(No Model.)

A. F. BREWER.

SUPPLEMENTAL BED PLATE, CENTERING DEVICE, AND WORK HOLDER FOR DRILLING OR SLOTTING MACHINES.

No. 355,679. Patented Jan. 11, 1887.

FIG. 1.

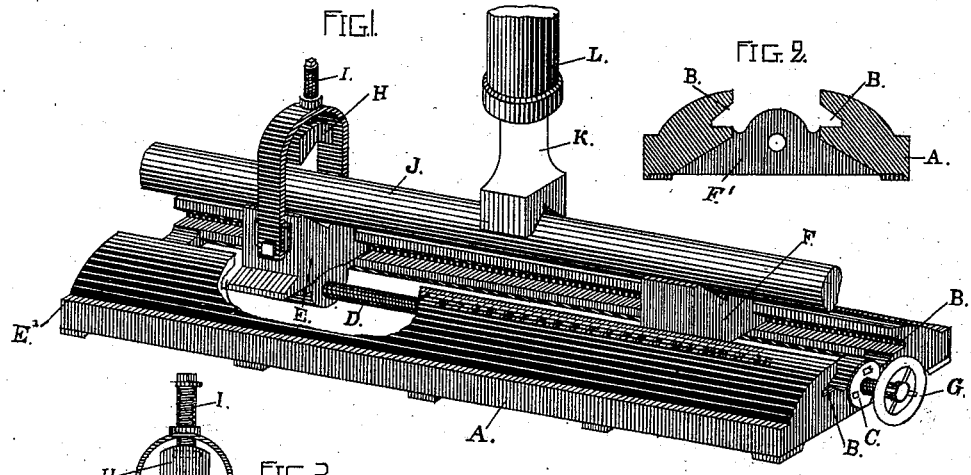


FIG. 2.

FIG. 3.

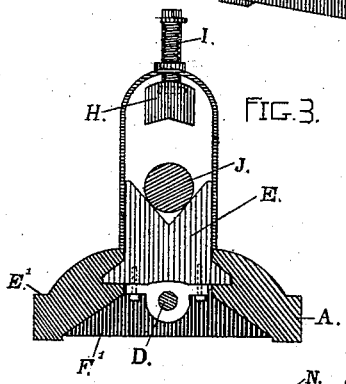


FIG. 4.

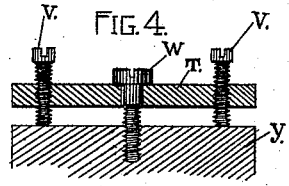


FIG. 7.

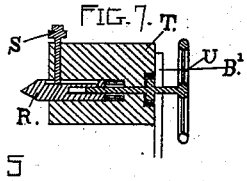


FIG. 5.

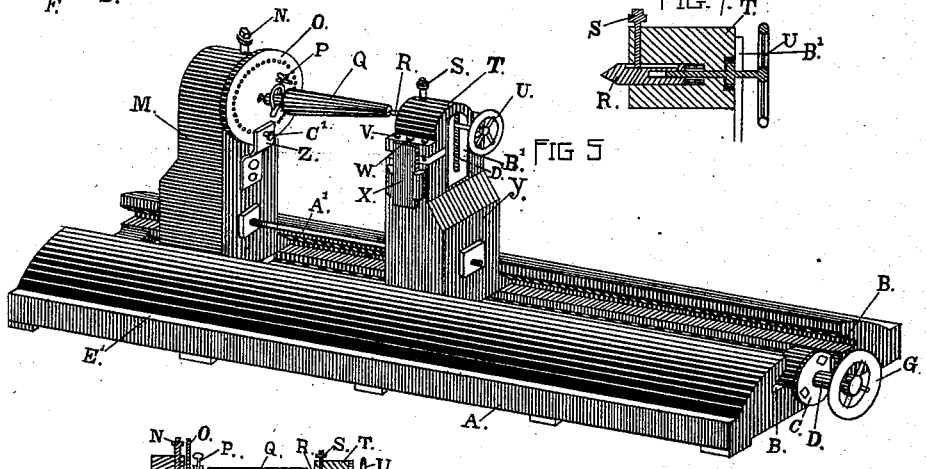
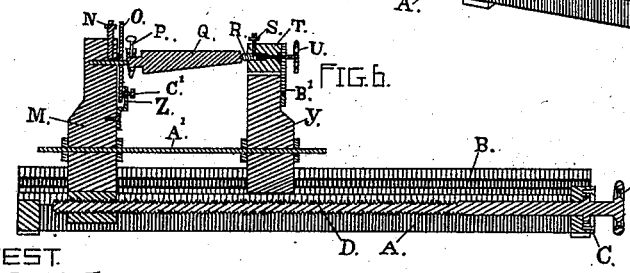


FIG. 6.



ATTEST.

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SUPPLEMENTAL BED-PLATE, CENTERING DEVICE, AND WORK-HOLDER FOR DRILLING OR SLOTTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 355,679, dated January 11, 1887.

Application filed October 1, 1886. Serial No. 215,063. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH F. BREWER, a citizen of the United States, residing in the city and county of San Francisco, and State of California, have invented a new and useful Combined Adjustable Bed-Plate Guide with Upper and Under Shaft-Centering V-Blocks for Drill-Presses, of which the following is a specification.

My invention relates to combined bed-plate guide-block with centering V-blocks for centering shafts and drilling the same, and head-blocks for milling and working tapering tools. It will be readily understood by reference to the accompanying drawings and the letters referring thereto.

Figure 1 is a perspective view showing a shaft centered in position to be clamped and held in line for working, as will be fully explained. A part is broken out to show the feed-screw attachment with the V-block. Fig. 2 is a cross-section cut through the center of the guide-block, designed to show the form of the same. Fig. 3 is a cross-section of the same as Fig. 2, with the clamping V-block in position for clamping a shaft. Fig. 4 is a cross-section showing the arrangement for the adjustment of the head-block. Fig. 5 is a perspective view showing the head-blocks with a tapering tool or tap in position to be milled. Fig. 6 is a longitudinal section of Fig. 5 upon a reduced scale. Fig. 7 is a longitudinal section of the back head-block cut through the back center.

The following is a description of the construction and operation of the device. The metal employed is similar to that employed in the manufacture of that class of construction.

A represents the main frame forming the body of the guide-block.

B represents the guide-grooves of the guide-block.

C represents the end piece in which the feed-screw operates.

D represents the feed-screw.

E represents the clamping V-block.

F represents the rear V-block.

G represents the hand-wheel for the feed-screw.

H represents the upper V-block for co-operating with the clamping V-block.

I represents the clamping set-screw.

J represents the shaft as it is centered in the lathe.

K represents the clamping-block of a drill-mandrel.

L represents the drill-mandrel.

In Fig. 5, M represents the head-block. N represents the set-screw for the mandrel of the face-plate. O represents the gage face-plate. P represents the dog. Q represents the taper tool. R represents the tail-block mandrel. S represents the set-screw. T represents the adjustable bearing-block on the tail-block. U represents the hand-wheel for adjusting the mandrel; V, the adjusting-screws; W, the raising and lowering set-screw. X represents the guide on the tail-block. Y represents the tail-block. Z represents the bent standard or frame for the set-point; C′, the set-point for the face-plate. A′ represents the rod which connects the head and tail block, (shown in Figs. 5 and 6;) B′, the guide-plate; D′, the guide-groove in the guide-plate; E′, the ledge designed to receive the clamping bar or hook for clamping the guide-block A to the plate of the machine with which it is used. F′ represents the chip-chamber.

I sometimes employ two clamping V-blocks for holding the shaft in position while drilling; but for ordinary work one is sufficient, as shown in Fig. 1.

When drilling a shaft, I place it in the position shown in Fig. 1, bringing the drill-mandrel L down so that V-block K brings the center of the shaft J directly under the center of the mandrel L. I then clamp the guide-block A firmly to the bed-plate of the drill, and as each hole is drilled I move the clamping V-block E forward until the distance which is drilled is sufficient to form the required slot; or, where a slot or groove is required to be finished at a single operation, the clamping V-block E is fed regularly along by the feed-screw D. As the feed-screw draws the shaft perfectly in line with its axis and insures the perfect line of the cut and forms a smooth slot or groove, it is finished at a single cut of the

milling-tool. When the cutting-edges of a tool are to be formed, I place the head-block M and tail-block Y in the guide-block and support the tool between the head and tail centers, as shown in Fig. 5. I raise the bearing-block T of the tail-block until the upper line of the tool Q is brought to a position parallel with the guide-grooves of the block A by means of the raising and lowering screw W. I then set the bearing-block T fast, and perfectly adjust the same by means of the adjusting-screws V.

Any tool or article to be worked must be centered by the same means as the shaft J—that is to say, by bringing the V-block K down upon the same and setting it perfectly under the center of the mandrel. Then the feed-screw D being operated insures a perfectly-longitudinal movement corresponding with the line of the guide-grooves B, and the tool is cut in a line parallel with the same; or by revolving the tool Q at a regular rate of speed a spiral groove or cut may be formed. The chip-chamber F′ is of sufficient capacity to hold all the chips or borings liable to result from any ordinary job of cutting, milling, or boring in working a single piece of shafting, a tool, or other article. It is formed by simply hollowing out the under side of the block A, without impairing the strength of the same.

I do not confine myself to the exact form of construction, as the form may be changed without changing the principle of the invention; but

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

1. In guide-blocks for drill-presses, the guide-block A, having the guide-grooves B and feed-screw D, in combination with the V set-blocks E and the V-block F, to operate in connection with the mandrel L, for the purpose of centering the shaft J and feeding the same so as to cut a true longitudinal slot, constructed and operated substantially as and for the purposes set forth.

2. The guide-block A, having the guide-grooves B, in combination with the V-blocks E and F, for the purpose of centering a shaft under a drill-mandrel, constructed and operated substantially as and for the purposes set forth.

3. The guide-block A, having the guide-grooves B and the feed-screw D, in combination with the head-block M, having the gage face-plate O, and the tail-block Y, with the adjustable journal-box or head T, for the purpose of working tapering pieces of metal, constructed and operated substantially as and for the purposes set forth.

ADOLPH F. BREWER.

Witnesses:
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