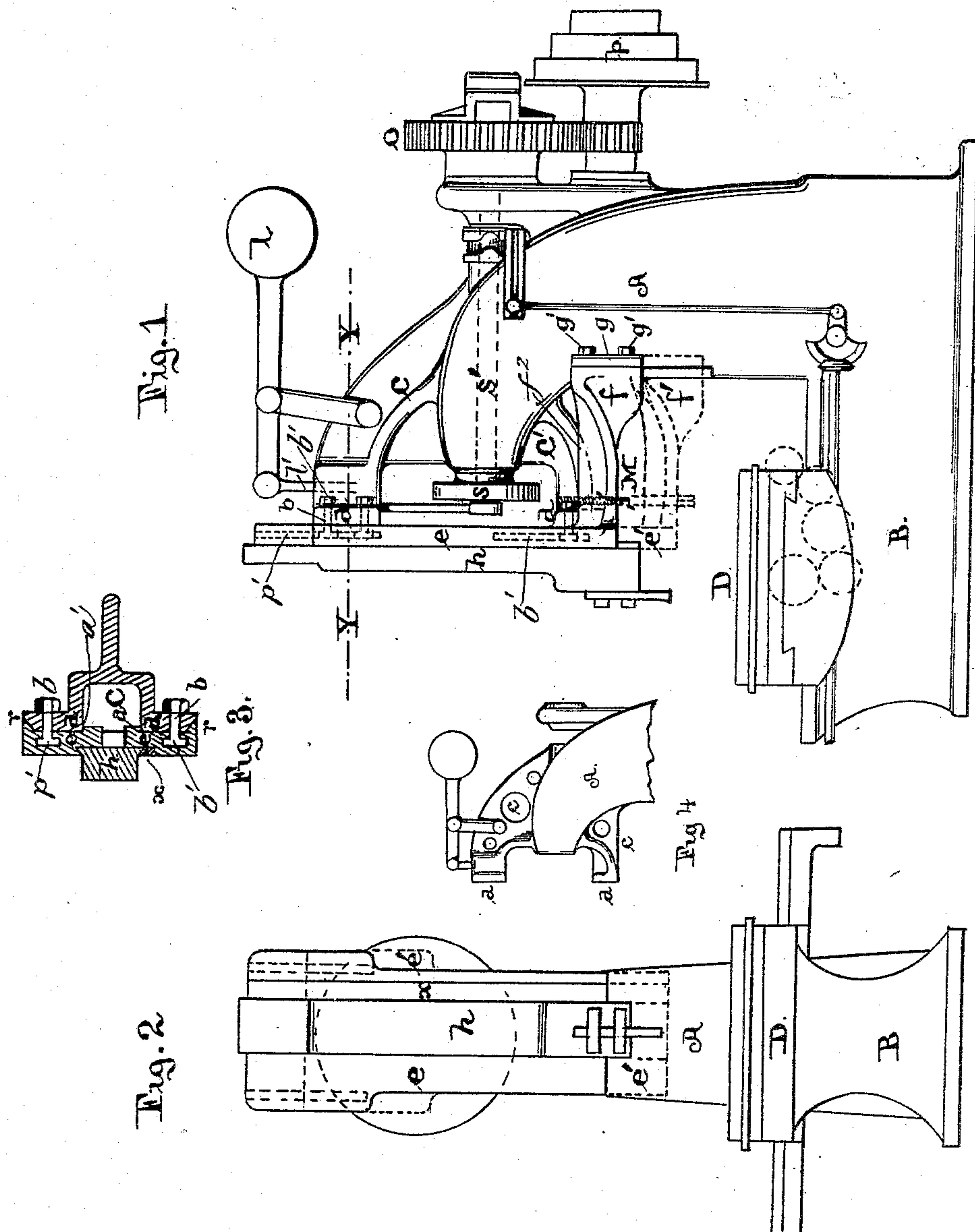


(No Model.)

H. L. BINSSE & A. J. FRITH.  
SLOTTING MACHINE.

No. 411,884.

Patented Oct. 1, 1889.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY L. BINSSE, OF NEW YORK, N. Y., AND ARTHUR J. FRITH, OF NEWARK,  
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## SLOTTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 411,884, dated October 1, 1889.

Application filed July 21, 1888. Serial No. 280,655. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY L. BINSSE and ARTHUR J. FRITH, citizens of the United States, residing, respectively, at New York, county and State of New York, and at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Slotting-Machine Tools; and we do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to the machine-tool known as the "slotter;" and the object of the invention is to secure a greater degree of rigidity in the slide in which the ram is reciprocated. Heretofore it has been common to fit the ram directly to guides formed in two brackets which are projected from the upright column of the slotter above and below the crank-shaft, or to sustain the ram in an adjustable slide secured to the upper bracket and sustained at its lower end by a foot movable upon the front of the column. Such foot, no matter how securely it may be clamped to the column, when adjusted, is liable to bend, and to permit some lateral yielding of the slide and deviation of the ram from the intended path; and the present invention consists, partly, in the combination, with the upper bracket and the foot of the slide, of an auxiliary bracket interposed between the crank-bearing and the foot to re-enforce the slide adjacent to the foot.

The improvement also consists in a special construction for the seats upon the upper bracket with beveled edges, and in the combination, with the slide, of inclined ribs fitted to such beveled edges to grasp the same more firmly.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a side elevation of a slotting-machine provided with our improvements. Fig. 2 is a front elevation of the same, the appearance of the slide in its lowest position being indicated by dotted lines in both figures.

Fig. 3 is a section on line *yy* in Fig. 1; and Fig. 4 is a side elevation of the upper portion of the column, with brackets differently ribbed from those shown in Fig. 1.

*h* is the ram which carries the slotting-tool; *e*, the slide in which the ram is reciprocated; *s'*, the crank-shaft, and *s* the crank, connected with the ram in the usual manner.

*o* is the gearing, and *p* the driving-cone, for rotating the crank-shaft.

Some of the feed-gearing is also indicated in Fig. 1, as well as the carriage *d* upon which the work to be slotted would be fastened; but such details are not fully illustrated, as they form no part of our present invention.

*B* represents the bed of the machine, formed as a hollow casting, and *A* the column, formed also as a hollow box rising vertically from the bed and tapered upward in cross-section to the crank-shaft *s'*, where the column is curved toward the ram *h*, as in similar constructions. Adjacent to the crank *s* brackets *c c'* are projected from the column upward and downward and extended beyond the vertical plane of the crank *s* to support the slide *e*. The outer ends of the brackets are provided with seats *d d'*, to which is fitted the slide *e*, the latter being provided with tongues or rabbets *a*, fitted to a corresponding recess in the two bracket-seats to guide the slide when adjusted. Bolts *b* are inserted through the seats upon the ends of the two brackets and are fitted to suitable slots *b'* in the slide for clamping the slide firmly to the brackets when adjusted.

In Fig. 3 is shown a special construction for holding the slide more securely upon the brackets by beveling the edges of the brackets parallel with the tongues *a* and providing ribs *r* upon the edges of the slide fitted to the beveled edges of the seat. Such bevel-fitting operates, when the slide is clamped to the bracket by the bolts *b*, to press the opposite edges of the seat inward toward one another and to pinch the edges of the tongues *a*, thus gripping the slide and seat together in the most rigid manner. The lower end of the slide is provided with a foot *f*, extended to the vertical front of the column *A* and fitted to flanges *f'*, formed upon the front corners of the column *f*, to which flanges the foot may



be firmly clamped by means of gibs *g* and bolts *g'* when properly adjusted.

The ram is fitted to move in the slide in the usual manner, and the slide is provided  
5 with a gib *x* to take up lost motion against the ram, and with a screw *M*, by which it may be adjusted to and from the table *D*, so as to sustain or steady the ram and the tool carried thereby as closely as possible to the work  
10 upon the table. The screw is preferably applied to connect the foot *f* with the lower bracket *c'*, and thus sustains the weight of the slide upon such bracket when the slide is loosened for adjustment. When the slide is  
15 adjusted, it is secured in such position by tightening all the bolts *b* and *g'*.

In Figs. 1 and 2 the slide is shown in full lines adjusted in its highest position, the lateral flanges *f<sup>2</sup>*, which form the sides of the  
20 foot *f* and extend from the slide to the gibs *g*, being shown outside of the lower bracket *c'*.

The foot and slide are shown in their lowest position in dotted lines *e'* in Figs. 1 and 2, in which position it is evident that the slide  
25 and the ram would be stiffened by a connection with the column at three different points—namely, by the seats *d d'* and the foot *f*. The seat *d'* and the foot *f* thus furnish two points of support for the slide where the  
30 stiffness is most required, and as they would never be widely separated it is obvious that the lower end of the ram, to which the strain of cutting is wholly applied, would thus be braced in a most efficient manner.

Heretofore, when the movable slide, with a foot *f*, has been employed, there has been no provision for strengthening or bracing the  
35 slide between such foot and the crank *s*, and as the foot is necessarily movable upon the column it cannot be secured or clamped as rigidly thereto as if it were made integral therewith, like the bracket *c'*. The addition  
40 of such bracket to the design thus furnishes an exceedingly rigid connection for the slide to the column near its lower end, where it is exclusively strained by the operation of the tool, and the ram thus receives an additional support greater than that afforded by the foot itself.

The form of the brackets *c c'* is immaterial, the brackets being shown each with a central rib and a flange intermediate to its edges in Fig. 1, and in Fig. 4 with the stiffening-rib  
45 disposed in a different manner to show a convenient modification.

A counter-balance *l* is shown connected with the ram by a link *l'*, and the upper bracket is therefore formed, as is usual, with an aperture between the opposite sides of the  
50 seat *d* to admit such link, the tongue *a* being inserted a little way into the aperture in

such bracket, but in the lower bracket being fitted merely to a suitable groove.

Having thus set forth our invention, what we claim herein is—

1. The combination, in a slotter having bed  
65 B, table *D*, and column *A*, with crank-shaft *s'*, journaled therein, as set forth, of the brackets *c* and *c'*, projected from the column above and below the crank-shaft, the slide *e*, fitted  
70 to seats *d d'* upon the brackets and clamped thereto by bolts *b*, and the foot *f*, attached to the lower end of the slide and fixed movably upon the front of the column, substantially  
75 as herein set forth.

2. The combination, in a slotter having bed  
80 B, table *D*, and column *A*, with crank-shaft *s'*, journaled therein, as set forth, of the brackets *c* and *c'*, projected from the column above and below the crank-shaft, the slide *e*, fitted  
85 to seats *d d'* upon the brackets and clamped thereto by bolts *b*, the foot *f*, projected from the lower end of the slide adjacent to the bracket *c'* and clamped movably upon the front of the column, and the screw *M*, connecting the foot and the bracket *c'* to adjust the  
slide vertically, substantially as herein set forth.

3. The combination, in a slotter having bed  
90 B, table *D*, and column *A*, with crank-shaft *s'*, journaled therein, as set forth, of the brackets *c* and *c'*, projected from the column above and below the crank-shaft, the slide *e*, fitted to seats *d d'* upon the brackets, and clamped  
95 thereto by bolts *b*, the foot *f*, projected from the lower end of the slide, and formed with the flanges *f<sup>2</sup>*, adapted to move outside the bracket *c'*, the flanges *f'* upon the front corners of the column, with the gibs *g*, and bolts *g'* for clamping the same thereto, and  
100 the screw *M*, connecting the foot and the bracket *c'*, as and for the purpose set forth.

4. The combination, in a slotter having bed  
105 B, table *D*, and column *A*, with crank-shaft *s'*, journaled therein, as set forth, of the brackets *c* and *c'*, projected from the column above and below the crank-shaft, the slide *e*, fitted to seats *d d'* upon the brackets, and clamped  
110 thereto by bolts *b*, the foot *f*, attached to the lower end of the slide and fixed movably upon the front of the column, the tongue *a*, fitted to a recess in the seat *d*, and the ribs *r*, fitted to the beveled edges of the seat, as and for the purpose set forth.

In testimony whereof we affix our signatures  
115 in presence of two witnesses.

HENRY L. BINSSE.  
ARTHUR J. FRITH.

Witnesses:

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THOMAS C. PROVOST.