

W. H. LAUBACH.

MACHINE FOR GRINDING CUTTERS OF MOWING MACHINES, &c.

No. 74,701.

Patented Feb. 18, 1868.

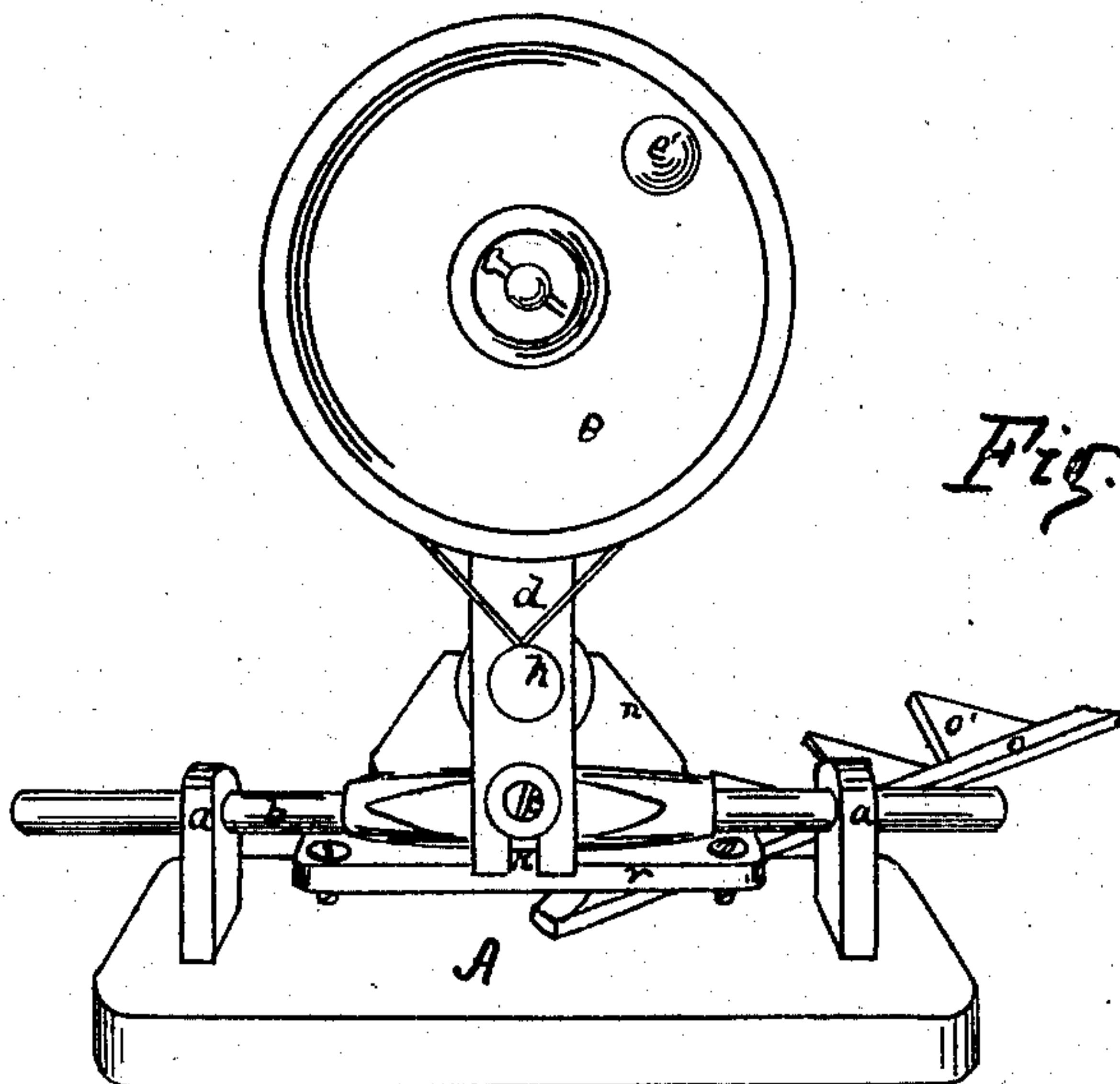


Fig. 1.

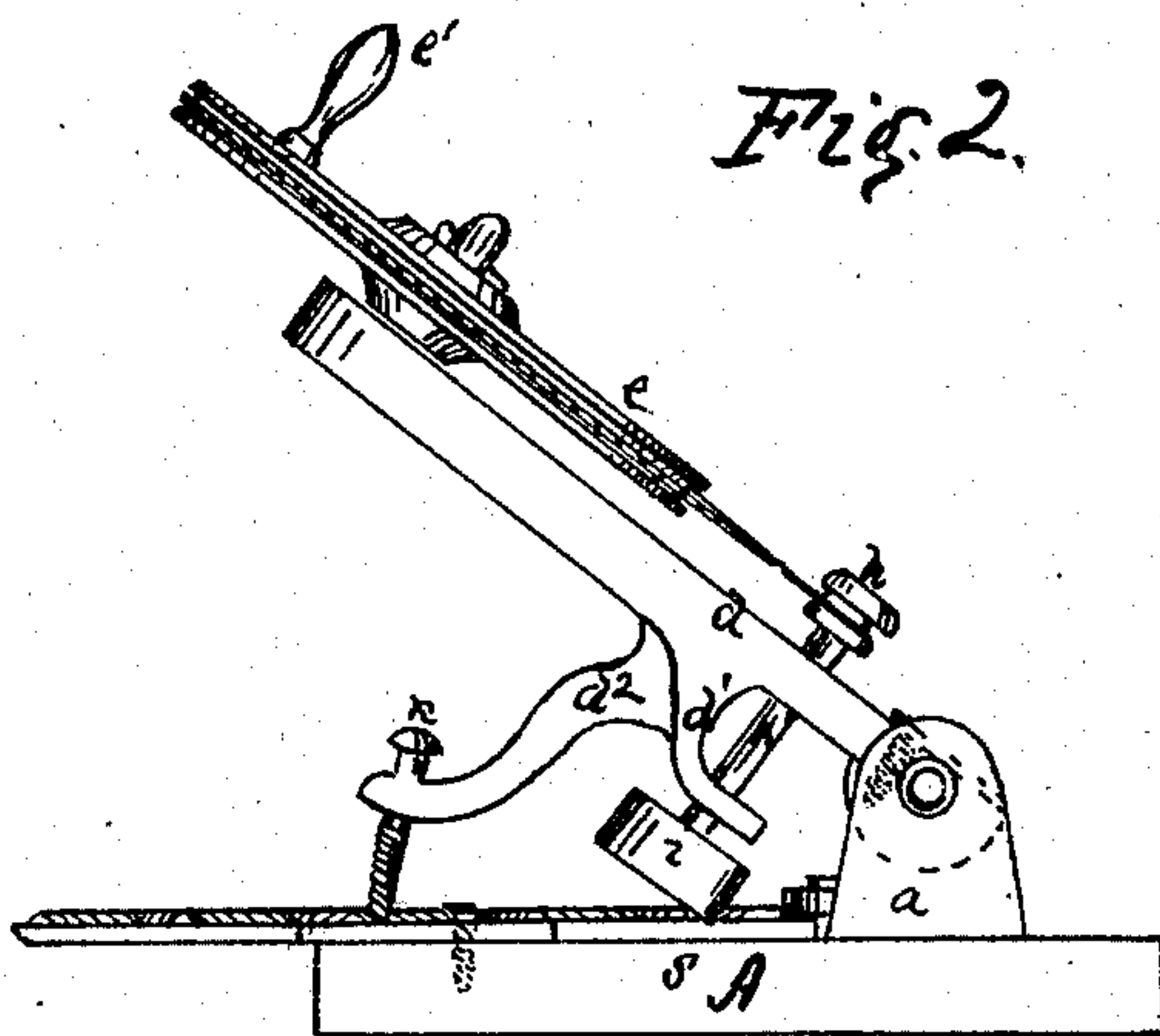


Fig. 2.

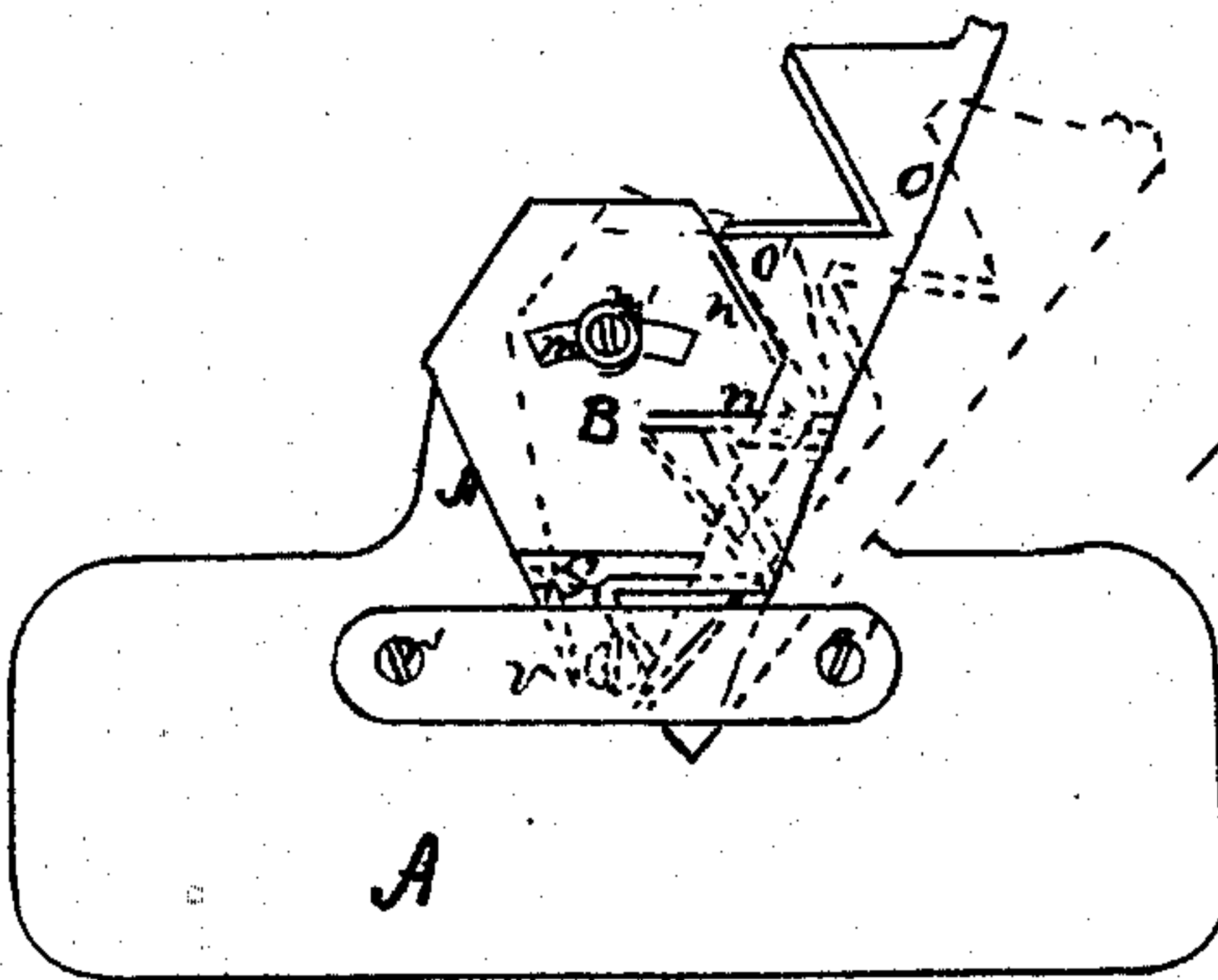


Fig. 3.

Witnesses:
G. H. Mellen
C. F. Brown

Wm. H. Laubach
Inventor
by Geo. E. Brown
Atty

United States Patent Office.

WILLIAM H. LAUBACH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND GEORGE H. MELLEN, OF ALEXANDRIA, VIRGINIA.

Letters Patent No. 74,701, dated February 18, 1868.

IMPROVEMENT IN MACHINE FOR GRINDING CUTTERS OF MOWING-MACHINES, &c.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, WILLIAM H. LAUBACH, of Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented a new and useful Machine for Grinding the Cutters of Mowers, Reapers, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a view in perspective of my invention,

Figure 2 a side elevation of the same, and

Figure 3 a plan view of my invention, the running-gear being removed.

This invention consists of a mechanism for grinding the cutter-bars of mowers, reapers, &c.; so arranged that said cutters can be sharpened at any bevel and at any angle, and at the same bevel and angle on each side of each tooth, as will, with other matters, hereinafter more fully appear.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a base-plate, made of iron or other suitable metal, and of the general form shown, to be attached by a set-screw, clamp, or other means, to any convenient part of a mowing or reaping-machine. From the plate project lugs *a a*, one at each end, which support the horizontal shaft *b*, arranged so as to slide freely in said lugs in either direction, as well as rotate therein. Attached to said shaft, by means of a set-screw, *c*, is a post, *d*, of proper dimensions for the support of the running-gear of the mechanism, said running-gear consisting of a wheel, *e*, of sufficient diameter for the generation of as high a degree of speed as may be required, to which wheel power is applied by means of a crank-pin, *e'*, or otherwise, and a smaller wheel, *h*, below the wheel *e*, said wheels being connected by bolts or spurs, as may be desired. The wheel *h* is placed at one end of a shaft, *h'*, having its bearings at one end in the lower part of the post *d*, and at the other end in the curved arm *d'* projecting from the post *d* on the side opposite to the wheel *e*. On the other end of the shaft *h'* is placed the grindstone *i*. The shaft *h'* is of such length that, in order to bring the grindstone in contact with the thing to be ground, it is necessary to give an inclined position to the said shaft, and the post *d* which sustains it, by which means the rim of the stone is made to cut a bevelled edge upon the knife being ground. Projecting from the arm *d'* is another arm, *d''*, in the outer end of which is a set-screw, *k*, resting upon the polygonal bed-piece B. In the lower end of the post *d* is a longitudinal slot, *k'*, through which is passed the set-screw *c*. By means of this arrangement the post *d* may be raised or lowered on the shaft *b*, its motion being in the arc of the circle whose centre is at the point at which the set-screw *k* rests on the bed-plate B; said set-screw sustaining, when the apparatus connected with the shaft is in position for use, in conjunction with said shaft, the whole weight of said apparatus. When, therefore, the post *d* is raised or lowered on the shaft the angle of the rim of the stone must necessarily be changed, or, in other words, the stone must cut at a different bevel. This result cannot be produced, however, without removing the stone from, or bringing it into too close contact with, the edge of the knife being ground, and to counteract these effects is the function of the set-screw *k*, by lowering which, when the stone has been raised, or raising it when the stone has been lowered, the latter is brought into the proper position with reference to the knife.

B represents a bed-plate, polygonal in the form here shown, but not necessarily so, this shape having been adopted merely for convenience. The said bed-plate is pivoted, at its inner point, to the base-plate A in such a manner as to swing freely over the surface thereof. A slot, *m*, is cut through the bed-plate in the arc of the circle, whose centre is at the pivot thereof, and through this slot *m* passes into the base-plate a set-screw, *m'*, by means of which the bed-plate is secured in any desired position. The two sides, *n n*, nearest the pivot, are sufficiently elongated to form suitable supports for the cutter *o* of a reaping or mowing-machine, which is placed with its teeth *o'* inward, and resting, upon the upper surface of the bed-plate, against both sides *n n* in succession, being held firmly in that position by a clamp consisting of a bar, *r*, supported above the surface of the bed-plate by means of screws *r' r'*, through the agency of which the said bar may be made to press upon the cutter

o with any desired force. A groove, *s*, runs across the bed-plate in the path of the stone, so as to enable the latter, in its transit, to run clear of everything but the cutter *o*. A scale, *t*, of equal distance, is inscribed upon the surface of the bed-plate on the outer side of the slot *m*.

Operation.

The cutter-bar having been applied to one of the sides *n* by means of the slot *m* and set-screw *m'*, the bed-plate is adjusted in the proper position for giving the required angle to the teeth *o*, and, by means of the set-screw *k*, slot *k'*, and set-screw *c*, the stone is so placed as to impart the desired bevel to the edges of said teeth, when the cutter *o* is clamped between the bed-plate and bar *r*, and the stone set in rotary motion by means of the running-gear *e h h'*, driven by hand, from the crank-pin *e'*, and in longitudinal motion by means of hand-pressure applied to the arm *d²*, to which a suitable handle is to be affixed, the shaft *b* having, as before explained, a motion in the direction of its length for this purpose. The stone *i* is thus made to travel along the edge of the tooth cutting as it goes, always at the same angle, as long as the position of the cutter *o* is unchanged, and always at the same bevel as long as the position of the post *d* is unchanged. One side of one tooth having been ground, the shaft *b* is slid back to its first position, the cutter passed further under the clamp so as to bring the same side of the next tooth into place, and the operation is repeated. When the same sides of all the teeth have been ground, the cutter is turned end for end, and placed against the opposite side *n'*. By means of the scale *t* the bed-plate may be set so that the other sides of the teeth may be ground at the same angle as the former sides.

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

1. The adjustable bed-piece B, constructed as described, and applied to a grinding-machine as and for the purpose specified.
2. The bed-piece B, provided with slot *m* and screw *m'*, in combination with the clamp *r* and screws *r' r'*, as and for the purpose set forth.
3. The post *d*, provided with the slot *k'* and arm *d²*, in combination with the set-screws *k* and *c*, and the rotating shaft *b*, substantially as described.
4. The grindstone *i*, in combination with the rotating and sliding shaft *b*, as and for the purpose described.
5. The adjustable bed-piece B, in combination with the clamp *r*, post *d*, grindstone *i*, and rotating and sliding-shaft *b*, as and for the purpose specified.

W. H. LAUBACH.

Witnesses:

JNO. H. WARDER,
ROBT. BURNETT.