(No Model.)

H. H. TAYLOR.

CLAMP.

No. 266,920. Patented Oct. 31, 1882.

Fig. 1.

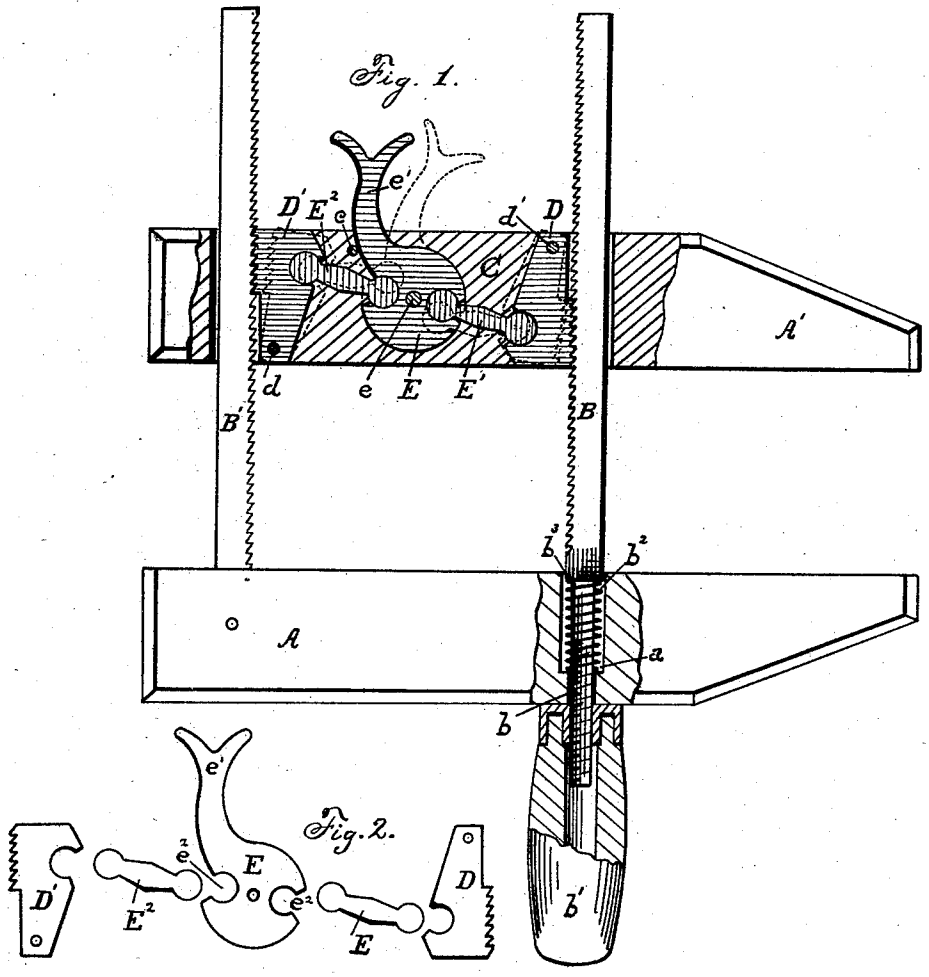

Fig. 2.

WITNESSES

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HARRISON H. TAYLOR, OF DETROIT, MICHIGAN, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THOMAS RENO AND THE DETROIT TOOL COMPANY, OF SAME PLACE.

CLAMP.

SPECIFICATION forming part of Letters Patent No. 266,920, dated October 31, 1882.

Application filed July 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, HARRISON H. TAYLOR, of Detroit, county of Wayne, State of Michigan, have invented a new and useful Improvement in Hand Screw-Clamps; and I 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 it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists of the combination of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of an apparatus embodying my invention, showing parts in section. Fig. 2 represents separate views of the toggle mechanism.

My invention relates to hand screw-clamps, and is designed especially as an improvement upon a clamp for which an application was filed May 9, 1882, by Thomas Reno, Serial No. 60,833, which was allowed June 12, 1882.

In carrying out my invention A and A′ represent the two jaws.

B and B′ are the ratchet-bars on which the ratchet-teeth are formed, projected in opposite directions. The ratchet-bar B, nearest the free ends of the jaws, is provided with a screw-cut tang, *b*, and a handle, *b′*, adapted to engage with said tang. It is also preferably provided with a spring, b^2, which is held in place between the shoulder *a* in the jaw A and the shoulder b^3 upon the ratchet-bar. The ratchet-bar B′ is secured in the jaw A without a handle. I prefer that said bar should be rigidly secured in said jaw, though it may be pivoted therein, if desired, without departing from the principle of my invention. The jaw A′ is constructed with a slot, C.

D and D′ represent ratchet blades or pawls, constructed with a series of ratchet-teeth adapted to engage with the ratchet-bars B and B′. The pawls are pivoted one at the top and one at the bottom, as shown at *d* and *d′*, and preferably provided with notches adapted to receive and secure the ends of toggle-levers E′ and E^2.

E is a revolving cam-shaped disk, preferably constructed as shown in the drawings, pivoted on the shaft *e*, and provided with a suitable handle or thumb-piece, *e′*. It is also constructed with suitable notches, e^2, upon its periphery, adapted to receive the ends of the levers or arms E′ and E^2. Said arms I prefer to construct in free and separate parts, with heads adapted to be slipped in and easily secured in the notches upon the pawls D and D′. The whole construction of the disk E and the levers E′ and E^2 is that of a double-acting toggle adapted to engage and disengage the pawls D and D′ with the ratchet-bars B and B′, when the disk is rotated in the proper direction, by means of the thumb-piece *e′*.

c is a stop secured to the jaw to limit the backward movement of the thumb-piece.

The operation of the device will now be understood. By projecting the thumb-piece *e′* forward the pawls D and D′ are disengaged from the ratchet-bars, when the two jaws of the clamp may be readily and quickly adjusted upon the wood and secured in that position by forcing the thumb-piece in the opposite direction and engaging the pawls with the ratchet-bars. Then by turning the one handle, *b′*, the jaws may be caused to grip with any required force.

It will be observed that this mechanism is much stronger and more durable than the spring-pawls used in the former device referred to for engagement with the ratchet-bars. It permits of a much easier adjustment of the jaws and secures an increased number of teeth upon the pawls for engagement with the teeth upon the ratchet-bars. Moreover, the teeth may be cut much closer together, whereby a more even adjustment of the jaws may be secured.

It is evident that the construction of the toggle mechanism is such that the different parts may easily be replaced, if required, as in their manufacture the several parts would all be duplicates.

It will be seen, again, that this device is simpler than that already applied for, in that it dispenses with one of the handles, as it not only provides for an easier adjustment of the jaws upon the wood, but dispenses, also, with one of the handles and the necessity of screwing up and unscrewing two handles to tighten

and loosen the jaws. Furthermore, it dispenses with the necessity of a stationary nut in connection with one of the handles, cheapening as well as simplifying the construction.

What I claim is—

1. A hand screw-clamp consisting of a jaw provided with two ratchet-bars, one of which has a screw-cut tang and engaging-handle, a jaw arranged to be adjusted on the ratchet-bars, two pawls arranged to swing in recesses formed in the adjustable jaw to engage and disengage the ratchet-bars, and toggle mechanism connected with the said pawls and serving to positively swing them both in engaging and disengaging the ratchet-bars, substantially as described.

2. A hand screw-clamp consisting of a jaw provided with two ratchet-bars, one of said bars provided with a screw-cut tang, an engaging-handle, and suitable spring, and in connection therewith a jaw adapted to be adjusted upon the ratchet-bars, and provided with pawls constructed with a series of teeth adapted to engage with the ratchet-bars, and a double-acting toggle mechanism adapted to operate said pawls, substantially as described.

3. A hand screw-clamp combining in its structure a jaw carrying two ratchet-bars, a jaw adjustable thereon and provided with two swinging pawls, and operating mechanism consisting of a pivoted cam-shaped disk having a projecting thumb-piece, and two lever-arms connecting the disk with the pawls, substantially as described.

4. A hand screw-clamp composed of two jaws united by two ratchet-bars, one of which has a screw-cut tang and engaging-handle, a set of pawls arranged to swing on one of said jaws, and operating mechanism consisting of two lever-arms and a disk having thumb-piece, said disk and lever-arms serving to positively swing the pawls in both their movements to engage and disengage the ratchet-bars, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

HARRISON H. TAYLOR.

Witnesses:
W. H. JACKSON,
J. EDWARD WARREN.