

(No Model.)

C. H. AYARS.
VISE.

No. 499,494.

Patented June 13, 1893.

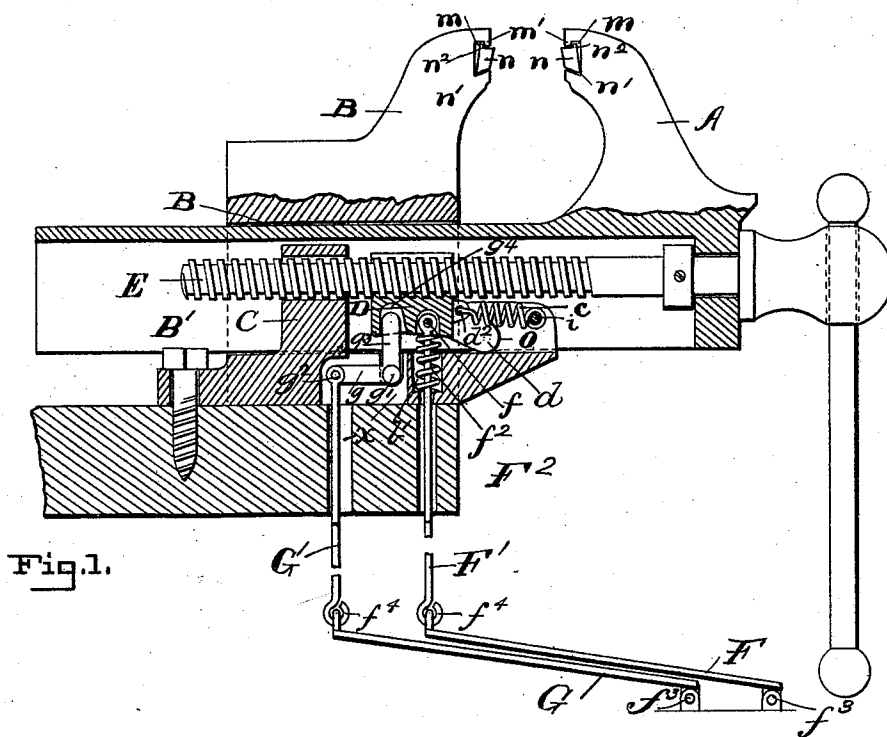


Fig. 1.

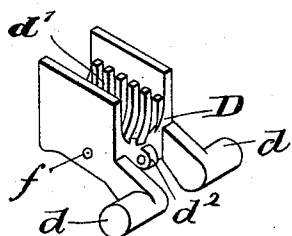


Fig. 2.

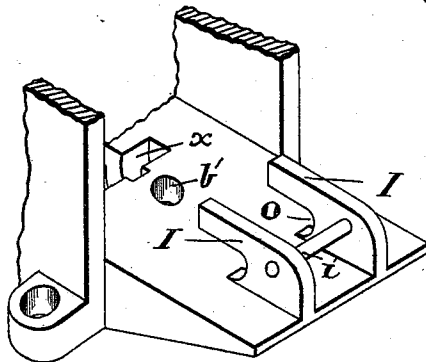


Fig. 4.

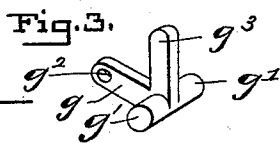


Fig. 3.

WITNESSES: _____
A. O. Babendriew.
Alvan Macauley.

INVENTOR: _____
Chas H. Ayars
By Chas B. Mann
att'y

UNITED STATES PATENT OFFICE.

CHARLES H. AYARS, OF HAVRE DE GRACE, MARYLAND.

WISE.

SPECIFICATION forming part of Letters Patent No. 499,494, dated June 13, 1893.

Application filed February 17, 1893. Serial No. 462,678. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. AYARS, a citizen of the United States, residing at Havre de Grace, in the county of Harford and State of Maryland, have invented certain new and useful Improvements in Vises, of which the following is a specification.

My invention relates to an improvement in vises, and has for its object to provide a device in which the movable jaw may be readily adjusted to or from the fixed jaw, without the necessity of running the length of the screw to obtain the desired position.

The invention is illustrated in the accompanying drawings in which—

Figure 1, is a longitudinal, vertical section through my improved vise. Fig. 2, is a detail of the pawl, D, bearing the half-nut. Fig. 3, is a detail of the bell-crank lever, F. Fig. 4, is a detail of lugs or projections, I.

The letter, A, designates the movable jaw of the vise; B, the stationary jaw; C, a stationary guide located within the casing, B', which forms part of the stationary jaw, B, and through which the screw, E, passes; D, a pawl bearing the half nut, d' , and having pivot bearings, d , journaled in the socket, O, formed by the lugs or projections, I, inside and on the bottom of the casing, B'. A spring, c , is secured at one end to a bar, i , which connects the projections, I, and at the other, to an eye in the boss, d^2 , upon the pawl, D. The function of this spring is to keep the pivot bearings, d , always within the socket, O, and to hold the screw-threads of the half-nut, d' , in normal engagement with the thread upon the screw, E. Treadles, F, and, G, are fulcrumed at one end to lugs, f^3 , upon the floor. The connecting rod, F', is hinged at its lower end to the treadle, F, and at its upper end, is pivoted at, f , to the pawl, D. A compression spring, f^2 , is on this connecting rod, and located in a recess, b' , in the casing, B', and is designed to assist in keeping the pawl, D, normally in engagement with the screw, E, and to return it to engagement therewith after it has been withdrawn by the treadle, F. A bell-crank lever is pivoted in a recess, X, in the bottom of the casing, B', and oscillates on pivots, g' . A connecting rod, G', is piv-

oted at its upper end to the horizontal arm, g , of the bell-crank lever, and at its lower end, is hinged to the treadle, G. The end of the vertical arm, g^3 , of the bell-crank lever is rounded and takes into a corresponding recess, g^4 , in the pawl, D.

The operation of the vise is as follows:—By means of the treadle, F, the pawl, D, is depressed, and the threads upon its half-nut, d' , are withdrawn from engagement with those upon the screw, E, whereupon the movable jaw, A, may be slid to any desired position without the screw being turned. On releasing the treadle, F, the half-nut on the pawl will re-engage with the threads of the screw, E, and the jaw, A, may then be moved to or from the jaw, B, by the means of screw, E. When an object is to be clamped in the vise, the treadle, F, is depressed, allowing the movable jaw to slide up till it touches; the treadle, F, is released, allowing the pawl to engage the screw, and then the treadle, G, is depressed, which causes the vertical arm of the bell crank lever, to move the pawl from its socket and toward the guide, C, and since the pawl is in engagement with the screw which carries the movable jaw, will cause said movable jaw to slide toward the fixed jaw and bind against the object to be clamped, whereupon the operator may have a free use of his hands, to turn the screw, &c. Work-supporting-blocks, n , are loosely disposed in recesses, m , in the jaws of the vise; they are supported on the edges, n' , eccentrically with respect to the center of gravity of the block, so that the tendency of said blocks is to fall forward from the recesses, but they are retained in their normal position shown, by a lug, n^2 , upon the supporting blocks, co-acting with a corresponding lug, m' , within the recesses, m . The function of these loose blocks is to act as a bottom-support for any object clamped in the jaws of the vise, to prevent such object from slipping down between the jaws. They are to be used when the object or piece of work is small enough to be clamped between the jaws, above the top of said blocks. When larger objects are clamped, the supporting blocks will be pushed entirely within their recesses and the

jaws present flat surfaces. If desired, the supporting blocks may be withdrawn from their recesses, and the vise used without them.

Having thus described my invention, I
5 claim as new and desire to secure by Letters Patent—

1. In a vise the combination of a fixed jaw;
a sliding jaw; a screw affixed to said sliding
jaw and movable therewith; a pawl pivoted
10 in the stationary jaw and bearing a half-nut
adapted to engage said screw; a spring for
retaining said pawl in normal engagement
with said screw; means for withdrawing the
half-nut from engagement with the screw; a
15 bell-crank lever pivoted to the stationary jaw,
and having one of its arms engaging a recess
in the pawl; and means for operating said
bell-crank lever, substantially as described.

2. In a vise the combination of a stationary
20 jaw: a sliding jaw; a screw journaled in said
sliding-jaw and movable therewith; a station-

ary guide for the screw secured in the casing
through which the screw passes loosely; a
pawl pivoted in bearings on the casing, and
having a half-nut for engaging the screw; a 25
spring connected at one end to the lugs and
at the other to the pawl; a depressible rod
connected to the pawl for withdrawing the
half-nut from engagement with the screw; a
compression spring, f^2 , on the depressible rod, 30
co-acting with the half-nut on the pawl; a
bell-crank lever pivoted in the casing, and
having one arm engaging in a recess in the
said pawl, and a depressible rod pivoted to
the other end of said bell-crank lever for op- 35
erating the same, as described.

In testimony whereof I affix my signature in
the presence of two witnesses.

CHARLES H. AYARS.

Witnesses:

DAVID M. AYARS,
J. W. FOSTER.