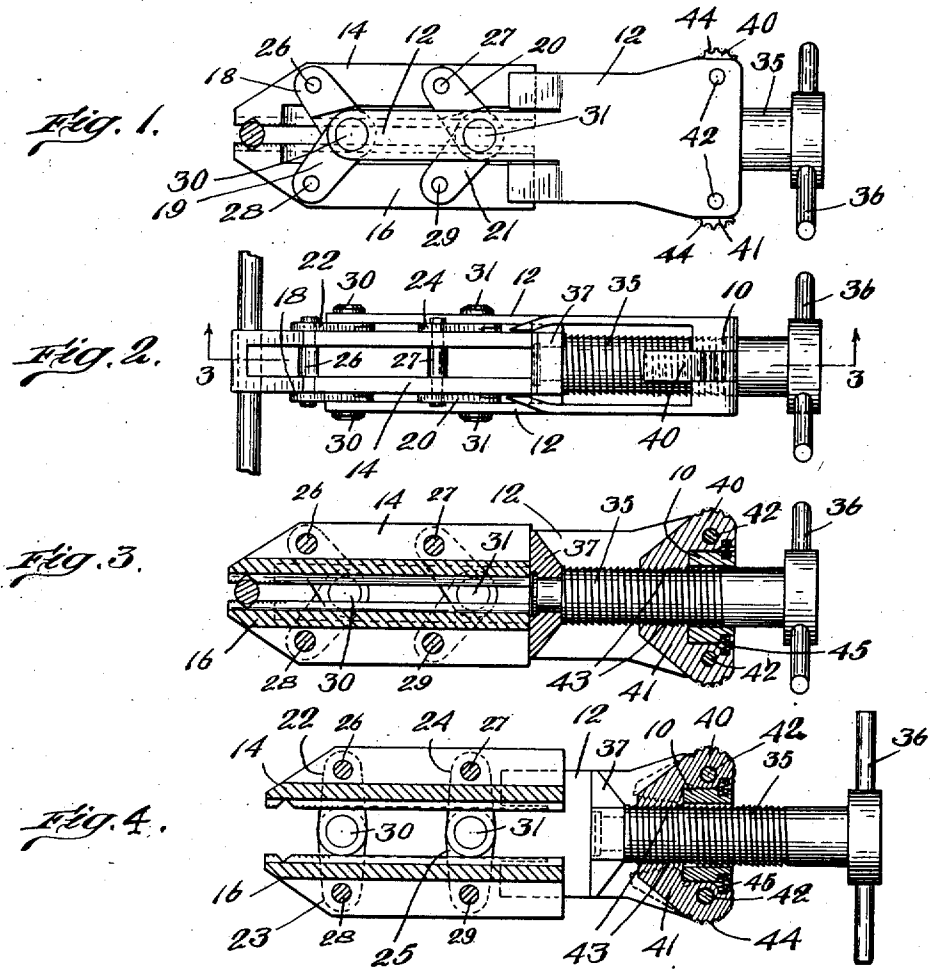


C. E. FISH.
HAND VISE.

APPLICATION FILED JAN. 8, 1914.

1,100,067.

Patented June 16, 1914.



Witnesses:

H. B. Davis.
C. Doyle.

Inventor:

Charles E. Fish
By *Hayes & Hamman*
Attys

UNITED STATES PATENT OFFICE.

CHARLES E. FISH, OF WALTHAM, MASSACHUSETTS.

HAND-VISE.

1,100,067.

Specification of Letters Patent.

Patented June 16, 1914.

Application filed January 8, 1914. Serial No. 810,956.

To all whom it may concern:

Be it known that I, CHARLES E. FISH, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Hand-Vises, of which the following is a specification.

This invention relates to hand-vises and has for its object the construction of a strong and durable vise having parallel jaws, and actuating-means for said jaws which are independent of the jaws and adapted to be moved into and out of engagement therewith quickly.

The vise embodying this invention has a pair of jaws connected by links with a frame whereby they are caused to move in parallel relation, said jaws having their inner ends formed with seats for engagement with the actuating-means and the actuating-means comprises a screw with hand-engaging means for turning it arranged at its outer end, said screw being extended through a smooth bore in the frame whereby it is permitted to slide freely therein, and having at its inner end an abutting block for engagement with the seats at the inner ends of the jaws and a pair of dogs pivoted to the frame having threaded engaging faces for engaging the threads of said screws and having finger-engaging means by which they may be moved on their pivots to disengage the screws, return movement thereof to normal being effected by means of springs which are associated therewith.

Figure 1 is a side elevation of a hand-vise embodying this invention. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal horizontal section taken on the dotted line 3-3 of Fig. 2, and, Fig. 4 is a similar view, the actuating-means for the jaws being removed from engagement therewith.

The frame, as here shown, consists of a block 10 and a pair of long side plates 12, 12, rigidly secured at one end to the opposite ends of said block. Said side plates may be of any suitable shape, so far as my invention is concerned, although they are here shown as made quite wide for a portion of their length and quite narrow for the remainder of their length, the wide portions being arranged adjacent to the block 10 and the narrow portions being remote therefrom.

14 and 16 represent the jaws which are

made alike, although oppositely disposed with respect to each other, and as here shown, each jaw consists of a bar having that side adjacent to the other jaw formed with a grooved, or it may be a flat face, for engagement with a rod, wire or other work to be engaged by the jaws; and having its end beveled from the outer side toward its inner or work-engaging face and having its outer side formed with a longitudinal channel and having its front and rear faces made flat for connection therewith of links which support it and to permit unobstructed movement of said links as the jaws are moved; and having its inner end made flat or otherwise to form a seat for engagement therewith of the actuating-means. Said jaws are made of a thickness somewhat less than the distance between the side plates to provide for the links. Each jaw is here shown as connected by two pairs of links with the side plates 18 and 19, 20 and 21, 22 and 23, 24 and 25 representing the links and said links are pivotally connected at their outer ends to the front and rear faces respectively of the jaws and at their inner ends to the side plates, and for simplicity of construction four pivot pins 26, 27, 28 and 29 which are extended transversely through the jaws serve as pivotal connections for the outer ends of the several links and two pivot pins 30 and 31 which are extended transversely through each side plate serve as pivotal connections for the inner ends of the several links. By means of these connections of the jaws with the side plates they are caused to move longitudinally in parallel relation, yet my invention is not limited to this particular means of connecting the jaws with the side plates. I prefer, however, to employ parallel moving jaws on account of the long work-engaging faces which they will present in all positions.

The actuating-means for the jaws is, as before stated, independent of the jaws and is adapted for quick operation, and, as here shown, said actuating-means comprises a screw 35 which is extended through a smooth bore in the block 10 permitting unobstructed longitudinal movement thereof, its outer end-portion having secured to it a cross-bar 36 or other hand-engaging means for turning and otherwise manipulating it and its inner end-portion being arranged between

the side plates and having at its inner end a block 37 with a flat or other face for engagement with the seats formed on the inner ends of the jaws. The block 37 is swiveled or otherwise loosely connected with the screw permitting a turning movement of the screw independently thereof while the block itself is free to slide between the side plates without turning.

10 The screw 35 is normally engaged by a pair of dogs 40, 41 which are made alike but oppositely disposed. Each dog is arranged between the side plates and pivoted to the block 10, 42 representing the pivot pins and
15 each dog has a threaded engaging face 43 of considerable length for engaging a plurality of threads of the screw, and each dog has a finger-engaging portion 44 which is serrated and which is readily accessible, being extended outward beyond the end of the block, whereby it may be moved on its pivot to disengage the threads of the screw, and each dog has a spring 45 associated with it for holding its threaded screw-engaging face
20 normally in engagement with the screw. It is very desirable that normal movement of the dogs shall be limited, so that their engagement with the threads of the screw will not be too severe when subjected to strain,
30 as, in such case, the threads of the screw as well as those of the engaging-faces are liable to become injured, and to accomplish this result the bottoms of the slots in the ends of the block 10 are arranged to serve as abutments for the dogs and the dogs are cut away to receive said abutments and admit of the engaging portions thereof extending over the ends of the abutments, and said abutments are of the proper dimensions, so that when engaged by the dogs said dogs
35 will correctly engage the threads of the screw.

In operating the device, assuming that the block 37 is removed from engagement with the jaws, the jaws may be separated to receive the work by moving them longitudinally by pressure exerted upon them at their outer ends or if the links are sufficiently loose they may be moved by gravity. The work having been placed in a position between them, the screw 35 is moved quickly in a longitudinal direction, the threads thereof slipping beneath the dogs until the block 37 strikes the inner ends of the jaws, then the screw is turned by manipulating the hand-engaging means to positively move the jaws longitudinally and cause them to firmly engage the work. To remove the work the screw is turned slightly to relieve the pressure on the dogs, then the dogs are moved on their pivots to disengage the screw, whereupon the screw may be moved quickly outward in a longitudinal direction and the jaws permitted to separate.

65 The block 37 and screw 35 are here shown

as having a smooth longitudinal bore extended entirely through them; so that, in case the work which is engaged by the jaws is a rod or wire, at least no larger in diameter than the diameter of the bore, it may be extended through said bore any desired distance.

I claim:—

1. The hand-vise herein described consisting of a frame, a pair of jaws having a parallel motion pivotally connected with said frame, said jaws having seats at their inner ends, actuating means to move said jaws longitudinally involving a screw slidably mounted in the frame having hand-engaging means for turning it, and means borne by said screw for engagement with the seats on said jaws, a pair of pivoted dogs having threaded engaging faces normally engaging a plurality of threads of the screw and having a readily accessible finger-engaging portion by which pressure may be exerted thereupon to move them out of engagement with the screw whereby the screw may be turned while engaged by the dogs and may be slid longitudinally when the dogs are disengaged therefrom.

2. The hand-vise herein described consisting of a pair of side plates attached to a block, said block having a smooth bore through it, a pair of jaws arranged for parallel motion pivotally connected to said side plates and having their inner ends formed with seats for engagement therewith of the actuating means, a screw extended through said bore in the block and slidable longitudinally therein having its inner end-portion arranged between the side plates and having at its inner end a swiveled block with a flat face for engagement with the seats at the inner ends of the jaws, said screw having at its outer end hand-engaging means for turning it, and a pair of pivoted dogs arranged between the side plates and normally engaging the screw having threaded engaging faces for engaging a plurality of threads of the screw and having readily accessible finger-engaging portions by which pressure may be exerted upon them to move them on their pivots to disengage the screw, and springs to normally hold said dogs in engagement with the screw.

3. The hand-vise herein described consisting of a frame, a pair of jaws connected therewith, quick adjusting actuating-means for said jaws comprising a screw slidably mounted in the frame having hand-engaging means for turning it and arranged for actuating the jaws when turned in one direction, a pair of pivoted dogs having threaded engaging faces for engagement with a plurality of threads of the screw and having finger engaging portions extended beyond the frame bearing them for moving them out of engagement with the screw, the frame

bearing said dogs having abutments and the
dogs having cut away portions to provide
for engaging said abutments thereby to limit
their movement toward the screw, and
5 springs to hold said dogs normally in en-
gagement with the abutments.

In testimony whereof, I have signed my

name to this specification in the presence of
two subscribing witnesses.

CHARLES E. FISH.

Witnesses:

B. J. NOYES,

H. B. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."