(No Model.)

C. E. HUDSON.

ADJUSTABLE CLAMP FOR SECURING STANDS TO VARIOUS OBJECTS.

No. 468,450. Patented Feb. 9, 1892.

Fig. 1.

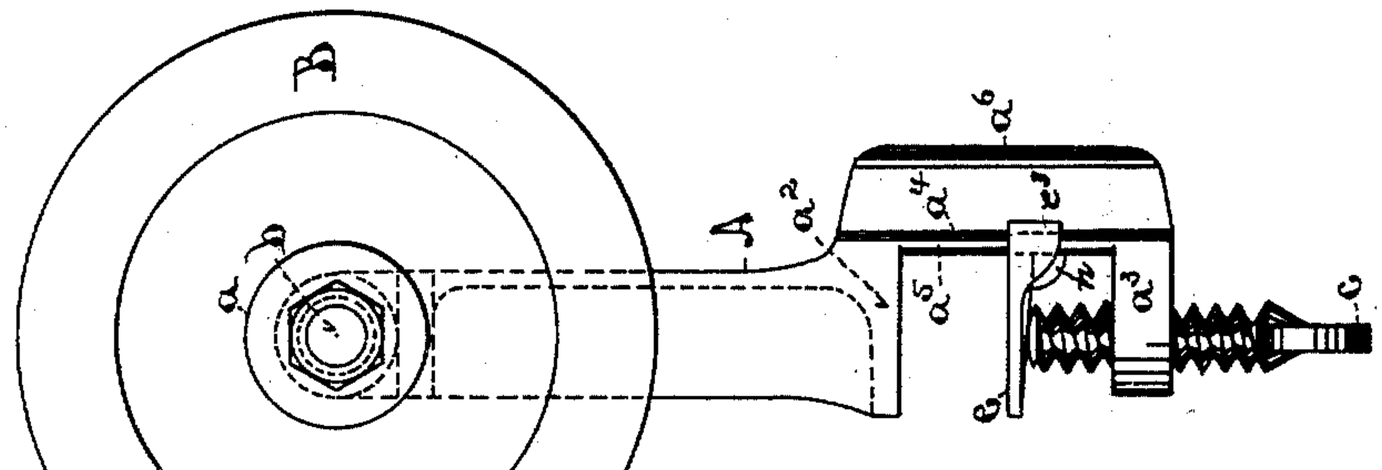


Fig. 7.

Fig. 6.

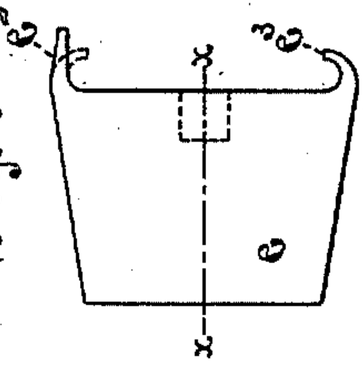


Fig. 5.

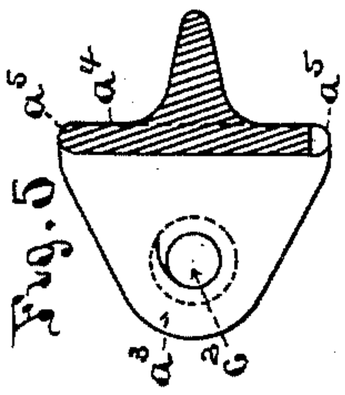


Fig. 3.

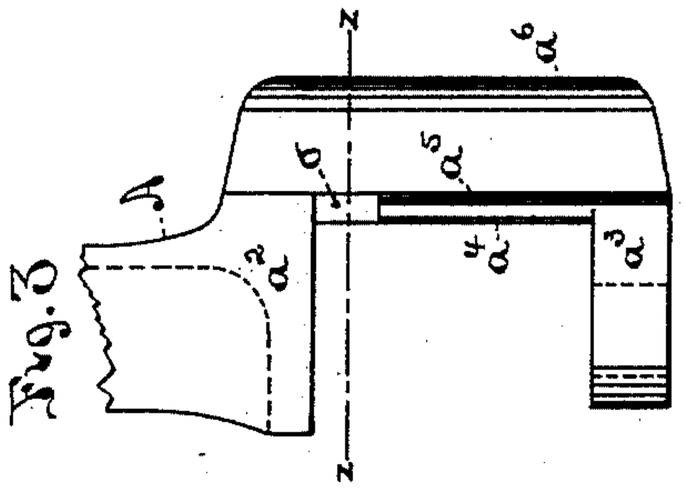


Fig. 4.

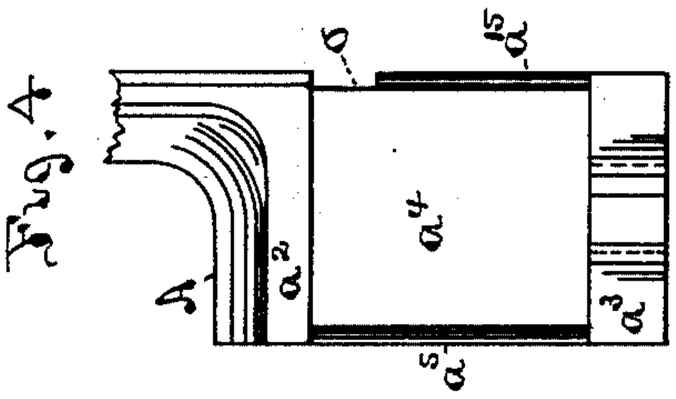
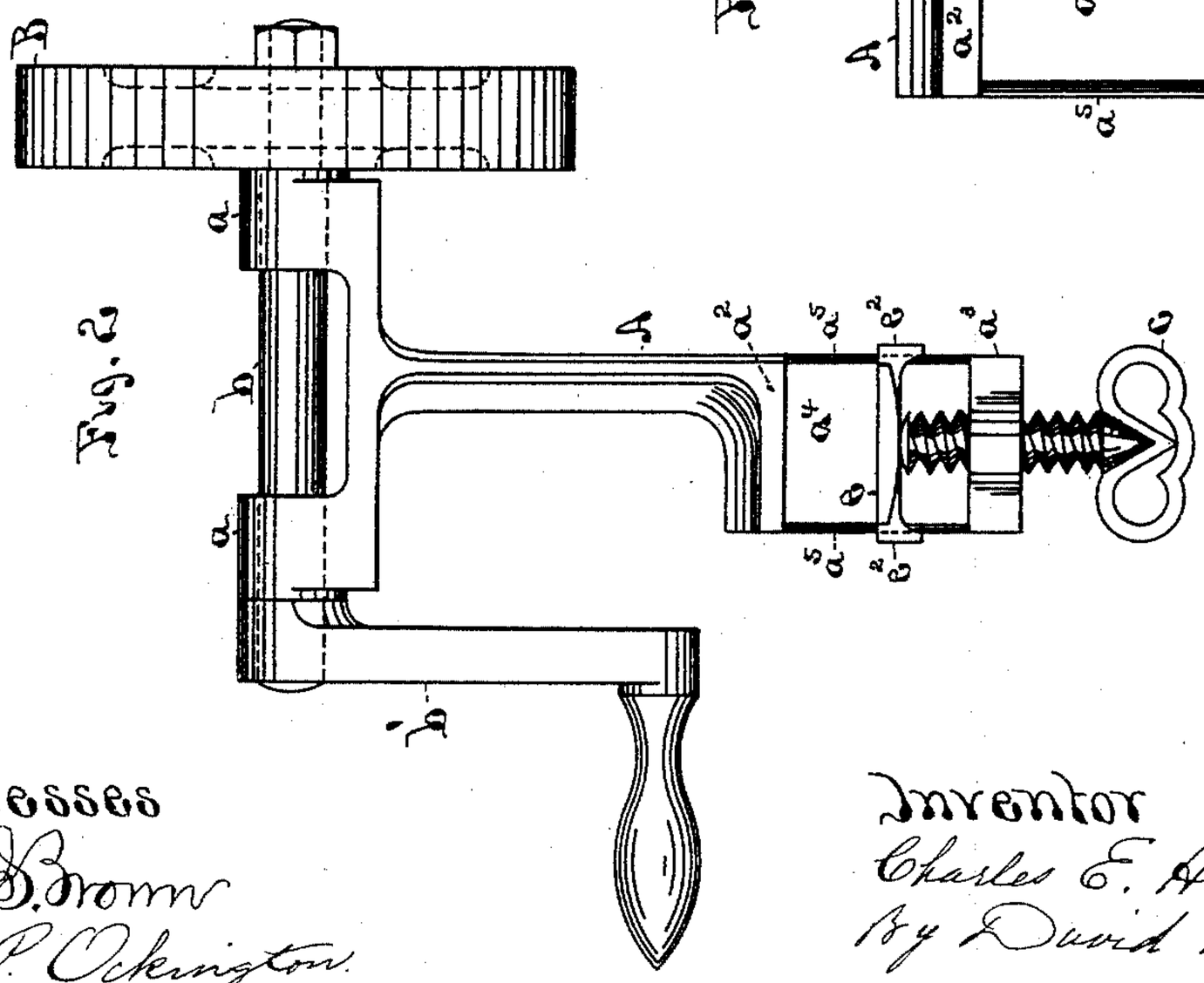


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES E. HUDSON, OF LEOMINSTER, MASSACHUSETTS.

ADJUSTABLE CLAMP FOR SECURING STANDS TO VARIOUS OBJECTS.

SPECIFICATION forming part of Letters Patent No. 468,450, dated February 9, 1892.

Application filed January 26, 1891. Serial No. 379,098. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HUDSON, of Leominster, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Adjustable Clamps for Securing Stands to Various Objects, of which the following is a specification.

My invention relates to clamps for securing stands or supports of mechanism adjustably to various objects, such as tables, shelves, &c.; and it consists in certain new and useful improvements in the construction and combination of the various parts of the same, substantially as hereinafter described and claimed.

I show the invention as applied to the stand which sustains an emery-wheel for grinding tools; but it may be applied to an apple-parer, an egg-beater, or any other similar portable mechanism which requires to be attached to and detached from the edge of a shelf or table.

In the drawings, Figure 1 is a side elevation of a stand and clamp constructed according to my invention. Fig. 2 is a front elevation of the same. Fig. 3 is an enlarged view of the lower end of the stand shown in Fig. 1 with a modification for applying the follower thereto. Fig. 4 is a front elevation of Fig. 3. Fig. 5 is a section of Fig. 3 on the line $z\ z$, looking downward. Fig. 6 is a top plan view of the follower detached from the clamp. Fig. 7 is a section through the same on the line $x\ x$.

A is the stand which supports the emery grinding-wheel B. The latter is mounted on the shaft b in bearings $a\ a$ on the upper end of the stand and is revolved by the crank b'. The construction of these parts is well known and needs no further description.

On the lower end of the stand A it is provided with two fixed jaws or projections $a^2\ a^3$, connected by the broad web a^4. The upper projection a^2 forms the upper fixed jaw of the clamp, which extends over the table-top. The lower projection a^3 supports the thumb-screw c, which is fitted to an internal corresponding thread formed in the hole c^2, Fig. 5. All these parts are of common construction, save those of the web a^4, hereinafter described and well understood. It has been customary heretofore to use the clamp by turning the screw c up against the lower face of the table-top when the projection a^2 extended over its upper face. This held the stand to the table, but was liable to two objections: first, that it marred the lower surface against which the end of the screw impinged, and, secondly, that the vibration of the stand when the emery grinder was operated gradually loosened the screw. In some instances, also, a follower has been pivoted on the upper end of the screw, and also sometimes connected by a projection to a guide or groove on or in web a^4; but while it saved marring the table-top it still acted to loosen the screw, or else in the case of the construction where the follower worked on a guide or groove on or in the web a^4 and was made to fit it snugly enough to prevent its backlash from loosening the screw it then bound or cramped in moving up and down the guide or groove under pressure of the screw it is to so construct the follower that it will be held closely enough to prevent its movement from loosening the screw, while giving it perfect freedom of movement up and down by the pressure upon or withdrawal of the screw from it, that my invention is devised, and it removes both difficulties at once. To overcome these difficulties, I construct the parts as follows: I form the edges of the wide web a^4 parallel to each other and parallel to the path of the screw c or substantially so. I also widen out the web until the distance between said opposite edges bears such relation to the distance of the screw away from its inner face as to cause the follower e to move up and down freely, as hereinafter described. I also form the outer edges of the web a^4 thin and smooth to serve as guideways $a^5\ a^{15}$ for the follower. The central fin a^6 will be found an easy and valuable mode of strengthening the web for this purpose. I next construct the follower e with two curved projections or fingers $e^2\ e^3$, which are made to embrace the guiding-edges $a^5\ a^{15}$, so that the follower will move freely up and down on them. This may be accomplished by forming the follower, as shown in Fig. 6, with one finger e^2 straight, while the other is curved, so as to fit around the opposite guide-edge a^5. The follower can then be hooked around that guide-edge and the finger e^2 bent around the other guide-

edge a^5 into the shape shown by the dotted lines. This construction and mode of uniting the parts is shown in Figs. 1 and 2. The finger e^2 of the follower may, however, be bent or cast in the form shown by the curved dotted lines in the first instance, and a slot *o* may be cut in one of the guide-edges a^5 next to the projection a^2. The follower can then be hooked around the opposite guide-edge a^{15} and have its finger e^3 passed through the slot *o*, when it will be slipped down the guideways a^5 a^{15} onto the screw *c*. The slot *o* can then be filled with a drop of solder, and this will prevent the escape of the follower, as the latter is always below the slot when clamping against the lower side of the shelf or table-top. In case the breadth of the web a^4 has been made sufficient it will be found that the follower will slide up and down on it without binding, the bearing of the fingers e^2 e^3 being so far away on each side of the screw *c* as to prevent their binding. If the center of the screw *c* is moved farther away from the face of web a^4, then the latter must be made correspondingly wider to effect this result. This proportionate distance can easily be found by experiment, and will vary somewhat in its minimum of effective operation from irregularities of the point of the screw in shape; but it must be of such proportions that the guideways a^5 a^{15} shall be at least twice the distance apart which the screw is placed from a plane passing through them.

As the follower is always attached to the web a^4, no operation of the emery grinder will loosen the screw *c*, for the follower moves with the stand and not with the screw under this twisting action.

The breadth apart of the guide-edges a^5 a^{15} assists in preventing the backlash of the follower *e* sliding on them from affecting the thumb-screw *c*, as this backlash is reduced to a minimum thereby in allowing movement of the follower. In order to aid the latter in slipping down on its guideways when the screw *c* is withdrawn, I form a spur *h* on its lower side, which bears against the web a^4, between its guide-fingers. All the working parts can be cheaply made by casting, on account of their form and arrangement.

What I claim as new and of my invention is—

1. The combination of the stand A, provided with projections a^2 a^3, the web a^4, uniting the said projections and provided with parallel guide-edges, the follower *e*, formed with guide-fingers e^2 e^3, embracing said guide-edges, and the screw *c*, working through the projection a^3 and located between the guide-edges a^5 and near enough to the face of web a^4 to move the follower *e* up without binding—that is to say, within one-half or less of the distance which separates the guide-edges—substantially as described.

2. The combination of the stand A, provided with projections a^2 a^3, the web a^4, uniting the said projections and provided with parallel guide-edges a^5 a^{15}, the latter having the slot *o*, the follower *e*, formed with guide-fingers e^2 e^3, embracing said guide-edges, one of which is fitted to pass through slot *o*, and the screw *c*, working through the projection and located between the guide-edges a^5 a^{15} and near enough to the face of web a^4 to move the follower *e* up without binding—that is to say, within one-half or less of the distance which separates the guide-edges a^5 a^{15}—substantially as described.

3. The combination of the stand A, provided with the projections a^2 a^3, the web a^4, uniting said projections and provided with parallel guide-edges, the follower *e*, formed with guide-fingers e^2 e^3, embracing said guide-edges and having the downward-projecting spur *n* between them arranged to bear against web a^4, and the screw *c*, working through the projection a^3 and located between said guide-edges and near enough to web a^4 to prevent binding of the follower as it moves the latter upon its guideways, substantially as described.

CHARLES E. HUDSON.

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