

No. 663,145.

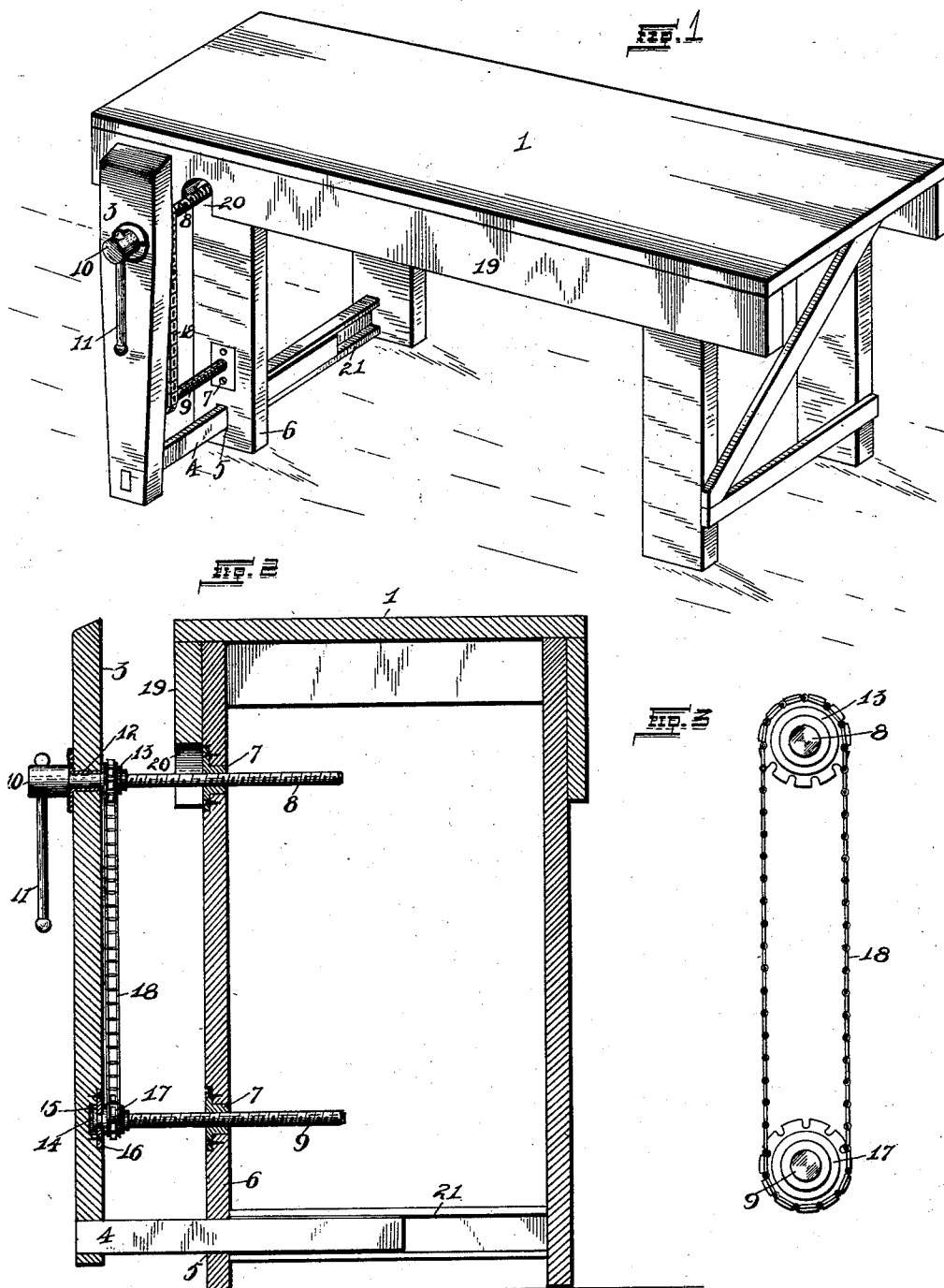
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E. J. ZWART.

CHAIN GEAR PARALLEL CARPENTER'S VISE.

(Application filed Apr. 27, 1899. Renewed July 5, 1900.)

(No Model.)



Witnesses,

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UNITED STATES PATENT OFFICE.

EDWARD J. ZWART, OF ST. LOUIS, MISSOURI.

CHAIN-GEAR PARALLEL CARPENTER'S VISE.

SPECIFICATION forming part of Letters Patent No. 663,145, dated December 4, 1900.

Application filed April 27, 1899. Renewed July 5, 1900. Serial No. 22,607. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. ZWART, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Chain-Gear Parallel Carpenters' Vises; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in carpenters' bench-vises; and it consists in the novel arrangement, construction, and combination of parts, as will be more fully hereinafter described, and set forth in the claim.

The object of this invention is to construct a vise whose outer or movable jaw travels parallel throughout its length to the bench in such manner that the entire attachment can be removed when it is desired to reconvert the vise into one of ordinary type.

To this end it consists of two screws manipulated simultaneously by the action of the hand-bar secured to the upper screw and is constructed to provide a parallel opening between the jaws, so that any-sized work may be held therein.

Referring to the drawings, Figure 1 is a perspective view of the work-bench and the complete invention applied thereto and in operative position. Fig. 2 is a vertical sectional view of the complete device, taken through that portion where the screws pass therethrough. Fig. 3 is an enlarged detail view of the end of the screws, showing the sprocket-wheels and chain connecting the same.

In the construction of the device as shown I provide an ordinary work-bench with the improved invention, which consists of a movable member 3, provided at its bottom with a bar 4, which is secured thereto in any desirable manner, extending at right angles thereto, and is adapted to slide through an opening 5, secured in the leg 6 of the bench. In the leg 6 are provided and held in any desirable manner two internally-screw-threaded nuts 7, in which are threaded the operating-

screws 8 and 9, which may be of any desirable length and thickness and of any-sized screw-thread. The screw 8 is passed through the movable member 3 and provided on its end with an enlargement or head 10, through which is passed a hand-rod 11 of the ordinary construction. Through said movable member 3 and around said screw is placed and secured a sleeve 12, which provides a bearing for a threadless portion of said screw, preventing the same from wearing the wood by the friction caused by the continual use or turning of the screw to enable the adjustment of screw 8 to a center parallel with nuts 7. On the screw at the inner side of the movable member 3 is secured a toothed or sprocket wheel 13, having suitable shoulders and collars by which said wheel is secured to said screw. The screw 9 is provided on its end with a head 14, which fits into a depression 15, formed in the movable member 3, and the same is covered and held therein by means of a plate 16, having a hole or opening which is passed over or astride said screw and engages a groove therein adjacent its head, the plate being secured to the inner face of the member 3 in any manner which will permit its removal, as by the ordinary screws illustrated. On this screw 9 is also placed and securely held a sprocket-wheel 17, the same in form and construction as the one 13 previously described. The two sprocket-wheels mentioned are connected by means of a sprocket-chain 18, which is of such construction as to fit the teeth of said wheels properly and of suitable strength as to stand the pressure of the strain produced by the manipulation of the hand-rod to bind the work between the jaws.

It will be observed that the front board of the bench, which stands beneath the top one and passes over the face of the leg 6, is provided with an opening 20. This is to allow the wheel 13 and chain 18 to pass therein, so as to allow the jaw of the movable member 3 to come snugly against the bench, which is necessary where thin material is being worked.

The bar 4 is guided in a channel 21, which extends from one front to the corresponding rear leg and is suitably connected to said legs, providing a smooth and free guideway, preventing the sagging of movable member 3.

This invention is of great importance, for the reason that the same can be made with little expense, can be manipulated easily, and that the movable member throughout its length is carried parallel, which is caused by the two screws being simultaneously operated by the sprocket-chain and by the simple movement of the hand-rod secured to the upper screw.

10 An important feature of this invention and one which will appeal to the general public is that if the device does not work successfully, or if the operator prefers the old-fashioned construction, or if repairs are necessary the entire vise can be converted into one of ordinary type with a few minutes' labor, as follows: The screws are turned out of their nuts, the plate 16 is removed, the lower screw 9 and its plate are pressed inward and moved upward, and the chain 18 thus loosened is disengaged from the upper sprocket 13. Thereafter the bar 4 is returned to the channel 21 and the upper screw 8 to its nut 7, and the device will operate in the usual manner. This brings us to the fact that aside from the well-known features of this device it might be called an "attach-

ment," in that it could be readily applied to most vises now in common use.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In a vise, the combination with the bench on legs, two alined nuts removably secured in one front leg, a guide-channel, a bar sliding therein, and a movable jaw attached to said bar; of two screws threaded through said nuts, the uppermost having a threadless portion journaled through said jaw and a head and hand-rod at its outer end, a head at the outer end of the lowermost screw extending into a depression in the inner face of said jaw, a plate removably attached to the inner face of the jaw and having an opening embracing the shank of the screw adjacent its head, sprocket-wheels fast on the two screws at the inner side of said jaw, and a chain connecting them, as and for the purpose set forth.

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

EDWARD J. ZWART.

Witnesses:

ANNA SCHOEPP,
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