W. H. LILLY.

JOINERS' CLAMP.

No. 194,830. Patented Sept. 4, 1877.

Fig. 1.

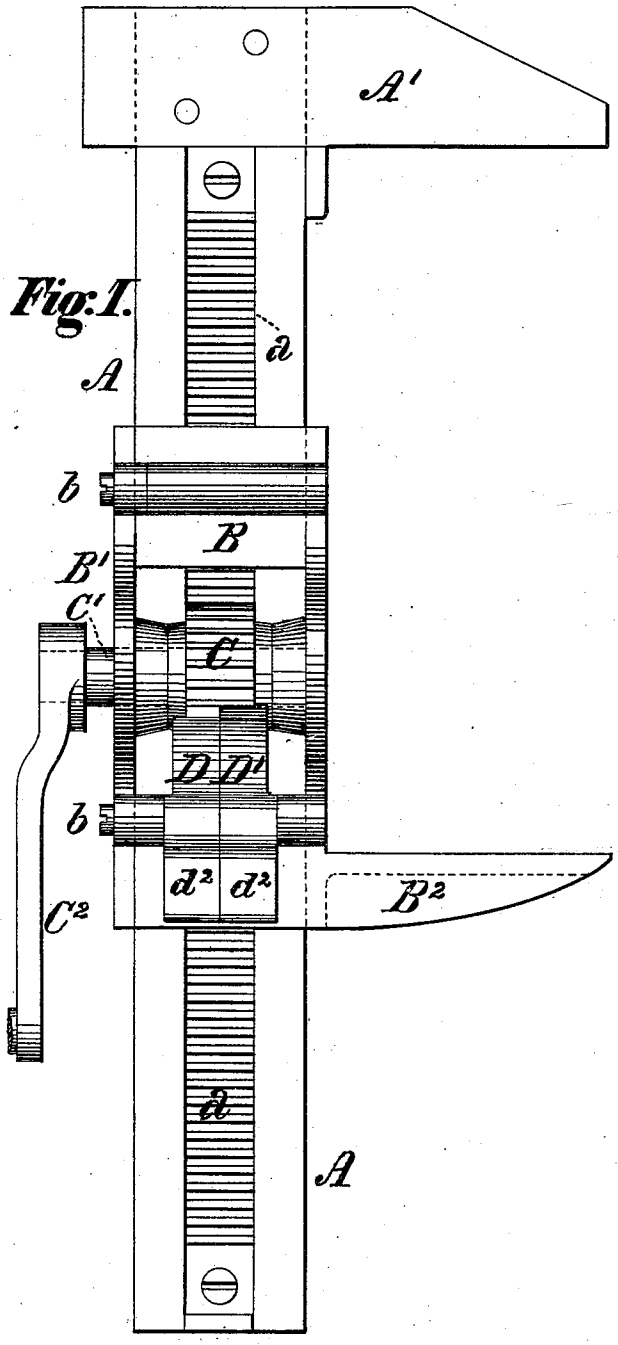
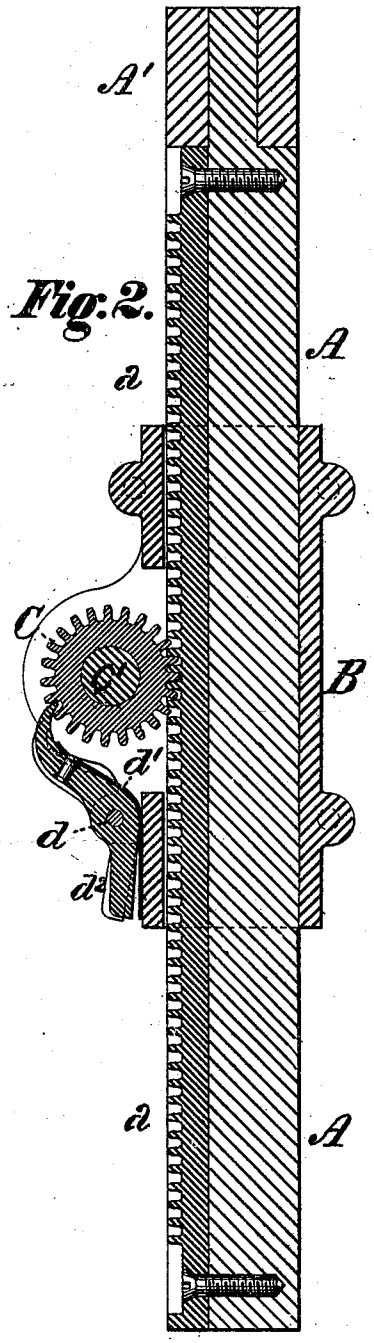


Fig. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM H. LILLY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CHARLES H. R. TRIEBELS, OF SAME PLACE.

IMPROVEMENT IN JOINERS' CLAMPS.

Specification forming part of Letters Patent No. **194,830**, dated September 4, 1877; application filed August 20, 1877.

To all whom it may concern:

Be it known that I, WILLIAM H. LILLY, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Joiners' Clamps, of which the following is a specification:

The object of my invention is to provide a joiner's clamp in which the degree of opening of the jaws between which the work is held may be readily and speedily varied and the jaws firmly locked in position, when desired; to which ends my improvements consist in the combination of a stock carrying a fixed jaw and a longitudinal rack, with a frame movable thereon, and provided with a jaw parallel to that of the stock, a pinion gearing with the rack on the stock, and pivoted spring-pawls engaging the teeth of the pinion, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a view, in elevation, of a joiner's clamp embodying my improvements; and Fig. 2 a longitudinal section through the same.

To carry out my invention, I provide a stock or shank, A, to one end of which is firmly secured a fixed jaw, A′. A longitudinal groove or recess is formed in the stock, within which groove is secured a metal rack, *a*, the depth of the groove and thickness of the rack-bar being preferably such as that there shall be no projection of the teeth of the rack above the surface of the stock. A box frame or carriage, B, is fitted snugly to the stock, so as to embrace the latter on three sides, and a plate, B^1, is secured to the open side of the frame B by bolts or screws *b*, so as to prevent motion of the frame upon the stock, except in the direction of the length of the latter. A jaw, B^2, is formed upon or secured to the frame B, projecting therefrom upon the same side of the stock as the fixed jaw A′, and having its inner face parallel thereto. A pinion, C, is secured upon a shaft, C^1, mounted in bearings on the frame B, and susceptible of rotation by a crank, C^2, the teeth of said pinion meshing with those of the rack *a* on the stock. Two pawls, D D′, are pivoted to the frame B by a bolt or pin, *d*, and take into the pinion C, each being pressed up thereto by a spring, d^1. One of the pawls, D′, is made longer than the other by a distance equal to about one-half the pitch of the pinion, so that when the longer is in gear with the pinion—that is to say, having its end resting in the space between two teeth—the shorter rests upon the top of one of said teeth, and is, consequently, out of gear, and vice versa. Each pawl is provided with a thumb-piece, d^2, by pressure upon which it may be thrown out of gear with the pinion.

In the operation of my improved clamp the movable jaw B^2 is moved into position relatively to the fixed jaw A′, as may be desired, for engaging the work by the rotation of the pinion C in gear with the rack *a*, and is firmly held at any desired point by one or the other of the pawls D D′.

The employment of the short and long pawls enables the pinion to be locked without lost motion, and at intervals of the thickness of a tooth; and by the use of a sunken rack a firmer connection to the stock is insured, and the teeth are better preserved from injury or breakage, as well as being kept out of the way of the operator.

I claim as my invention, and desire to secure by Letters Patent—

The combination, in a joiner's clamp, of a stock, having a fixed jaw and a longitudinal rack, with a frame movable on said stock and carrying a jaw parallel with that of the stock, a pinion gearing with the rack on the stock, and pivoted spring-pawls engaging the teeth of the pinion, substantially as set forth.

WM. H. LILLY.

Witnesses:

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