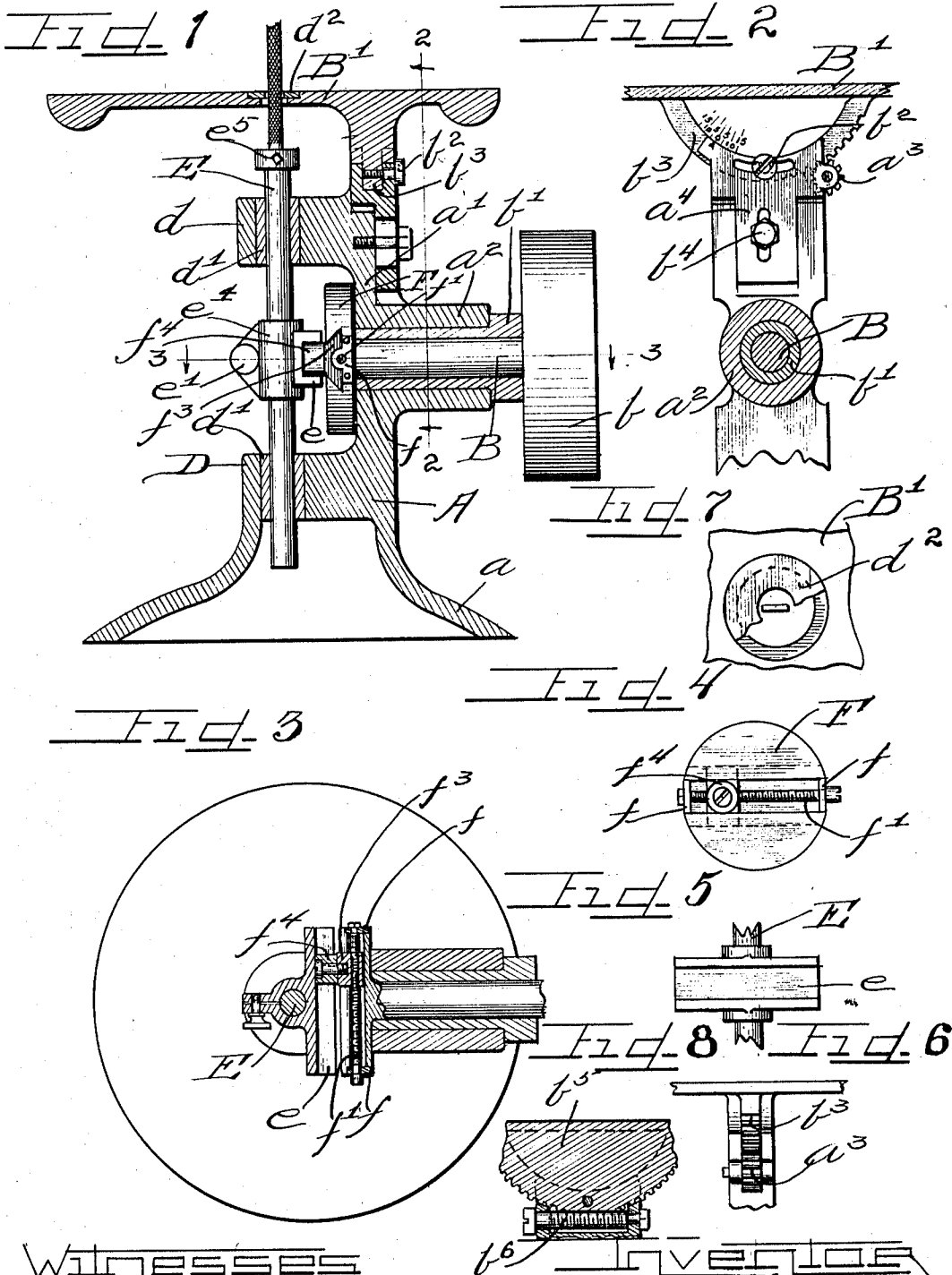


E. C. BRULL.
FILING MACHINE.

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982,791.

Patented Jan. 31, 1911.



WITNESSES

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FILING-MACHINE.

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To all whom it may concern:

Be it known that I, EUGENE C. BRULL, a citizen of the United States, and a resident of the city of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Filing-Machines; 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, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to a filing machine of that class known as bench filing machines and intended for use more particularly by model, tool and die makers.

In much of the model, tool and die work it is necessary to dress or file parts with the utmost precision as to angle and to insure a fair face of the desired conformation which may, of course, be at any desired angle with reference to any other portion of the body operated upon. Where this has been done by hand, it frequently occurs that the slight rocking motion frequently occasioned in using the file or even slight differences in pressure unconsciously made by the operator result in varying the angle of the work so that frequently a good fit is not secured although the utmost care is taken to secure the same.

The object of this invention is to afford a filing machine adapted for use more particularly by model, tool and die makers, though, of course, valuable for others and by the use of which any desired surface may be dressed to exactly the conformation and angle required.

It is also an object of the invention to afford a machine of the class described in which a file may be set at any desired angle with reference to the work and table, or rather, the work table may be adjusted at any desired angle with reference to the cutting face of the file.

It is also an object of the invention to afford a machine adapted to receive files of any desired shape or size, and provided with means wherein the throw or movement of the file may be accurately adjusted to afford a long or a short cut.

The invention embraces many novel features and consists in the matters herein-after described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a fragmentary vertical section of a machine embodying my invention taken longitudinally of the driving shaft. Fig. 2 is a section taken on line 2—2 of Fig. 1. Fig. 3 is a section taken on line 3—3 of Fig. 1. Fig. 4 is an inner face view of the adjustable eccentric roller. Fig. 5 is a fragmentary face view of the file spindle with the head for the eccentric roller thereon. Fig. 6 is an enlarged fragmentary detail illustrating one of the adjusting means for the tilting table. Fig. 7 is an enlarged fragmentary detail of the bed illustrating the construction whereby files of any preferred shape may be used, though admitting small pieces of work to be approached as closely as may be desired thereto. Fig. 8 illustrates a modification for varying the angular adjustment of the table.

As shown in the drawings: said machine is constructed upon a frame, which though shown as a bench frame, may be of any desired size and is indicated as a whole by A, and consists of a base a , and upper standard a' , centrally apertured and affording a long apertured boss a^2 , in which is journaled a main driven shaft B, provided with a belt pulley b , and as shown, secured if desired in a suitable anti-friction sleeve or bushing b' . At its upper end said standard is rabbeted at a right angle with the shaft B, and also provided with a vertical groove. A vertically adjustable section a^4 , is engaged in the groove by means of a set screw b^4 , and slidably engaged therein by means of a set screw b^2 , is a segment b^3 , integral with the work table B', which may be constructed of cast metal.

Journaled on the side of the section a^4 , is a pinion a^3 , which meshes with the mutilated gear or rack on the segment b^3 , as shown in Figs. 2 and 6, and is provided with a slotted and angular head on its pintle or shaft adapted to be engaged by a wrench or screw driver, or other suitable tool to rotate the pinion, and thereby adjust the bed. As shown in Fig. 8, the segment b^5 , (which corresponds to the segment b^3) is provided with a worm and a worm gear b^6 , is provided for adjusting the same. As shown, the section a^4 , and also the segment b^3 , are slotted to receive the set screw b^2 , therein, to facilitate the adjustment.

The bottom portion D, of the bed extends rearwardly from the standard a , as does also an arm d , above the same. Said bottom or

base section and also said arm are each provided with an aperture therethrough in which is secured an anti-friction bushing or sleeve d' , in which is slidably engaged the file actuating stem or shaft E. As shown also, the work table B', in alinement with the apertures in said base and the arm d , is provided with an aperture therethrough, as shown in Figs. 1 and 7, of sufficient size to receive any file that it may be desired to use, and set at whatsoever angle with reference to the angle that may be required, and as shown, the metal about said aperture is trimmed away to afford a seat in which may be dropped a washer d^2 , having an aperture therein suitable for the file employed. Thus by having different shaped bores therethrough a support for the work is afforded close to the file.

On the inner end of the shaft B, is provided a face plate F, which is provided with a dove-tail seat extending diametrically across the same, and as shown, at each end of the groove thus afforded, is secured an upwardly and inwardly directed metallic plate f , which is apertured to receive a screw shaft f' , thereon and slidable in said dove-tailed groove is a carriage f^3 , through which said screw shaft has threaded connection and carried on said carriage or block f^3 , is a cam roller f^4 , which fits in a head e , which comprises, as shown, a horizontally grooved block rigidly secured on a sleeve e^4 , extending centrally and transversely thereof and through and in which the file actuating stem E, extends and is rigidly engaged by means of a set screw e' .

The operation is as follows: The suitable file having been selected, it is engaged in the seat or bore in the end of the stem by means of the set screw e^5 , and projects upwardly through the aperture in the tilting table B'. A suitable washer is then dropped into place over the file carrying the bed up close to the file. The table is now adjusted to the proper angle for the work required. This is accomplished by releasing the set screw b^2 , and actuating the pinion a^3 , or worm b^6 , by means of a wrench or other suitable tool, thus causing the table B', to swing thereon until the desired adjustment is attained, which may easily be accomplished with reference to the scale on the segment, as shown in Fig. 2. The set screw is then adjusted to hold the table rigidly and the operation may begin.

As the shaft B, rotates, the roller f^4 , moving in the traverse track e , therefor carried on the file stem forces said stem to reciprocate

with each rotation of the pulley and shaft B, thus enabling very rapid motion to be attained. Should the extent or amplitude of the reciprocation desired vary, adjustment can very quickly be accomplished by means of a threaded shaft f' , one end of which is slotted to receive a screw drive, and the other end of which is shaped to receive a wrench. Adjustment in one direction obviously moves the cam roller toward the center while rotation in the opposite direction obviously moves the same toward the periphery of the face plate F, affording a longer throw. An almost infinite variety of adjustments as to angle may be secured dependent upon the arrangement of the file in the stem E, and it is possible to so adjust the file with reference to the table as to afford any angular cut desired.

Of course, I am aware that details of construction may be varied. I therefore do not purpose limiting myself otherwise than necessitated by the prior art.

I claim as my invention:

1. A filing machine, comprising a table, a toothed segment secured to said table, a support, means on said support for slidably receiving said segment and forming the sole support for the same, and a gear for oscillating said segment in said support.

2. A filing machine, comprising a frame, a standard vertically adjustable in said frame and having a curved groove in its top, a table, a toothed segment secured to said table and fitting in said groove the same forming the sole support for said table, and a gear journaled in said standard and meshing with the teeth on said segment to oscillate said table to vary the adjustment thereof.

3. A filing machine, comprising a frame, a vertically adjustable standard secured thereto, said standard having a curved groove in its top and a slot opening into said groove, a table, a toothed segment fixed to said table and engaged in said groove to form the sole support for said table, a set screw extending through said slot and engaging said segment to limit the adjustment of said segment, and a gear meshing with the teeth of said segment for adjusting the table.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

EUGENE C. BRULL.

Witnesses:

K. E. HANNAH,
LAWRENCE REIBSTEIN.