No. 668,545. Patented Feb. 19, 1901.

T. P. SAYERS.

SOCKET WRENCH.

(Application filed Oct. 26, 1900.)

(No Model.)

Fig. 2.

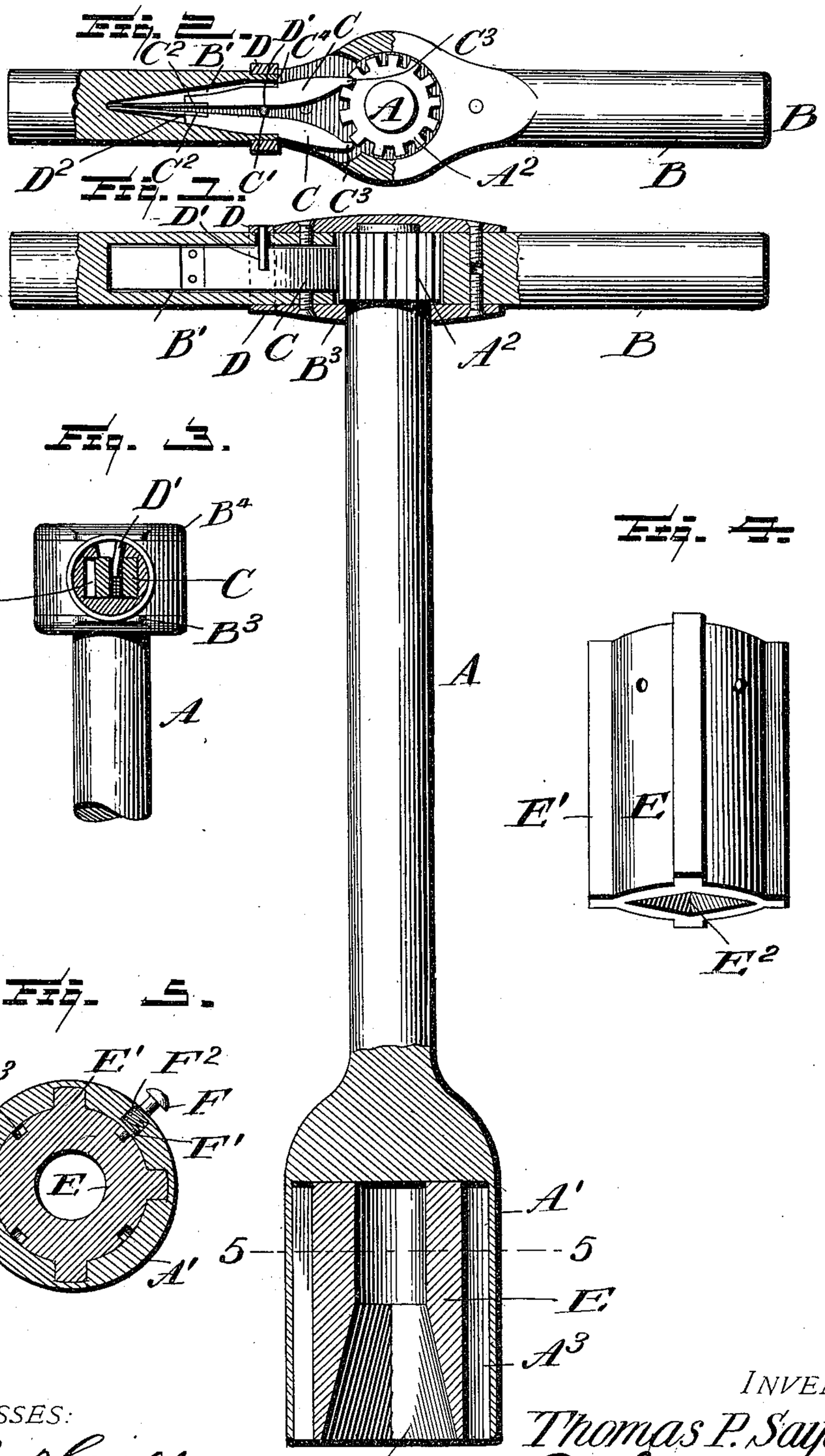

Fig. 3.

Fig. 4.

Fig. 5.

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THOMAS P. SAYERS, OF CAMBRIA, WYOMING, ASSIGNOR OF ONE-HALF TO HARRY UPTON, OF SAME PLACE.

SOCKET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 668,545, dated February 19, 1901.

Application filed October 26, 1900. Serial No. 34,481. (No model.)

To all whom it may concern:

Be it known that I, THOMAS P. SAYERS, a citizen of the United States, residing at Cambria, in the county of Weston, State of Wyoming, have invented certain new and useful Improvements in Socket-Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to socket-wrenches, and particularly to a wrench of that character adapted to be operated by a ratchet connection between the handle and the shank of the wrench.

The invention has for its object to provide a construction of handle and ratchet connection by means of which the dogs or pawls may be alternately engaged with the ratchet carried upon the shank of the wrench through the medium of a partially-rotatable ring or band encircling the handle.

Other and further objects of the invention will hereinafter appear, and the novel features thereof will be pointed out by the appended claims.

In the drawings, Figure 1 is an elevation of the wrench with the handle and socket in vertical section. Fig. 2 is a plan of the handle with one portion in horizontal section. Fig. 3 is a vertical section upon line 3 3 of Fig. 1. Fig. 4 is a detail perspective of the sleeve or core, and Fig. 5 is a horizontal section upon the line 5 5 of Fig. 1 through the wrench-socket.

Like letters of reference indicate like parts throughout the several figures of the drawings.

The wrench proper comprises a shank or stem A, provided at one end with a socket A′ and at its opposite end with a handle B. At the handle end of the shank or stem A a ratchet-wheel A^2, of any suitable construction, is secured. One end of the handle B is provided with the recess B′, within which the locking dogs or pawls C are secured, each of the same being pivoted at C′ and having their ends C^2 beyond the pivot normally held apart by means of a spring D^2, the action of which carries the opposite end C^3 of the pawl into engagement with the ratchet-wheel. For the purpose of holding one of these pawls or dogs out of engagement with the ratchet while the opposite one engages the same a band or ring D is provided and surrounds the arm of the handle. This band is provided with an inwardly-projecting pin D′, which lies between the pawls and projects inward through a slot formed in the upper part of the casing of the handle. A partial rotation of the band or ring in either direction brings the pin into engagement with the pawl, removing the latter from its contact with the ratchet, while the remaining or opposite pawl is held in engagement by the spring D^2.

In the arrangement and disposition of the parts hereinbefore described I have provided a seat or recess C^4 upon the outer faces of the pawls, within which the band may ride when the pawl is held in contact with the same, and the opposite end portions of the handle are connected together by a suitable plate B^3, through which the stem A of the wrench passes and which is screwed or otherwise secured to the ends of the handle, while beyond the end of the stem a cap-plate B^4 is similarly secured to the ends of the handle, thus permitting the parts of the handle to be readily separated for the purpose of repairs to the pawls or springs whenever desirable.

The socket of the wrench is provided upon its inner walls with a series of grooved ways A^3, adapted to coöperate with the ribs E′, carried upon the sleeve or core E, so as to guide the insertion of the same and hold it against rotation within the socket. This core is provided with an angular aperture E^2, preferably tapering longitudinally; but the configuration of the aperture may be altered at will to adapt the wrench for use with any desired character of nut or bolt, while sleeves having different apertures are particularly intended to be used with the present invention. For that purpose the cores are made removable and are automatically held in position when inserted within the sleeve by means of a fastening device F, which may be of any desired structure, but for the purpose of illustration is shown as a spring-pressed pin located in a recess in the side wall of the socket and adapted to engage any one of a series of sockets E^3 in the wall of the sleeve E. This pin is provided with a collar F′, against which

one end of the tension-spring F^2 presses, the opposite end bearing against a wall of the socket or a suitable closure-plate. When the sleeve or core is inserted in the socket, the pin is pressed outward until it reaches a socket E^3, in which it is automatically seated, and the parts locked in position. To release the core, the head of the pin F is drawn outward, permitting the core to freely drop by gravity from the socket A'.

From the foregoing description the operation of the wrench will be clearly apparent, as when the handle is to be locked for turning in any direction the ring is shifted to carry the opposite pawl out of engagement with the ratchet, and this simple and efficient construction permits the direction of movement to be quickly changed, so that the wrench can be used for turning a nut or bolt in either direction in the quickest possible manner. It will therefore be seen that the wrench is particularly adapted for use in machinery and other places where the ordinary handle of the wrench cannot be operated, as the socket may be inserted into contact with the nut or bolt and the same easily rotated, even in positions where the ordinary wrench cannot be used. With the pawls in the position shown in Fig. 1 it will be seen that the handle may be turned in one direction without affecting the ratchet or wrench-socket, while in the reverse movement the socket will be turned, thus permitting the use of the handle in positions where a full revolution could not be made.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A socket-wrench comprising a shank having a ratchet-wheel thereon, a handle provided with oppositely-disposed pawls or dogs adapted to engage said ratchet, and means carried by said handle having a projection extending between the pawls for holding one of said pawls out of operative position; substantially as specified.

2. A socket-wrench comprising a shank having a ratchet-wheel thereon, a handle provided with oppositely-disposed pawls or dogs adapted to engage said ratchet, a ring surrounding said handle, and a pin extending inward from said ring and lying between said pawls, whereby a rotary movement of the ring will throw one of said pawls out of operative position; substantially as specified.

3. A socket-wrench comprising a shank carrying at one end a ratchet-wheel, oppositely-disposed pivoted pawls, a spring for normally holding said pawls in engagement with said ratchet-wheel, a ring mounted upon said handle, and an inward projection from said ring adapted to engage and move one of said pawls out of operative position; substantially as specified.

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

THOMAS P. SAYERS.

Witnesses;

SAMUEL SPANOGLE,

C. E. CARPENTER.