T. T. MERRIMAN & B. F. PEART.

VISE.

APPLICATION FILED MAY 18, 1911.

1,019,682.

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Fig. 1

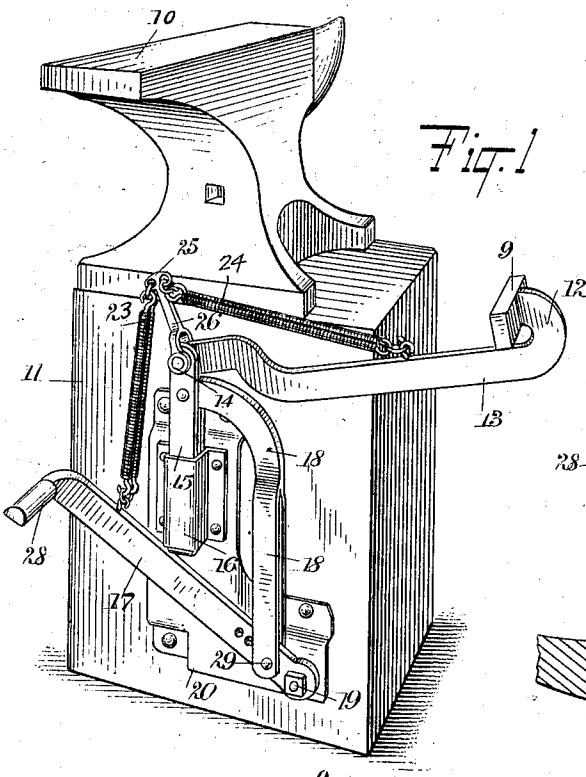


Fig. 4.

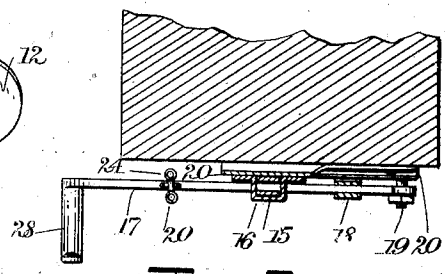


Fig. 3.

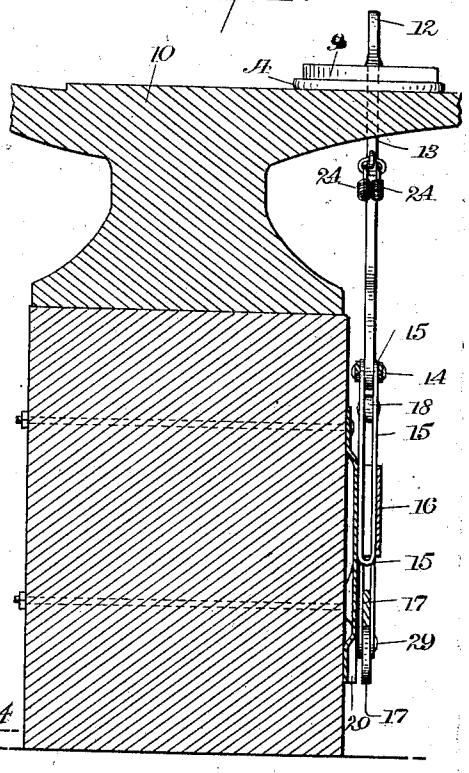
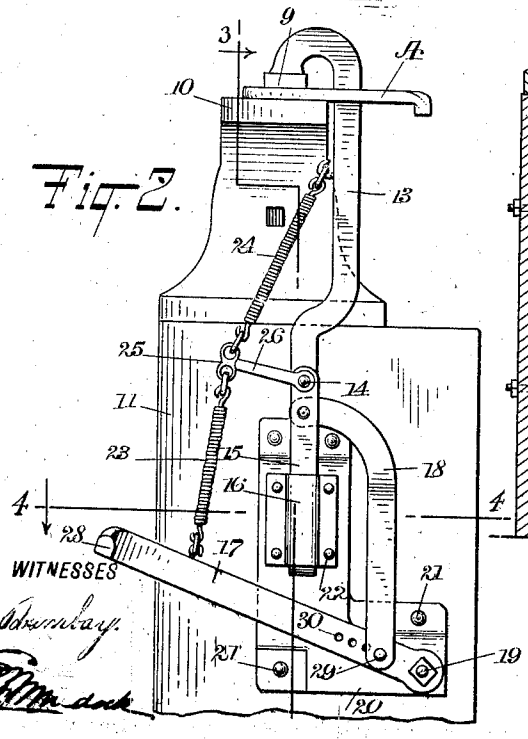


Fig. 2.



WITNESSES

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VISE.

1,019,682. Specification of Letters Patent. Patented Mar. 5, 1912.

Application filed May 18, 1911. Serial No. 627,932.

To all whom it may concern:

Be it known that we, THOMAS T. MERRIMAN and BENJAMIN F. PEART, citizens of the United States, and residents of Central Point, in the county of Jackson and State of Oregon, have invented a new and Improved Vise, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a vise attachable to the anvil block or pedestal and operable in conjunction with the anvil; to provide an operating mechanism for the movable jaw which automatically adjusts the clamping member thereof in operative relation to the anvil; and to provide a mechanism of the character mentioned which is simple, durable and readily adjusted to the anvil block of ordinary construction.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of an anvil and block therefor provided with a vise constructed and arranged in accordance with the present invention; Fig. 2 is a side view of the anvil, showing the block thereof equipped with a vise constructed and arranged in accordance with the present invention, the vise being shown in operative holding position; Fig. 3 is a vertical section taken on the line 3—3 in Fig. 2; and Fig. 4 is a horizontal cross section taken on the line 4—4 in Fig. 2.

The vise shown in the accompanying drawings is employed principally in the operation known as hot rasping. It is advantageous to rasp certain articles while the same are softened by the heat of the forge, to do which the article is rested on the flat of the anvil. In the present instance the vise is provided with a holding foot 9, the lower or holding surface whereof is downturned to rest upon the flat of the anvil 10. The anvil 10, as in usual installations, is rested upon a pedestal or anvil block 11 and there secured. The vise shown in the accompanying drawings is pivotally mounted upon the block 11, permitting thereby the change or replacement of the anvil. The foot 9 is disposed at the end of a gooseneck 12 formed at the end of the swinging bar 13. The bar 13 is shaped substantially as shown in Fig. 2 of the drawings, the body portion thereof being offset to dispose the pivot 14 beneath the operative position of the foot 9. In this manner is provided against exerting a rocking tendency upon the foot 9.

The bar 13 is connected by means of the pivot 14 with a guide plunger 15. The plunger 15 is mounted in a socket 16 through which it is reciprocated by means of a foot lever 17 to which it is operatively connected by means of a link 18. The lever 17 is pivotally connected by means of a bolt 19 with the face plate 20. The face plate 20 is secured by means of fastening devices 21 upon the block 11. The socket 16 is formed from a plate which is secured by means of rivets 22 upon the said plate.

To cause the bar 13 to assume the vertical position above the anvil 10 there are provided the spiral springs 23—24. The springs 23—24 are connected to the crab 25 formed at the free end of a rocking arm 26. The arm 26 is rotatably mounted upon the pivot 14. A stop is formed by the arm 26 to limit the throw of the plunger 13 when drawn forward by the spring 24. When thus arrested the bar 13 assumes the position shown in Fig. 1 of the drawings.

When the vise is properly installed on the block 11, as shown in the drawings, to operate the same the smith, having placed on the anvil 10 the article A which is to be rasped, which, in the present drawings is indicated as a horse shoe, he then places his foot on the treadle 28 and depresses the lever 17. The spring 23 being connected with the lever 17 near the free end thereof, and the link 18 being connected with the said lever near the fulcrum end thereof, the extent of the movement of the spring 23 is proportionately greater than the extent of the movement of the link 18. This operation accelerates the swing of the bar 13 about the pivot 14, causing the said bar to assume the vertical position seen in Fig. 2. This operation is so timed to the movement of the link 18 that prior to the foot 9 reaching the article A to be grasped, the said bar 13 has assumed the vertical position. The continued depression of the treadle 28 by the smith now exerts a pull through the intermediary of the link 18 and the plunger 15 upon the bar 13, the operation of the plunger 15 being guided in the socket 16. The

pressure thus imposed upon the article A by the foot 9 is proportioned to the leverage of the lever 17 multiplied by the force applied at the treadle 28. During the operation of the vise, after the foot 9 has been seated upon the article A, the springs 23—24 are expanded to accommodate the action of the lever 17 during the manipulation thereof to produce what may be termed the direct pull on the bar 13. The leverage exerted by the lever 17 is varied by shifting the bolt 29 and the end of the link 18 connected thereby to the lever 17, to any of the perforations 30 formed in the said lever 17, as shown in the drawings. When now in the course of operation the smith releases the treadle 28, the springs 23—24 contracting lift the lever 17. The lift of the lever 17 raises the link 18 and bar 13 connected therewith to move the foot 9 from the article A. The center of gravity of the bar 13 being to the off-set side of the body of the said bar, or to the right of the pivot 14 as viewed from Fig. 2 of the drawings, the bar 13 swings outward and drops to the position shown in Fig. 1 of the drawings, when the springs 23—24 are relaxed. The pull of the spring 24 when the bar 13 assumes the horizontally extended position shown in Fig. 1 rotates the arm 26 on the pivot 14 until the same is arrested, in which position it is held, as shown in Fig. 1. The object of this construction is to prevent the arm 26 throwing past a vertical line drawn from the center of the pivot 14, in which position, as will be seen, the pull of the spring 23 when the lever 17 is depressed would serve to reverse the desired operation as above described. In the normal inoperative position of the vise the springs 23—24 and the connecting arm 26 assume the position substantially shown in Fig. 1 of the drawings.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:—

In a vise of the character described, a foot lever; a reciprocatory plunger; a socket for said plunger to guide the same; a link connecting said plunger and said lever, said link connected with said lever at near the fulcrum thereof; a swingable arm pivotally connected with said plunger to normally rest in a horizontal position; a spring operatively connected with said swingable arm and said lever said spring being connected with said lever at near the power application end thereof; and an arm pivotally connected to said plunger and said swingable arm at the junction thereof to hold said spring away from the pivot of said swingable arm and in operative position to move said swingable arm.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS THEODORE MERRIMAN.
BENJAMIN FRANKLIN PEART.

Witnesses:
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