H. PLUMMER.

ENGRAVING BLOCK.

APPLICATION FILED MAR. 6, 1919.

1,397,293.

Patented Nov. 15, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

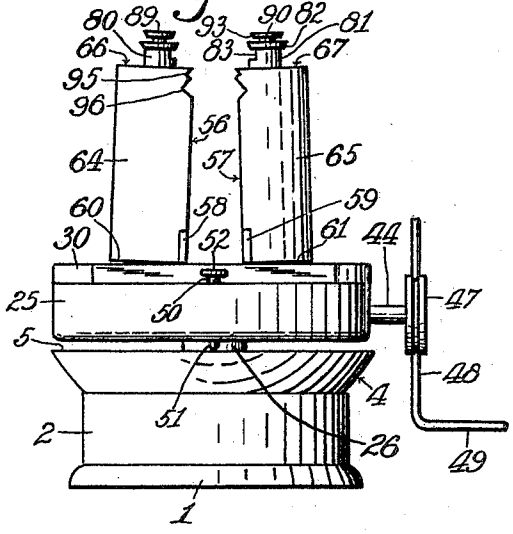


Fig. 2.

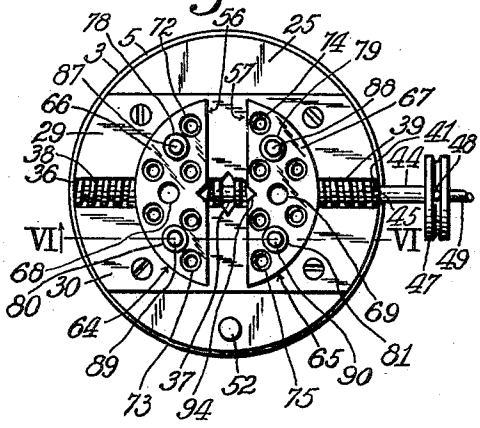


Fig. 3.

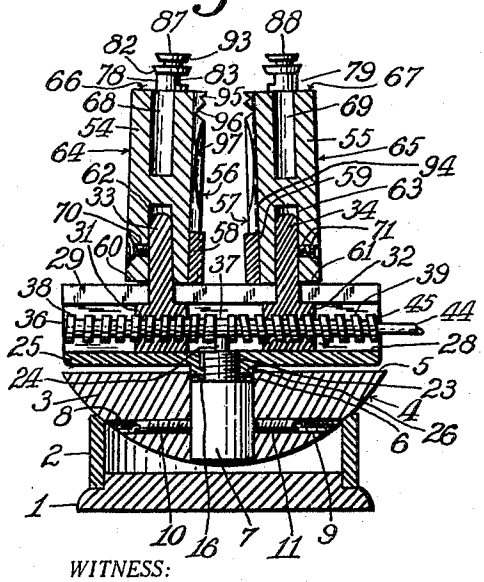
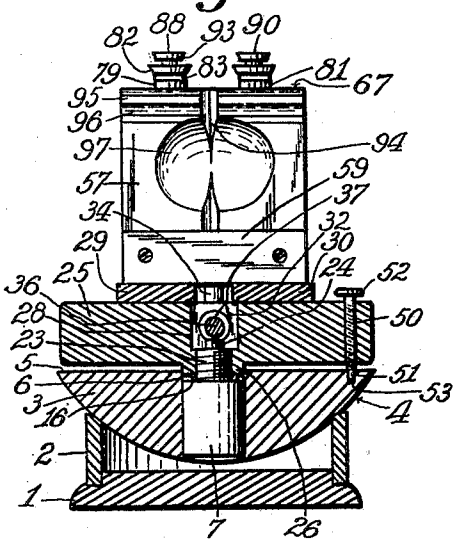


Fig. 4.



WITNESS:

D. W. Voorhies

J. M. Roeder.

INVENTOR:

Horace Plummer,

BY

E. F. Silvius,

ATTORNEY.

H. PLUMMER.

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2 SHEETS—SHEET 2.

Fig. 5.

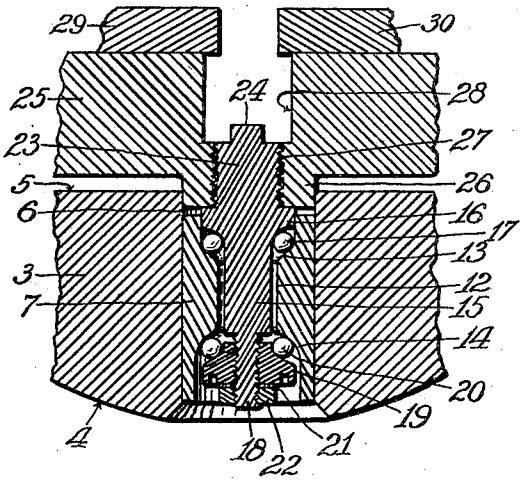


Fig. 6.

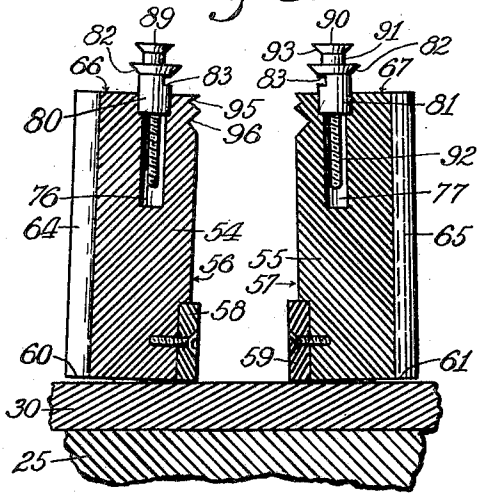


Fig. 7.

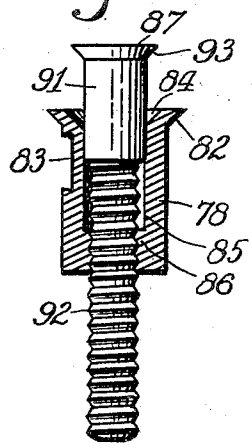


Fig. 8.

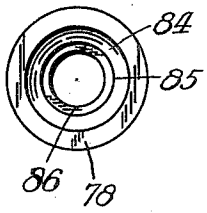


Fig. 9.

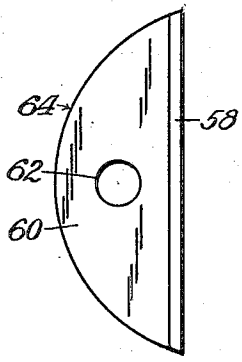


Fig. 10.

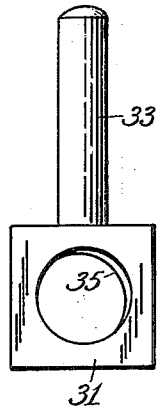
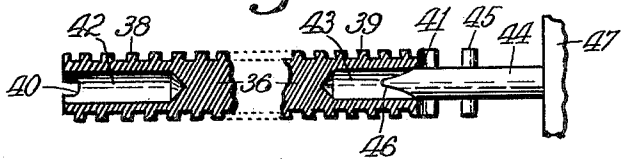


Fig. 11.



WITNESS:

D. W. Vorhies

F. M. Rowden

INVENTOR:

Horace Plummer,

BY

E. T. Silvius,

ATTORNEY.

UNITED STATES PATENT OFFICE.

HORACE PLUMMER, OF LAWRENCE TOWNSHIP, MARION COUNTY, INDIANA.

ENGRAVING-BLOCK.

1,397,293. Specification of Letters Patent. Patented Nov. 15, 1921.

Application filed March 6, 1919. Serial No. 281,009.

To all whom it may concern:

Be it known that I, HORACE PLUMMER, a citizen of the United States, residing in Lawrence township, in the county of Marion and State of Indiana, have invented a new and useful Engraving-Block, of which the following is a specification, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

This invention relates to means for holding various articles, and especially small articles to be worked upon, the invention having reference more particularly to means for adjustably holding jewelry or other articles while being engraved by means of hand-tools.

An object of the invention is to provide an improved engraving block which shall be so constructed as to be adapted to hold articles of various sizes and shapes, without requiring the use of a large number of pins or similar devices to be used at different times and necessitating care-taking when not in use.

Another object is to provide an engraving block of such construction as to be adapted to be immediately used when required, without requiring troublesome adjustments, and which shall be readily adjustable to suit the various requirements of the engraver.

A further object is to provide an adjustable engraving block which shall be so constructed as to be adjusted with precision and adapted to be readily adjusted to insure precision in action, so as to not be loose and wabbling with resultant hampering of the engraving work.

A still further object is to provide an engraving block which shall be of such construction as to be adapted to be supported either stationarily or so as to be titled, as may be desired, and which shall be strong, durable and economical in use.

With the above-mentioned and other objects in view, the invention consists in an improved engraving block having various novel features of construction, more particularly relating to the jaws and clamping devices thereof; and, the invention consists also further in the novel parts and combinations and arrangements of parts as hereinafter particularly described and further defined in the accompanying claims.

Referring to the drawings,—Figure 1 is an elevation of the improved engraving block; Fig. 2 is a top plan of the engraving block; Fig. 3 is a vertical central section of the engraving block; Fig. 4 is a vertical central section on a plane at right angles to the plane of the section in Fig. 3; Fig. 5 is a fragmentary vertical central section on an enlarged scale; Fig. 6 is a fragmentary section on the line VI—VI in Fig. 2 on an enlarged scale; Fig. 7 is a vertical sectional elevation of the improved adjustable jaw device; Fig. 8 is a top plan of one of the parts of the jaw device; Fig. 9 is a plan of one end of the jaw; Fig. 10 is an elevation of an improved device for operating and controlling the improved jaws of the engraving block; and, Fig. 11 is a longitudinal section, partially broken away, of the screw for operating and controlling the jaws of the engraving block.

Similar reference characters throughout the various figures of the drawings indicate corresponding elements or features of construction herein referred to in detail.

The engraving block, as preferably constructed, has a foundation comprising a bottom 1 which may be wooden and a metallic ring 2 thereon composed of suitable metal such as brass, the bottom being adapted to rest firmly upon a work bench. A heavy metallic base 3 is provided which has a spherical bottom portion 4 that rests upon the ring 2 and is adapted to slide thereon so as to tilt the base which has a flat top portion 5. The base has a central vertical bore 6 in which a bearing case 7 is closely fitted removably. The base has screw-threaded holes 8 and 9 horizontally arranged therein and extending from the bottom portion 4 to the bore 6 in which screws 10 and 11 are respectively inserted to engage and secure the case 7 in the bore. The case 7 can be removed from the base and again arranged in the base in relatively inverted position to permit the base to rest stationarily on its flat portion 5, when it may be desired that the base be stationary, instead of being adjustable on the foundation. The case 7 has a central bore 12 at one end of which is a ball cup or race 13 and at the opposite end a ball cup or race 14. An axle is arranged in the bearing case and comprises a main portion 15 having a cone collar 16 which is supported on balls 17 arranged in the cup 13. The main portion of the axle has a rela-

tively small screw-threaded lower portion 18 on which a cone collar 19 is adjustably arranged which supports bearing balls 20 that are arranged in the ball cup 14. Preferably a washer 21 is arranged below the cone 19 and a nut 22 in contact with the washer for securing the cone in place when adjusted. The axle may be freely turned without noise and without lubrication; and it has a head portion 23 provided on its top with a short cylindrical guide projection 24.

A metallic table or bed plate 25 is provided which preferably is less in diameter than the base and has a central hub 26 in which is an aperture 27 receiving the head 23 of the axle, the head preferably being screwed securely into the aperture, so as to be firmly and accurately connected to the table. The table has a transverse guideway 28 therein extending downward from the top portion of the table, and the top of the table has parallel guides 29 and 30 secured thereto that extend partially over the guideway 28. Two controlling heads or nuts 31 and 32 are adjustably guided in the guideway and have vertical cylindrical posts 33 and 34 thereon, respectively. Each controlling head has a screw-threaded bore 35 horizontally arranged therein, the screw thread in one being right hand and in the other left hand. The controlling heads are arranged equi-distant from the projection 24 on opposite sides thereof, respectively. A controlling shaft 36 is arranged in the guideway 28 and extends through the controlling heads and it has a centrally arranged circumferential guide groove 37 receiving the projection 24, and the shaft has oppositely pitched screw threads 38 and 39 that engage the corresponding screw threads in the bores of the controlling heads 31 and 32 respectively. The ends of the shaft 36 have recesses 40 and 41 and also sockets 42 and 43 therein respectively. The controlling shaft preferably has a detachable device for operating it, so as to eliminate obstructions on the outside of the table. Therefore a shaft extension or key stem 44 is provided which is removably inserted into either one of the sockets in the controlling shaft and has a cross bar 45 to be received into the adjacent recess to rotate the shaft. The stem 44 has a screw driver portion 46 on its inner end and a head 47 on its outer end in which a cross bar lever 48 is secured and preferably provided with a crank arm 49. The screw driver portion is adapted to operate different screws embodied in the structure of the engraving block. The table 25 has a securing screw 50 vertically arranged therein a suitable distance from the axle of the table, and it has a suitable contact portion 51 projecting below the table and a head 52 arranged above the table. The contact portion may be forced against the top 5 of the base to ordinarily prevent rotation of the table, but if it is desired to more firmly lock the table it may be turned until the contact portion 51 is brought to a socket 53 which is made in the top portion 5 of the base to receive the contact portion of the securing screw.

The engraving block has two improved vise jaws 54 and 55 which preferably are shaped as segments of a cylinder, so as to have straight faces 56 and 57 respectively. The jaws are composed of suitable material and preferably have yielding face pieces 58 and 59 at one end of the straight faces, respectively, the yielding pieces preferably being composed of leather so as not to mar articles gripped thereby. The jaws have flat ends 60 and 61 that are at right angles to the straight side faces of the jaws and from which sockets 62 and 63 extend to receive posts 33 and 34, respectively, so as to be obliquely to the straight sides in order that when the jaws are brought in near proximity to one another to hold a thin object, the object may be securely held without permitting the lower portions of the jaws to come together. The remaining side portions 64 and 65 of the jaws respectively are curved cylindrically and may be brought into engagement with an annular object to secure it while being engraved. The jaws have flat end portions 66 and 67 that are at right angles to the straight sides 56 and 57 respectively, and sockets 68 and 69 extend therefrom respectively to receive the posts when the jaws are inverted. The sockets permit the jaws to be adjusted rotatively on the posts as the posts move the jaws each toward or from the other as they are supported upon the guides 29 and 30. The jaws are provided with securing screws 70 and 71 respectively that are inserted in the curved sides of the jaws to engage the posts 33 and 34 respectively, whereby to secure the jaws to the posts when desired.

In the upper portion of the jaws, as shown in the drawings, one jaw has a suitable number of sockets 72 and 73 extending from the end 66, the opposite jaw having similar sockets 74 and 75 extending from the end 67, the jaws being provided respectively with other similar sockets 76 and 77, to receive universal clutch or grip devices of which two only are usually required for each jaw to be arranged as may be most advantageous in the different sockets. The devices comprise cylindrical main holders 78, 79, 80 and 81, all alike and interchangeable in the sockets, each suitably seated so that the holders shall project a uniform distance beyond the top of the jaws, the upper portion of the sockets preferably being counterbored to receive the holder rotatably. Each holder has a flaring upper portion so as to have an annular bevel face 82 presented downwardly toward the jaw whereby an object may be

engaged and held upon the jaw. The side of each holder preferably has a recess 83 therein as clearance space to receive portions of objects worked upon. The top of each holder has a countersink 84 therein from which extends a guide bore 85, the holder having a bottom 86 which is screw-threaded in a suitable opening. The clutch or grip devices include also a suitable number of studs 87, 88, 89, 90, all alike and comprising each a cylindrical main portion 91 that is rotatably guided in the bore 85 and from which extends a screw-threaded shank 92 arranged in the bottom 86 of the holder, so that the studs are adjustable vertically. The upper portion of each stud has a circumferentially extending bevel portion 93 that faces downwardly toward the top of the jaw and may be received into the countersink 84 so that the stud need not project obstructively when not required for use. The bevel portion 93 is adapted to hold an article down to the top of the holder.

In some cases the straight side of the jaw has a vertical groove 94 arranged centrally to receive vertically arranged objects, and in some cases the straight side has also a shallow horizontal groove 95 and also a deeper groove 96 in which objects may be received and in some cases held to be worked upon. Also in some cases the straight side portion of each jaw has a concave portion 97 in which objects or portions thereof may be received.

In practical use the clutch or grip devices are suitably adjusted and placed in the jaws, two in each jaw being usually required, so that an object may be placed between the devices of the two jaws, and the controlling shaft is suitably turned so as to operate the jaws as may be required to clamp the object in place to be worked upon. In some cases the article is engaged by the bevel faces 82 of the holders; in other cases the object is placed upon the tops of the holders and engaged by the faces 93 of the studs which may be raised or lowered as may be necessary, according to the thickness of the article required to be clamped in place. In some cases an article may be held in the grooves 94 while in other cases an article may be held in the groove 95 or in the groove 96; or in some cases an article may be more conveniently held in the concave recesses 97 of the jaws. When it is desired to reverse the jaws to bring the curved sides thereof inward the jaws may be readily turned on the posts. In some cases the jaws are inverted and articles are clamped between the yielding pieces 58 and 59.

Having thus described the invention, what is claimed as new is—

1. An engraving block including a table, two vise jaws removably mounted upon the table and adjustable each toward the other and also rotatably on the table, each vise jaw having a cylindrical socket in the top thereof that has a cylindrical counterbore of uniform diameter extending from the top of the jaw, a plurality of hollow cylindrical holders removably and rotatively seated on the bottom of the counterbore in the sockets respectively, each holder being laterally supported in the socket immediately at the top of the jaw and having each an annular projection at its top, the projection having a beveled edge facing toward the vise jaw, and a plurality of studs adjustably supported vertically and rigidly secured in the holders respectively.

2. An engraving block including a supported table, two controlled heads adjustably supported by the table and having each a vertical cylindrical post, and two vise jaws having cylindrical sockets in their lower portions removably receiving the posts respectively and having also sockets in their upper portions adapted to receive the posts when the jaws are inverted, the jaws being removably supported adjustably on the table and adapted to be inverted thereon.

3. An engraving block including a base having a vertical central bore therein, a hollow bearing case secured in the central bore and having a ball cup in the upper portion and an inverted ball cup in the lower portion thereof, bearing balls arranged in the upper one of the ball cups, an axle extending through the bearing case and having a cone collar arranged upon the bearing balls, the axle having a head extending upward beyond the cone, a table secured to the head of the axle, a pair of vise jaws mounted on the table, a cone collar adjustably connected to the lower portion of the axle, and bearing balls arranged between the adjustable cone collar and the inverted ball cup.

4. An engraving block including a base having a vertical central bore therein, a hollow bearing case secured in the central bore, an axle rotatably supported in the bearing case and extending above the top thereof, the top of the axle having a guide projection thereon, a table secured to the upper portion of the axle and having a guideway into which the guide projection extends, a screw-threaded operating shaft rotatably arranged in the guideway and having a circumferential groove receiving the guide projection, the shaft having sockets in its opposite ends to receive an operating extension shaft, controllable movable heads in the guideway connected with the operating shaft and having each a cylindrical vertical post, and two vise jaws supported upon the table and having sockets therein receiving the posts respectively.

5. In an engraving block, the combination with a base, a table, and a pair of vise jaws mounted on the table, of a bearing case removably inserted in the base, a se-

curing screw inserted in the base and engaging said case, and an axle secured to the table and rotatably supported by the bearing case.

6. In an engraving block, the combination of a base having a central bearing and also a socket in the top of the base at a distance from said bearing, a table rotatably supported by the central bearing, a binding screw inserted in the table and projectible into said socket, and a pair of vise jaws mounted upon the table.

7. In an engraving block, the combination of a bottom member, a high and relatively narrow circular wall supported on the bottom member, the wall being unyielding, a base with a spherically-curved bottom supported slidingly on the inner edge of the top of the wall, the base having a vertical central bore therein, a hollow bearing case removably secured in said central bore, an axle rotatably supported in the bearing case and extending above the top thereof, a table having a hub secured to the upper portion of the axle, and vise jaws adjustably mounted upon the table.

8. In an engraving block, the combination with a table, of two vise jaws adjustably mounted on the table and having each a cylindrical socket in the top thereof, each socket having a counterbored upper portion, a plurality of hollow cylindrical holders supported rotatably in the counterbored portion of the sockets respectively and having each an annular projection at its top, the projection having a beveled edge facing toward the vise jaw, the outer side of said holder having a recess below said beveled edge, and a plurality of studs adjustably supported vertically and rotatively in the holders respectively and having each a projection extending about its top.

9. In an engraving block, the combination of a table, two controlled heads adjustably supported by the table and having each a vertical cylindrical post, two vise jaws having cylindrical sockets in their lower portions removably receiving the posts respectively and having also sockets in their upper portions adapted to receive the posts when the jaws are inverted, the jaws being removably supported on the table and adapted to be inverted thereon, each one of said jaws having a counteredbored socket in the upper portion thereof and having also a straight vertical face, the middle portion of the face being concave, said face having a vertical groove and also horizontal grooves adjacent to the upper end thereof, a yielding strip secured in said face adjacent to the lower end thereof, a plurality of hollow cylindrical holders supported in the counterbored portion of said sockets respectively, and a plurality of studs adjustably supported in the holders respectively.

10. In an engraving block, the combination of a table, two controllable heads movably mounted in the table and having each a cylindrical vertical post thereon, two vise jaws supported on the table and having sockets therein receiving the posts respectively, and a securing screw inserted in one of the vise jaws and extending to the socket therein to engage the post in the socket.

11. In an engraving block, the combination of a base, a table rotatably mounted on the base and having a guideway in its upper portion, an operating shaft guided in the guideway and having reversely pitched screw threads, two controllable heads movable in the guideway and connected with the screw threads respectively, each controllable head having a cylindrical vertical post thereon, and two vise jaws supported upon the table and having sockets therein that are inclined to the side face of the jaw to receive the posts respectively.

12. In an engraving block, the combination of a table, two vise jaws adjustably mounted on the table and having each a plurality of cylindrical sockets in the top thereof, each socket having a counterbored upper portion, a plurality of hollow cylindrical holders supported in the counterbored portion of the several sockets respectively and having each an annular projecting beveled edge at its top facing toward the vise jaw, the holder having a cylindrical guide bore therein and a countersunk portion at the top of the bore, and a plurality of studs adjustable in the guide bore of the holders respectively and having each a projection extending about its top, the projection being beveled to correspond to said countersunk portion, each stud having a screw-threaded shank extending adjustably through the lower portion of the holder in engagement therewith.

In testimony whereof, I affix my signature in presence of two witnesses.

HORACE PLUMMER.

Witnesses:
E. T. SILVIUS,
F. M. ROEDER.