

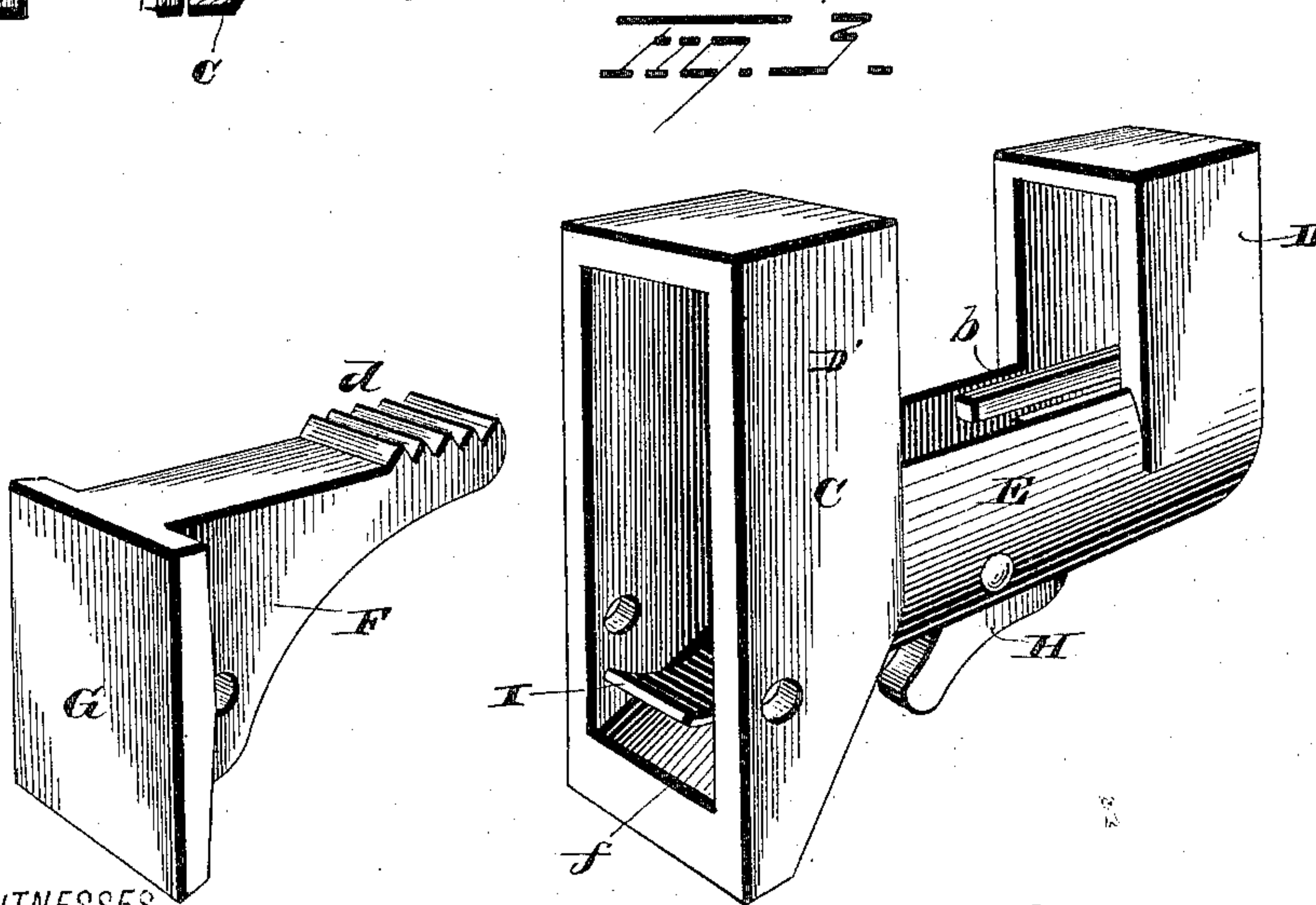
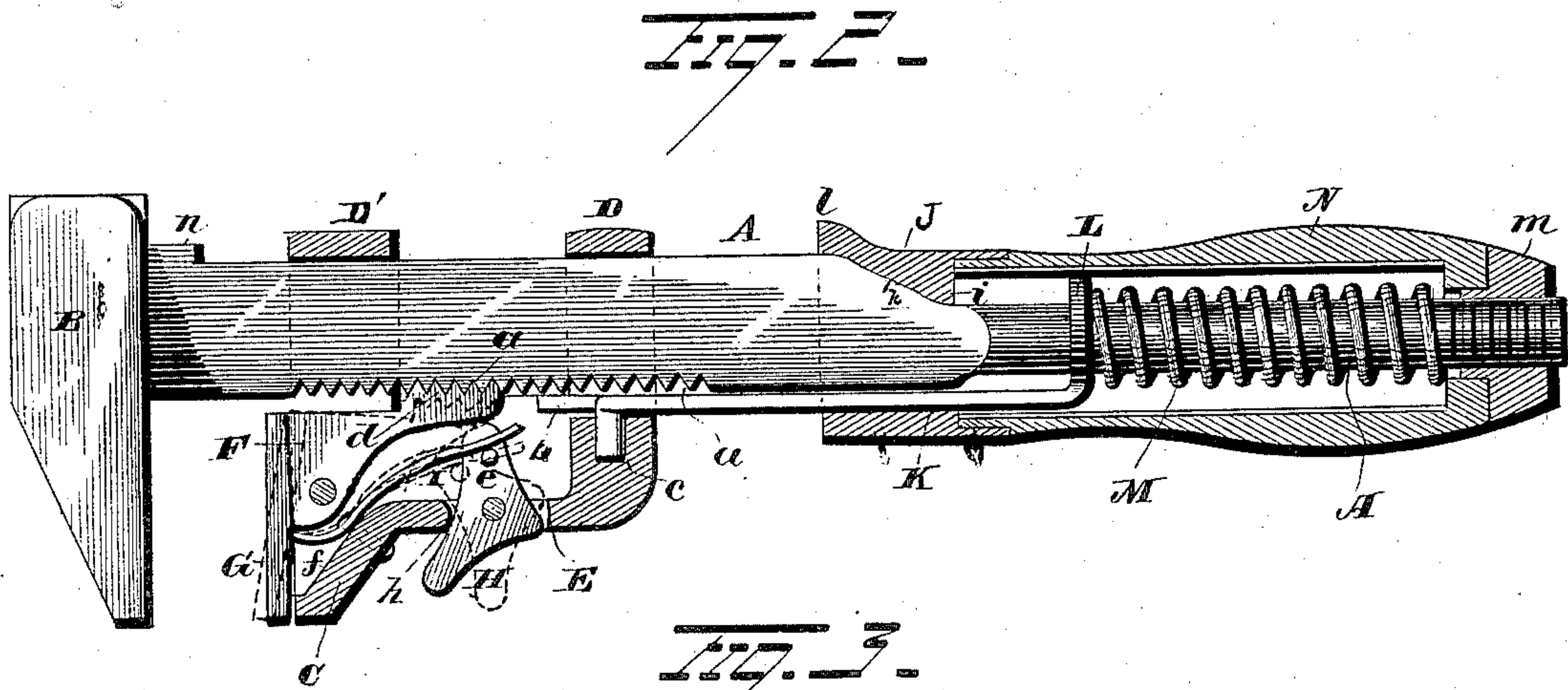
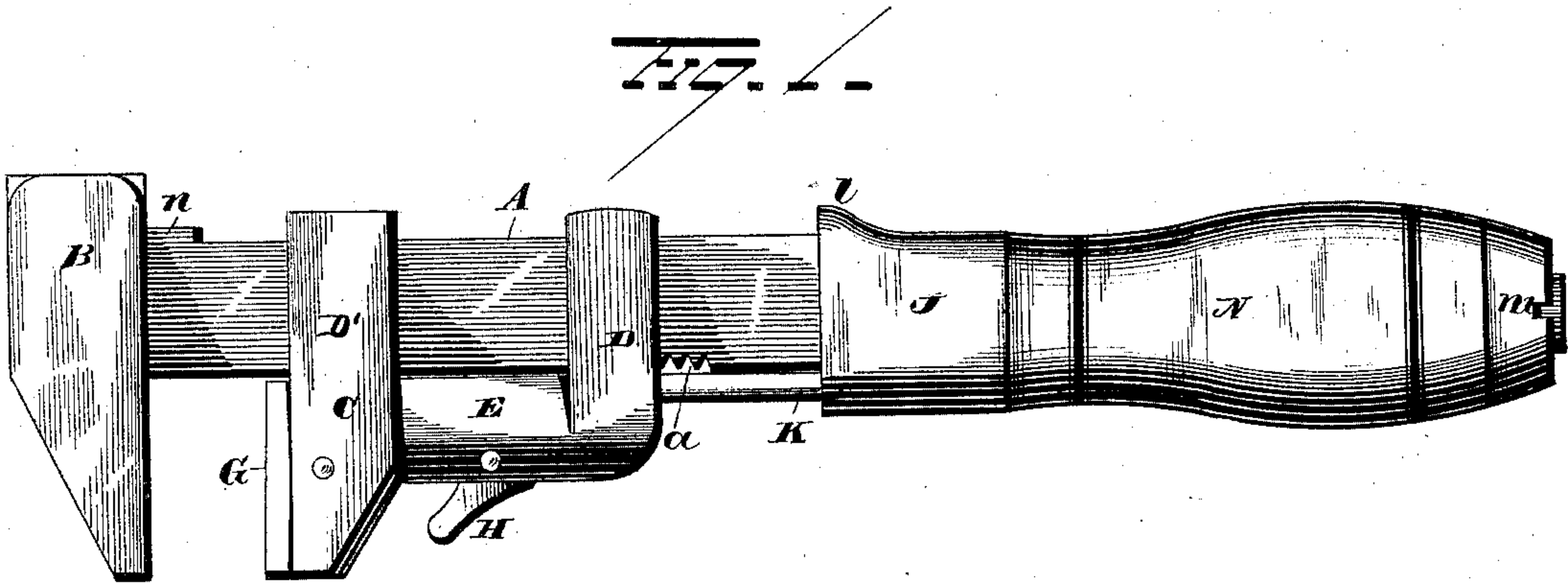
(No Model.)

B. F. STOCKFORD.

WRENCH.

No. 306,439.

Patented Oct. 14, 1884.



WITNESSES

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. STOCKFORD, OF STURGIS, MICHIGAN.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 306,439, dated October 14, 1884.

Application filed May 31, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. STOCKFORD, of Sturgis, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Wrenches; 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 appertains to make and use the same.

My invention relates to an improvement in wrenches, the object being to provide a wrench which shall be adapted to automatically adjust itself to a nut or bolt-head, and which may, if desired, be retained in such adjustment. A further object is to provide a wrench which shall be simple and economical in construction, and at the same time durable and efficient in use; and with these ends in view my invention consists in certain novel features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, inside elevation, of my improved wrench. Fig. 2 is a sectional view thereof. Fig. 3 is a detached view of the sliding frame.

A represents the wrench-bar, provided on one end with a rigid jaw or head, B, a portion of one edge of which bar is provided with serrations or teeth *a*.

C is a sliding jaw, movably secured on the bar A by the loops D D'. This jaw consists, essentially, of the frame E, having the loops D and D' formed integral therewith, the bearing-plate G, and arm F. The frame E is provided on the sides, near the loop D, with the guides *b*, adapting it to travel on the bar A, one end of the said frame being made solid and provided with a cavity or recess, *c*, for a purpose to be hereinafter explained. The outer face of the plate G of the movable jaw C is formed flat, and the inner end of the under side of same is formed on an incline and bears on the outer face of the frame E. The arm F is formed in the shape of a triangle and fits in the frame E, one edge of the arm extending up on a line with the guides *b*, and provided near the free end with serrations or teeth

*d*, similar to the teeth *a*, the arm being pivoted to the frame near the plate G and below the center of the latter.

In the portion E of the sliding frame is pivoted a triangular trigger, H, two corners of which extend within the said portion E.

On each side of the trigger H and near one of the ends within the frame-piece E are formed the lugs or projections *e*, on which latter bear the arms of a bifurcated spring, I, which is secured to the inner side of slanting face *f* of the frame E, the opposite end of which spring extends out from the face and bears against the arm F, and tends to keep the outer end of the plate G raised from the frame E. It will now be readily seen that when the trigger is pulled to one side one of the ends within the frame-piece E will be raised, the pins or projections *e* at the same time raising the end of the spring I until the side of the trigger strikes the side of the opening *h* in the frame-piece, when the pins *e* will be beyond the center and thus be kept in position. When the trigger is pulled back, the end within the frame-piece is lowered, the spring bearing on the pins *e*, which are again beyond the center, tending to keep the inner end of the trigger in its lowered position. When the inner end of the trigger is raised, as above described, it bears on the inner side of the arm F and forces the serrated end against the teeth *a* on the bar A, and held in that position by the spring, and thus prevents the sliding frame from moving on the bar. When the end of the arm F is thus forced toward the bar, the inner end of the plate G is raised and the outer end lowered and allowed to rest flat on the frame E. When the inner end of the trigger is lowered, the frame is allowed to slide back and forth on the bar.

On the lower portion of the wrench-bar A, which is cut away, fits a ferrule, J, provided on its interior with a flange, *i*, adapted to strike the shoulder *k*, formed on the bar A, the forward end of the ferrule being enlarged, as shown at *l*, and fits over large portion of the bar. Into the perforation *c*, formed in the piece E, fits the bent end of the bar or rod K, which passes through the ferrule, and is provided on the opposite end with a loop, L, which bears on



the flange *i*, and through which passes the bar A. The upper portion of the opening in the forward end of the ferrule and in the flange *i*, being rounded, accommodates the upper rounded face of the bar K. Around the smaller portion of the bar A fits a coiled spring, M, which bears against the loop L, the other end of which bears against a collar or shoulder formed in the outer end of a handle, N, which fits over the spring and bar A, and having its inner end fitting with the outer end of the ferrule and against the flange *i*, the end of the bar A being provided with a nut, *m*, to keep the handle in position. It will be observed that the spring M, bearing against the stationary handle N and the loop on the bar K, tends to keep the loop D of the frame E down against the stop *n*, formed on the bar A, to prevent the jaws from closing tightly. When the frame is forced backwardly, the bar K compresses the spring, the loop passing up in the handle N, the interior of which is lined with metal to allow the parts to work easily and to avoid wear on the wooden handle. When it is desired to adjust the wrench to a nut or bolt-head, the sliding frame is pulled back a sufficient distance and then allowed to adjust itself to the size of the nut or bolt-head, the coiled spring forcing the sliding jaw against the same. The trigger is then turned and the sliding jaw held stationary.

My invention is exceedingly simple in construction, is of few parts, and can be manufactured at a small initial cost.

It is evident that slight changes 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 shown and described, but consider myself at liberty to make such changes and alterations as fairly fall 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. In a wrench, the combination, with a wrench-bar and the rigid jaw, of a spring-actuated sliding jaw having a pivoted arm, and a trigger for locking said arm to the wrench-bar.

2. The combination, with a wrench-bar provided at one end with a rigid jaw, of a sliding jaw mounted on the wrench-bar, and consist-

ing, essentially, of a frame and a movable bearing-plate having an inwardly-projecting arm, and a trigger for holding said arm in contact with the wrench.

3. The combination, with a wrench-bar serrated and provided with a rigid jaw, of a spring-actuated jaw adapted to slide on the wrench-bar, and consisting, essentially, of a frame and a pivoted bearing-plate having an inwardly-projecting arm serrated near its inner end, and a trigger adapted to throw said arm in or out of contact with the wrench-bar.

4. The combination, with a wrench-bar provided with a rigid jaw, of a spring-actuated sliding jaw having a movable arm, and a spring-actuated trigger for locking said arm to the wrench-bar.

5. The combination, with a wrench-bar provided with a rigid jaw, of a sliding jaw consisting, essentially, of a frame and a bearing-plate pivoted in said frame and provided with an inwardly-projecting arm, a spring-actuated trigger pivoted within the frame of the sliding jaw, a spring located within the handle of the wrench, and a bar or rod connecting the sliding jaw and spring, substantially as set forth.

6. The combination, with a wrench-bar provided with a rigid jaw and hollow handle, of a movable jaw having an arm pivoted therein, a trigger for holding said arm in contact with the wrench-bar, a spring located within the handle, and a bar or rod one end of which bears against the spring while the other end is connected to the movable jaw.

7. The combination, with a wrench-bar provided with a rigid jaw and a hollow handle, of a movable jaw consisting, essentially, of a frame and a bearing-plate pivoted in said frame and provided with an inwardly-projecting arm, a trigger for locking said arm to the wrench-bar, a spring located within the handle, and a bar or rod one end of which is connected to the movable jaw while the opposite end bears against the spring, substantially as set forth.

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

BENJAMIN F. STOCKFORD.

Witnesses:

TALCOTT C. CARPENTER,  
F. G. HEALD.