawl, the several parts being arranged and combined in such a manner that the spring always exerts a constant pressure between the draft and reel-frame; sixthly, in the combination, with a pawl engaging with the ratchet within the face of the gear-wheel, of a spring-lever arranged relatively to said pawl in such a manner that the lever may be unshipped and throw the pawl out of contact with the ratchet.

In the accompanying drawings like letters refer to like parts of the machine.

The road-wheels A A' are suitably journaled to a through-axle, B. Upon the axle, and against the inner faces of road-wheels A A', are placed journal-bearings *a a'*, to the ends of which the arms C C' of the reel-frame are rigidly secured. The arms C C' are cross-braced by the cross-braces D D', the former serving as a support for the draft-frame E, while the cross-bar D' rests upon the axle B, and is rigidly secured thereto by means of axle-clips, bolts, or in any other suitable manner.

The cross-bar D', arranged in direct contact with the axle, will admit of an easy adjustment of the reel-frame, the axle serving as the pivotal bearing upon which the reel-frame oscillates, and also the cross bar serves as a backing to materially stiffen and strengthen the through-axle B. Heretofore the reel-frame has been constructed with a cross-bar in rear of the axle, thereby removing the reel-journals the breadth of the cross-bar from the axle or pivotal bearing of the reel-frame. My improved arrangement and construction of reel-frame consist in securing the cross-bar directly upon top of the through axle, whereby the tines may swing in close proximity to the axle. The leverage of the reel-frame is thus shortened, the draft is more direct, and the reel-frame can be readily adjusted by the operator.

The driving-gears F F' are constructed with horns or lugs *b*, preferably of a number to correspond with the spokes of the road-wheel, and each of said horns has an offset or projection that enters the felly of the wheel.

Through holes *b*¹, in horns *b*, are inserted

bolts b^2 , which firmly unite the driving-gear to the road-wheels, and effectually prevent their slipping on each other. To the arm C^1 of the reel-frame the camway G is attached.

The tine-shafts $H H^1$ have imparted to them a variable movement through the medium of the arms $c c^1$, which are fastened to the ends of the pivoted tine-shafts, while their outer ends carry anti-friction rollers $d d'$, that travel in the cam-groove G' .

Gear-wheels $I I'$ are loosely secured to the reel-journals, and to the ends of these journals the ratchets $s s'$ are rigidly secured, said ratchets being arranged within the recessed outer faces of the gear-wheels $I I'$.

Pawls $e e'$ are formed with circular end bearings f , which rest in corresponding recesses f' in the gear-wheels, and springs g serve to keep the pawls in contact with the ratchet.

During the forward movement of the tedder the gear-wheels $I I'$ are locked to the reel-shaft by means of the pawl and ratchet above described, and the reel is positively rotated thereby, while in the backward movement of the machine the pawls are free to slip over the teeth of the ratchets, and the reel is not affected by the movement of the machine.

In order to completely isolate the pawl from the ratchet at will, that the reel shall not be actuated either during the forward or backward movement of the tedder, spring-levers are combined with the pawls, as follows:

Spring-levers J are pivoted to the rims of gear-wheels $I I'$ at j , the handle or long end of said lever, when not employed, resting between pins k , the other end of the lever serving as a guard-plate to retain the pawl in place.

When it is desired to throw the pawl out of contact with the ratchet, the handle of the spring-lever is raised above the top of the inner locking-pin k , and moved over the same so that the outer edge of the lever rests against the inner side of the pin. This movement throws out the other end of the lever, which catches on a projection, l , formed on the side of the pawl, and thus removes the working face of the pawl clear of the ratchet. In order that the weight of the driver may serve to wholly or partially counterbalance the weight of the reel and its frame, the draft-frame E (to which the driver's seat is secured) is hinged to the cross-bar D of the reel-frame, said cross-bar being situated in front of the axle B .

K is a notched or serrated sector-bar, which is hinged in front of the draft-frame E , while its free end is arranged to slide within an opening in the hand-lever M , a pin, l , through the end of the sector-bar, preventing the accidental detachment of the bar from the hand-lever.

The hand-lever M is firmly secured between the cross-bars $D D'$, and projects upward within easy reach of the driver. O is a lock-bar, and is pivoted to the hand-lever at M . A groove, n , is formed in the face of the lock-bar, and within said groove rests the end of

a link or pawl, o , the opposite ends of said link or pawl serving to retain a spiral spring, P , against the hand-lever at any required tension. The pawl o , in its normal position, rests in one of the notches of the sector K , and is retained therein by the tension of the spring P . The lock-bar O , being forced against the hand-lever, lifts the pawl from its notch, and retains it in groove n of the lock-bar, when the lever carrying the pawl and spring may be moved along the sector until the desired adjustment is effected, and then by releasing the lock-bar the pawl instantly engages in a notch in the sector.

The devices above described for insuring a constant and equable pressure on the reel, at variable adjustments, constitute an important feature of my invention, for the following reasons: The height of the thills or pole above the ground will, in practice, vary to a considerable extent, on account of different heights of horses, construction of harnesses, the irregularity of the surface of the field, owing to knolls, ridges, and other obstacles met with, requiring different degrees of adjustment of the reel to conform to the height of the thills or pole, and as it is desirable that a constant or equable pressure should be kept on the reel at all times, it is of great importance that the spring by means of which the said pressure is accomplished should form a part of the adjusting apparatus and be controlled by the same movement of the hand that controls the adjustment of the reel-frame relative to the draft-frame.

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

1. The reel-frame, constructed without a cross-bar in rear of the through-axle, and arranged to carry the reel between the road-wheels, in combination with the rocking tine-shafts and the through-axle, substantially as and for the purpose set forth.

2. The combination of the cross-bar D' of the reel-frame with the through-axle B , the said cross-bar being rigidly secured to the axle, substantially as and for the purpose set forth.

3. The combination of the tilting or reel frame and through-axle with the draft-frame, the latter carrying the driver's seat, and hinged to said reel-frame in such a manner that the weight of the driver serves to counterbalance wholly or in part the weight of the reel, substantially as set forth.

4. The gears, constructed with perforated horns, the same provided with offsets, in combination with the road-wheels, properly recessed to receive said offsets, substantially as and for the purpose set forth.

5. The combination, with the hand-lever and sector, of a spring capable of adjustment on the sector, and arranged to preserve a constant pressure between the reel and draft frame, substantially as set forth.

6. The hand-lever M and sector K, in combination with the lock-bar O, spring P, and link or pawl o, substantially as and for the purpose specified.

7. The combination of the spring-lever J, with the pawl e, the latter having its bearing in the gear-wheel I, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of February, 1876.

STUART PERRY.

Witnesses:

HOMER BROWN,
MILLARD N. PEARCE.