

May 12, 1931.

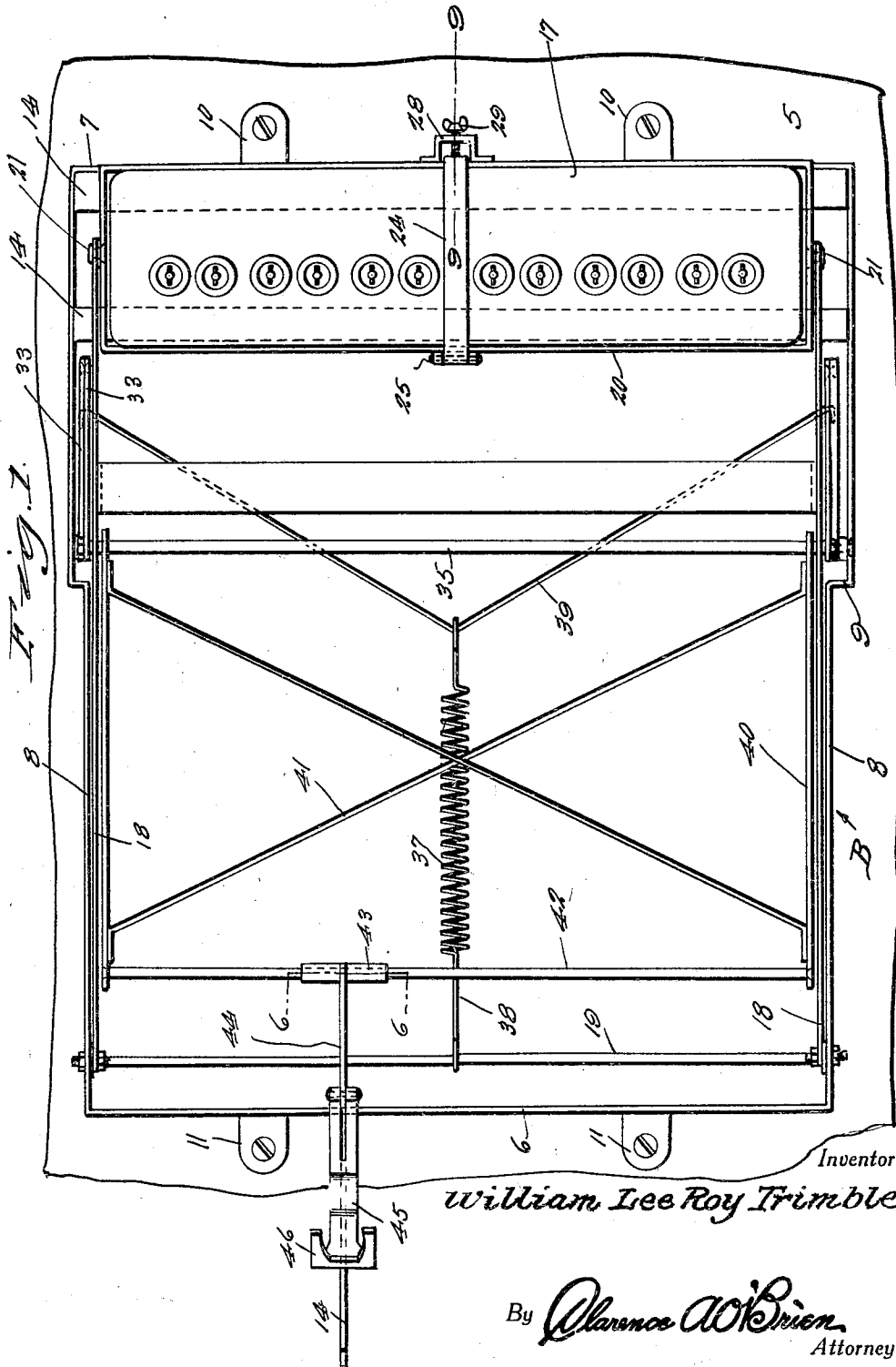
W. L. R. TRIMBLE

1,805,320

CYLINDER HEAD STAND

Filed March 30, 1929

4 Sheets-Sheet 1



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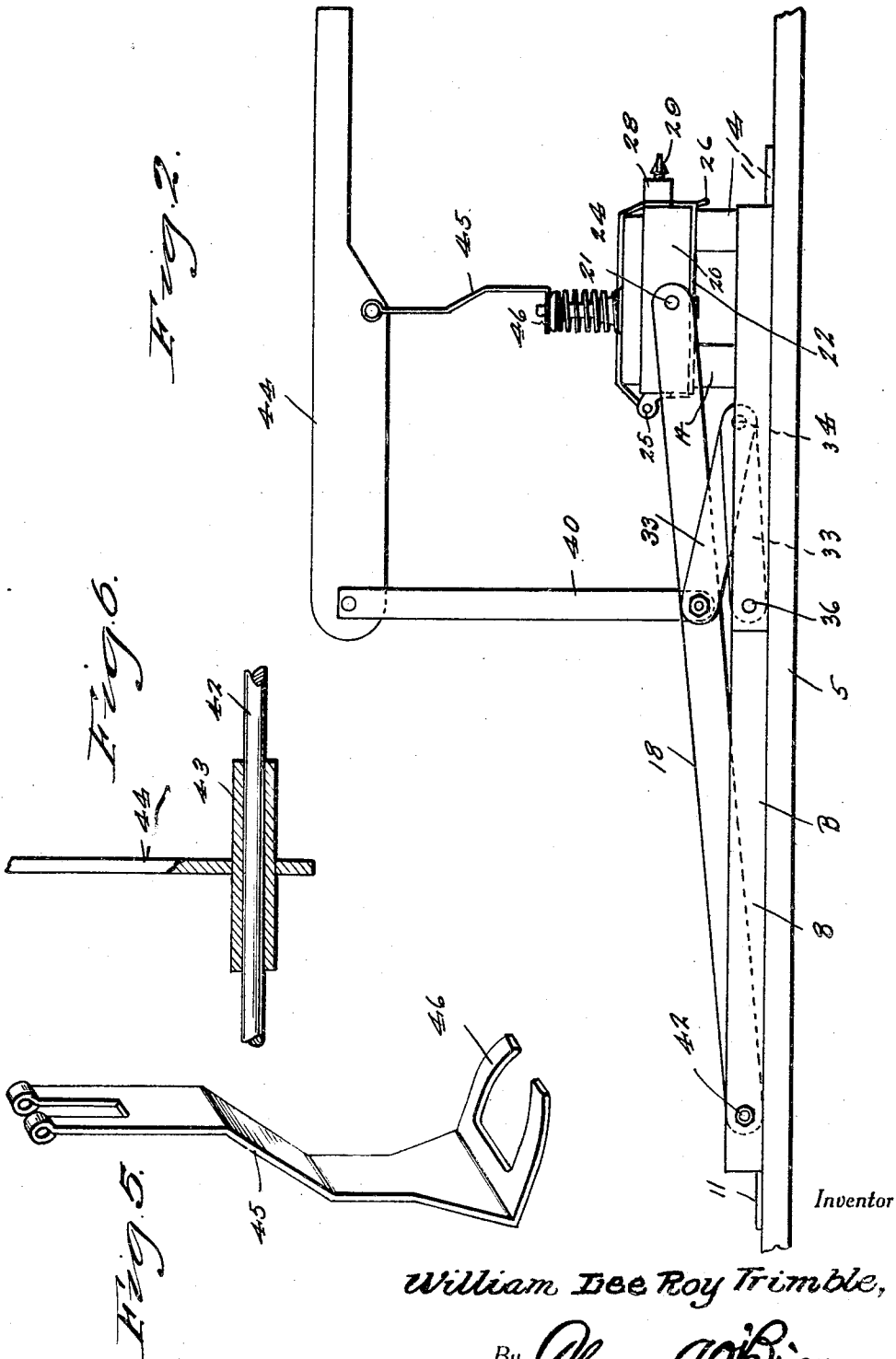
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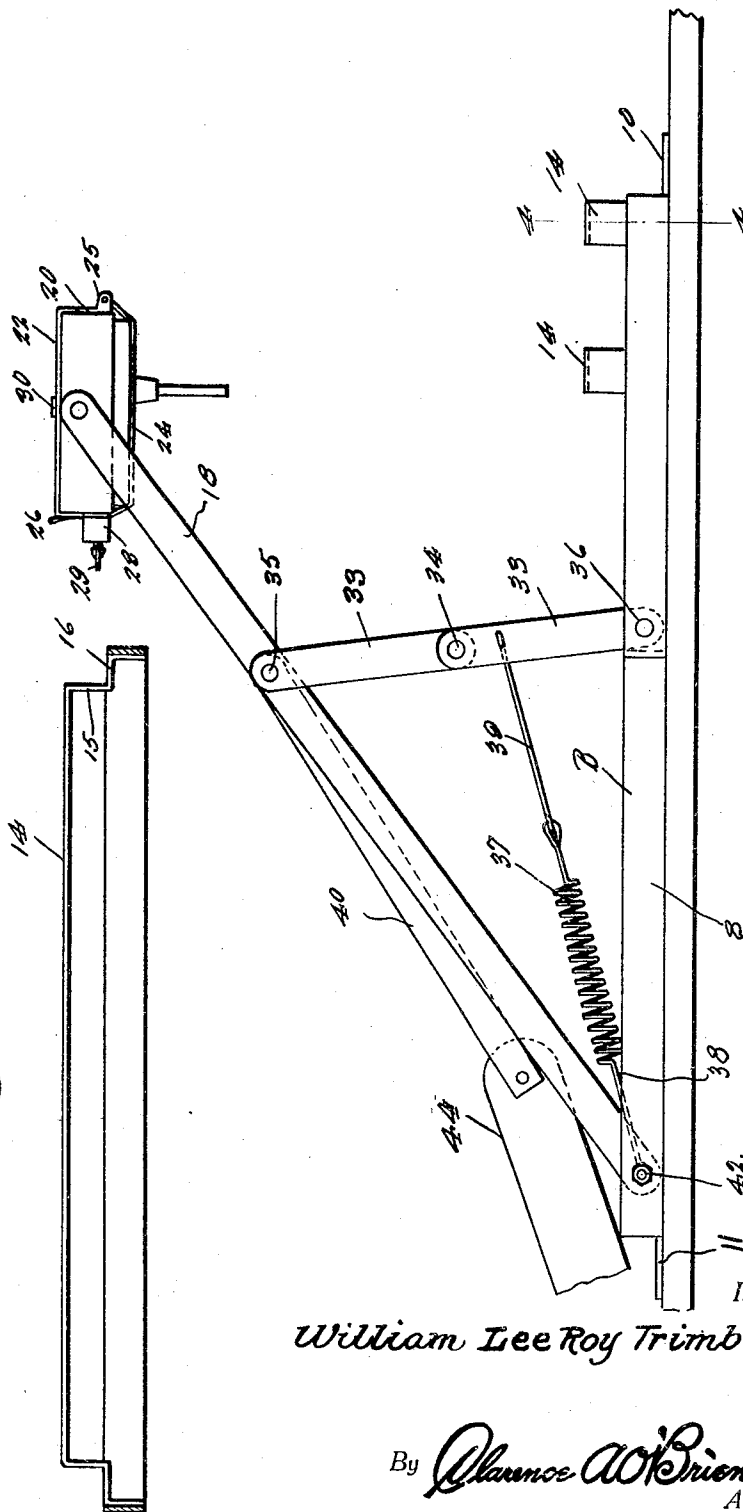
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Fig. 3.

Fig. 4.



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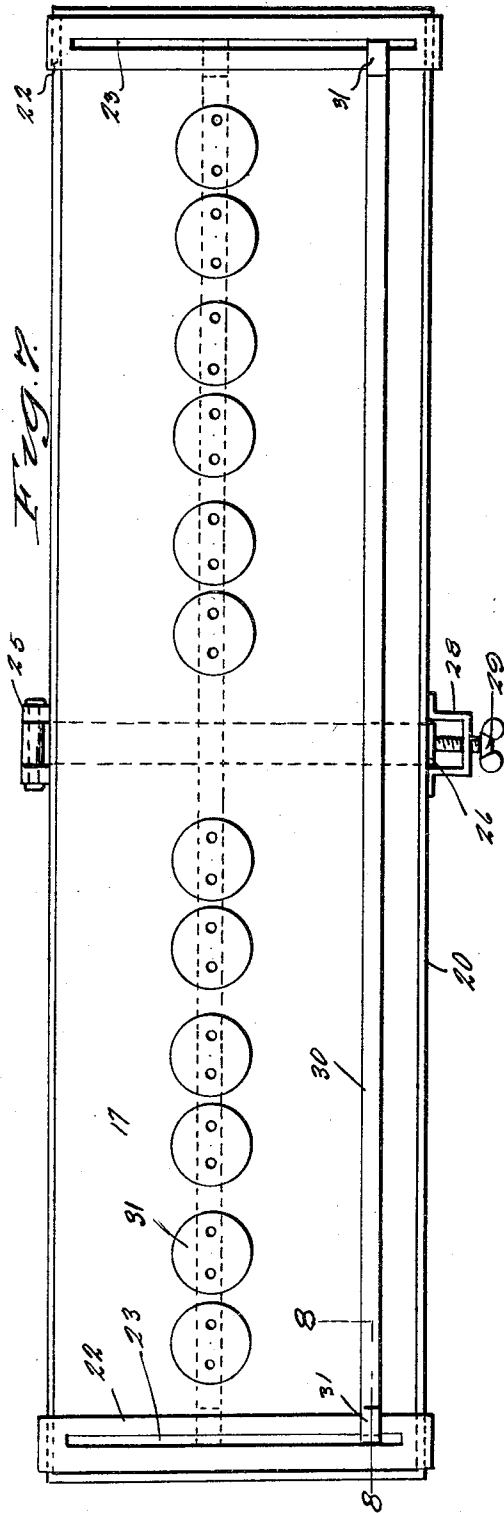
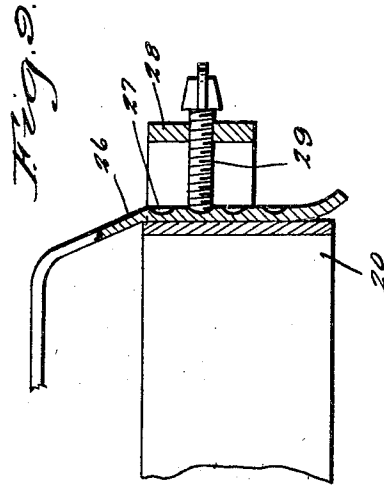
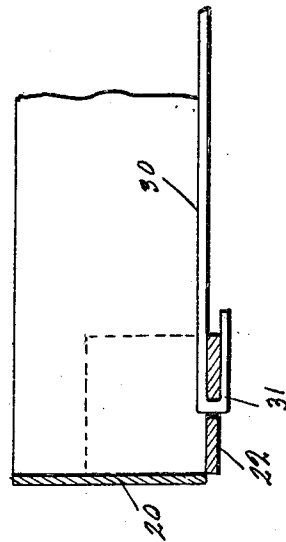


Fig. 8



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UNITED STATES PATENT OFFICE

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CYLINDER HEAD STAND

Application filed March 30, 1929. Serial No. 351,332.

The present invention relates to a stand for holding a cylinder head so that the valves therein may have their springs easily removed and so that the valves may be conveniently ground.

Another very important object of the invention resides in the provision of a stand of this nature, which is simple in its construction, strong and durable, compact and convenient in its arrangement of parts, easy to manipulate, and otherwise well adapted to the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is a top plan view of the stand embodying the features of my invention.

Figure 2 is a side elevation thereof.

Figure 3 is another side elevation thereof showing the stand in a different position.

Figure 4 is a detail transverse section taken substantially on the line 4—4 of Figure 3.

Figure 5 is a perspective view of the spring compressor.

Figure 6 is a detail section taken substantially on the line 6—6 of Figure 1.

Figure 7 is a bottom plan view of the cylinder head holding frame with the head therein.

Figure 8 is a detail section taken substantially on the line 8—8 of Figure 7.

Figure 9 is a detail section taken substantially on the line 9—9 of Figure 1.

Referring to the drawings in detail, it will be seen that the numeral 5 denotes the top of the work bench on which is mounted a substantially rectangular base frame B, including ends 6 and 7, and sides 8, which are offset intermediate their ends as at 9, so that the width of the forward portion of the base frame is slightly greater than the rear portion thereof. Ears 10 project from the cross member 7, while ears 11 project from the rear cross member 6 and these ears 10 and 11 are screwed or otherwise secured to the

bench 5. A pair of spaced parallel transverse ledge bars 14 have depending end extensions 15 offset as at 16 and secured between the front end portions of the side bars 8, so that a cylinder head 17 may rest thereon. A pair of arms 18 are pivotally mounted between the rear ends of the sides 8 by means of a cross rod 19. A rectangular cylinder head holding frame 20 has its ends pivoted as at 21, to the ends of the arms 18. A pair of end plates 22 extend across the frame and are longitudinally slotted as at 23. The head 17 rests on these plates 22 and a strap 24 is hingedly mounted as at 25, on one side of the frame 20 and has an angularly extending end 26 provided with indentures 27. The ends 26 are adapted to be passed through loops 28 on the other side of the frame 20 so that set screws 29 may engage in the indentures 27 and hold the head in place. Thus, this holding strap is adjustable to fit different sized heads. A rod 30 has ends 31 extending through the slots 23 so that the rod 30 may be slid along the plate 22 either to an out of the way position as shown in full lines in Figure 7 or to a position toward the center as is shown in dotted lines in Figure 7, to prevent the valves 33 from falling out of the blocks after the springs and keys have been removed. Links 33 are pivoted together as at 34, and as at 35 are pivoted to intermediate portions of the arms 18 and as at 36 to the sides 8 immediately forwardly of the offset portions 9. Spring means 37 tend to hold the links in alignment with the arms 18 raised, that is, at an acute angle to the base frame B.

By breaking the links, it will be seen that the holder frames and the arms will swing downwardly so that the block may rest on the ledge bars 14. This spring means 37 is anchored on the rod 19 by means of a link 38, and is anchored to the lower links 33 by a tie rod 39 of V-shaped formation. The pivot means 35 is in the form of a rod extending between the arms 18 and arms 40 are pivotally mounted thereon and held together by cross braces 41. A rod 42 extends between the extremities of the arms 40. A sleeve 43 is slidable on the rod 42 and has an arm 44 extend-

ing therefrom, to which is pivotally engaged a spring compressor 45, having a bifurcated end 46 for engaging a valve spring. By placing the valve head in its cylinder head holder and clamping the same in place as described heretofore and placing the rod 30 in the dotted line position in Figure 7, it will be seen that the links 33 may be broken to allow the arms 18 to swing downwardly and rest the cylinder head block on the ledge bars 14 and then the arms 40 may be swung upwardly and the arm 44 swung over to extend forwardly and may be slid transversely so as to engage the spring compressor 47 with the springs of the valves so as to release the keys one at a time. After this has been accomplished the arm 44 and the arms 40 may be swung out of the way and the holder 30 moved upwardly and reversed and then moved downwardly to again rest the cylinder head on the ledges 14, for valve grinding purposes.

It is thought that the construction, operation, utility and advantages of this invention will now be quite apparent to those skilled in this art, without a more detailed description thereof. The present embodiment of the invention has been disclosed in detail, merely for the purposes of exemplification, since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description. It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to, without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what is claimed as new is:

1. A stand of the class described for a cylinder head including a base structure, a swinging structure mounted in the base structure, a holder rotatably mounted in the swinging structure, a ledge on which the head may be rested, a pair of links pivoted together and pivoted to the swinging structure and base structure for holding the swinging structure raised, said holder comprising a rectangular frame with plates across the ends thereof so that a cylinder head may be mounted therein, and adjustable strap means on the frame for holding said head in place.

2. A stand of the class described for a cylinder head including a base structure, a swinging structure mounted in the base structure, a holder rotatably mounted in the swinging structure, a ledge on which the head may be rested, a pair of links pivoted together and pivoted to the swinging structure and base structure for holding the swinging structure raised, said holder comprising a rectangular frame with plates across the ends thereof so that a cylinder head may be mounted therein, and adjustable strap means on the

frame for holding said head in place, arms swingably mounted in the swinging structure and having a cross rod therebetween, a sleeve slidable on the cross rod, a member attached to said sleeve, and a spring compressor pivotally engaged with said member last mentioned.

3. A stand of the class described comprising a substantially rectangular base frame having its side portions offset intermediate its ends, ledge bars across one end of the base frame, a pair of arms pivoted to the sides of the base frame adjacent the other end, a pair of links, the links of each pair being pivoted together and pivotally engaged with respective arm and side of the base frame, so that the lower link will engage the offset portion when said links are in alignment to hold said arms raised.

4. A stand of the class described comprising a substantially rectangular base frame having its side portions offset intermediate its ends, ledge bars across one end of the base frame, a pair of arms pivoted to the sides of the base frame adjacent the other end, a pair of links, the links of each pair being pivoted together and pivotally engaged with respective arm and side of the base frame, so that the lower link will engage the offset portion when said links are in alignment to hold said arms raised, a cylinder head holder frame pivoted between the extremities of said arms.

5. A stand of the class described for a cylinder head including a base structure, a swinging structure mounted in said base structure, a holder rotatably mounted in the swinging structure, a ledge on which the head may be rested, said holder comprising a rectangular frame, longitudinally slotted end plates extending transversely of said frame at opposite ends thereof so that a cylinder head may be mounted within said frame, a longitudinally extending bar having its opposite ends slidable within the slots of said end plates, a retaining strap hinged at one end to one side of said frame intermediate the ends of said frame, for disposition transversely of the cylinder head mounted within the frame, and adjustable means for securing the other end of said retaining strap to the opposite side of said frame.

6. A stand of the class described for a cylinder head including a base structure, a swinging structure mounted in said base structure, a holder rotatably mounted in the swinging structure, a ledge on which the head may be rested, said holder comprising a rectangular frame, longitudinally slotted end plates extending transversely of said frame at opposite ends thereof so that a cylinder head may be mounted within said frame, a longitudinally extending bar having its opposite ends slidable within the slots of said end plates, a retaining strap hinged at one

end to one side of said frame intermediate the ends of said frame, for disposition transversely of the cylinder head mounted within the frame, and adjustable means for securing the other end of said retaining strap to the opposite side of said frame, arms swingably mounted in said swinging structure and having a cross rod therebetween, a member slidable longitudinally on said cross rod, and a spring compressor pivotally engaged with said last referred to member.

7. A stand of the class described for a cylinder head including a base structure, a swinging structure mounted in said base structure, a holder rotatably mounted in the swinging structure, a ledge on which the head may be rested, said holder comprising a rectangular frame, longitudinally slotted end plates extending transversely of said frame at opposite ends thereof so that a cylinder head may be mounted within said frame, a longitudinally extending bar having its opposite ends slidable within the slots of said end plates, a retaining strap hinged at one end to one side of said frame intermediate the ends of said frame, for disposition transversely of the cylinder head mounted within the frame, and adjustable means for securing the other end of said retaining strap to the opposite side of said frame, arms swingably mounted in said swinging structure and having a cross rod therebetween, a member slidable longitudinally on said cross rod, and a spring compressor pivotally engaged with said last referred to member, and spring controlled link members pivoted together and pivoted to the swinging structure and base structure for holding the swinging structure raised.

In testimony whereof I affix my signature.
WILLIAM LEE ROY TRIMBLE.