

Aug. 7, 1962

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3,048,387

HOLDING FIXTURE FOR CYLINDER HEADS

Filed March 17, 1960

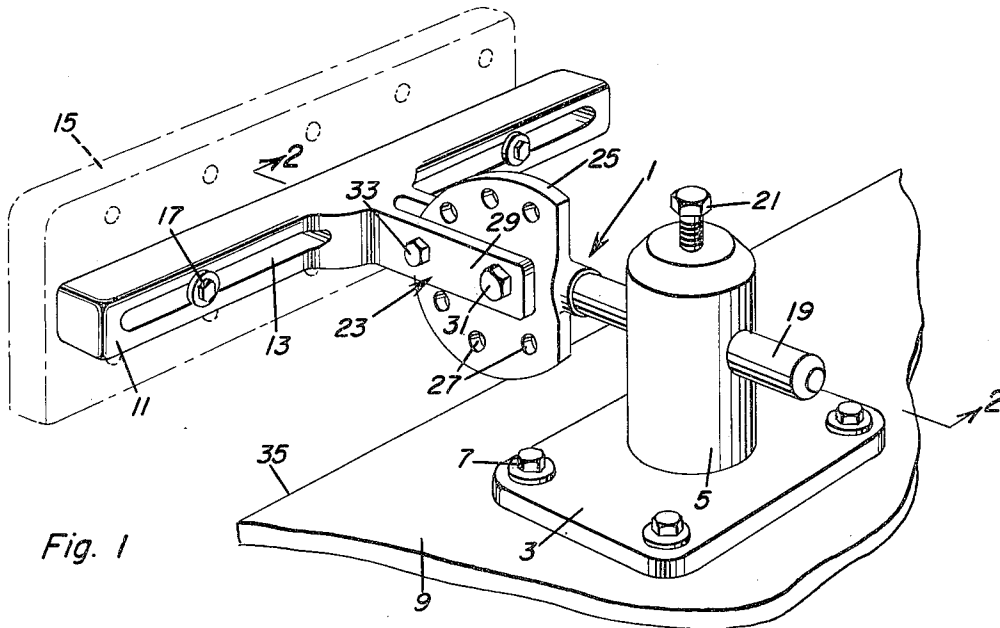


Fig. 1

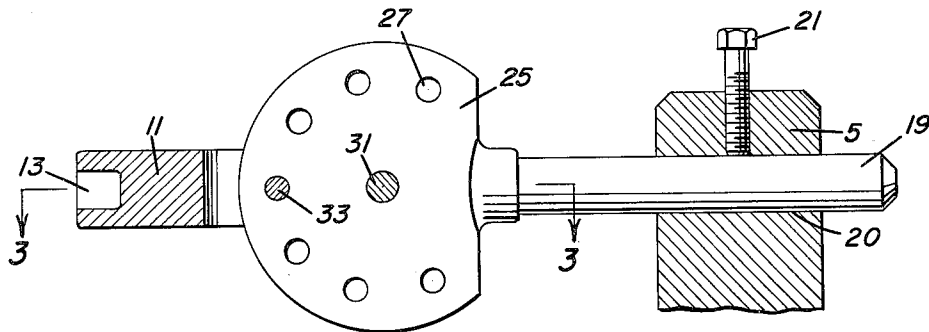


Fig. 2

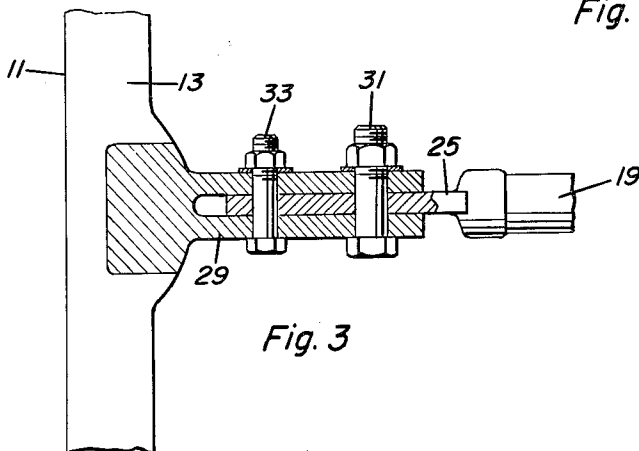


Fig. 3

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1

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HOLDING FIXTURE FOR CYLINDER HEADS

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Filed Mar. 17, 1960, Ser. No. 15,702

2 Claims. (Cl. 269-51)

This invention relates to improvements in holding fixtures for cylinder heads of internal combustion engines.

The primary object of the invention is to provide a fixture for attachment to a bench, table, or the like, to hold a cylinder head in elevated, suspended position and which is universally adjustable to adjust a cylinder head thereon into substantially any desired angular position to facilitate grinding of valves in their seats, or repair work on the cylinder head.

Another object is to provide a fixture for the above purposes which is easy to adjust, safe to use, simple in construction and inexpensive to manufacture and service.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a fragmentary perspective view of the holding fixture attached to a bench;

FIGURE 2 is an enlarged view in horizontal section taken on the line 2-2 of FIGURE 1; and

FIGURE 3 is a fragmentary view in horizontal section taken on the line 3-3 of FIG. 2.

Referring to the drawing by numerals, the holding fixture of this invention, and which is designated generally by the numeral 1, comprises, in its preferred embodiment, an attaching plate or base 3, preferably rectangular, with a central post rising therefrom and preferably formed integrally therewith, said post being substantially cylindrical and of a material diameter. The plate 3 is adapted to be bolted, as at 7, flatly on a bench 9 preferably adjacent one edge of the bench.

An elongated bar 11, or like member, with a longitudinal central slot 13 therein is provided for supporting a workpiece in the form of a cylinder head 15 which may be secured to the front side of said bar by bolts 17 passing through said slot 13 and whereby the cylinder head 15 may be secured to the front side of the bar 11 in longitudinally extending position for adjustment longitudinally along said bar 11.

Means is provided for connecting the bar 11 to the post 5 in spaced relation thereto comprising a reversible slide rod 19, or similar member, longitudinally and rotatably adjustably extending transversely through the bore 20 in post 5 and retained in adjusted position by a top set bolt 21 in the post 5, and a joint 23 connecting the bar 11 to said rod 19.

The joint 23 comprises a segmental plate 25 on the outer end of the rod 19 coplanar therewith and provided with circumferentially spaced, transverse bolt holes 27 therein, a bifurcated rear arm 29 extending laterally from the center and rear side of the bar 11 coplanar therewith and straddling the segmental plate 25, a pivot bolt 31 connecting the arm 29 to the segmental plate 25 for swinging thereof and of the bar 11 on the segmental plate 25 about an axis transverse to the rod 19 into different angular positions, and a bolt 33 extending through said arm 29 and through a selected bolt hole 27 for securing the arm 29 in adjusted position on said plate 25.

As will be seen, the rod 19 provides for horizontal adjustment of the bar 11 and a cylinder head 15 on said bar, and for rotation thereof about a horizontal axis, whereas, the joint 29 provides for swinging adjustment of the bar 11 and head 15 so that the head 15 may be so adjusted for variably positioning the same as occasion

2

may require. Also, when the plate 3 is positioned adjacent the front edge 35 of the bench 9, the bar 11 is positioned forwardly of the bench 9 to suspend a cylinder head 15 clear of the bench so that it can be freely adjusted without interference with the bench.

An important advantage of the invention, besides providing for holding a cylinder head in substantially any desired position is that the fixture may be readily taken apart by removing the bolts 31, 33 to disassemble the joint 23, and removing the rod 19 from the post 5 by loosening the bolt 21. Then the parts may be assembled in a compact bundle for carrying or storage in a small space.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A cylinder head holder comprising a horizontal base, means for securing said base on a support, an essentially solid cylindrical post of a material diameter fixed on said base and having a bore extending diametrically through its upper portion, a cylindrical, horizontal rod reversibly mounted for rotary and sliding adjustment in the bore, a set bolt threadedly mounted in the upper end portion of the post and engageable with the rod for securing same in adjusted position, a bar, means for mounting said bar for swinging adjustment on the rod, and means for mounting a workpiece on said bar, the second-named means including a segmental plate integral with one end of the rod, said plate having an inner opening therein and further having circumferentially spaced marginal openings therein, a bifurcated arm on an intermediate portion of the bar straddling the plate and having an opening therein aligned with the inner opening, a bolt in the aligned openings pivotally connecting the arm to the plate, said arm further having an opening therein selectively registrable with the marginal openings, and a bolt in the registering openings securing the arm in adjusted position.

2. A cylinder head holder comprising a horizontal base, means for securing said base on a support, an essentially solid cylindrical post of a material diameter fixed on said base and having a bore extending diametrically through its upper portion, a cylindrical, horizontal rod reversibly mounted for rotary and sliding adjustment in the bore, a set bolt threadedly mounted in the upper end portion of the post and engageable with the rod for securing same in adjusted position, a bar, means for mounting said bar for swinging adjustment on the rod, and means for mounting a workpiece on said bar, the second-named means including a segmental plate integral with one end of the rod, said plate having an inner opening therein and further having circumferentially spaced marginal openings therein, a bifurcated arm on an intermediate portion of the bar straddling the plate and having an opening therein aligned with the inner opening, a bolt in the aligned openings pivotally connecting the arm to the plate, said arm further having an opening therein selectively registrable with the marginal openings, and a bolt in the registering openings securing the arm in adjusted position, said bar having a continuous longitudinal slot therein terminating adjacent the ends thereof, the third-named means including headed bolts on the bar adjustable in the slot and threadedly engageable with the workpiece for adjustably securing same on said bar.

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