No. 824,360. PATENTED JUNE 26, 1906.

J. HORMBY.

VISE.

APPLICATION FILED FEB. 17, 1906.

Fig. 1.

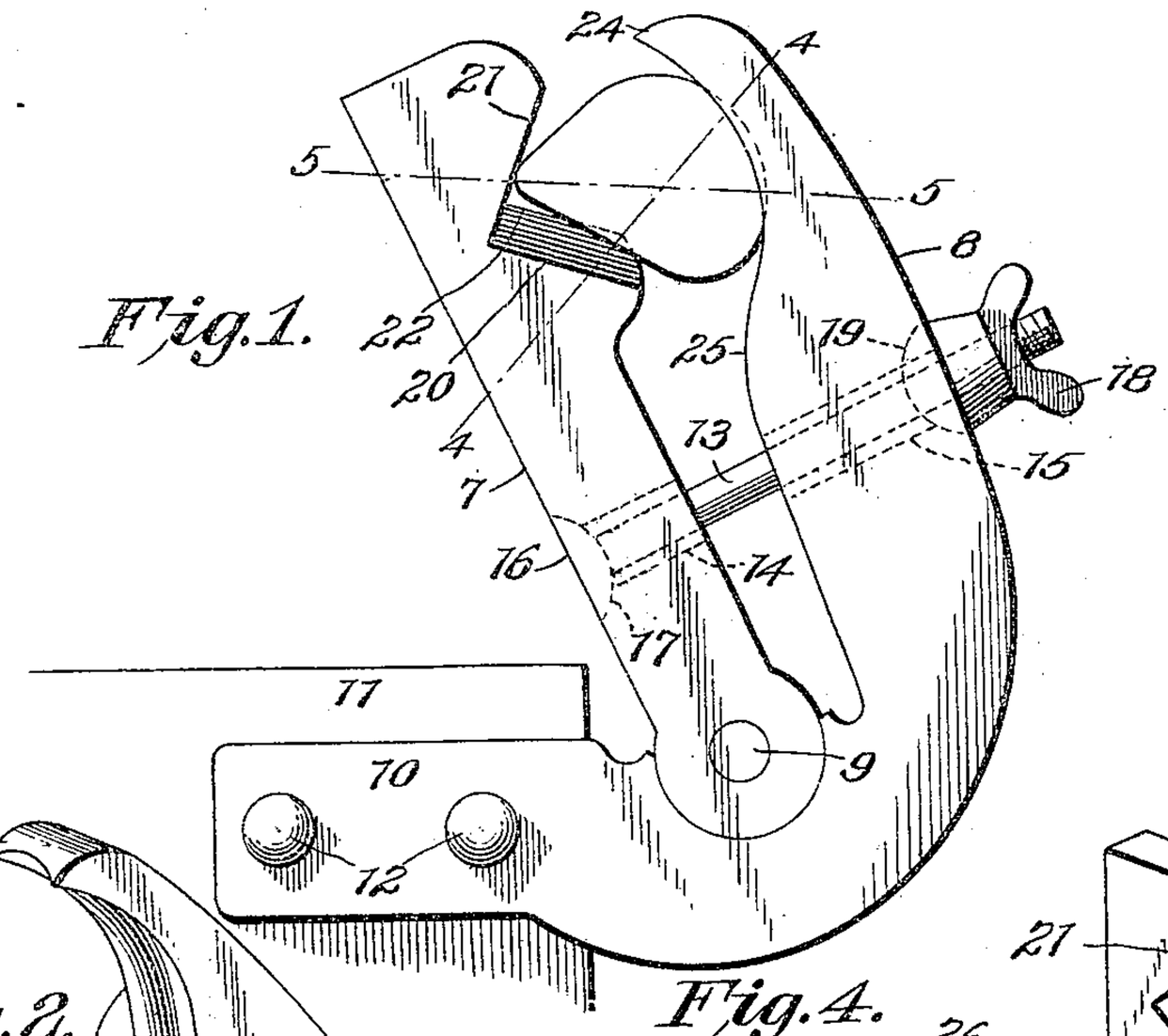



Fig. 2.

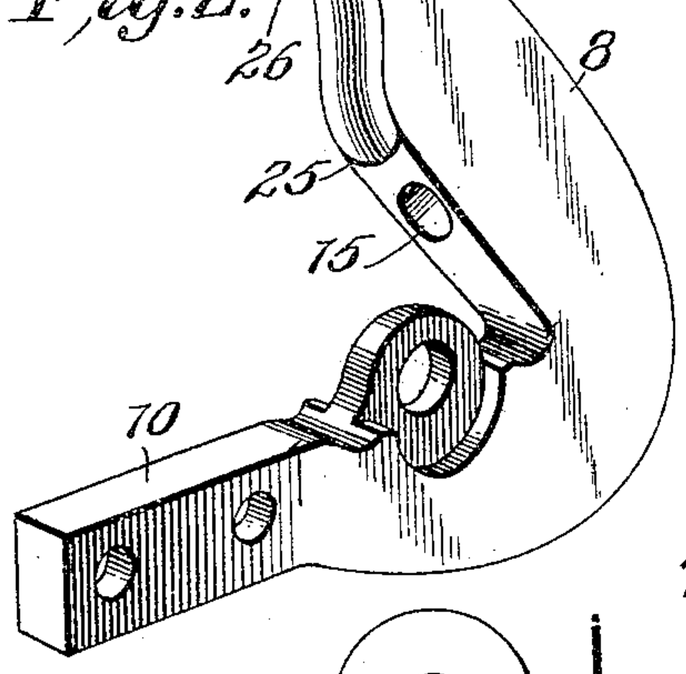



Fig. 3.

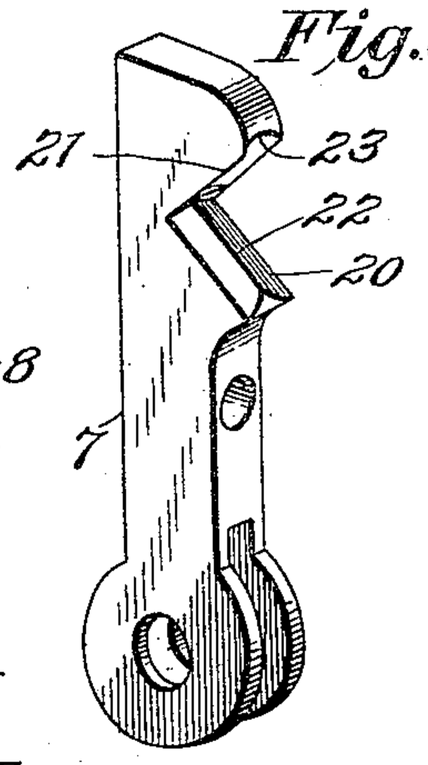



Fig. 4.

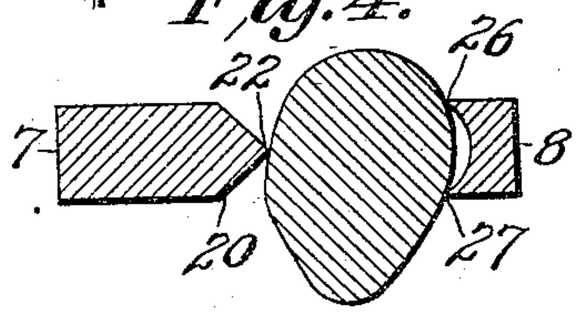



Fig. 5.

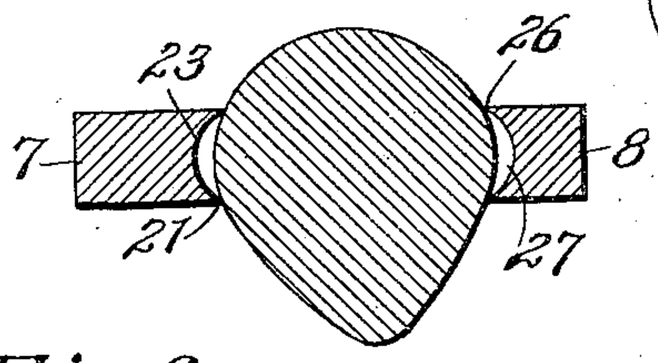
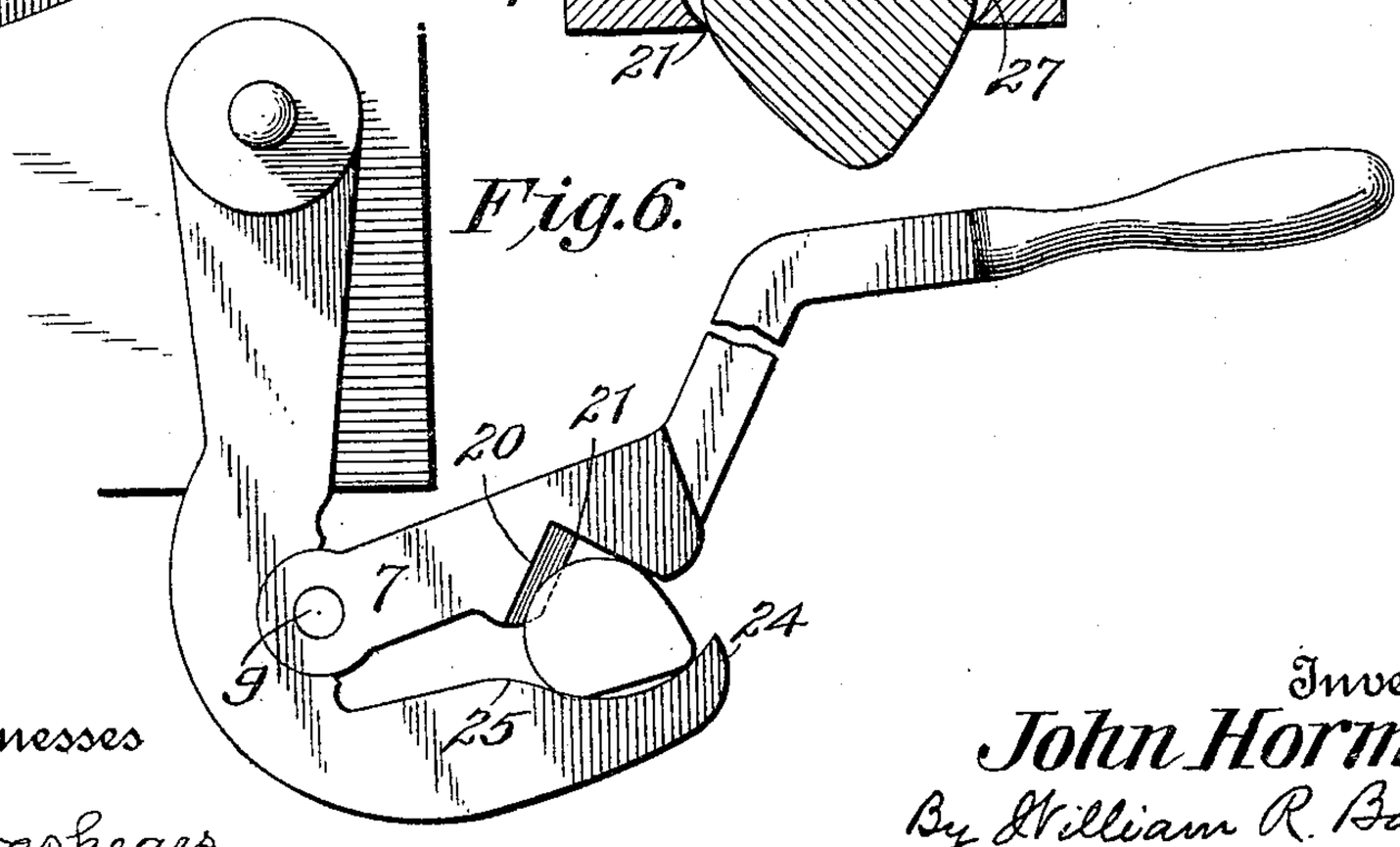



Fig. 6.




Witnesses

S. Brashears

Geo. H. Luscombe

Inventor

John Hormby

By William R. Baird

His Attorney

# UNITED STATES PATENT OFFICE.

JOHN HORMBY, OF NEW YORK, N. Y., ASSIGNOR TO THE BUTTON MACHINERY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## VISE.

No. 824,360. Specification of Letters Patent. Patented June 26, 1906.

Application filed February 17, 1906. Serial No. 301,621.

*To all whom it may concern:*

Be it known that I, JOHN HORMBY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Vises, of which the following is a specification.

This invention relates to the construction of the jaws of vises, and more particularly to the jaws of that class of vises intended to firmly clamp articles of irregular form.

Heretofore vise-jaws have been constructed of a form to securely clamp flat, square, round, and other somewhat regularly-formed articles, and in special instances vise-jaws have been constructed to clamp in each vise a single irregular form; but to my knowledge no vise has been provided with jaws which will securely clamp any form of article within the limit of its size.

It is the object of my invention to provide vise-jaws which will securely clamp any article which may be inserted between them, no matter how irregular its form; and with this object in view my invention consists in the improved construction, arrangement, and combination of the parts of the jaws of a vise or clamp which will be hereinafter fully described and afterward specifically pointed out in the appended claims.

In order that others skilled in the art to which my invention most nearly appertains may be enabled to construct and use the same, I will now proceed to particularly describe its construction and operation, having reference to the accompanying drawings, in which—

Figure 1 is a view in side elevation of one embodiment of my invention. Fig. 2 is a perspective view of one of the jaws detached. Fig. 3 is a similar view of the other jaw detached. Fig. 4 is a sectional view on the plane of the broken line 4 4 of Fig. 1. Fig. 5 is a sectional view on the plane of the broken line 5 5 of Fig. 1. Fig. 6 is a view in side elevation of another embodiment of my invention.

Like reference characters mark the same parts wherever they occur in the several figures of the drawings.

Referring specifically to the drawings, 7 and 8 mark, respectively, the two jaws of a vise or clamp which form the subject of my invention. These jaws may be attached together in any of the well-known ways in which the jaws of vises or clamps have heretofore been connected. As a suitable manner of connecting them I have illustrated them as pivotally connected by means of a pin 9, although they might be otherwise pivotally connected, or might be made to slide toward or from each other, if desired. The vise or clamp formed of these two jaws may be secured in position in any suitable manner—as, for instance, by lengthening the jaw 8, so as to cause it to project beyond the pivot in the form of an extension 10, which extension is secured to any suitable support 11 by means of bolts or rivets 12, as clearly shown in Fig. 1. The two jaws may be caused to approach each other for the purpose of clamping an object between them by any suitable or well-known means, and I do not confine myself to any particular form of such means. In this instance I have shown for closing the jaws a bar or bolt 13, passed through holes 14 15 in the two jaws, such holes being of greater diameter than the bolt in order to compensate for the movement of the two jaws in arcs of circles on their pivot 9. The bolt is provided with a head 16, having the under face 17 of its head curved to readily move in a similarly shaped or curved countersunk opening at the outer end of the bore of the hole 14, through the jaw 7, and on the outer threaded end of the bolt is placed a hand or thumb nut 18, similarly shaped at 19 to fit a similarly-curved countersunk opening at the outer end of opening 15 in jaw 8.

Having fully explained the general construction of vise or clamp in which the improved jaws of my invention may be embodied, which general construction forms no part of my invention, I will now proceed to describe the construction of the jaw-faces.

The jaw 7 is provided with a transverse recess in its face located between the two walls 20 and 21, which are substantially at a right angle to each other, the wall 20 being provided with an angular or wedge-shaped edge 22, extending longitudinally of its face, while the wall 21 is longitudinally grooved, as at 23.

The face of the jaw 8 is cut out on a curved line extending longitudinally from its end or point 24 to a point 25, forming a curved recess 26, and the face of this recess is grooved, as at 27, as best shown in Figs. 2, 4, and 5

It will be observed that this construction affords a sharp edge on each side of the groove 32 of the wall 21 of jaw 7 at substantially a right angle to the edge 22 of jaw 20, so that any object resting against the face of the jaw 7 will have at least three points of contact, one on each of these edges. It will also be observed that the opposite side of the object resting against these three points of the face of jaw 7 will rest in the curved recess 26 in the face of jaw 8, and in nearly every instance the two sharp edges at the sides of the groove 27 of the wall of the recess 26 of the face of jaw 8 will bite against said opposite side of said object. One of these edges at the sides of the groove 27 will always contact with the object, so that it will have at least four holding-points and will be rigidly secured against movement or displacement in any direction. Ordinarily there will be two points of contact with one or both of the sharp edges in the curved recess 26, as shown in Figs. 1 and 6, so that there may be as many as four points of contact with the face of jaw 8, which, with the three points of contact with jaw 7, will give a total of seven and assure absolute rigidity.

While I have specifically described the exact construction of the faces of the two jaws, it will be obvious to all skilled in the art that slight changes might be made therein without departing from the spirit or scope of my invention.

What I claim as new is—

1. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess on its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being constructed to coöperate therewith.

2. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess on its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being provided with a longitudinally-curved recess in its face.

3. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess on its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being provided with a transversely-curved recess in its face.

4. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess in its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being provided with a longitudinally and transversely curved recess in its face.

5. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely-grooved recess in its face, the other jaw being constructed to coöperate therewith.

6. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely-grooved recess in its face, the other jaw being provided with a transverse V-shaped recess in its face.

7. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely-grooved recess in its face, the other jaw being provided with a transverse V-shaped recess in its face, one wall of which recess is longitudinally wedge-shaped.

8. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely grooved recess in its face, the other jaw being provided with a transverse V-shaped recess in its face, one wall of which recess is longitudinally grooved.

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

JOHN HORMBY.

Witnesses:
MAY HUGHES,
ALAN MCDONNELL.