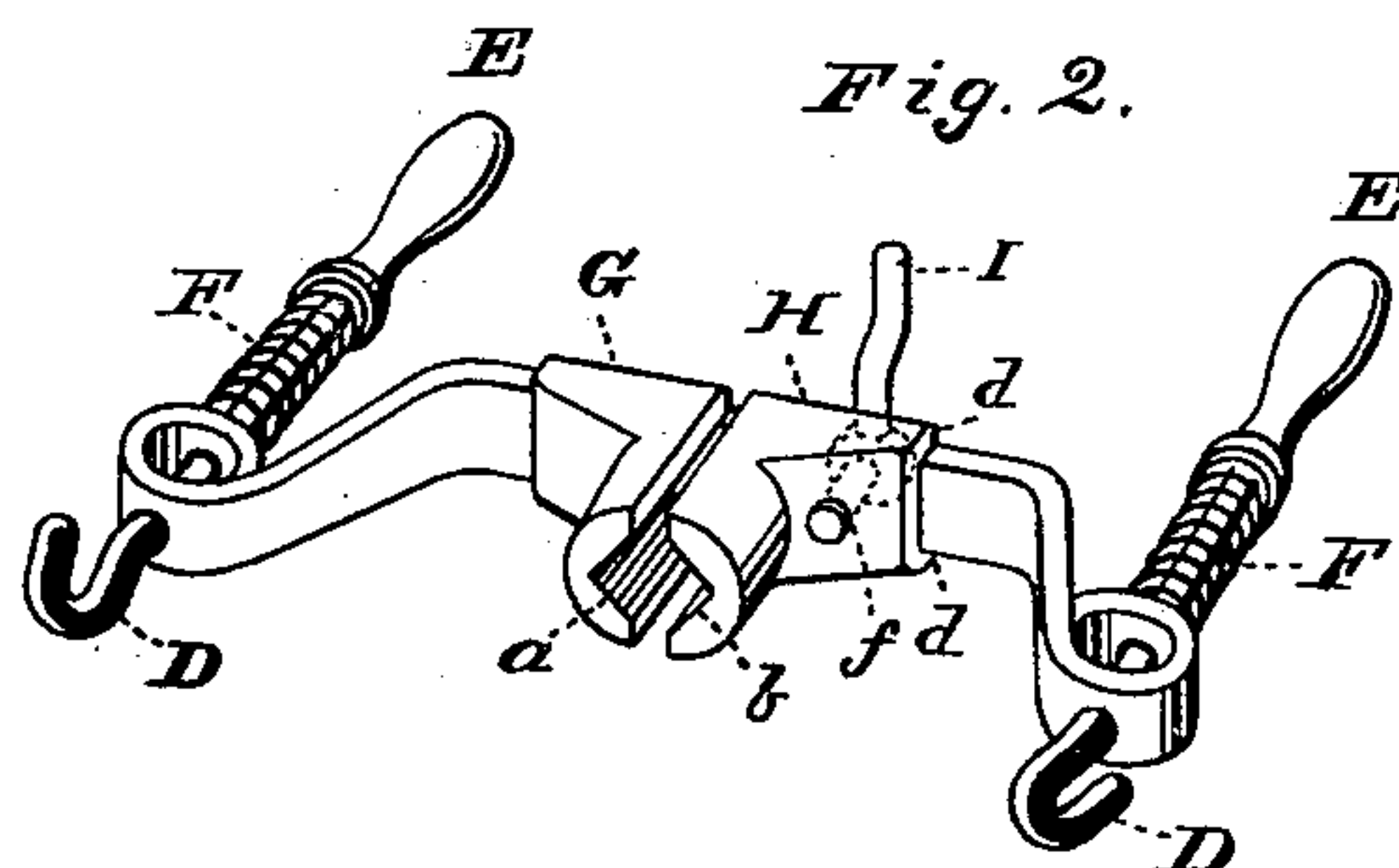
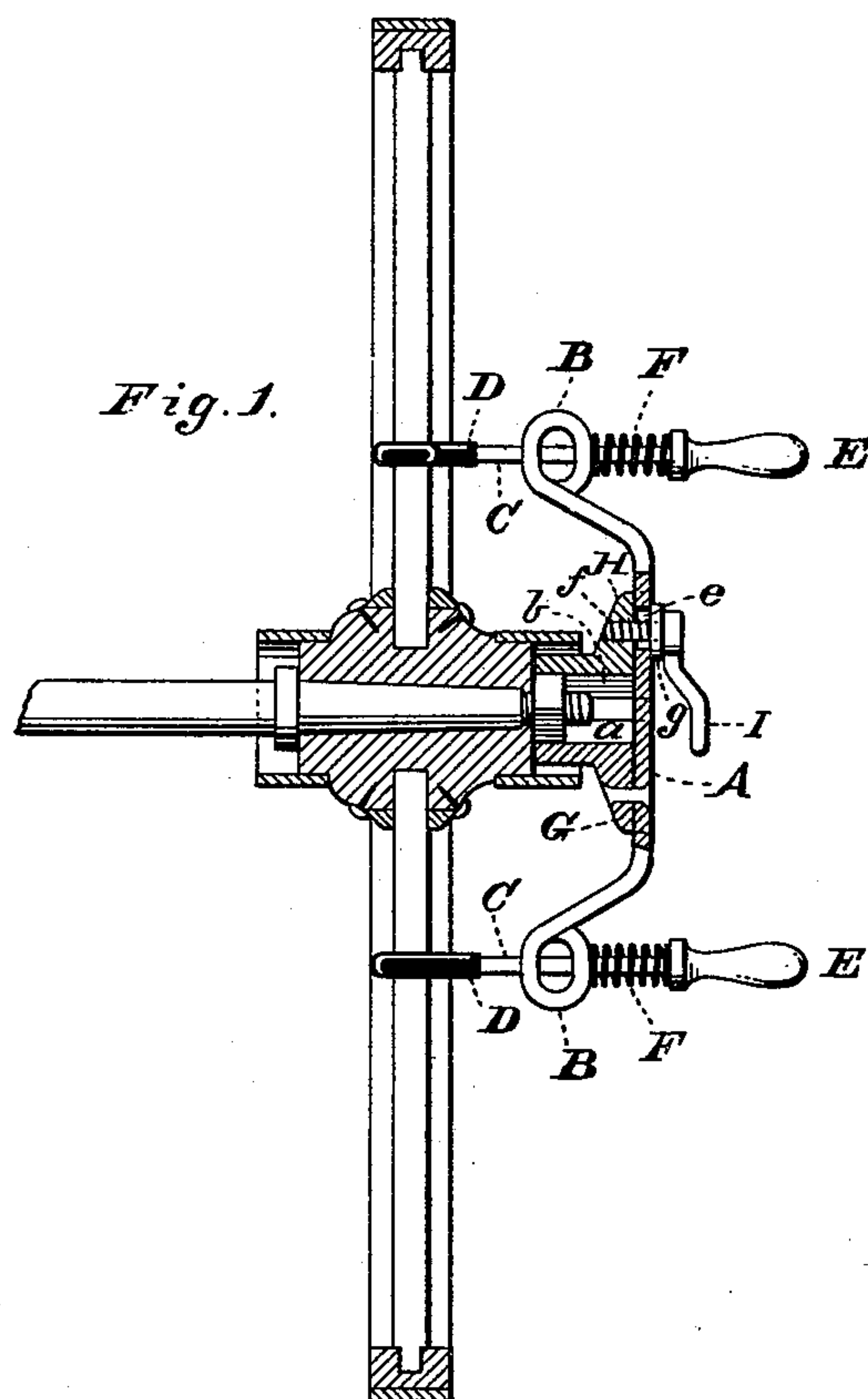


(No Model.)

W. R. SMITH.
WRENCH.

No. 403,895.

Patented May 21 1889.



WITNESSES,
Villette Anderson,
C. R. Ferguson

INVENTOR
Wilson R. Smith
by E. W. Anderson
Attorney

UNITED STATES PATENT OFFICE.

WILSON R. SMITH, OF BELOIT, WISCONSIN, ASSIGNOR OF TWO-THIRDS TO
JOSEPH GOSS AND ANDREW C. HUTCHISON, BOTH OF SAME PLACE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 403,895, dated May 21, 1889.

Application filed June 28, 1888. Renewed April 13, 1889. Serial No. 307,209. (No model.)

To all whom it may concern:

Be it known that I, WILSON R. SMITH, a citizen of the United States, and a resident of Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Wrenches; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of this invention, and is a section through a wheel with the wrench attached, the latter being partly in section. Fig. 2 is a perspective view of the wrench.

The invention relates to improvements in vehicle-axle-nut wrenches of that class in which a clamping device secures the wrench to the nut and to the wheel-spokes; and it consists in the construction and novel combination of parts, as hereinafter set forth.

The object is to provide a strong and serviceable wrench to be attached to the wheel and nut, so that both can be removed together from the spindle and easily replaced without touching the greasy nut with the hands.

Referring by letter to the drawings, A designates a cross-head having its ends curved inwardly and provided with a scroll, B, which is perforated, as shown, and serves as a bearing for the rods C, which have the hook ends for engaging the spokes of a wheel at opposite sides of the hub, as indicated in the drawings. I prefer to cover the hook ends with rubber or other soft material, as at D, so that the varnish or paint on the spokes

will not be marred. The outer ends of the rods C are provided with a handle, E, and the coiled spring F, between the handle and the scroll-bearing, is designed to hold the hooks in engagement with the spokes during the operation of removing the wheel.

G is a fixed jaw on the cross-head, having the angular seat *a*, adapted to fit upon one side of the axle-nut, and H is an adjustable jaw having a similar nut-seat, *b*, for engaging the opposite side of the nut. The adjustable jaw has the flanges *d*, adapted to bear against the edges of the cross-head and prevent lateral movement of the jaw.

I is a set-screw, which passes through a longitudinal slot, *e*, in the cross-head and engages a threaded opening, *f*, in the adjustable jaw. A washer, *g*, is interposed between the head of the set-screw and the outer surface of the cross-head, which prevents the wearing away of the cross-head by the screw-head impinging or turning thereon.

It will be observed that the jaws have a long bearing on the cross-head, which materially strengthens the parts.

Having described my invention, what I claim is—

The combination of the cross-head having the longitudinal slot and the inwardly-turned scroll-ends, the rods having the hook ends covered with a soft material, and the handle, the spiral springs between the handle and the scroll-bearing, the fixed jaw, the adjustable jaw having the flanges *d*, the set-screw, and the washer, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILSON R. SMITH.

Witnesses:

R. C. CLEVELAND,
J. G. WICKHAM.