(Model.)

E. C. HALL & C. D. SMITH.

Vise.

No. 232,959. **Patented Oct. 5, 1880.**

Fig. 1.

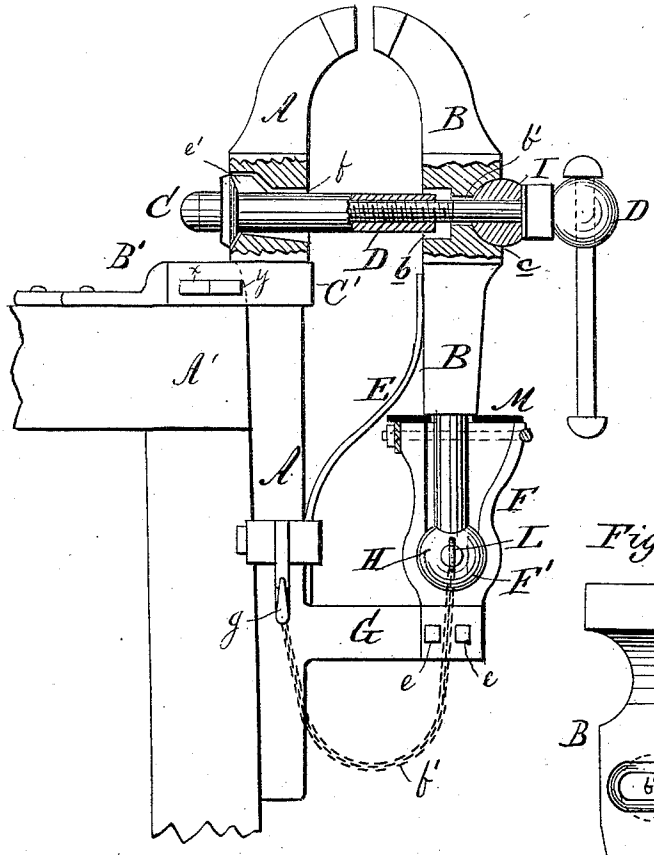


Fig. 2.

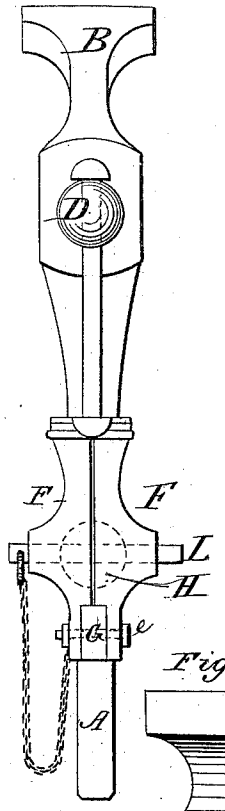


Fig. 4.

Fig. 5.

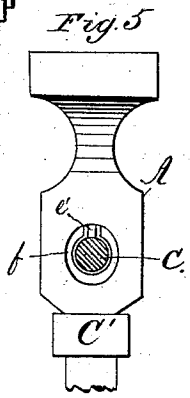
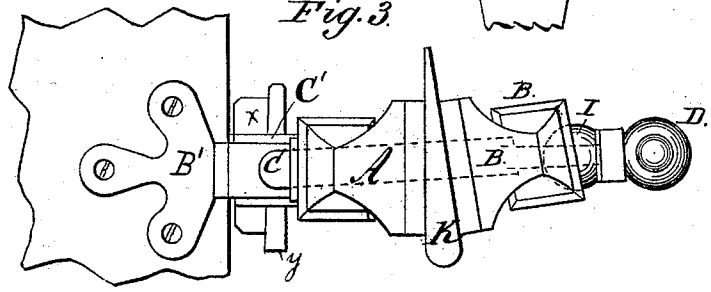


Fig. 3.



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EDGAR C. HALL, OF IONE, AND CHARLES D. SMITH, OF AMADOR CITY, CALIFORNIA.

VISE.

SPECIFICATION forming part of Letters Patent No. 232,959, dated October 5, 1880.

Application filed May 28, 1880. (Model.)

To all whom it may concern:

Be it known that we, EDGAR C. HALL, of Ione, Amador county, State of California, and CHARLES D. SMITH, of Amador City, Amador county, State of California, have invented a new and Improved Vise, of which the following is a specification.

The object of this invention is to provide a device for securely holding wedge-shaped pieces of iron or other material.

The invention consists of a movable vise-jaw supported on a ball-and-socket joint or joints, so that it may have lateral and angular adjustment.

Figure 1 is a side elevation of the vise, partly in section. Fig. 2 is a front elevation of the same; and Fig. 3 is a plan of the vise holding a wedge between its jaws. Fig. 4 is a detail, showing the horizontal elongated recess in the inner side of the movable jaw; and Fig. 5 is a similar view, showing the enlarged recess in the inner side of the fixed jaw.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the fixed jaw of the vise, held by strap C′ passing around it, said strap being secured to bracket B′, bolted to the table A′, by keys *x y*, as shown in Figs. 1 and 3 of drawings. B is the movable jaw. C is the screw-sleeve, formed with rib or wing *c′*, to prevent it from turning in the enlarged recess *f*, as shown in Figs. 1 and 5 of drawings; and D is the screw that holds the jaws together, and E the usual spring to move or assist in moving them apart.

On the projecting arm G of the fixed jaw A is secured, by bolts *e e*, an upright socketed block, F, having a spherical socket, F′, within it, in which socket F′ is introduced the ball H, that terminates the foot of the movable jaw B. Said block F is made in two vertical sections bolted or otherwise secured together, as shown—above by screw-ended staple, cross-bar, and nuts, and below by bolts and nuts. The said jaw B is recessed at *b* about the end of the screw-sleeve C, in order to be free for lateral or angular motion, and is provided on its front with a semi-spherical recess, *c*, connecting the recess *b* by passage *b′*, to receive the ball I that is secured centrally on the outer extension of the screw D.

The ball-and-socket joints formed, respectively, by the socket F′ and ball H and the recess *c* and ball I are the only bearings of the movable jaw B. Hence it will be seen that said jaw is free to move and adjust itself so that its face will bear evenly and firmly on the surface of a wedge, as seen in Fig. 3, wherein K represents the wedge. Should it be desired to hold the said jaw B rigidly so that it can make only the usual backward and forward movements, the pin L, held by chain *f′*, extending from hook *g* on the lower part of jaw A, is thrust through the block F and ball H, thereby preventing the lateral movement of said ball.

A washer, M, set around the leg of the jaw B, over the top of the socketed block F, prevents the falling therein of chips or filings to interfere with the working of the ball-and-socket joint.

It will be seen that as the sleeve C has a lateral as well as vertical movement in the recess *f*, said sleeve and the screw D may, by withdrawing the pin L, be adjusted to one side of an imaginary line drawn in a vertical plane and at right angles with the jaw A. The sleeve C and screw D being in this adjusted position, it is obvious that the jaw B may be turned on the ball I as a center, so as to clamp the wedge K, and the edges of the jaws stand flush one with the other, as shown in Fig. 3 of drawings.

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

In a vise, the jaws A and B, provided with enlarged recesses *f* and *b*, to allow vertical and horizontal movement of the sleeve C and screw D, in combination with the block F, formed with socket F′, to receive ball H on lower end of jaw B, the pin L, and washer M, all constructed and operating substantially as shown and described.

EDGAR C. HALL.
CHARLES D. SMITH.

Witnesses:
PHIL. KENNEDY,
A. D. STREETER.