

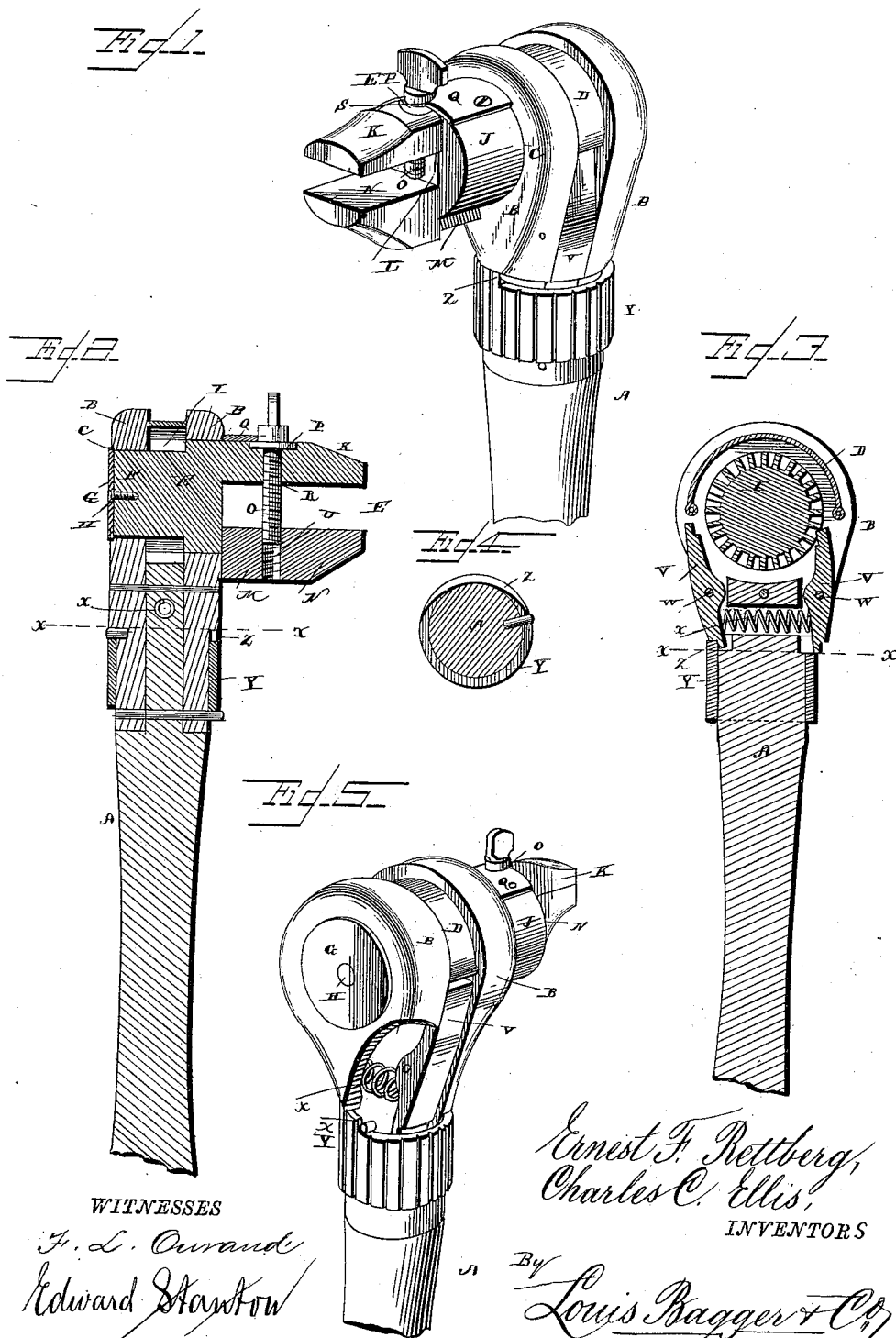
(No Model.)

E. F. RETTBERG & C. C. ELLIS.

WRENCH.

No. 335,481.

Patented Feb. 2, 1886.



WITNESSES

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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 335,481, dated February 2, 1886.

Application filed October 12, 1885. Serial No. 179,525. (No model.)

To all whom it may concern:

Be it known that we, ERNEST FREDERICK RETTBERG and CHARLES CARROLL ELLIS, both residents of San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful Improvements in Wrenches; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of our improved ratchet-wrench. Fig. 2 is a longitudinal sectional view taken through the axis of the ratchet-head. Fig. 3 is a similar view taken at a right angle to the former view. Fig. 4 is a cross-section on line *x x*, Figs. 2 and 3; and Fig. 5 is a perspective view on an enlarged scale of the head of the wrench, showing parts broken away.

Similar letters of reference indicate corresponding parts in all the figures.

Our invention has relation to ratchet-wrenches; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the handle, to the upper end of which two plates, B B, are secured, the upper portions of which plates are circular and formed with circular registering apertures C, and connected by means of a flange, D, connecting the upper edges of their inner faces, forming a circular chamber between the plates.

The cylindrical portion of the ratchet-head E has its reduced end F turning in one of the apertures in the plates, and has a circular plate or washer, G, secured upon the outer end by means of a central screw, H, the said washer bearing against the outer side of the plate, and securing the ratchet-head in the chamber formed between the plates. The portion of the ratchet-head within the said chamber is formed into a ratchet-wheel, I, and the portion J of the head, which projects out through the aperture in the plate, is formed with the

rigid jaw K of the wrench. The portion J of the ratchet-head has a dovetailed recess, L, extending outward from the foot of the rigid jaw, and the inner dovetailed end, M, of the movable jaw N slides in this recess.

A screw, O, having a flat head for manipulating it, is formed near the head with an annular collar, P, which is retained between the outer side of the rigid jaw and a plate or lip, Q, secured upon the outer side of the said jaw, turning in apertures R and S in the said jaw and lip, and the inner end, T, of the screw turns in a threaded perforation, U, in the sliding jaw.

Two pawls, V V, are pivoted upon bolts W W between the shanks of the plates B B, and have their lower ends forced outward by means of a spring, X, placed between them and forcing them apart, the said spring forcing the upper ends of the pawls to engage the ratchet-teeth upon the revolving head.

A sleeve, Y, turns upon the upper end of the handle and upon the lower ends of the shanks of the plates B, and has a flange, Z, projecting from its upper edge, which flange is thicker at its middle and tapers toward the ends, so that when the sleeve is turned to bring the flange to bear against the lower end of one of the pawls its thick middle will force the lower end of the pawl in, disengaging its upper end from the ratchet-teeth, so that the ratchet-head may be turned in a direction toward the upper end of the pawl, and it will be seen that by shifting the flange from one pawl to the other the ratchet-head may be turned in the opposite direction. The ratchet-head will thus be held perfectly firm in the head when the flange is turned away from both pawls, but may be turned to either side by causing the flange of the sleeve to force the lower end of the pawl at the side to which it is desired to turn the head into the space between the plates, the compression of the spiral spring increasing its tension, so that the pawl which engages the ratchet-head will bear firmly against it. In this manner it will be seen that the wrench may be adjusted to any size of a nut by sliding the jaw of the wrench by means of the screw, and thereupon the nut and

the ratchet-head may be turned by rocking the handle forward and back in the manner usual in ratchet-wrenches.

It will be seen that the wrench may be easily changed to turn in either direction, or to be rigid by simply turning the sleeve upon the handle, which may be done while the wrench is adjusted upon the nut without removing it from the same, thus rendering the wrench very useful in complicated machinery, or where a nut is placed in a position having difficult access.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

In a ratchet-wrench, the combination of a handle formed with two plates at its upper ends having circular perforations and connected by means of a flange at their upper edges, a cylindrical head turning in the apertures in the plates and having a washer secured at one end bearing against the outer side of one plate and having a rigid jaw at

its other end and a dovetailed recess, and formed with ratchet-teeth at its middle, a jaw having a dovetailed inner end sliding in the said recess and having a screw-threaded perforation, a screw turning in a perforation in the rigid jaw and in the perforation of the sliding jaw, pawls pivoted between the edges of the inner ends of the plates and having a spring forcing their lower ends apart, and a sleeve turning upon the handle and having a flange upon its upper edge increasing in thickness toward its middle for engaging the lower ends of the pawls and forcing them in, as and for the purpose shown and set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

ERNEST FREDERICK RETTBERG.
CHARLES CARROLL ELLIS.

Witnesses:

JOS. SHEEM,
E. J. GASTON.