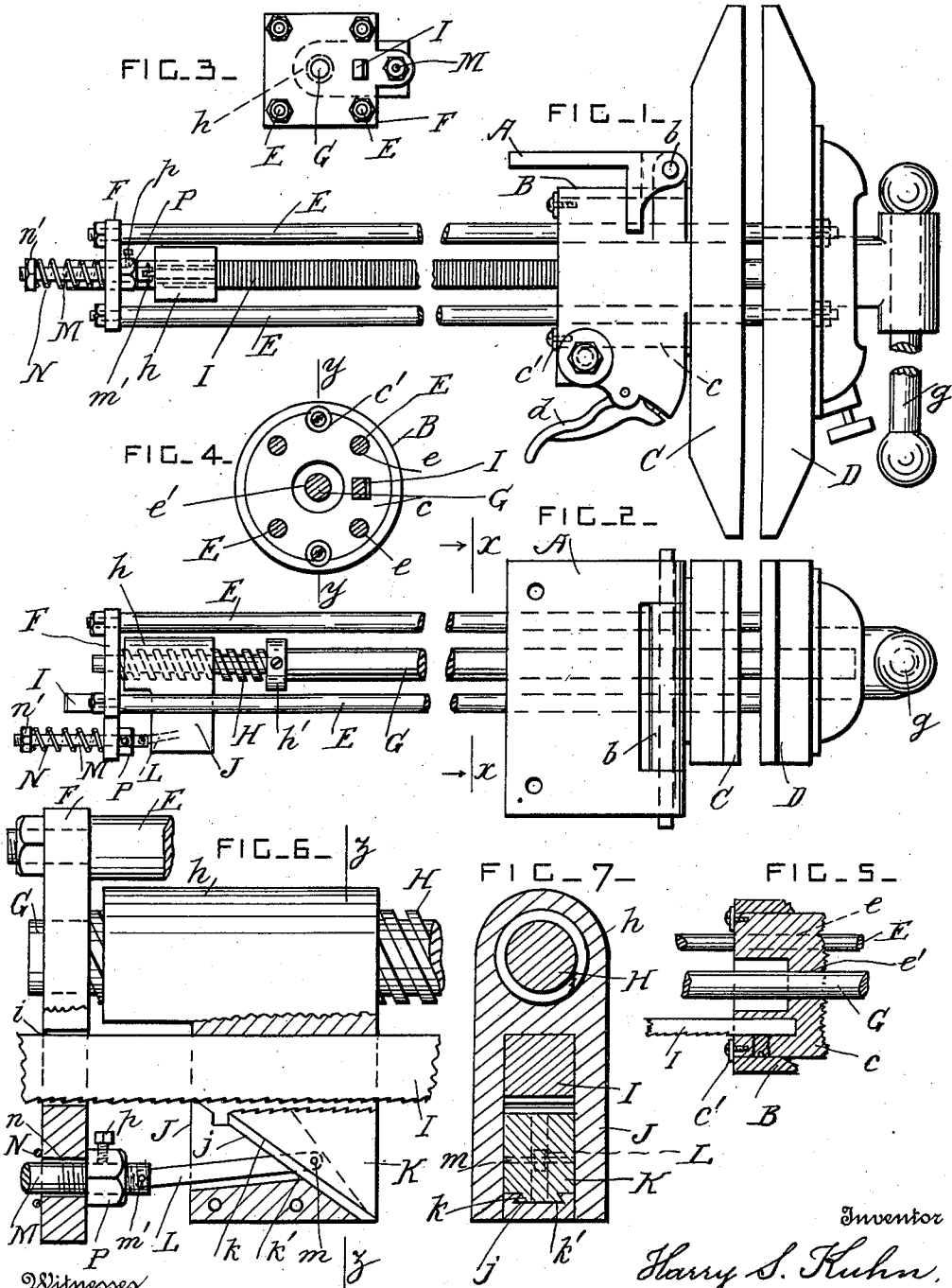


H. S. KUHN.
TURRET VISE.

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1,000,417.

Patented Aug. 15, 1911.



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UNITED STATES PATENT OFFICE.

HARRY S. KUHN, OF WAYNESBORO, PENNSYLVANIA.

TURRET-VISE.

1,000,417.

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To all whom it may concern:

Be it known that I, HARRY S. KUHN, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Turret-Vises; and I do hereby 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.

This invention relates to turret vises of the kind shown in the patent of J. F. Emmert, No. 787,328, dated April 11, 1905; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed whereby the movable vise jaw can be slid by hand to its approximate position and is subsequently caused to clamp the work by means of a screw, and whereby the vise jaws can be moved on their axis to any desired position.

In the drawings, Figure 1 is a side view of the vise. Fig. 2 is a plan view of the vise. Fig. 3 is an end view of the stop-plate. Fig. 4 is a cross-section taken on the line $x-x$ in Fig. 2. Fig. 5 is a partial longitudinal section through the hub of the non-slidable vise jaw, taken on the line $y-y$ in Fig. 4. Fig. 6 is a detail view of the locking wedge and the parts connected to it. Fig. 7 is a cross-section taken on the line $z-z$ in Fig. 6.

A is a supporting plate or bracket adapted to be secured rigidly to any approved work-bench or support.

B is a cylindrical socket which is pivoted to the plate A by a hinge b .

C is the inner and non-slidable vise jaw which is provided with a cylindrical hub c which is journaled in the socket C. Washer plates c' are provided to prevent the hub c from sliding endwise.

D is the outer and movable vise jaw.

E are four guide rods arranged parallel to each other and at equal distances from the center of the hub. These rods are rigidly secured to the movable vise jaw D at one end, and they are slidable in guide holes e in the hub c .

F is a stop-plate secured to the free end portions of the guide rods.

G is the operating spindle of the vise. This spindle is journaled in the movable vise jaw D at one end, and it is provided with a handle g for revolving it. The other

end of the spindle is journaled in the stop-plate, and H is a short screwthreaded portion formed on the rear end portion of the spindle. The middle part of the operating spindle slides loosely in a central hole e' in the hub c .

A trigger d is provided for locking the vise jaws to the socket B, and as the locking mechanism and other various attachments are the same as those described in the hereinbefore mentioned patent, said parts are not more fully described herein.

I is a serrated locking-bar having one end secured to the hub c of the non-slidable vise jaw. The free end portion of this bar is slidable in a hole i in the stop-plate F.

A screwthreaded nut h is arranged to work on the screwthreaded portion H of the operating spindle, and a collar h' is secured on the operating spindle at the front end of the screwthreaded portion to limit the movement of the nut in that direction. The nut h has a loop J which incloses the locking-bar, and this loop has an inclined surface j .

K is a wedge arranged between the surface j and the locking-bar, and this wedge is provided with serrations for engaging with the serrations of the locking-bar. The inclined surfaces of the wedge and loop are provided with a dovetailed tongue k and groove k' so that the parts cannot become separated from each other, but each is free to move longitudinally with respect to the other. This construction is necessary because the vise jaws and the parts connected to them are all revoluble in the socket B, and the wedge is sometimes above and sometimes below the locking-bar.

L is a link which is pivoted in a slot in the wedge by a pin m , and which projects rearwardly from the smaller end of the wedge.

M is a rod which is pivoted by a pin m' to the link L, and which is slidable in a hole n in the stop-plate. A retracting spring N is arranged around the rod M, and n' is a nut for regulating the strength of the spring.

P is a nut screwed on the rod M, and arranged between the wedge and the stop-plate. This nut P is adjustable, and it is provided with a locking-screw p for securing it on the rod, and it forms an adjustable stop for regulating the action of the wedge.

The four rods E form a guide for the

movable vise jaw, and support it in all its positions, and permit the vise to be used as a turret vise to the best advantage. When the nut *h* on the operating spindle is screwed back toward the stop-plate F, the nut or stop P bears against the stop-plate and arrests the rearward movement of the wedge. The continued rearward motion of the nut *h* causes the serrated wedge to be moved out of engagement with the locking-bar by means of the dovetailed tongue and groove, and the movable vise jaw together with its guide and operating spindle can be slid by hand to place the vise jaws at approximately any desired distance apart. The operating spindle is then revolved by hand to move the nut *h* toward the collar *h'*. The inclined surface *j* moves the wedge into engagement with the locking-bar, and the continued revolution of the operating spindle moves the movable vise jaw so that the vise jaws grip the object or work between them.

What I claim is:

1. In a vise, the combination, with a non-slidable vise jaw, of a movable vise jaw provided with a guide which is slidable in the non-slidable vise jaw, a stop-plate secured to the said guide, an operating spindle journaled in the movable vise jaw and provided with a screwthreaded portion, a locking-bar secured to the non-slidable vise jaw, a nut engaging with the said screwthreaded portion and provided with an inclined surface, a clamping-wedge arranged between the inclined surface and the locking-bar, means for preventing the said wedge and inclined surface from being moved apart but permitting them to slide relatively to each other, a spring-actuated rod carried by the said stop-plate and operatively connected with the said wedge, and a stop on the said rod between the wedge and the stop-plate.

2. In a vise, the combination, with a supporting socket, and a non-slidable vise jaw provided with a hub which is journaled in the said socket; of a movable vise jaw provided with a guide which is slidable in the said hub, a stop-plate secured to the said guide, an operating spindle journaled in the movable vise jaw and provided with a screwthreaded portion, a locking bar secured to the said hub, a nut engaging with the said

screwthreaded portion and provided with an inclined surface, a clamping-wedge arranged between the inclined surface and the locking-bar, means for preventing the said wedge and inclined surface from being moved apart but permitting them to slide relatively to each other, a spring-actuated rod carried by the said stop-plate and operatively connected with the said wedge, and a stop on the said rod between the wedge and the stop-plate.

3. In a vise, the combination, with a supporting socket, and a non-slidable vise jaw provided with a hub which is journaled in the said socket and provided with a hole at its axis and a series of guide holes arranged around its axis; of a movable vise jaw, a series of guide-rods secured to the movable vise jaw and slidable in the said guide holes, an operating spindle journaled in the movable vise jaw and provided with a screwthreaded portion, a locking-bar secured to the said hub, a nut engaging with the said screwthreaded portion and locking-bar, and locking mechanism for securing the said nut to the locking-bar.

4. In a vise, the combination, with a supporting socket, and a non-slidable vise jaw provided with a hub which is journaled in the said socket and provided with a hole at its axis and a series of guide holes arranged around its axis; of a movable vise jaw, a series of guide-rods secured to the movable vise jaw and slidable in the said guide holes, an operating spindle journaled in the movable vise jaw and provided with a screwthreaded portion, a locking-bar secured to the said hub, a stop-plate secured to the said guide-rods, a nut engaging with the said screwthreaded portion and provided with an inclined surface, a clamping-wedge arranged between the inclined surface and the locking-bar, a spring-actuated rod carried by the said stop-plate and operatively connected with the said wedge, and a stop on the said rod between the wedge and the stop-plate.

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

HARRY S. KUHN.

Witnesses:

M. G. HARMONY,
H. S. LEOHER.