(Model.)

G. W. KING & J. R. WILLIAMS.

Machine for Grinding Mower and Reaper Knives.

No. 237,292. **Patented Feb. 1, 1881**

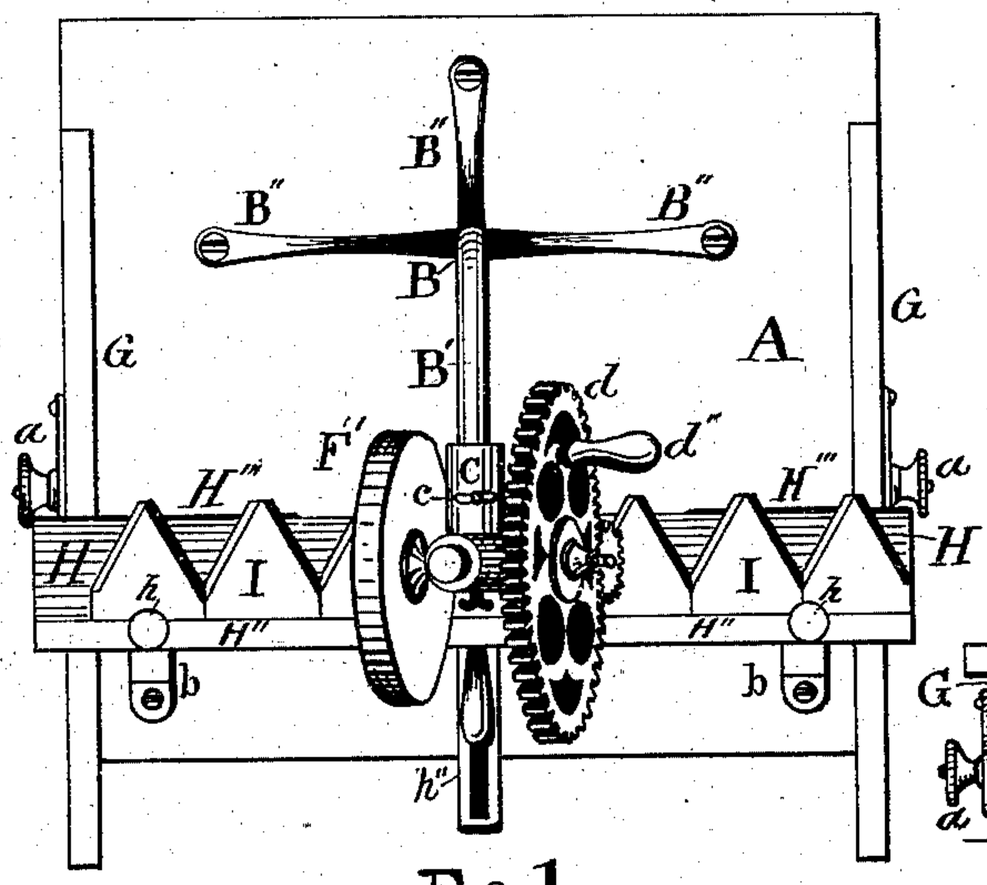

Fig. 1.

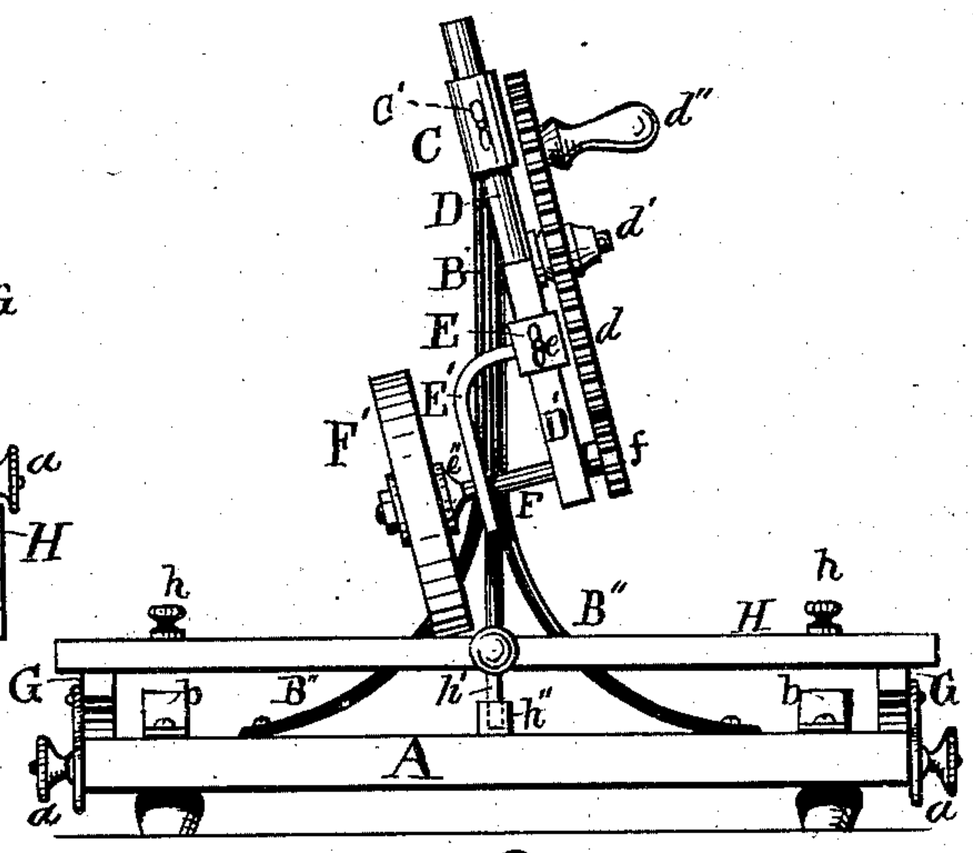

Fig. 2.

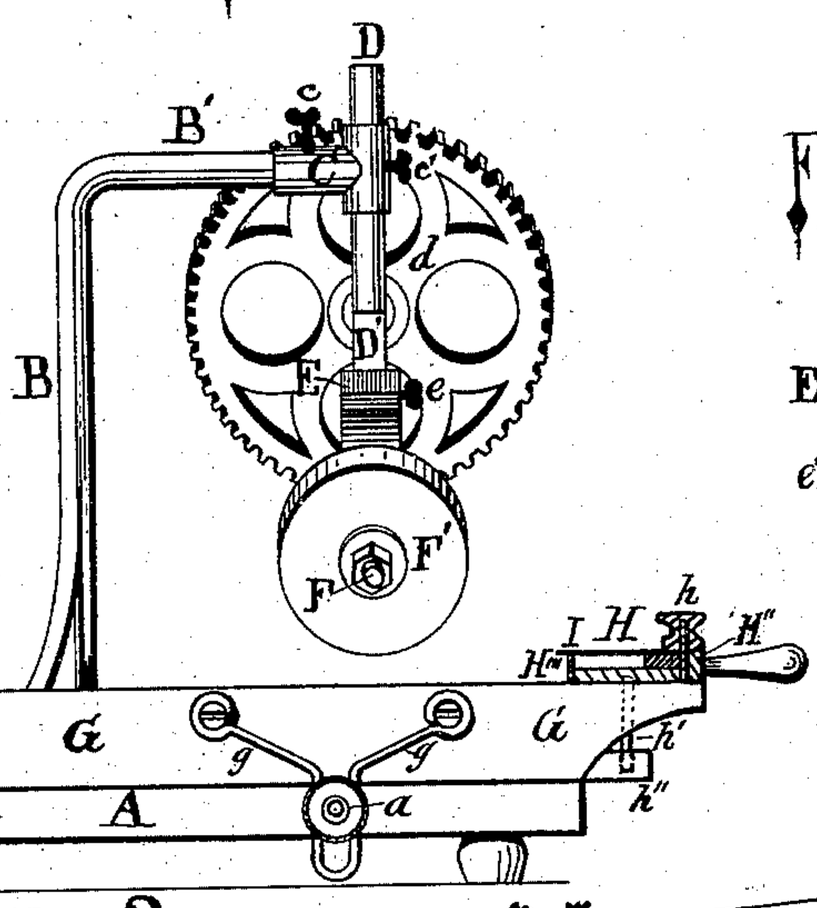

Fig. 3.

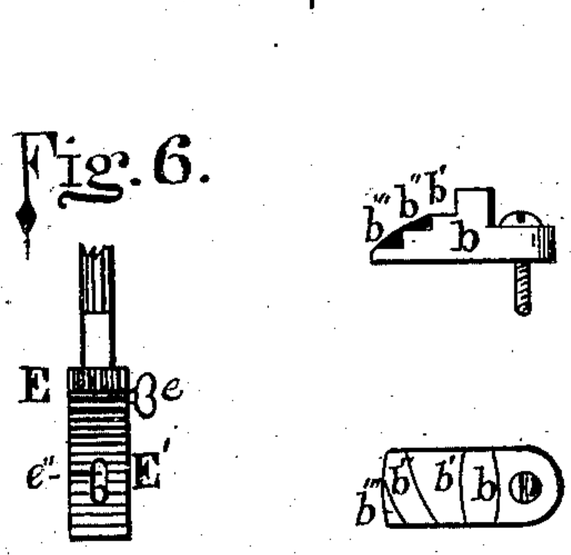

Fig. 6.

Fig. 4.

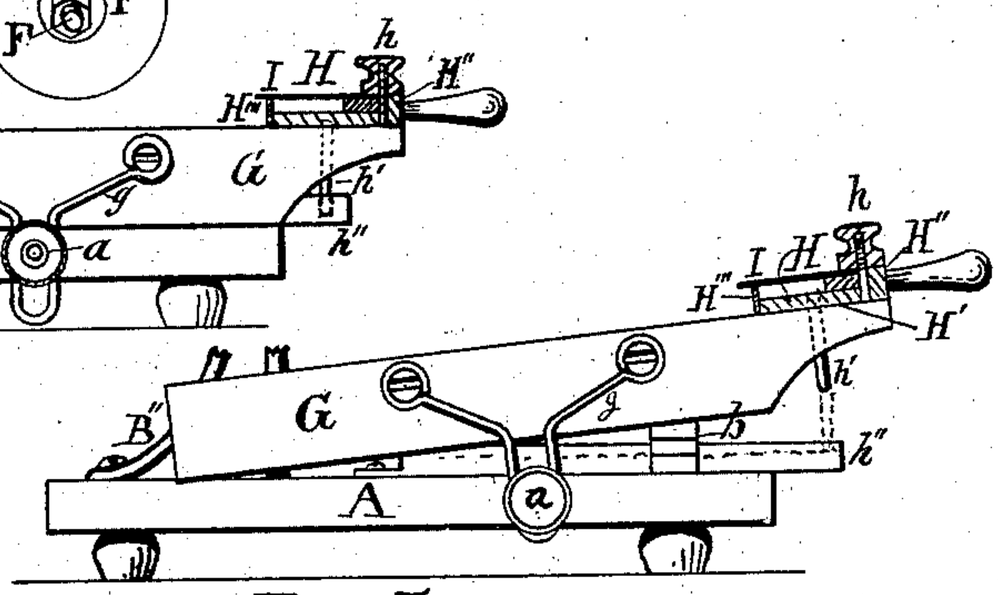

Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE W. KING AND JOHN R. WILLIAMS, OF FORT SCOTT, KANSAS.

MACHINE FOR GRINDING MOWER AND REAPER KNIVES.

SPECIFICATION forming part of Letters Patent No. 237,292, dated February 1, 1881.

Application filed October 4, 1880. (Model.)

To all whom it may concern:

Be it known that we, GEORGE W. KING and JOHN R. WILLIAMS, of Fort Scott, in the State of Kansas, have invented a new and useful Machine for Grinding Mowing-Machine Knives, of which the following is a full description.

This invention relates to machines for grinding the cutters of mowing-machines, wherein the rotary grinding-tool is made adjustable to any bevel which may be required for the cutters, and which, by an adjustment of the knife-bed, can be made to give different "basils," to suit the form of the cutters, all of which will be hereinafter more fully described, and set forth in the claims.

In the drawings, Figure 1 is a top view of the machine. Fig. 2 is a side elevation from the front. Fig. 3 is an end view. Figs. 4, 5, and 6 are details.

A is a bed-plate, on which all the various parts of the machine rest. B is a metallic standard having three branches for feet B″, fastened to the bed-plate A, and the upper part bent into an arm, B′, having at the outer end a T-shaped pipe or sleeve, C, which moves freely on the arm, and is secured in any position by a thumb-screw, *c*.

D is a rod, which is round on its upper section, but has the bottom section, D′, of a square form. D rotates in the T-shaped pipe or sleeve C, and is secured in any position by the thumb-screw *c′*. By these movements of the rod D in the sleeve C and the sleeve C around the arm B′, any position of the rod may be obtained and duly secured by the thumb-screws *c* and *c′*. On the rod D is a short projecting shaft, *d′*, and on it rotates a spur-wheel, *d*, which has a short handle, *d″*. This spur-wheel meshes with a pinion, *f*, on a shaft, F, which carries on the other end a rotary grinding-tool, F′. This shaft is supported in a bearing in the lower part of the rod D, and is allowed to play up and down in a slot, *e″*, formed in the strap E′, which is pendent from a square socket, E, which is made to slide freely on the square part D′ of the rod D, and which can be secured in any position by a thumb-screw, *e*.

G G are two supporting adjustable rails, secured to the bed A by adjusting-loops *g g* and set-screws *a a*.

b b are buttons screwed to bed-plate A, near the ends of the rails G G, having on them several planes, as *b′ b″ b‴*, for the purpose of placing any one of these planes under the end of the rail G, and thus tilting up that end, as seen in Fig. 5, the purpose of which will be explained hereinafter. On these rails can be placed, when required for grinding, the knife-supporter H, which is thus constructed, viz: a base-piece, H′, and back strip, H″, and front guide-pieces, H‴, and two or more thumb-screws, *h h*. There is a dependent pin, *h′*, from the lower side of the base-piece H′, which fits in a slot or groove in strip *h″*, fastened to the bed-plate A, and which serves as a guide in the movements of the knife-supporter H.

By reference to the sections of the knife-supporter H in Figs. 3 and 5, it will be seen that the knife-blade I rests with its back upon the base-piece H′ and the points upon the guide-pieces H‴, and is secured by the thumb-screws *h h*. When the knife-supporter is guided to the rotary grinding-tool it carries firmly the knives at any angle which may be required, and with any basil, by tilting the rails and adjusting the rotary grinding-tool by means of the T-sleeve on the arm B′, and also regulating the movement of the square socket E on the square part D′ of rod D. The rod D moves freely in the sleeve C, and can be turned around, so that the grinder F′, after all the points of the knives have been ground on one edge, can grind the other edges correspondingly.

Should there be any irregularity in the edges of the knives, as is often the case, the rotary grinding-tool, being mounted on the shaft which has a loose bearing in the slot *e″* of the strap or pendant E′, can adjust itself to these irregularities. This slot is shown in Fig. 6.

We claim—

1. The adjustable rod D, having its upper part round and the lower part square, in combination with the T-shaped tube or sleeve C, the adjustable curved pendant E′, having with-

in it an elongated slot, *e''*, and the adjustable square collar E, and with the shaft F, substantially as and for the purpose described.

2. The combination of the side rails, G G, adjustably attached to the bed A by straps *g g* and thumb-screws *a a*, and the buttons *b b*, substantially as and for the purpose described.

3. The knife-supporter H, having the back piece, H'', guide-pieces H''' H''', and pendent pin *h'*, in combination with the rails G G and grooved guides *h''*, substantially as and for the purpose described.

4. In combination with the bed-plate A, the side rails, G G, adjustably attached by straps *g g* and set-screws *a a*, and the buttons *b b*, substantially as and for the purpose described.

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