(Model.)

# C. H. GOVE.

## ADJUSTABLE CLAMP.

No. 257,939. Patented May 16, 1882.

Fig. 4.

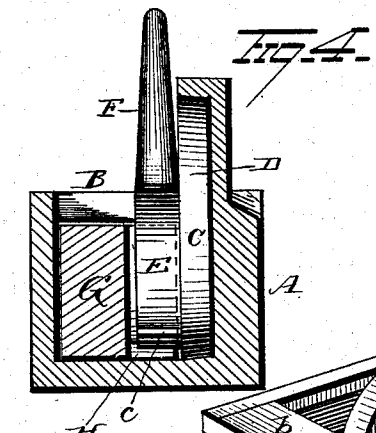



Fig. 1.




Fig. 5.




Fig. 2.

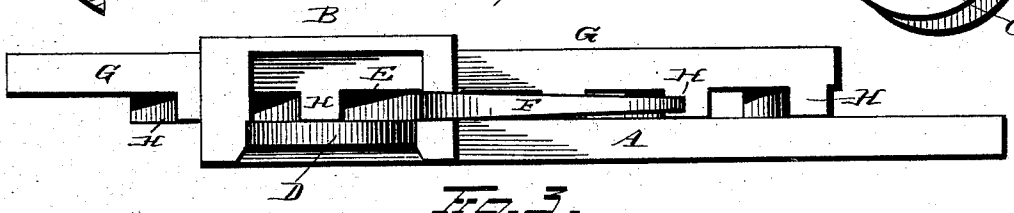
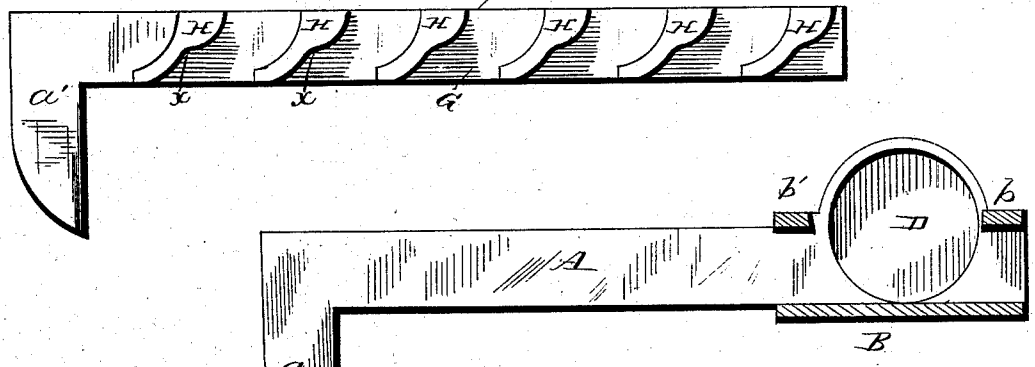



Fig. 3.




WITNESSES

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# UNITED STATES PATENT OFFICE.

CHARLES H. GOVE, OF NORWALK, OHIO, ASSIGNOR OF ONE-HALF TO CHARLES E. GOVE, OF SAME PLACE.

## ADJUSTABLE CLAMP.

SPECIFICATION forming part of Letters Patent No. 257,939, dated May 16, 1882.

Application filed November 14, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. GOVE, of Norwalk, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Adjustable Clamps; 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 pertains to make and use the same.

My invention relates to an improvement in adjustable clamps, the object of the same being to provide a clamp of small initial cost capable of being extended or contracted, so as to enable one clamp to be used on different size flasks, thereby dispensing with the rigid clamps ordinarily employed; and with these ends in view my invention consists in certain details in construction and combinations of parts, as will be more fully explained, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view, representing my improvement. Fig. 2 is a plan view of the same. Fig. 3 is a side view of the opposing faces of the arms. Fig. 4 is a transverse sectional view of the clamp, showing the manner of securing the lever and cam in position; and Fig. 5 is a detached view of the lever.

A represents the stationary arm, having the jaw *a* on one end thereof, and provided with the housing or boxing B on the opposite end, by means of which the sliding arm is held in contact with the stationary arm A. This housing or boxing B is closed at the bottom and sides and open at both ends and partly open on top, the openings at the ends being sufficiently large to admit the sliding arm, while the opening on top is adapted for the introduction of the disk C, and also for the movement of the lever controlling the locking-cam. In the body of the stationary arm A, and formed integral therewith, is the circular recess or seat D, adapted for the reception of the circular disk C, to which the cam E and lever F are secured, this recess or seat D being of the same size as the said disk, and when the latter is secured in position the outer face thereof rests flush with the side of the stationary arm A.

As before stated, the opening in the top of the housing or boxing is for the introduction of the disk C and for the movement of the lever; but this movement of the handle or lever is controlled by the bridges *b* and *b'*, which form the top of the housing, the bridge *b* forming the limit of forward movement, and when the lever is resting thereon the cam is raised above the curved teeth on the sliding arm, which allows the said sliding arm to be moved freely therein, while the bridge *b'* forms the limit of backward movement, and when the lever is resting thereon the sliding arm is securely locked in position. This lever F can be formed integral with the disk and cam E, or the said parts can be made separate pieces and rigidly secured together in the manner shown. The lever is purposely curved to form a suitable handle, whereby it may be carried conveniently from place to place and handled without inconvenience. The cam E is shaped as shown, and is situated to one side of the center of the disk, and is of such size that the end *c* thereof rests on a level with the under side of the bridges *b* and *b'* when the lever rests on the bridge *b*. When the sliding arm is introduced within the outer end of the housing all that portion of the disk C below the cam E is covered by the sliding arm G, which holds the said disk, cam, and lever in position, but allows them to be turned freely without interference.

The sliding arm G is provided with the jaw *a'* at one end thereof, and with the teeth H, with which the cam E engages. These teeth are formed integral with the arm G, and are shaped substantially as shown in the drawings, the front or concave portions thereof forming the bearings of the convex side of the cam E, while the indented portion *x* of the back is adapted for the reception of the end *c* of the cam E. When the cam E is moved down so as to rest between the teeth H it lies below the center of the disk, and all pressure tending to separate the jaws *a a'* only serves to move the cam lower, which consequently holds the parts more secure and prevents them from becoming accidentally unlocked after they have been applied to a flask, &c.

To secure a flask by this clamp it is only necessary to move the sliding jaw until it rests on the edge of the flask, when the lever is thrown backward, which engages the cam with the concave or front face of a tooth, and by forcing the lever backward the sliding arm is moved inward, which increases the space between the jaws *a* and *a'*, and consequently holds the parts of the flask securely together.

I have described this clamp in connection with a flask, but it is equally well adapted for the use of joiners, carpenters, pattern-makers, or any one using clamps for gluing or holding their work together, as well as for foundry use.

These clamps can be made of cast metal, and can be taken from the sand and put together for immediate use without any finishing whatever; or they can be made of any suitable material and size to suit the work.

The advantages of this style of clamp over the old rigid clamp are numerous, as its wide range of adjustability allows three or four clamps of different sizes to supersede the hundreds of rigid clamps employed in foundries.

Instead of using the housing shown in the drawings, any suitable number of loops or arms can be used for the same purpose; and instead of closing the sides and bottom, they may be left open and answer all the necessary purposes, it only being necessary to provide suitable means for holding the two arms together.

It is evident that slight changes in the construction and arrangement of the different parts of my improvement might be resorted to without departing from the spirit of my invention, and hence I would have it understood that I do not limit myself to the exact construction of parts shown and described, but consider myself at liberty to make such changes as come within the spirit and scope of my invention.

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

1. The combination, with the stationary arm having a recess or seat formed therein, and a movable arm having teeth on one side and adapted to be loosely secured to the said stationary arm by any suitable means, of the disk having the lever and cam secured thereto and adapted to rest in the seat or recess in the stationary arm and be held therein against displacement by the removable arm, substantially as set forth.

2. The combination, with the stationary arm provided with means for loosely holding the movable arm, and with a recess or seat, and a sliding arm having teeth thereon, the latter being shaped substantially as described, of a disk having a cam and lever rigidly secured thereto, the said disk adapted to fit in said recess or seat and be partly rotated therein, so as to enable the cam to be moved between the said teeth, substantially as set forth.

3. The combination, with the arm A, provided with the jaw *a*, recess or seat D, and housing B, and the movable arm G, provided with the jaw *a'* and teeth H, of the disk C, adapted to loosely fit in the said recess D, and provided with the cam E and lever F, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES H. GOVE.

Witnesses:
O. E. KELLOGG,
T. R. STRONG.