

B. C. I. HALLGREN.
VALVE LIFTING DEVICE.
APPLICATION FILED NOV. 20, 1911

1,044,517.

Patented Nov. 19, 1912.

Fig. 1

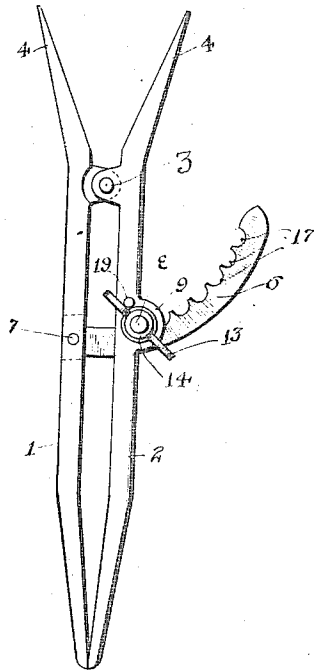


Fig. 3

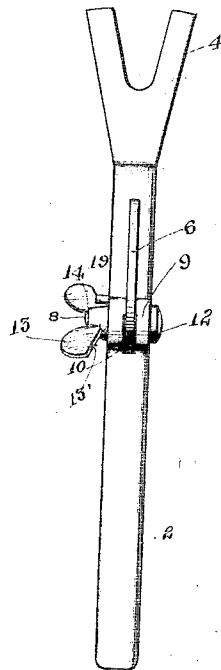


Fig. 2

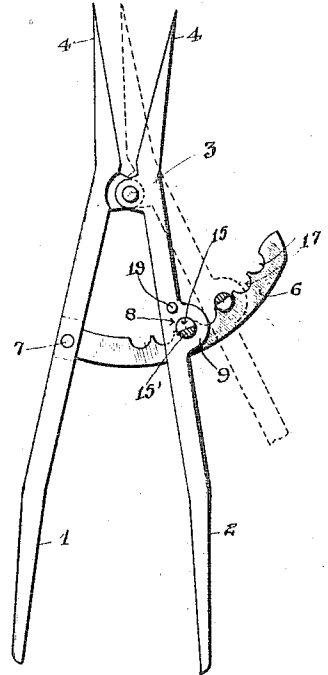


Fig. 4

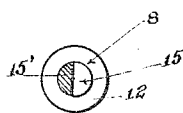


Fig. 5

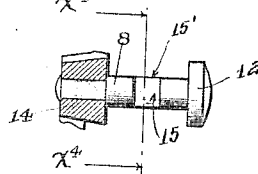


Fig. 6

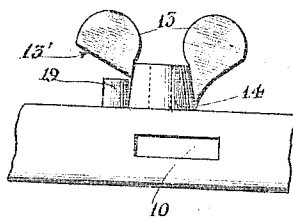
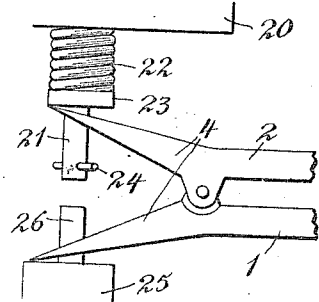


Fig. 7



Witnesses:
Sully Russo.
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UNITED STATES PATENT OFFICE.

BROR CARL IVAR HALLGREN, OF PASADENA, CALIFORNIA.

VALVE-LIFTING DEVICE.

1,044,517.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed November 20, 1911. Serial No. 661,406.

To all whom it may concern:

Be it known that I, BROR CARL IVAR HALLGREN, a subject of the King of Sweden, residing at Pasadena, in the county of Los Angeles and State of California, have invented a new and useful Valve-Lifting Device, of which the following is a specification.

This invention relates to means for lifting the valves of gas engines, and the main object of the invention is to provide a device for this purpose with convenient and effective means for releasably locking the valve lifter in position to hold the valve open.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate an embodiment of my invention, and referring thereto: Figure 1 is a side elevation of the valve lifter in operated position. Fig. 2 is a similar view, showing the valve lifter in released position. Fig. 3 is a side elevation of the valve lifter. Fig. 4 is a transverse section through the locking device, on line x^1-x^2 in Fig. 5. Fig. 5 is a side elevation of the locking device, partly in section. Fig. 6 is an elevation of a portion of the lever showing the locking device thereon. Fig. 7 is a side elevation of a portion of the valve mechanism of an engine, showing the application of the valve lifter thereto.

The valve lifter comprises a pair of levers 1 and 2 pivoted together at 3 and provided with forks 4 for engaging with parts on the valve stem and engine, to lift the valve from its seat in well known manner.

Means are provided for locking the levers 1 and 2 in operated position, said means comprising a segmental bar 6 pivotally mounted at 7 on the lever 1 and a locking pin 8 mounted in the lever 2. Said lever 2 may have an enlarged portion 9 forming a bearing for the locking pin 8, said enlarged portion being formed with a slot 10 through which the segmental bar 6 slides. Locking pin 8 is provided at one end with a head 12 and at the other end with a handle consisting of a collar 14 fast on said pin and two wings 13 on said collar, the head 12 and collar 14 engaging with lever 2 to retain the pin on said lever. Locking pin 8 is formed with a slot 15 and is so located with reference to the slot 10 that in the rotation of said pin the slot 15 therein may be brought into register with the slot 10 so as to form a clear passage for the segmental bar 6, or

the unslotted portion 15' of the pin may, by suitably turning the pin, be brought into the slot 10 to form an obstruction therein. The segmental bar 6 is formed with a series of recesses or notches 17 for receiving the locking pin, said recesses being preferably rounded so as to fit the unslotted portion 15' of the locking pin, when the pin is turned to locking position. In order to properly limit the rotative movement of the locking pin, a stop pin or projection 19 is provided on lever 2, adapted to engage with one of the wings 13 on the locking pin, the other wing 13 being cut away as shown at 13' to enable it to pass the stop projection 19 without striking the same.

Fig. 7 shows the manner of application of the device to the lifting valve of an engine. The cylinder is indicated at 20, the valve stem 21 being provided with the usual spring 22 and with a collar 23 which is loose on the stem and engages a pin 24 on the stem. 26 indicates a tappet rod sliding in a tappet guide 25.

The operation is as follows: The locking pin having been moved to position in which its slot 15 registers with the slot 10 in lever 2, the said lever is moved to position shown in dotted lines in Fig. 2, and the tool is then slipped into position on the valve stem one of the jaws 4 of the device engaging with the collar 23 and the other of the jaws engaging with the tappet 25 and the handle portions of the levers are then moved toward one another as indicated in Fig. 7 and in full lines in Fig. 2, so as to lift the valve. When the valve has been lifted to the desired amount, the handle of the pin is turned so as to bring one of the stop wings 13 thereon against the stop projection 19 and in this position the unslotted portion 15' of the locking pin extends into the slot 10 and comes into engagement with one of the recesses or notches 17 in the segmental bar 6, thereby locking said bar, and the tool in operated position.

What I claim is:—

1. A valve lifter comprising a pair of levers pivotally connected together, a segmental bar pivotally mounted on one of said levers, and provided with a series of recesses, the other of said levers having a slot through which said segmental bar extends, and a locking pin rotatably mounted in said slotted lever, and having a slotted portion adapted in one position of the pin to register

ter with the slot in the lever so as to allow free movement of the segmental bar, and in another position of the pin, to enter the slot in the lever and engage with one of the recesses in the segmental bar to lock the levers in relative position, and a handle for said locking pin.

2. A valve lifter comprising a pair of levers pivotally connected together, a segmental bar pivotally mounted on one of said levers, and provided with a series of recesses, the other of said levers having a slot through which said segmental bar extends, and a locking pin rotatably mounted in said slotted lever, and having a slotted portion adapted in one position of the pin to regis-

ter with the slot in the lever so as to allow free movement of the segmental bar, and in another position of the pin, to enter the slot in the lever and engage with one of the recesses in the segmental bar to lock the levers in relative position, and a handle for said locking pin, and a stop projection on said slotted lever for engaging the handle to limit the rotative movement thereof.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 10th day of November, 1911.

BROR CARL IVAR HALLGREN.

In presence of—

ARTHUR P. KNIGHT,
GLADYS RUSSELL.