Feb. 5, 1929. 1,700,795

J. HAJOS

KEYWAY CUTTING MACHINE

Filed Aug. 15, 1927 2 Sheets-Sheet 1

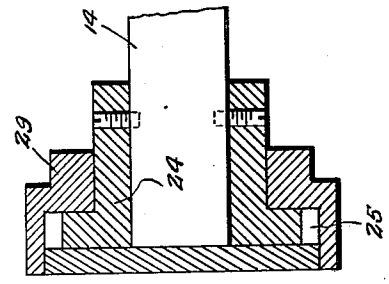


Fig. 6.

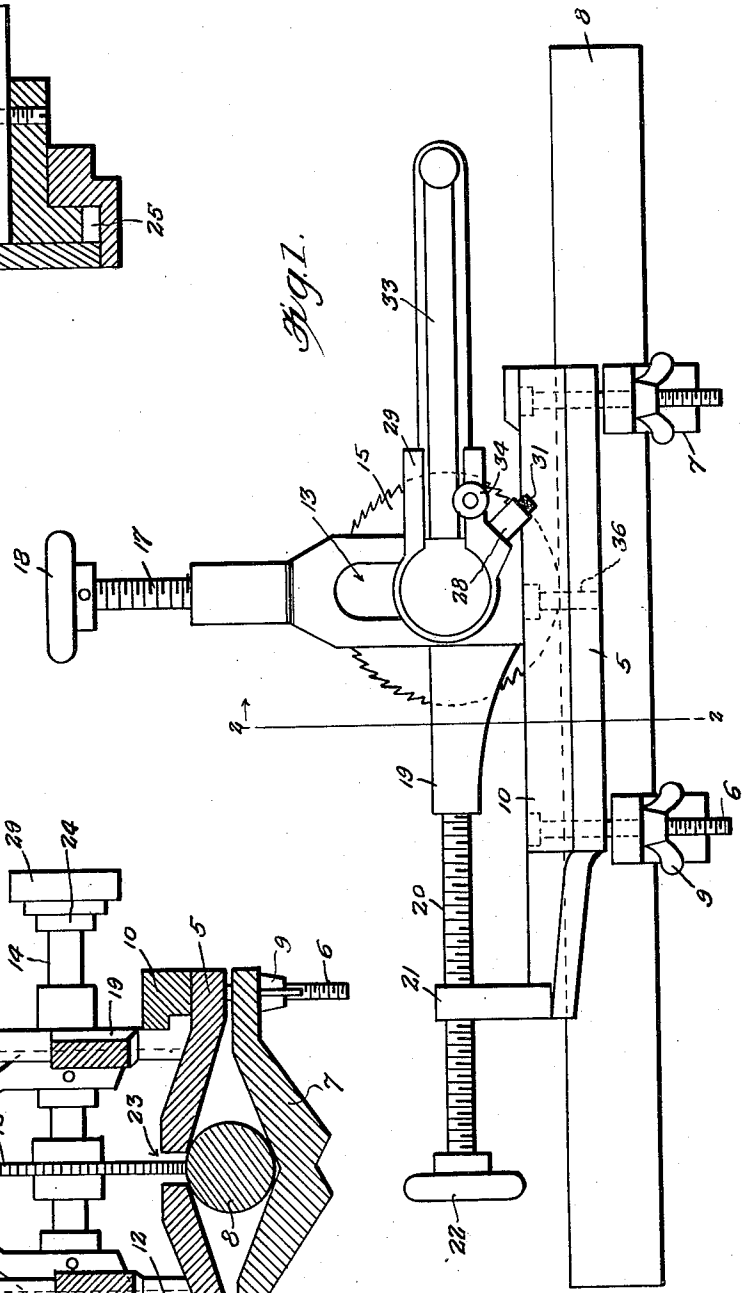


Fig. 1.

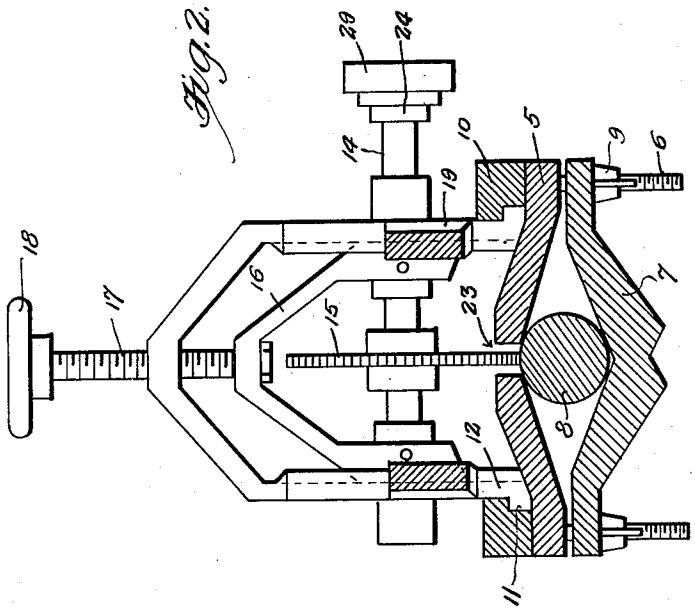


Fig. 2.

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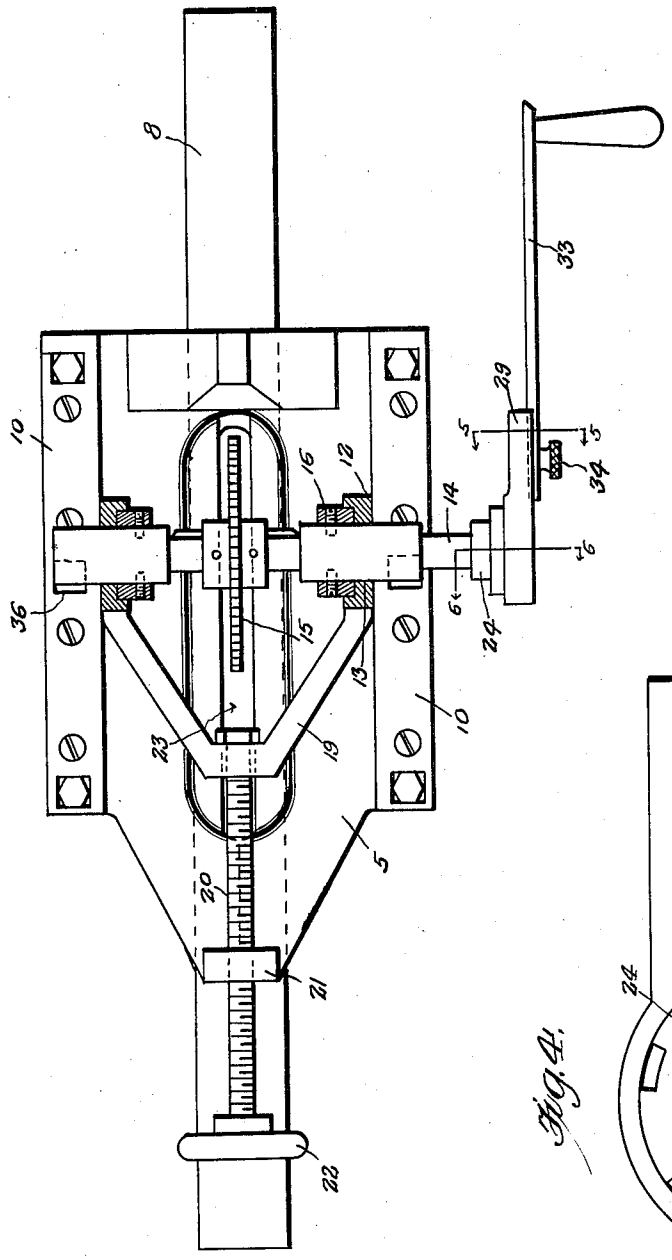


Fig. 3.

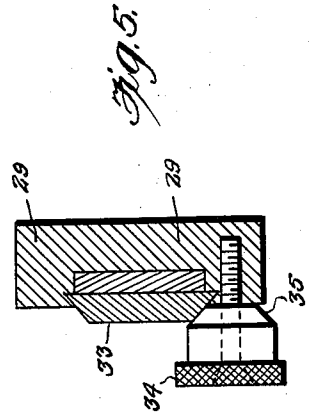


Fig. 5.

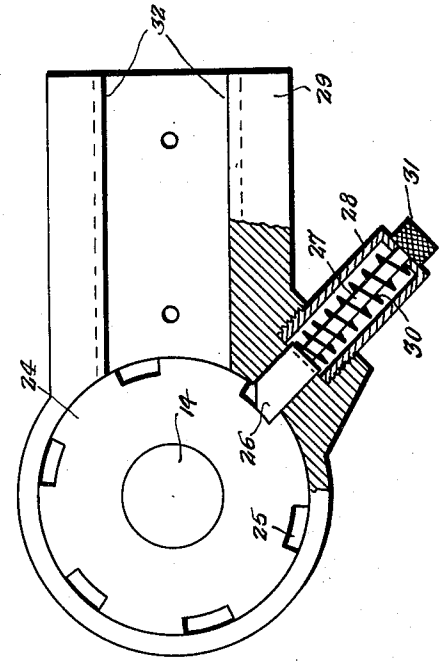


Fig. 4.

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Patented Feb. 5, 1929. 1,700,795

UNITED STATES PATENT OFFICE.

JOSEPH HAJOS, OF ST. LOUIS, MISSOURI.

KEYWAY-CUTTING MACHINE.

Application filed August 15, 1927. Serial No. 213,073.

This invention relates to machines for cutting keyways in shafts and the like, and comprises essentially a shaft clamping frame on which is mounted a traveling cutting frame rotatably supporting a milling cutter and provided with a handle whereby to manually operate said cutter.

An important object of the invention is to provide a machine of this character enabling the cutter to be vertically adjusted whereby to regulate the depth of the keyway to be cut and also embodying means permitting the cutter to be adjusted longitudinally with respect to the shaft thereby enabling the keyway to be cut at a desired length without necessitating an adjustment of the shaft.

Another object is to provide a ratchet attachment for the handle operating the milling cutter enabling the manipulation of the device in confined places.

A further object is to provide an apparatus of this character of simple and practical construction, which is portable, thereby enabling the machine to be transported from place to place to perform the work required, efficient and reliable in performance, inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the special construction and combination of the various elements forming the invention, reference being had to the accompanying drawings forming a part hereof, wherein:—

Figure 1 is a side elevational view.

Figure 2 is a vertical sectional view taken along a line 2—2 of Figure 1.

Figure 3 is a top plan view.

Figure 4 is a detail showing the ratchet attaching means for the handle.

Figure 5 is a sectional view illustrating the adjustable attaching means for the handle, and,

Figure 6 is a sectional view taken along a line 6—6 of Figure 3 illustrating the ratchet connection with the cutter shaft.

Referring now to the drawings in detail, I provide a cutting frame indicated generally at 5 from the underside of which extends a plurality of screws 6 adapted to be inserted through the ends of a pair of shaft clamps 7 whereby to secure a shaft 8 against the underside of the frame and retained in clamping position by means of wing nuts 9.

Along the upper sides of the frame is arranged a pair of guide strips 10 having their inner edges undercut whereby to form grooves therein and adapted to slidably receive flanges 11 formed on the lower end of a cutting frame 12.

The cutting frame 12 is of a substantially arch-shaped formation with its vertically disposed side members having vertically extending slotted openings 13 formed therein through which a cutting shaft 14 is adapted to extend transversely of the frame with a milling cutter 15 keyed thereon and arranged in a substantially central position within the arch-shaped frame 12. A shaft adjusting frame 16, likewise of an arch-shaped formation has its lower end provided with openings for receiving the shaft 14 and arranged beneath the frame 12 with an adjusting screw 17 extending upwardly therefrom through a threaded opening at the top of the frame 12 and having an adjusting wheel 18 mounted on its upper end thereof. It will be apparent from this construction that the adjusting frame 16 may be moved vertically with respect to the frame 12 thereby permitting the cutter 15 to be raised or lowered and thus regulate the depth of the keyway to be cut in the shaft 8.

A substantially U-shaped frame 19 disposed in a horizontal position extends at one side from the frame 12 with its outer end having a screw 20 attached thereto and extending through a threaded support 21 mounted on the frame 5 with an operating wheel 22 mounted at its outer end. By means of the manipulation of the screw 20 the arch-shaped frame 12 carrying the milling cutter is adapted to be moved longitudinally with respect to the frame 5 thereby enabling the length of the keyway to be cut in the shaft 8 to be regulated.

A longitudinally extending groove 23 is formed in the frame 5 immediately beneath the cutter 15 affording access of the cutter with the shaft.

At one end of the shaft 14 a ratchet wheel 24 is mounted having a plurality of notches 25 formed in the periphery thereof within which a pawl 26 is yieldably inserted. The pawl has a shank 27 formed thereon extending radially with respect to the ratchet wheel and arranged in a housing 28 attached to a handle socket 29. A coil spring 30 is arranged on the shank of the pawl within the housing yieldably forcing the pawl into engagement with one of the notches 25. The

outer end of the shank is formed into a knurled handle 31 enabling the pawl to be removed from engagement with the ratchet wheel so as to enable the free movement of the handle socket 29 when desired.

The handle socket is provided with a pair of opposed undercut flanges 32 forming a guide for the handle 33 enabling the same to be adjusted longitudinally with respect to the socket, thus permitting the handle to be shortened when desired for use in confined spaces. An adjusting screw 34 is carried by the handle socket having a beveled edge 35 for frictionally engaging the handle 33 so as to secure the same in adjusted position.

In order to enable the shaft 8 to be securely retained in position by the clamps 7 for cutting a keyway in the extreme end of the shaft, I provide a screw opening 36 at each side of the frame 5 intermediate the ends thereof so as to permit one of the clamping members 7 to be secured at the center of the frame thereby retaining the end of the shaft immediately beneath the cutter 15.

It will be apparent from the foregoing explanation that the frame may be firmly secured at any position along the shaft and by means of the operation of the handle 33 rotates the cutter 15 so as to cut a keyway in one side of the shaft. By means of the screw 22 the cutter may be moved longitudinally of the shaft so as to cut the keyway a sufficient length without necessitating any adjustment of the shaft itself. Likewise, by means of the screw 17 the shaft carrying the cutter may be raised or lowered, thereby permitting the depth of the keyway to be regulated.

It is obvious that the invention is susceptible of various changes in the shape, size, and combination of the various elements constituting the invention, without departing from the spirit or scope of the appended claim, and I accordingly claim all such forms of the device to which I am entitled.

I claim:—

In a keyway cutting apparatus for shafts, a cutter frame adapted for mounting in a fixed position upon the shaft and having guides extending longitudinally thereof, a cutter supporting frame comprising a pair of fixedly connected U-shaped frame members disposed at right angles with respect to each other, one of said members being disposed horizontally with its opposite side slidably mounted in said guide and with said other member extending upwardly from the cutter frame, and having vertically extending guides formed at its inner edges, a complementary shaped shaft supporting member having its side edges slidably mounted in said vertical guide, a cutter shaft rotatably journaled between the slides of said last named member, a cutter carried by said shaft and disposed in cutting position above said first named shaft and adjusting means for said slidably mounted frame member and said shaft supporting member.

In testimony whereof I affix my signature.

JOSEPH HAJOS.