

No. 694,376.

Patented Mar. 4, 1902.

F. G. GREENE.
MOWING MACHINE KNIFE GRINDER.

(Application filed Aug. 4, 1900.)

(No Model.)

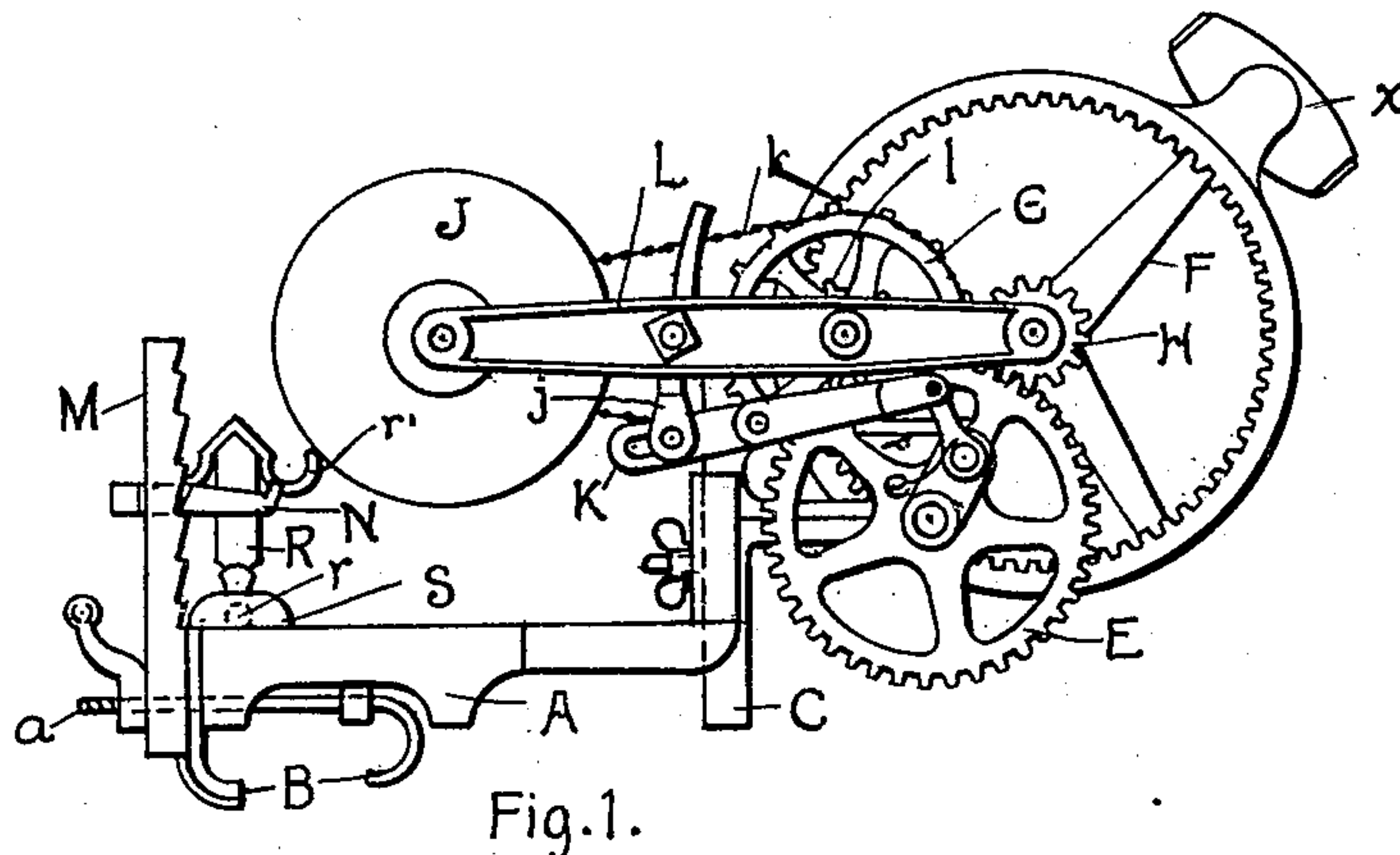


Fig. 1.

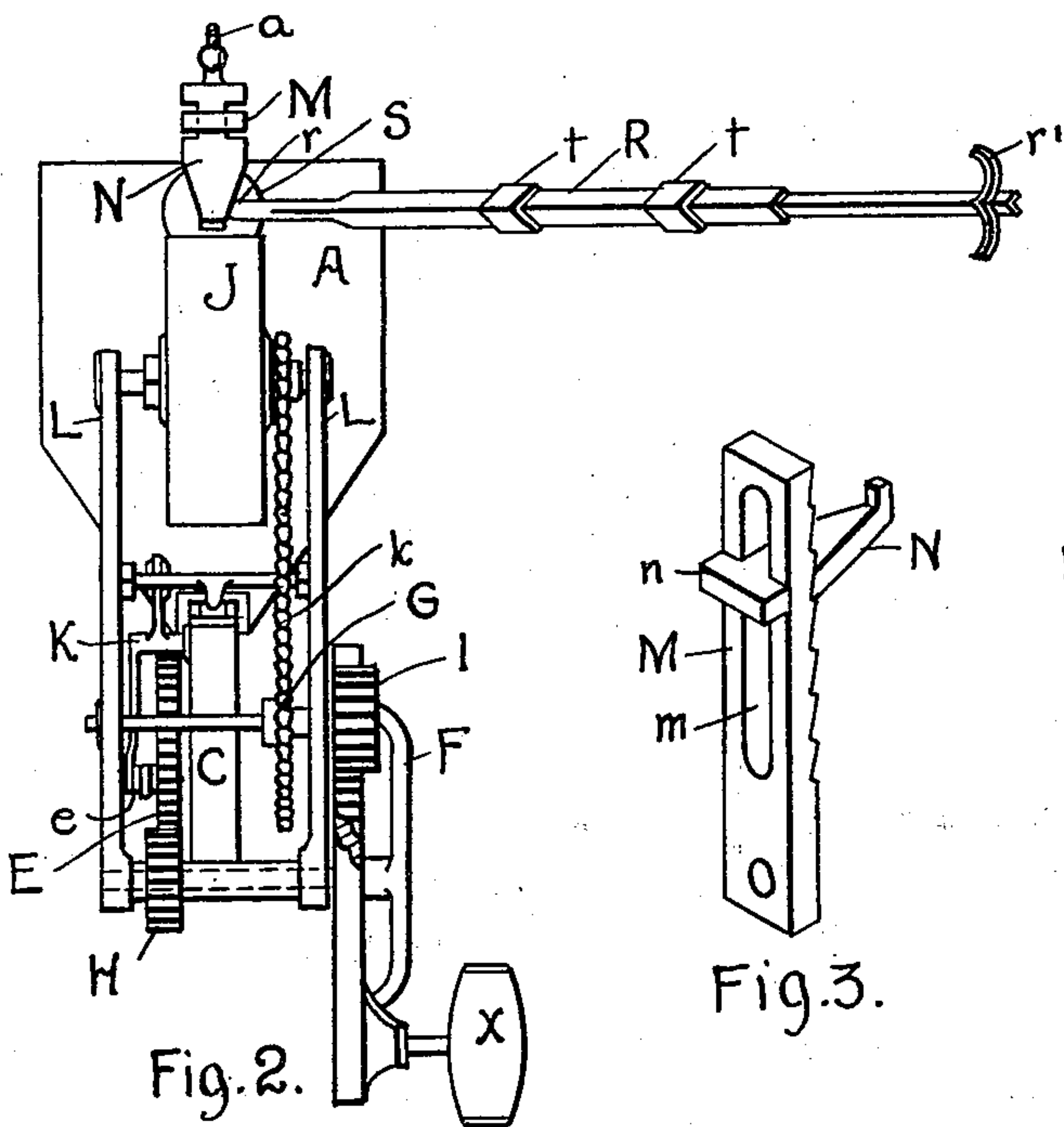


Fig. 2.

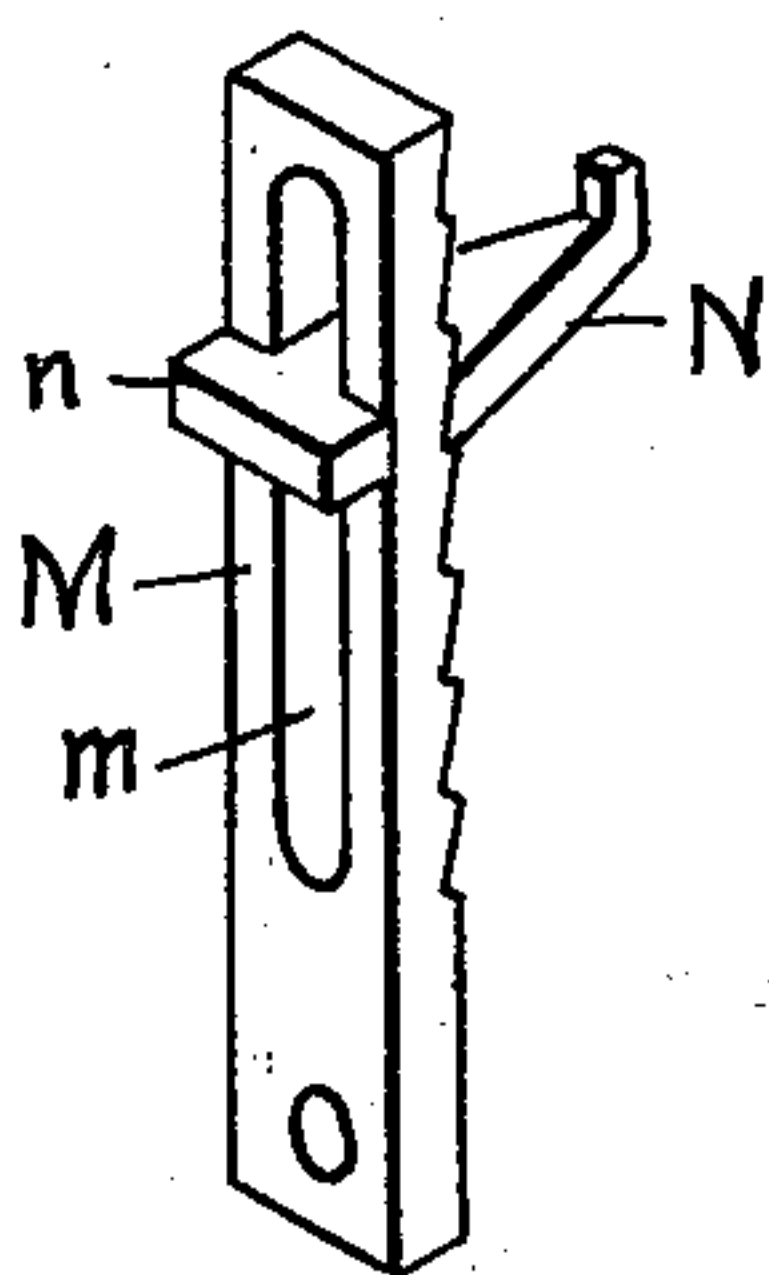


Fig. 3.

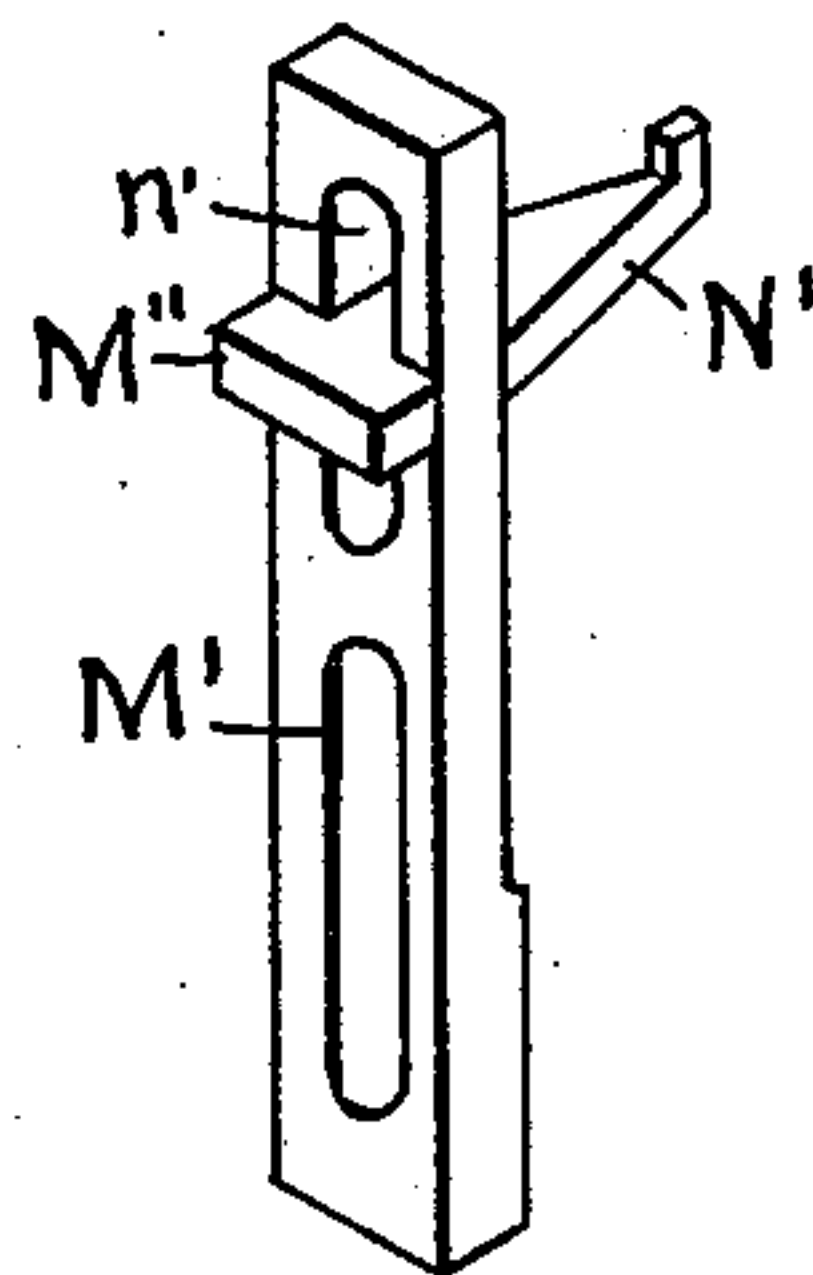


Fig. 4.

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UNITED STATES PATENT OFFICE.

FRANK G. GREENE, OF ALBANY, NEW YORK.

MOWING-MACHINE-KNIFE GRINDER.

SPECIFICATION forming part of Letters Patent No. 694,376, dated March 4, 1902.

Application filed August 4, 1900. Serial No. 25,888. (No model.)

To all whom it may concern:

Be it known that I, FRANK G. GREENE, a citizen of the United States of America, and a resident of the city of Albany, county of Albany, State of New York, have invented certain new and useful Improvements in Mowing-Machine-Knife Grinders, of which the following is a specification.

My invention relates to improvements in machines for grinding mowing-machine knives; and the object of my invention is to produce an improved mowing-machine-knife grinder in which the knife will be ground on the face of an automatically raising and lowering emery-wheel, together with other improvements hereinafter more specifically set forth and claimed. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a plan. Fig. 3 is a detailed view of the adjustable rest. Fig. 4 is a detailed view of a modified form of the adjustable rest.

Similar letters refer to similar parts throughout the several views.

To the base-plate A, which is adapted to be secured to the table by means of suitable clamps B, I arrange the frame C, in which frame are mounted the wheels E F G and pinions H and I. The emery-wheel J, besides its revolutionary movement, is capable of a movement in a vertical plane, because of the supporting-arm L being pivoted to the frame C at its end farthest away from the emery-wheel J and being attached by the link *j* to the arm K forward of said pivot, which arm is connected to the wheel E by the link *e*.

The operation of the gearing is readily understood. The wheel F is turned by the handle X, which puts in motion the pinion I, attached to the shaft carrying the sprocket-wheel G, upon which the chain *k* passes, engaging with a sprocket-gear on the shaft carrying the emery-wheel J. On the shaft to which the wheel F is attached is a pinion H, which engages with the wheel E, by the operation of which the link *e*, the arm K, the link *j*, and supporting-arm L are put in motion, causing the slow movement of the emery-wheel in a vertical plane, as hereinbefore

described. To the plate A, I also secure, by suitable bolt *a* or in any suitable manner, the post M, provided with an adjustable rest N.

It will be noted that the post M is provided with a slotted opening *m* and along one of its faces is serrated. The rest N is adapted to fit within the slot *m* and held therein by means of a T-shaped portion *n* on one side and a shoulder on the rest N on the opposite side, the rest N being prevented from falling by means of its lower edge engaging with one of the serrations in the face of the post M. I provide a sufficient play between the shoulder or the rest N and the T-shaped portion *n* to allow for the free movement of the rest N up and down within the slot *m* and when placed in its desired position to allow the lower portion of the rest N to fall slightly below the horizontal, causing the lower edge of said rest to engage with one of the serrations in the face of the post.

I may use the modified form of adjustable rest, as shown in Fig. 4, in which the slotted portion M' extends from the lower portion of the post M², the post being adjustable upon the bolt *a*, the rest N being placed within the opening *m'*, as shown in Fig. 4.

I do not wish to limit myself to the actual construction of the adjustable rest.

For the purpose of supporting the end of the cutter-bar I arrange a swinging arm R, preferably adjustable and preferably provided at one end with a hooked rest *r* and on the opposite end with a suitable hook *r'*, adapted to engage in the opening in the plate S, secured to the frame C of the machine and placed at the rear portion of the plate A, midway between the sides of the plate, as shown in Fig. 2.

It will be noted that after a sufficient number of the teeth of the knife are ground the swinging arm R may be taken from one side of the machine and caused to extend from the opposite side, so as to hold the cutter-bar on that side. I may make the swinging arm adjustable, as shown in Fig. 2; but I do not limit myself to an adjustable arm. The arm may be adjustable by making it in two sections and constructing the arm in the shape of a triangle, one portion fitting within the

other, thus telescoping upon one another, the two parts held together by means of the straps *t t*.

I am aware that heretofore mowing-machine knives have been ground upon emery-wheels and during the grinding process have been supported by swinging arms and rests; but they have been so arranged that the blade or tooth to be ground has rested upon the side of the emery-wheel instead of upon its face and the swinging arm has been placed so as to swing from the side of the frame rather than from the center, or midway between the sides. It is very important that the face of the emery-wheel should be brought in contact with the blades rather than the sides. The emery-wheel will last longer and the blade will be ground better and the temper of the blade will be retained longer by the use of the stone placed as shown in my invention. Furthermore, the movement in a vertical plane of the emery-wheel during the grinding process adds to the efficiency of the wheel and tends to the preservation of the temper of the blade. An important part of my invention is the adjustability of the rest.

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

1. In a machine for grinding mowing-machine knives; a base; a means for securing it into position; a frame connected with said base; an emery-wheel mounted in a pivoted frame; a means for rotating said emery-wheel; with a means for causing said emery-wheel to

move in a vertical plane, consisting of a link attached to said pivoted frame, a lever secured to said link at one end and to a pivoted arm attached to a gear-wheel at its opposite end; with a means for causing said gear-wheel to revolve; a swinging arm pivoted to the base about midway between the sides at one end of the base; substantially as described.

2. In a machine for grinding mowing-machine knives; a base; a means for securing it into position; a frame connected with said base; an emery-wheel mounted in a pivoted frame; a means for rotating said wheel; a means for causing said wheel to automatically move in a vertical plane; an adjustable knife-rest, consisting of a base; provided with a slotted opening and serrated along one of its faces, a support adapted to fit within said slot and held therein by means of a T-shape portion on one side and a shoulder on the opposite side; with an adjustable swinging arm adapted to engage in the opening in the plate secured in the frame about midway between the sides at one end thereof; said arm constructed in sectional parts arranged to be telescoped upon each other, substantially as described.

Signed at Albany, New York, this 27th day of July, 1900.

FRANK G. GREENE.

Witnesses:

FREDERICK W. CAMERON,
MARY E. PARLATI.