Oct. 14, 1941. N. M. OLNEY 2,258,686

VISE

Filed March 11, 1941

Fig. 1.

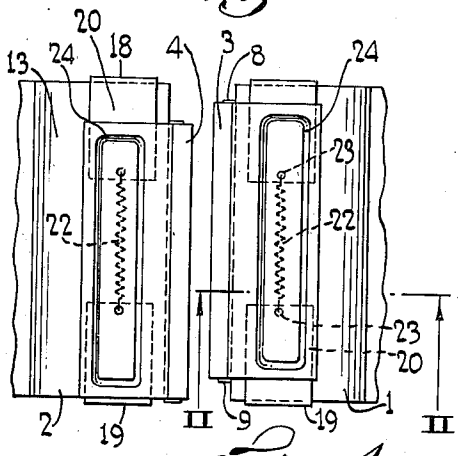


Fig. 2.

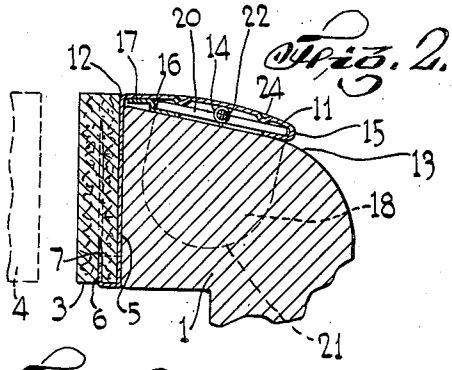


Fig. 3.

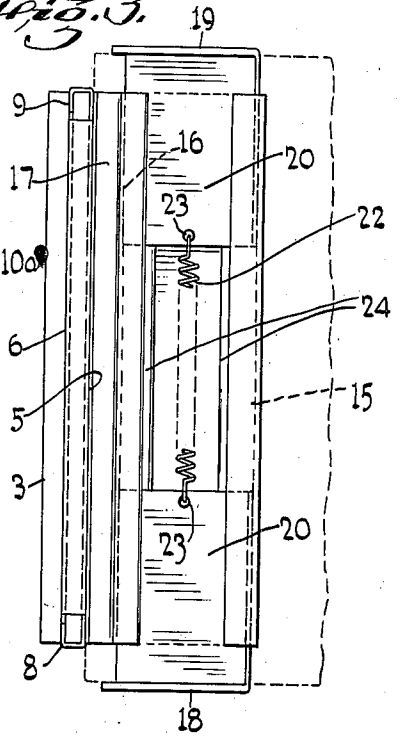


Fig. 4.

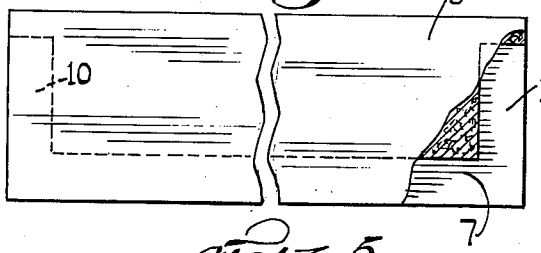


Fig. 5.

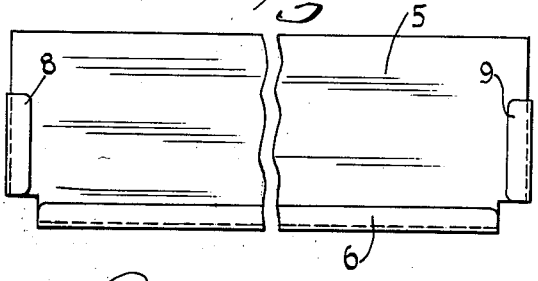


Fig. 6.

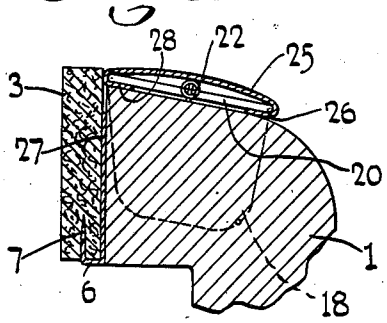
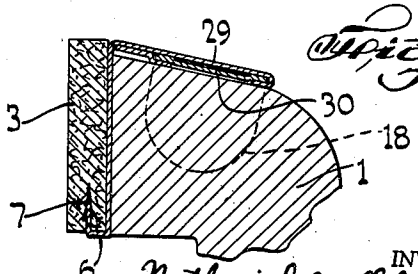


Fig. 7.



INVENTOR.
Nathaniel M. Olney
BY
Lyman E. Dodge
ATTORNEY

Patented Oct. 14, 1941 2,258,686

UNITED STATES PATENT OFFICE

2,258,686

VISE

Nathaniel M. Olney, Jersey City, N. J.

Application March 11, 1941, Serial No. 382,699

1 Claim. (Cl. 81—38)

This invention relates to work holders, especially to work holders of the type known as vises, and more particularly to removable and adjustable face plates therefor.

A principal object of the invention is the production of a device of the type specified which will be adaptable to vises of different width jaws.

A further object of the invention is the production of a device of the type specified which will be resiliently held in contact with a vise jaw.

A further object of the invention is the production of a device of the type specified which will be so constructed and arranged that the end of the removable face plate may be aligned with either end of a vise jaw.

Other objects and advantages will appear as the description of the invention and the particular physical embodiments selected to illustrate the invention progresses and the novel features will be particularly pointed out in the appended claim.

In describing the invention in detail, and the particular physical embodiments selected to illustrate the invention, reference will be had to the accompanying drawing and the several views thereon, in which like characters of reference designate like parts throughout the several views, and in which:

Figure 1 is a top plan view of a pair of applicant's devices in position on opposing jaws of a vise which jaws have been shown fragmentarily; Fig. 2 is a cross-sectional view of the device as shown by Fig. 1 on the plane indicated by the line II—II of Fig. 1, viewed in the direction of the arrows at the ends of the line; Fig. 3 is a bottom plan view of one of the pair of devices as shown in Fig. 1 with the vise jaw to which it is attached, shown in broken lines; Fig. 4 is a face view with parts broken away to more clearly show the internal construction of a removable face plate used with the device as shown by Fig. 1; Fig. 5 is a face view of a face plate forming part of the device as shown by Fig. 1; Fig. 6 is a view similar to Fig. 2 but showing a modified form of a face plate supporting member; Fig. 7 is a view similar to Fig. 2 showing a further modified form of the device.

In the figures, 1 and 2 designate vise jaws and may be considered as the jaws of a vise of ordinary and well known form.

It is well known to users of vises that it is usual to somewhat serrate the working faces of opposing vise jaws so that they will the more securely hold any work clamped therebetween.

It is also well known by users of vises that, at times, it is desired to hold work in the vise which has a surface which would be injured by a serrated vise jaw or even by a smooth face vise jaw.

Applicant's invention has for an object the production of a means by which work which would be injured by contact with ordinary vise jaws may be held in such ordinary vise jaws without being crushed or marred.

In accordance with applicant's invention, there is interposed between the opposing vise jaws 1 and 2, two adjustable and removable face plates as 3 and 4. These face plates may be of any suitable or appropriate material. They are, of course, made of a material which is relatively soft, that is, softer than the face of the vise jaw with which they are to be used. Various materials would be suitable, a soft metal, such as lead or copper would be suitable. Wood, either hard or soft could be used. Various artificial materials could be used, but it is preferred to make the removable and adjustable face plates 3 and 4 of leather.

When vise jaws are equipped with leather face plates such as 3 and 4 a piece of work may be placed therebetween and the vise jaws brought together upon the work without danger of marring the work and, further, if the work is of a round contour it will sink into the face plates somewhat and so be less likely to shift its position when work is being done upon it.

In order to properly support and position the removable and adjustable face plates such as 3 and 4, applicant provides a metallic face plate 5. This metallic face plate 5 may be made of any suitable material, preferably soft steel, and is provided with means for supporting the removable and adjustable face plates. In the form shown the means takes the form of flanges. There is provided a bottom flange 6 which will be sufficient to support the removable and adjustable face plate 4 as the face plate 3 would be grooved at 7 to receive the flange 6 but it is preferred to also support the ends of the removable face plate 3 and so flanges as 8 and 9 are formed, one at one end and the other at the other end of the face plate 5 and corresponding grooves as 10 and 10a are formed in the removable face plate 3 to receive the flanges 8 and 9.

The face plate 5 is adapted to lie in close contact with the working face of the vise jaw and applicant provides means for supporting it in that position. In the form shown the means takes the form of a supporting plate 11 as shown in Fig. 2 which extends from the upper edge

12 of face plate 5 at an angle thereto preferably somewhat less than a right angle and preferably at such an angle that it will lie upon and be supported by the top face 13 of the vise jaw 1. This top plate 11 may be of any suitable or appropriate form but it is preferred to have it slightly bulging upwardly as shown in Fig. 2 to provide room for a spring 14 to be hereinafter described. The plate 11 has formed therewith, in any suitable and appropriate manner, two opposing longitudinal grooves 15 and 16 on the inner side thereof. The longitudinal groove 15 may well be made by turning over the edge of the member 11 while the groove 16 may well be made by attaching, as by riveting or spot welding the offset plate 17.

The device, as hereinbefore described, would afford a face plate of softer material than a jaw vise and a means for supporting that face plate in place by a plate bearing upon the top surface of the vise jaw. It is preferred, furthermore, to provide means for restricting longitudinal movement of the face plate 5, and this means consists of two end plates 18 and 19. Each end plate has a bend approximating a right angle intermediate its ends and one portion, as 20, is positioned in the opposing grooves 15 and 16 so as to slide therein longitudinally of the plate 11. The other portion, as 21 of each end plate depends downwardly and along the end face of the vise jaw.

In order that the plates will bear tightly against the end faces of the vise jaw, means are provided for pulling the plates toward one another. This means is preferably a spring and preferably a helical tension spring, as 22, an end of which is suitably attached to each of the end plates as by passing through an orifice, as 23, therein. By this construction the end plates 18 and 19 are resiliently or spring held one toward the other and against the end faces of a jaw vise upon which the device may be placed.

By the construction of end plates as hereinbefore described, it will be seen that a very considerable variation in width of a vise jaw is no obstacle to the proper placing of applicant's device thereon because the end plates 18 and 19 may be moved apart or together through a very considerable distance. Variation in width of a vise jaw is, therefore, no obstacle to the proper placing of applicant's device thereon because even if the end plates 18 and 19 are moved apart or together through a very considerable distance, they will, at all times, hold firmly against the jaw vise upon which they are placed.

The plate 11, as shown, is so positioned that it forms no obstacle to a tool being drawn transversely across the work if the work is held between the faces 3 and 4 and its end is in line with the top faces thereof so that an operation, such as filing upon the top face thereof, may be accomplished without interference by the plate 11.

It may be desirable to somewhat stiffen the plate 11 by forming ribs as 24 therein.

It should also be noticed that regardless of the width of the vise jaw upon which the device is placed the removable face plates 3 and 4 may be adjusted so that they are in line with either end of the vise jaw, that is, after the device has been placed upon a vise jaw, by grasping the removable face plate 3 and pushing it longitudinally, it together with face plate 5 and plate 11, will slide toward the end of the vise jaw to which it is being pushed and will align perfectly with that end so that regardless of the width of the face to which the device is attached a workman may work upon a piece of work at either end of the vise jaw and have that work supported by the face plate out to the free end of the vise jaw.

In Fig. 6 a modified form of plate similar to plate 11 is shown. This plate 25 has the opposing grooves formed one on one side by turning over the edge of the plate as at 26 and the other by slitting the face plate 27 and turning under a portion, as at 28.

In Fig. 7 the plate comparable to plate 11 of Fig. 2, that is, plate 29 is shown flat and the portion 30 of an end plate positioned in the opposing grooves is shown with a slight depression in that portion intermediate the grooves thereby making a structure in which there will be less friction than if the portion 30 bore throughout its width upon the plate 29. In this form no spring such as 22, is used, the friction of the contorting alone being relied upon.

What I claim as new and desire to secure by Letters Patent of the United States, is:

In a vise jaw cover, including, in combination: two end plates, each end plate formed with substantially a right angle bend intermediate its ends, one portion of one end plate on one side of the bend adapted to rest against the end face of a vise jaw and one portion of the other plate on one side of the bend adapted to rest against the other end face of a vise jaw, the other portions of each of the end plates adapted to rest upon the top face of a vise jaw, a spring interposed between the end plates and attached to each whereby they are drawn toward each other and tightly against the end faces of a vise jaw, a supporting plate formed with a bend somewhat less than a right angle therein, one portion adapted to be positioned on the top face of a vise jaw above the end plates formed with opposing grooves embracing those portions of the end plates adapted to lie upon the top of a vise jaw whereby the plate may slide longitudinally, the other portion of the plate adapted to lie against the face of a vise jaw, a relatively soft material face plate formed with a groove in the edge thereof, and means provided on that portion of the supporting plate adapted to lie against the face of a vise jaw for supporting said relatively soft material face plate.

NATHANIEL M. OLNEY.