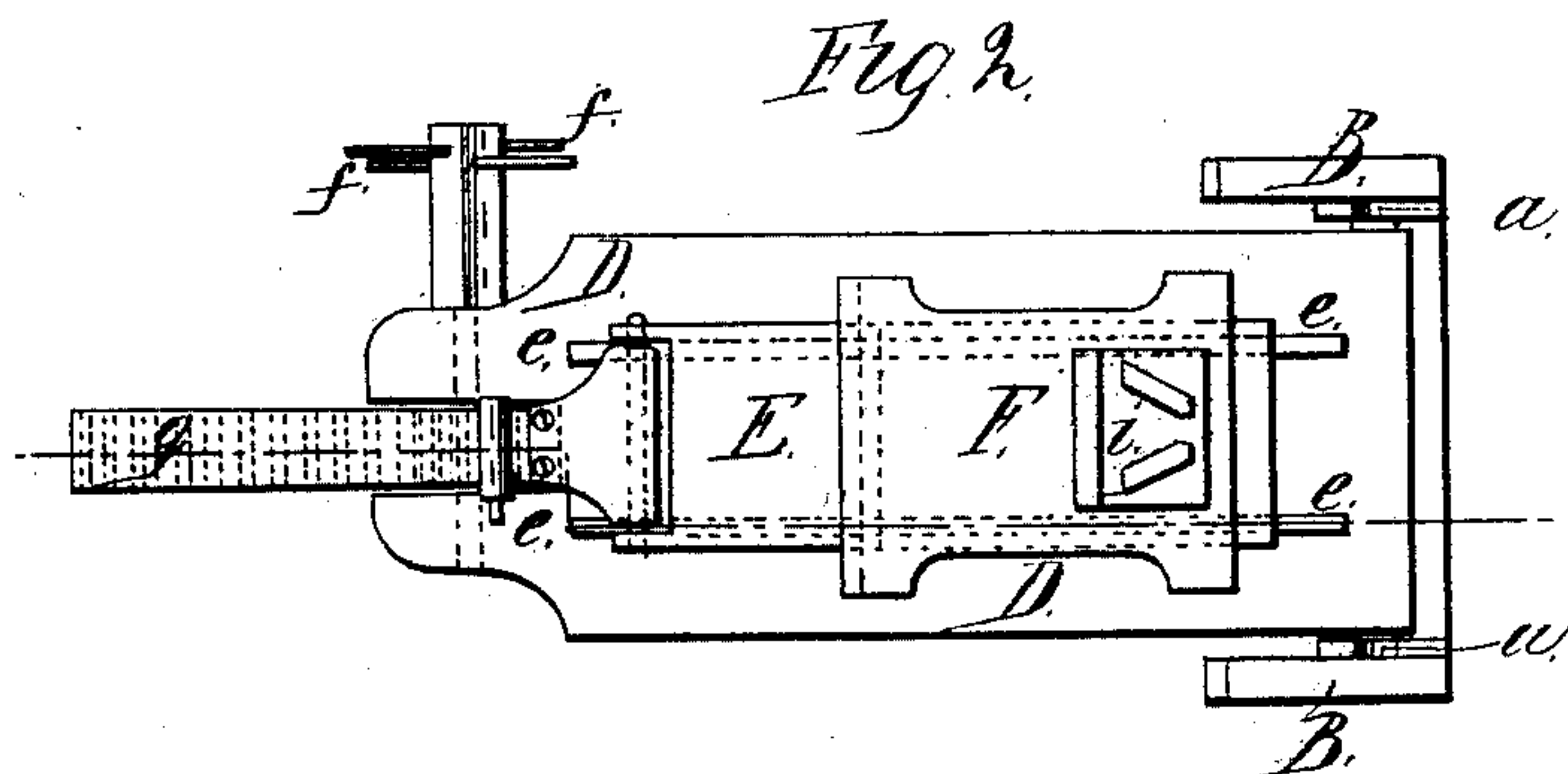
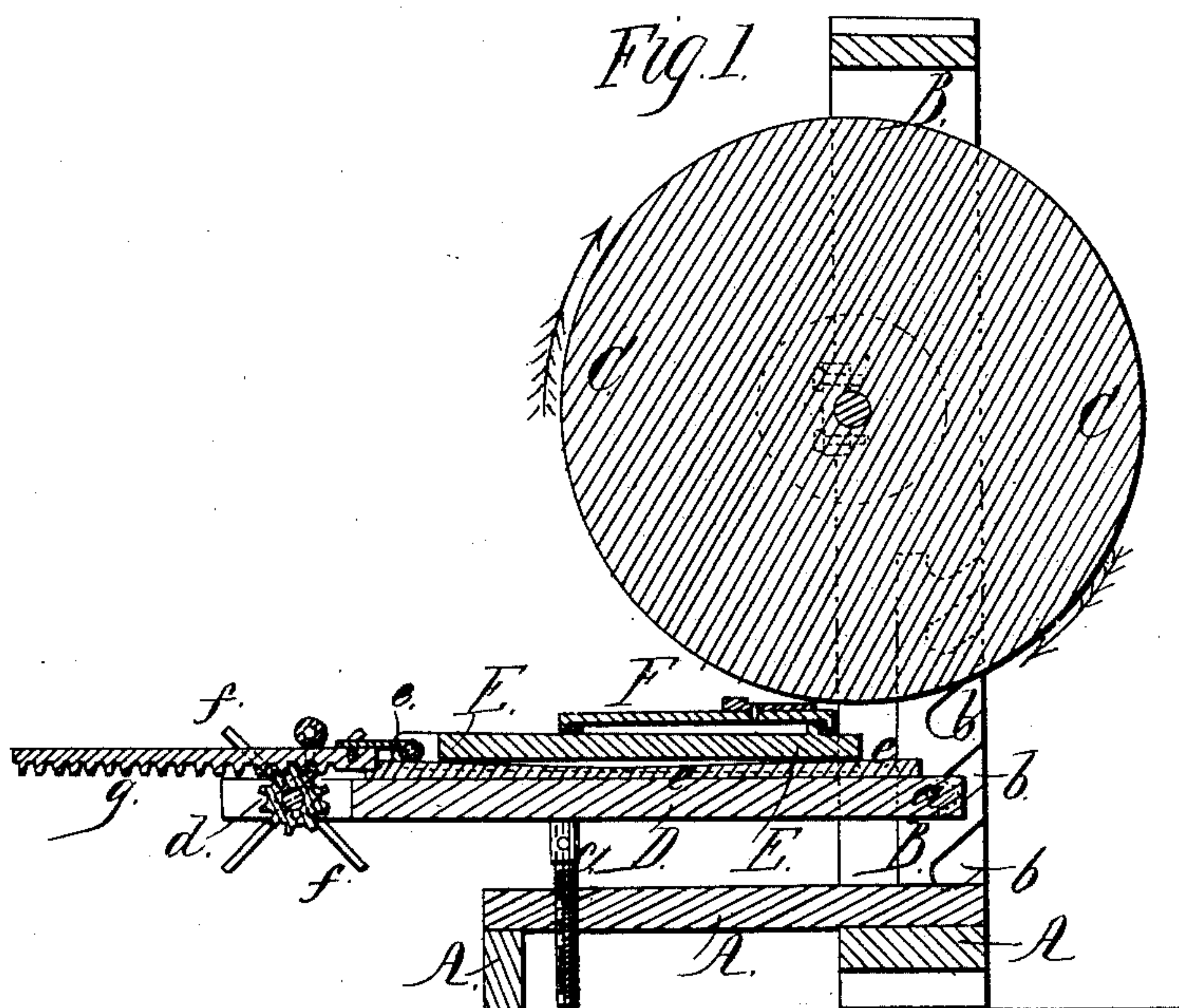


A. R. REYNOLDS.
MACHINE FOR GRINDING METAL PLATES.

No. 62,566.

Patented Mar. 5, 1867.



Witnesses;

John D. Allen
Chas. B. Wilson

Inventor,

Asa R. Reynolds
By atty. *M. B. Stoughton.*

United States Patent Office.

ASA R. REYNOLDS. OF AUBURN. NEW YORK.

Letters Patent No. 62,566, dated March 5, 1867.

IMPROVEMENT IN MACHINES FOR GRINDING METAL PLATES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ASA R. REYNOLDS, of Auburn, in the county of Cayuga, and State of New York, have invented certain new and useful Improvements in Machines for Face Grinding; and 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, in which—

Figure 1 represents a vertical section through the machine; and

Figure 2 represents a top plan with the grinding-stone removed to show the parts underneath it.

Similar letters of reference where they occur in the separate figures denote like parts of the machine in both of the drawings.

In grinding machines for facing off pieces of steel, such, for instance, as knife sections for harvesting machines, or plane irons, or any other article requiring true and accurate sides and edges, I find that when constructed as at present in general use, the part of the steel or plate that comes first in contact with the stone is invariably rounded off and not a perfectly flat surface. This is due, as I believe, to the play of the journals of the grinding-stone and the yielding of the bed, and probably of other parts of the machine without any compensation or provision for such play and yielding or counteracting influence. The object of my invention is to avoid this rounding off of the edge of the plate that first strikes or comes in contact with the grinding-stone. And my invention consists in making the ways on which the bed moves, that holds and feeds up the article that is to be ground, concave, so that the bed may conform thereto under any undue pressure or sudden contact between the article and the stone.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A is a base or bed, on which two upright pieces, B B, rise to support the grinding-stone C. In the uprights B, and on the bed A, which may be called the frame, is supported an adjustable bed-piece, D, having at one end journals, *a a*, which will enter and be supported in any of the recesses or bearings *b*, on the insides of the frame-pieces B, the other end of said bed being adjusted and held by a set-screw, *c*. On the top of this bed-piece D, are ways, *ee*, which are made concave, as seen in the section, fig. 1, and upon these concave ways the feeding-bed E moves. The feeding-bed E may be run up to or under the stone C, by means of a pinion, *d*, (which may be turned by hand-levers *f*,) taking into the rack *g* attached to said feeding-bed. The article to be faced may be placed immediately upon this feeding-bed; but, to accomplish another purpose, to be hereafter explained, I prefer to place upon the end of the feeding-bed E, another bed, F, which rests upon transverse ways on the bed E, so that it may be moved at right angles to the motion of the bed E as well as with the bed. Upon this upper bed F, the sickle section, or plane iron, or other article may be placed and secured, so that it may be moved under the stone and from one side to the other of the stone. I have shown at *i*, fig. 1, a recess margined by ribs or projections, so that a sickle section, (triangular in form,) may lie in said recess whilst being ground. Any other shaped recess corresponding to the shape of the article to be ground may be used, with ledges or projections to hold it in place. The stone C runs (as shown by the arrows) against the feed of the article to be ground. The rack *g* is hinged to the bed E, and to keep it in gear with the pinion *d* it passes under a friction-roll, *m*, which keeps it from rising. This roll *m* may be on a turning arm so as to release the rack and bed and allow them to be removed. The object of the lateral traverse of the upper bed F, on the longitudinally moving bed E, is to move the article that is being ground under any part of the stone that is desirable, and to avoid or to avail of the harder or softer spots in the stone. The wearing away of the stone is compensated for by the adjustment of the bed D, by its journals *a*, and the bearings *b* at one of its end, and the set-screw *c* at the other end. The rounding off of the edge of the plate that first comes in contact with the stone, may be due (in machines with straight or level ways for the feeding-bed) to the play of the journals, or yielding of the bed or frame, or to the rapid motion of the stone just as it strikes the piece to be ground, or by the suddenness of the contact causing the bed to slightly tip, or of all combined. The making of the ways concave avoids the rounding of the edge by yielding or giving way to the play, yield, concussion, or abrasion, or whatever may be the cause in the level ways. The concavity appears to be an entire remedy to the evil mentioned, and produces perfectly accurate work.

What I claim, is—

1. Moving a bed that carries an article to be faced to a grinding-stone upon concave ways for the purpose of preventing the rounding off of the edge first brought into contact with the stone, as set forth.
2. I also claim adjusting a bed at both of its ends to the wear of a grinding-stone by means of the journals and bearings *a b* at one end, and set-screw *c* at the other end, substantially as described.

ASA R. REYNOLDS.

Witnesses:

FRED. M. TERRILL,

W. L. GOODRICH.