Aug. 29, 1950 L. E. LAPOINTE ET AL 2,520,249

JIG FOR CONNECTING RODS

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Fig. 2

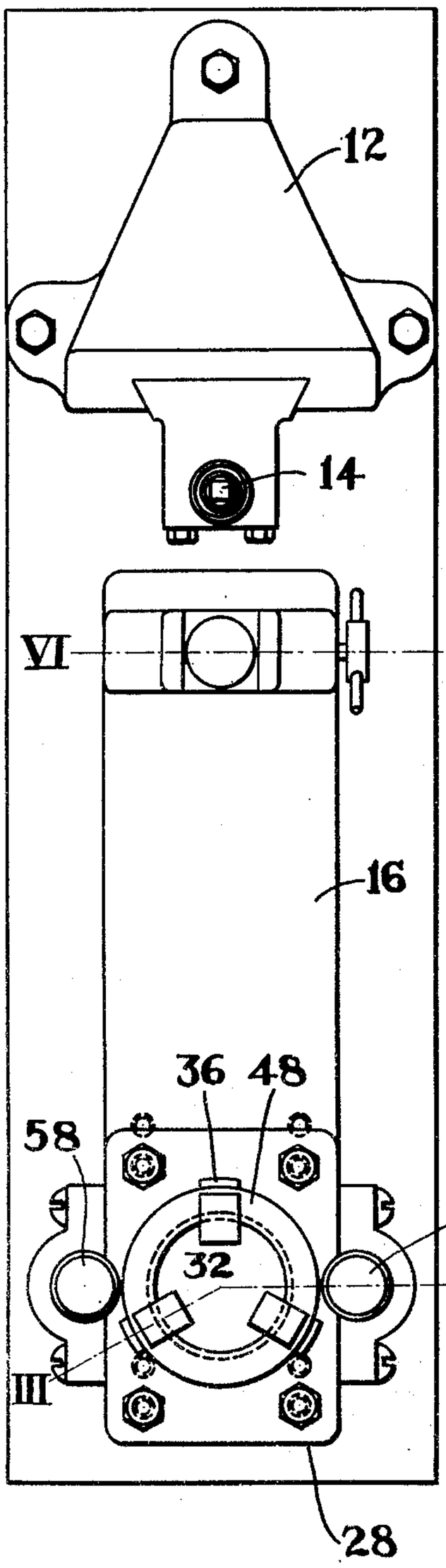
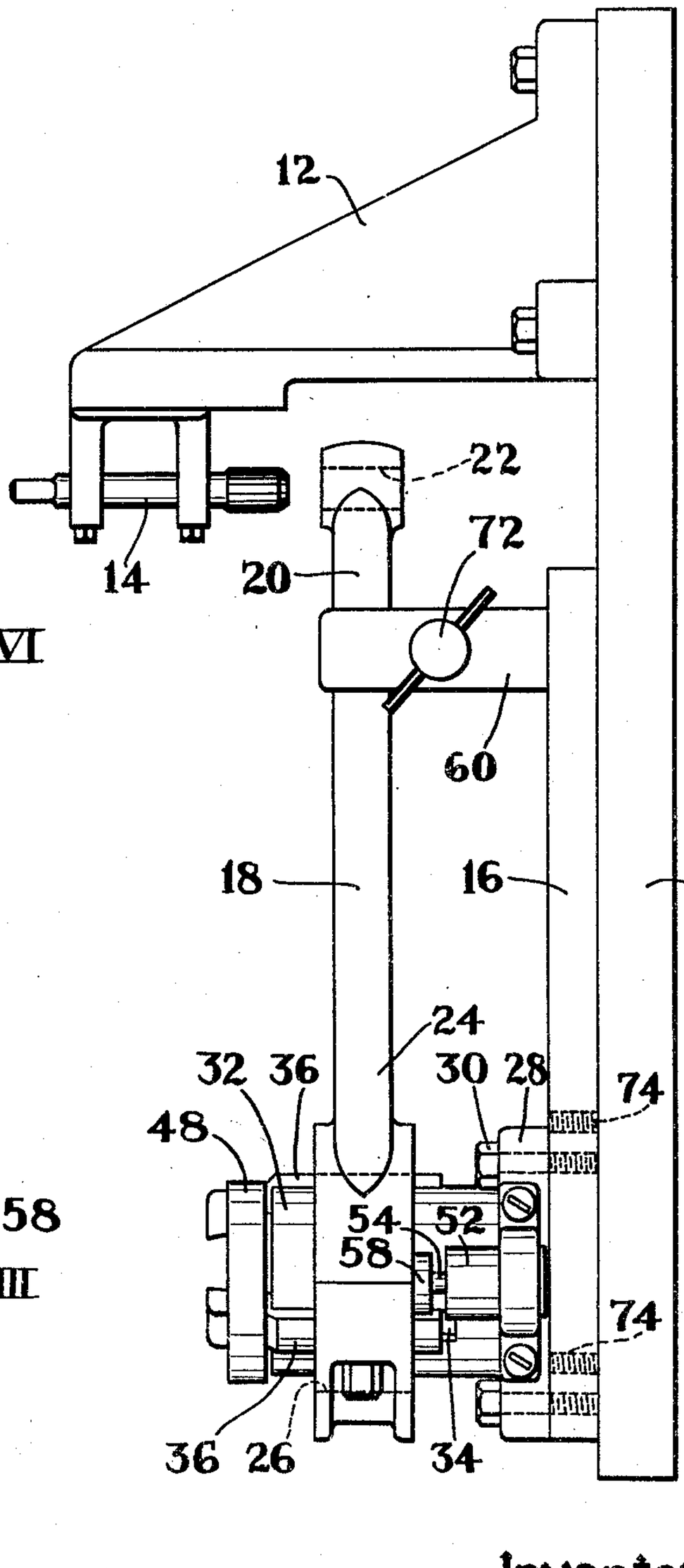



Fig. 1




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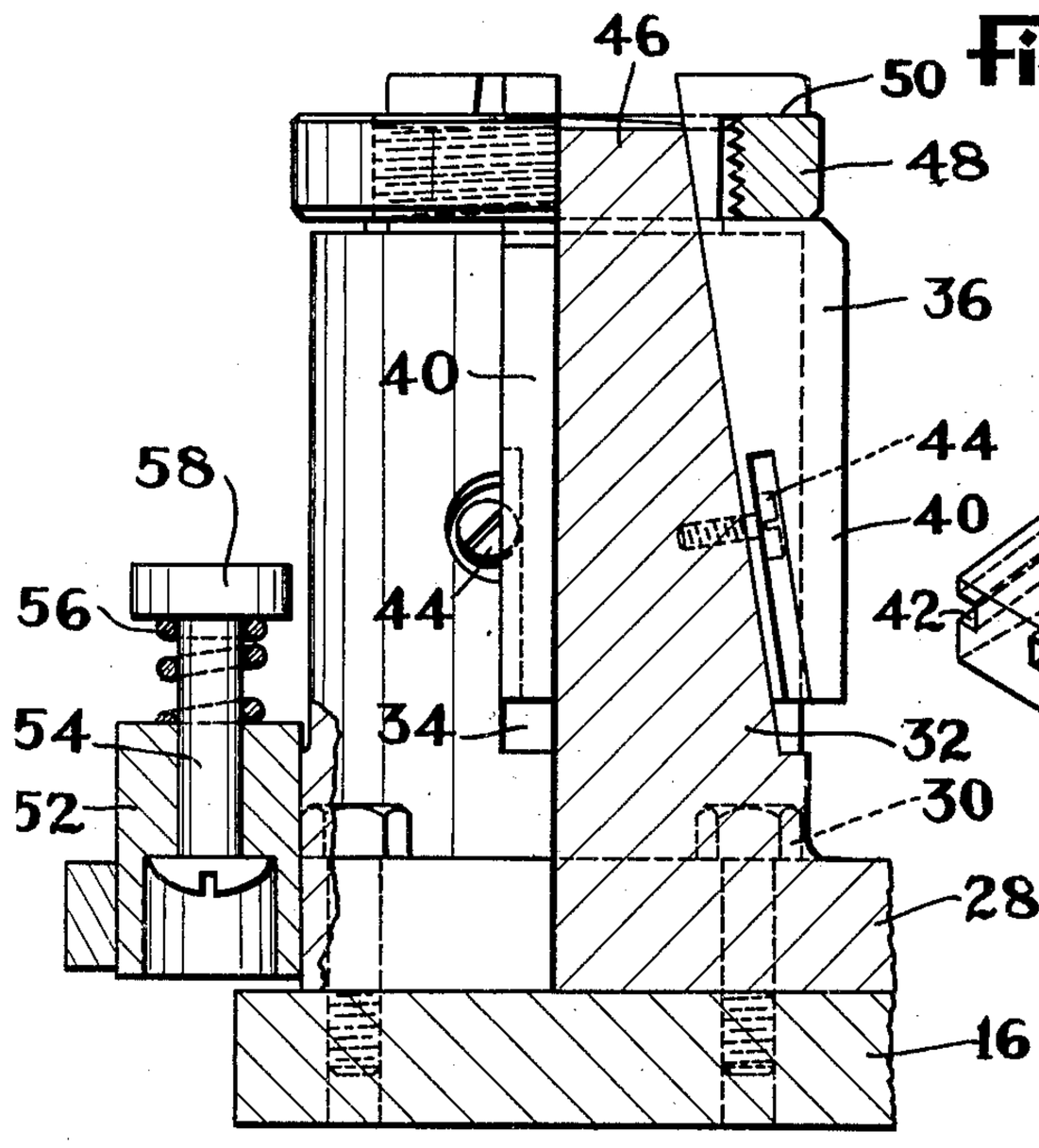



Fig. 3

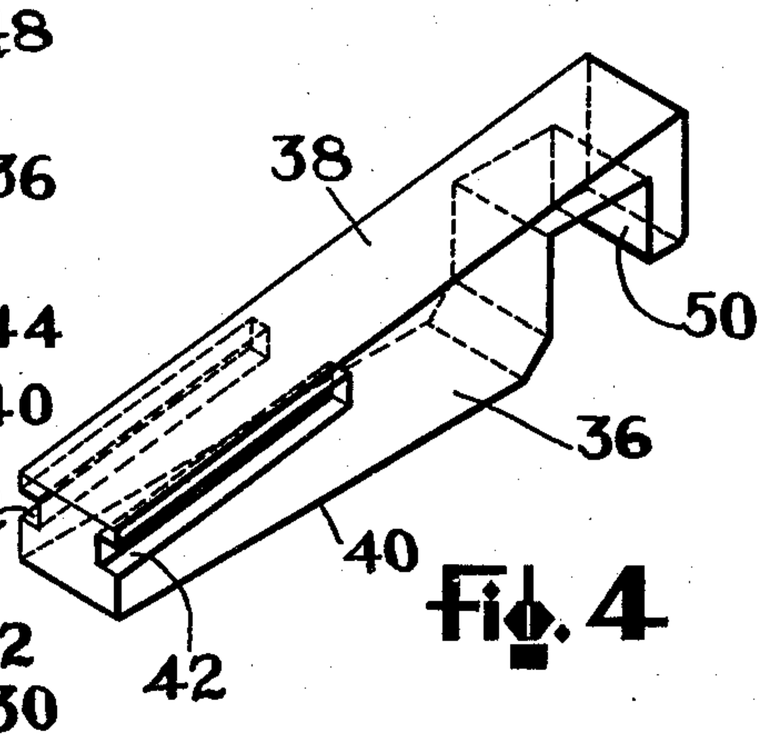
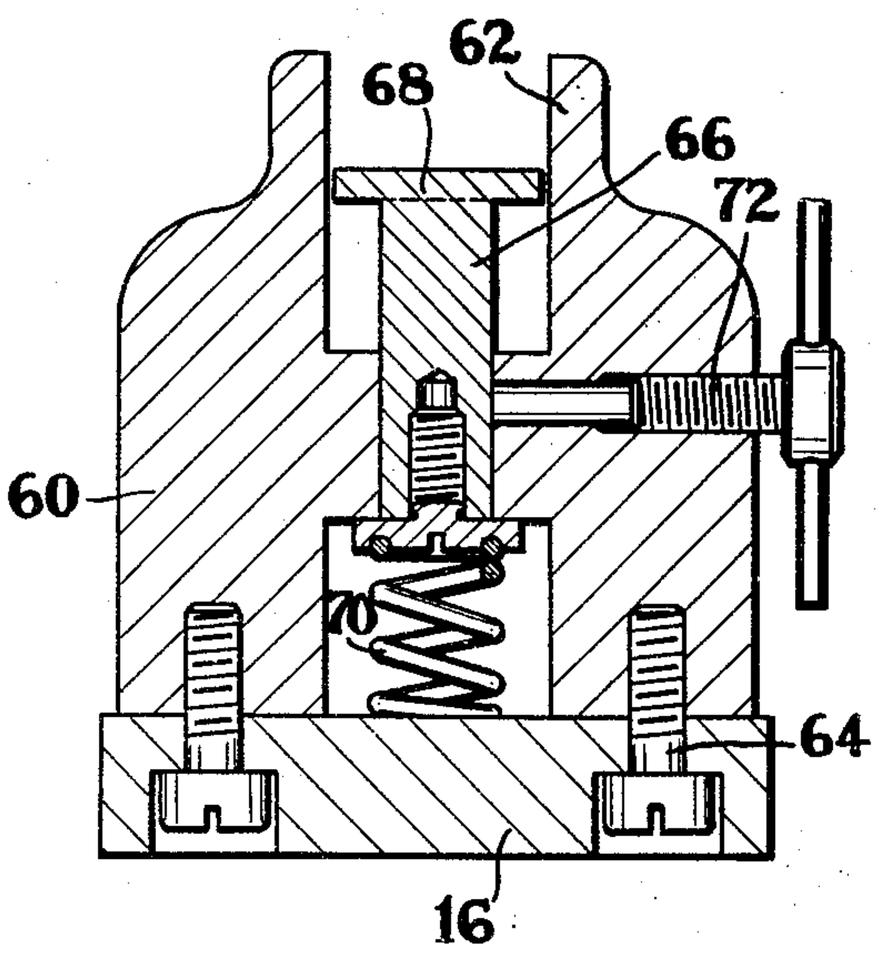



Fig. 4

Fig. 5




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## JIG FOR CONNECTING RODS

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2 Claims. (Cl. 77—62)

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This invention relates to a connecting rod reaming jig which however can be used for other operations.

Objects of the invention include the provision of a jig primarily for supporting a connecting rod in correct horizontal position for a drilling or reaming operation; the provision of a jig for the purpose described having resilient supports for positioning a connecting rod or the like so that the bores in the connecting rod will be exactly vertical regardless of irregularities of the exterior surfaces of the connecting rod; and the provision of a jig as above stated comprising a base, a clamping member, resilient supports associated with the clamping member for initially positioning the larger end of a connecting rod so that its bore will be on a true vertical axis, and a second spring holder for the smaller end of the connecting rod insuring correct horizontal positioning of the connecting rod in the jig.

Further objects of the invention include the provision of a jig for holding connecting rods comprising a base, an internal clamp for the larger bore of the connecting rod, spring supports at each side of the clamp for initially positioning the connecting rod with its larger bore on a true vertical axis, and a second spring support for the narrow end of the connecting rod, said second spring support having associated therewith a clamping means for locking the same in correct position.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a view in side elevation of a jig according to the invention in combination with a tool for operating on the smaller bore of the connecting rod;

Fig. 2 is a plan view of Fig. 1 with the connecting rod removed;

Fig. 3 is a view in elevation with parts in section of the clamping device for the larger bore in the connecting rod;

Fig. 4 is a perspective view of the clamping fingers or wedges;

Fig. 5 is a sectional view through the locating means for the smaller end of the connecting rod.

The present invention as illustrated in the drawings comprises a base or support 10 upon which may be mounted a bracket 12 for rotatably holding a vertical cutter 14. The base 10 also carries a plate 16 in turn supporting the clamping means for a connecting rod 18, the latter having the usual smaller end 20 with bore 22 and larger end 24 with bore 26.

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An internal clamping device is utilized to support the larger end of the connecting rod, this clamp comprising a base 28 secured to the plate 16 by any desired means such as screws 30. The base 28 may be made integral with an upstanding cylindrical element 32 the latter being provided with a plurality of vertical angular slots 34, these slots being arranged in the periphery of the element 32. Slots 34 are deepest at their upper ends and shallowest at their lower ends as plainly seen in Fig. 3 and each slot is arranged to vertically slidably receive a finger or wedge 36, the latter having diverging sides, see Fig. 4, in order to provide that a flat surface 38 of each finger or wedge may slide on the bottom of a slot while the surface 40 will extend vertically. Side slots 42 are provided in each finger for the reception of screw heads 44 to provide frictional contact.

At its upper end the cylindrical member 32 is provided with external screw threads 46 for receiving a circular ring 48 the latter passing through slots 50 in each finger both to hold the fingers assembled with the cylindrical member 32 and to adjust the fingers vertically in their slots. It is to be noted that as ring 48 is turned in a direction to travel downwardly relative to element 32, the vertical surfaces 40 of fingers 36 will move outwardly radially with respect to element 32.

At each side of the cylindrical element 32 there is provided an inverted cup or the like 52 which may be secured thereto by any desired means. Each cup 52 has slidable through the top thereof a bolt or the like 54, the latter being provided with a coil spring 56 surrounding the same and bearing upwardly against a head 58. This arrangement provides for a pair of resilient supports 58, one being located at either side of the clamping means 32.

At the other end of the plate 16 there is provided an upstanding bracket 60 which is bifurcated as at 62 to provide a slot open at its top. Bracket 60 may be secured to plate 16 as by bolts 64 or other desired means. A vertically slidable member 66 is arranged in bracket 60 and is provided with a head 68 acting as a support. A spring 70 bears against the bottom of the member 66 to normally project the same upwardly for a purpose to be described and a clamp screw 72 is provided to bear upon the member 66 to clamp the same in vertically adjusted position.

Reference characters 74 indicate tapped holes for adjusting the position of clamping member 32 longitudinally relative to the bracket 60.

In the operation of the device a connecting

rod is slipped over the element **32** so that the fingers **36** are located interiorly in the larger bore at the larger end of the connecting rod. The connecting rod at this end will come to rest on spring supports **58** which will locate the connecting rod in initial, nearly horizontal position. The narrower end of the connecting rod will rest on the spring support **68**. When the connecting rod has been located as above stated, the ring **48** is turned to radially expand fingers **36** to tightly clamp the larger end of the connecting rod, thus forcing the latter into correct position with the axis of the bore vertically, and the screw **72** is turned up to hold the support **66** in adjusted position as determined by the weight of the small end of the connecting rod thereon. When this has been done the connecting rod is correctly held in the desired location, and the cutting tool **14** may then be used to provide the operation for which it is intended. The support **10**, bracket **12**, and tool **14** may be dispensed with where there is provided a drill or the like having a table perfectly square with its spindle, but where the support **10** is used bore **22** of the connecting rod can be machined perfectly parallel to the bore **26**.

This invention presents a jig for the purpose described which provides for a practically automatic location of the two bores of the connecting rod in perfectly vertical condition so that both bores of the connecting rod will be parallel for perfect machining.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what we claim is:

1. In a device of the class described, a base, an upstanding element and an upstanding bracket on the base in spaced relation, resiliently mounted supporting devices adjacent the element, a resiliently mounted supporting device in the bracket, means to clamp the bracket supporting device, and radially movable fingers on the element to clamp an object having a hole therein by means of impingement of the fingers on the object hole.



2. In a device of the class described, a base, an upstanding generally cylindrical element on the base, a bracket on the base, a plurality of upwardly spring pressed pins adjacent the element to resiliently support an object having a hole, the latter being received over the element, expansible fingers on the element to fixedly clamp the object, an upwardly spring pressed supporting device on the bracket to resiliently support another part of the same object, and means to clamp the supporting device in fixed relation to the bracket and base.

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