

(No Model.)

2 Sheets—Sheet 1.

G. GONTIER.  
RATCHET WRENCH.

No. 290,036.

Patented Dec. 11, 1883.

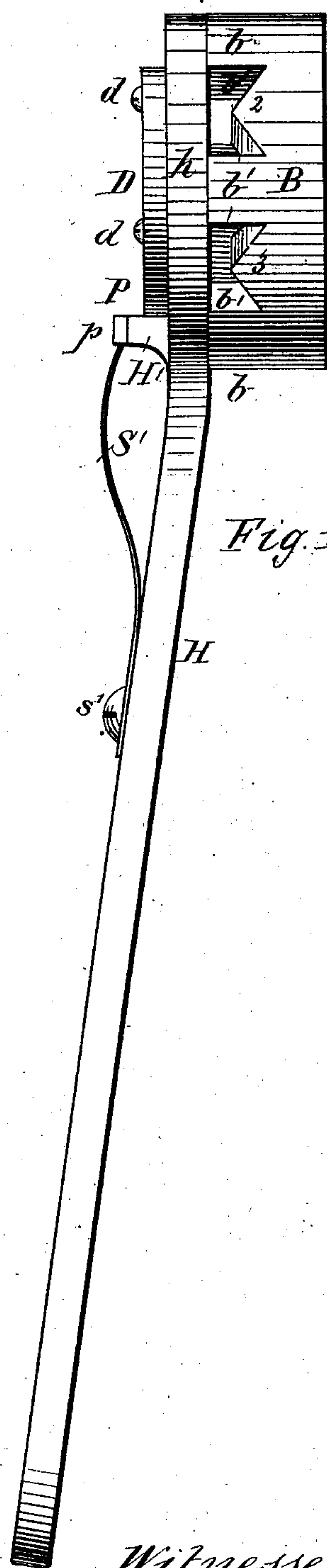


Fig. 1

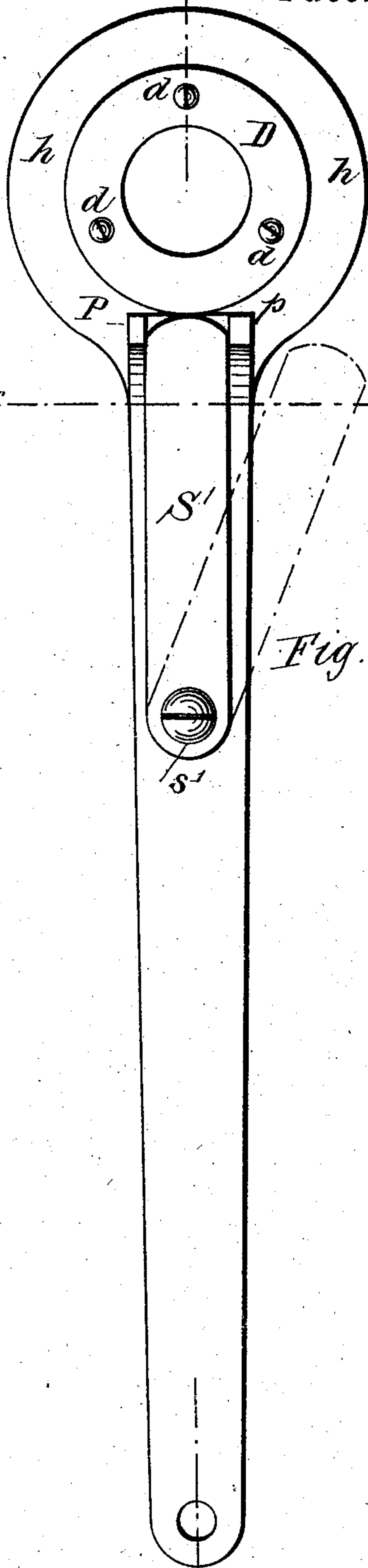


Fig. 2.

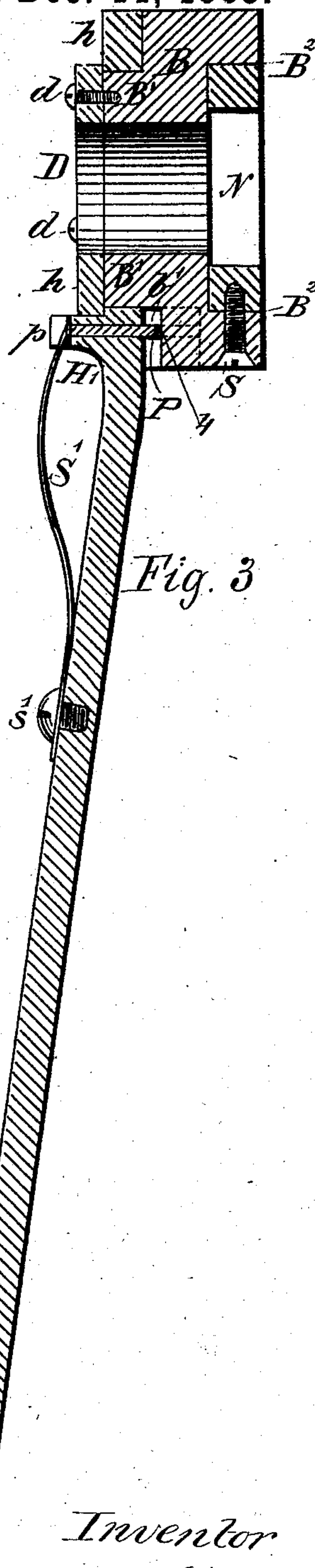


Fig. 3

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W. E. Foulter,  
Geo. W. Knott

Inventor  
Guillaume Gontier  
per Henry Orth  
his atty

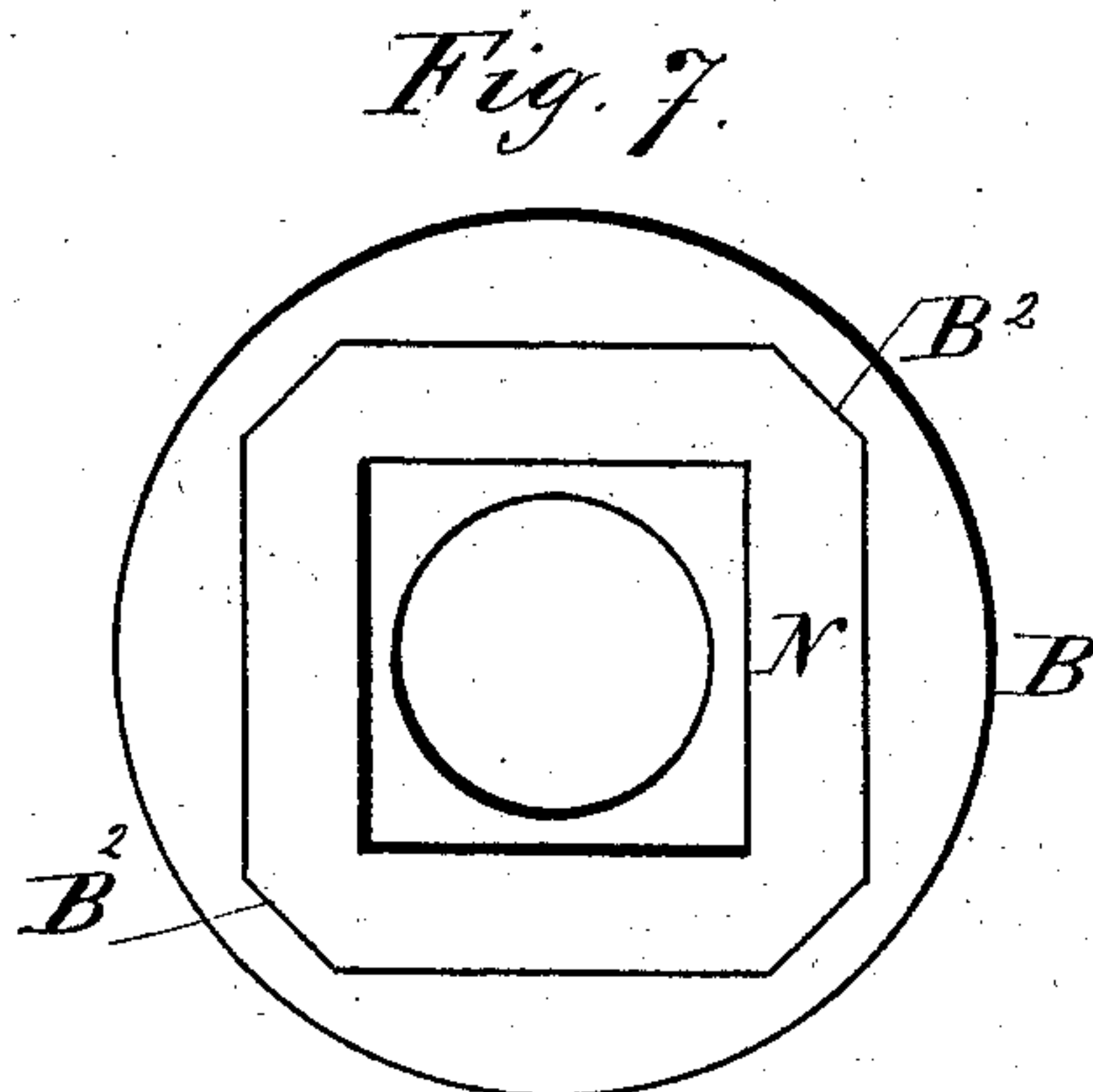
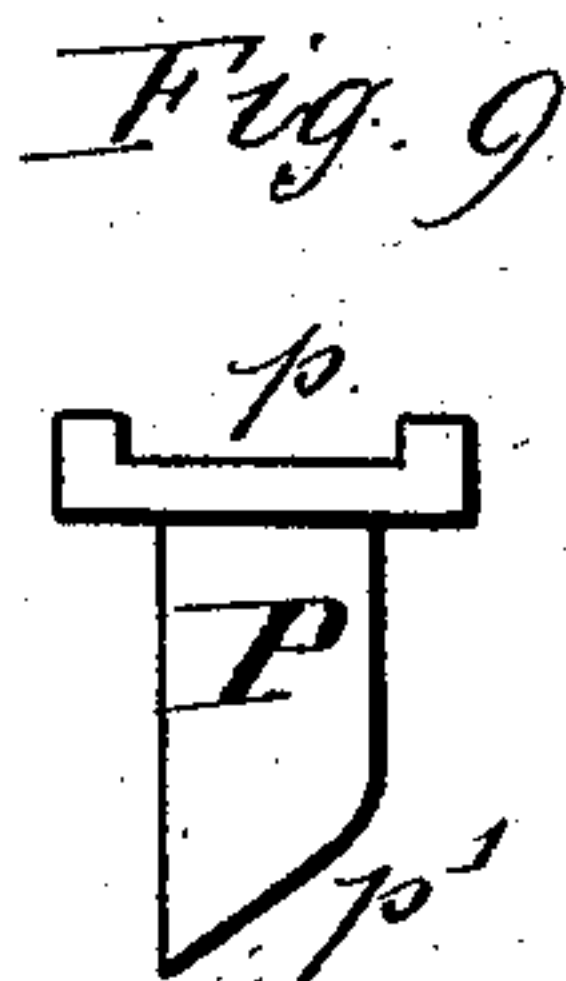
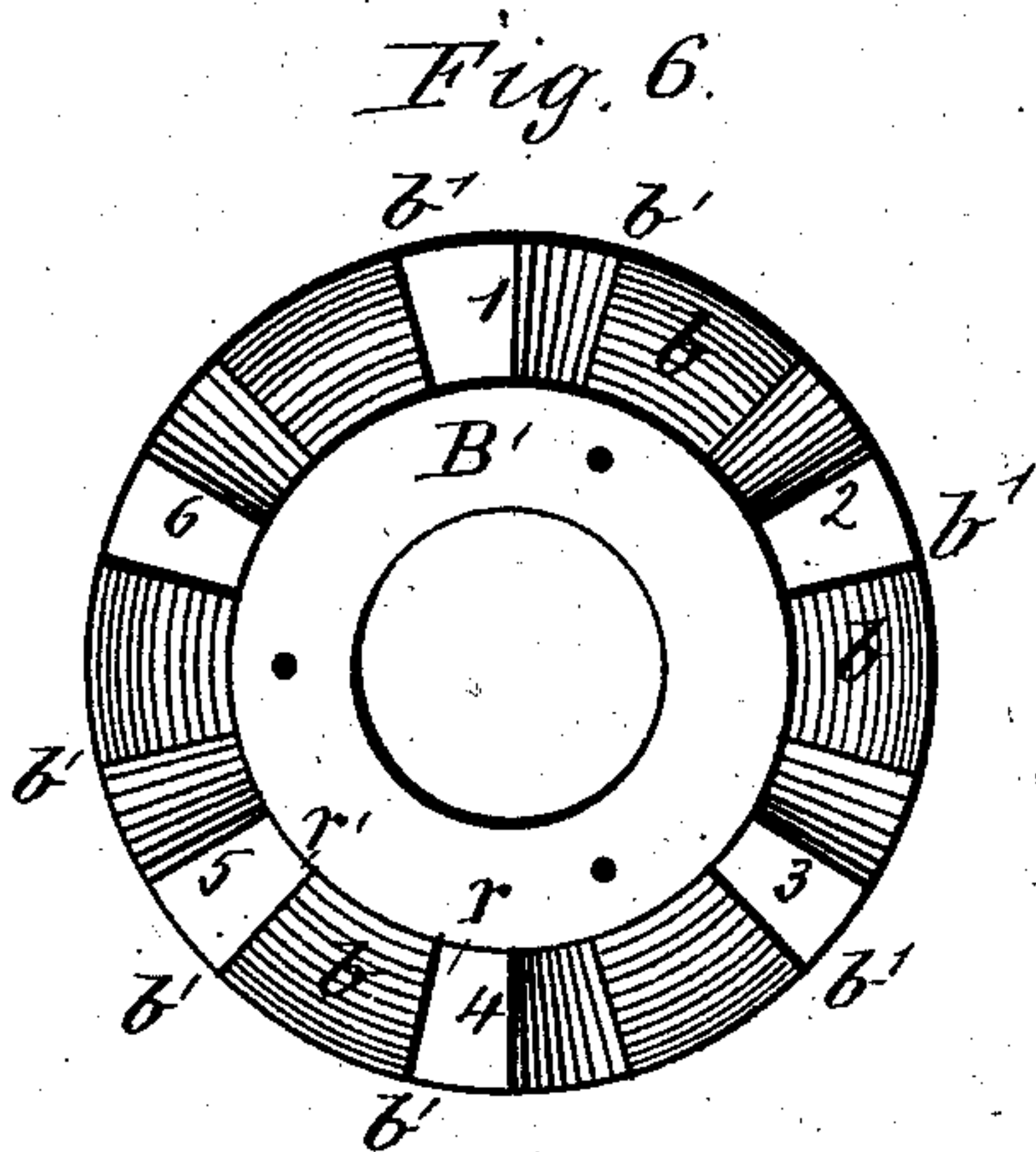
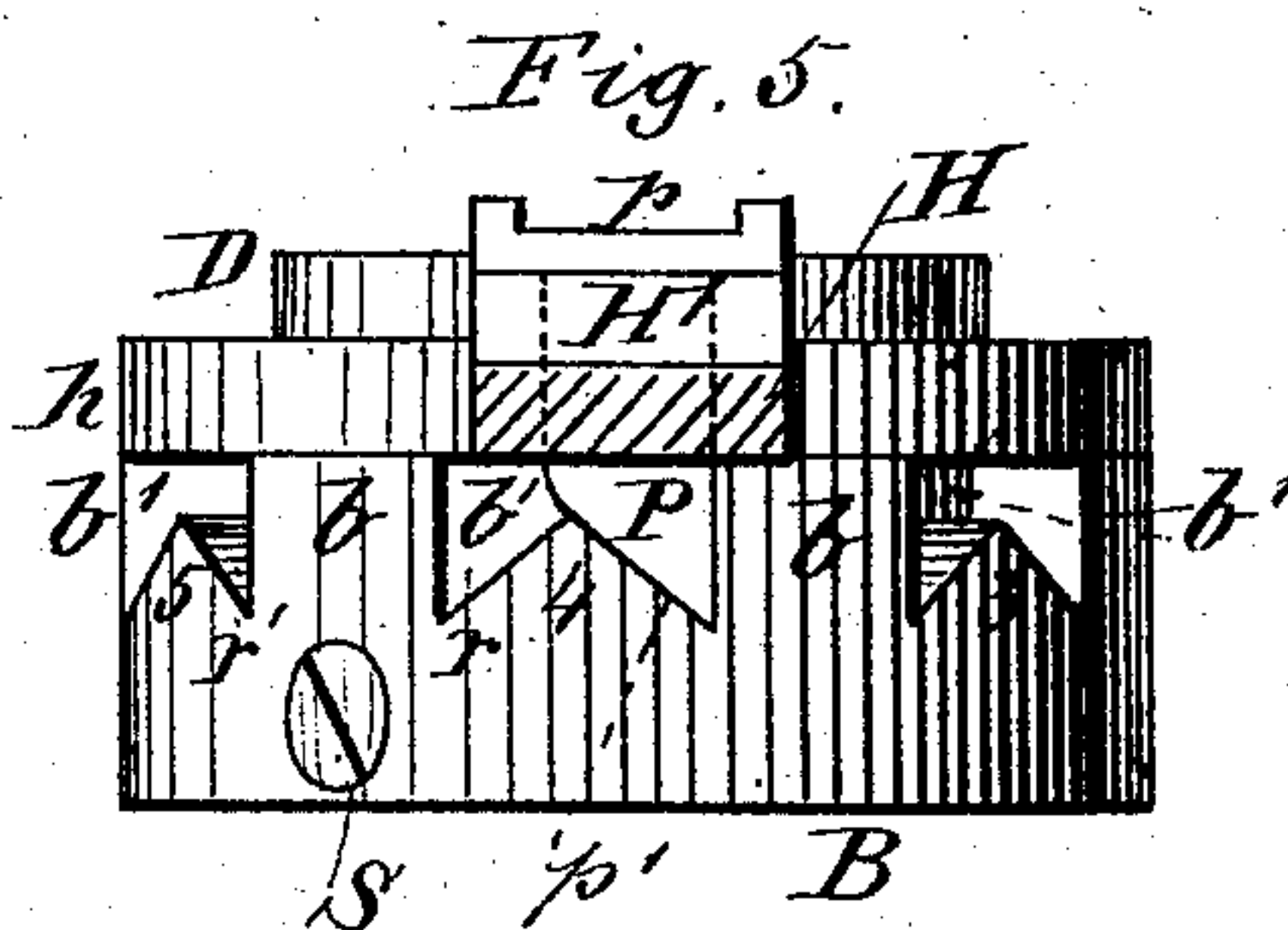
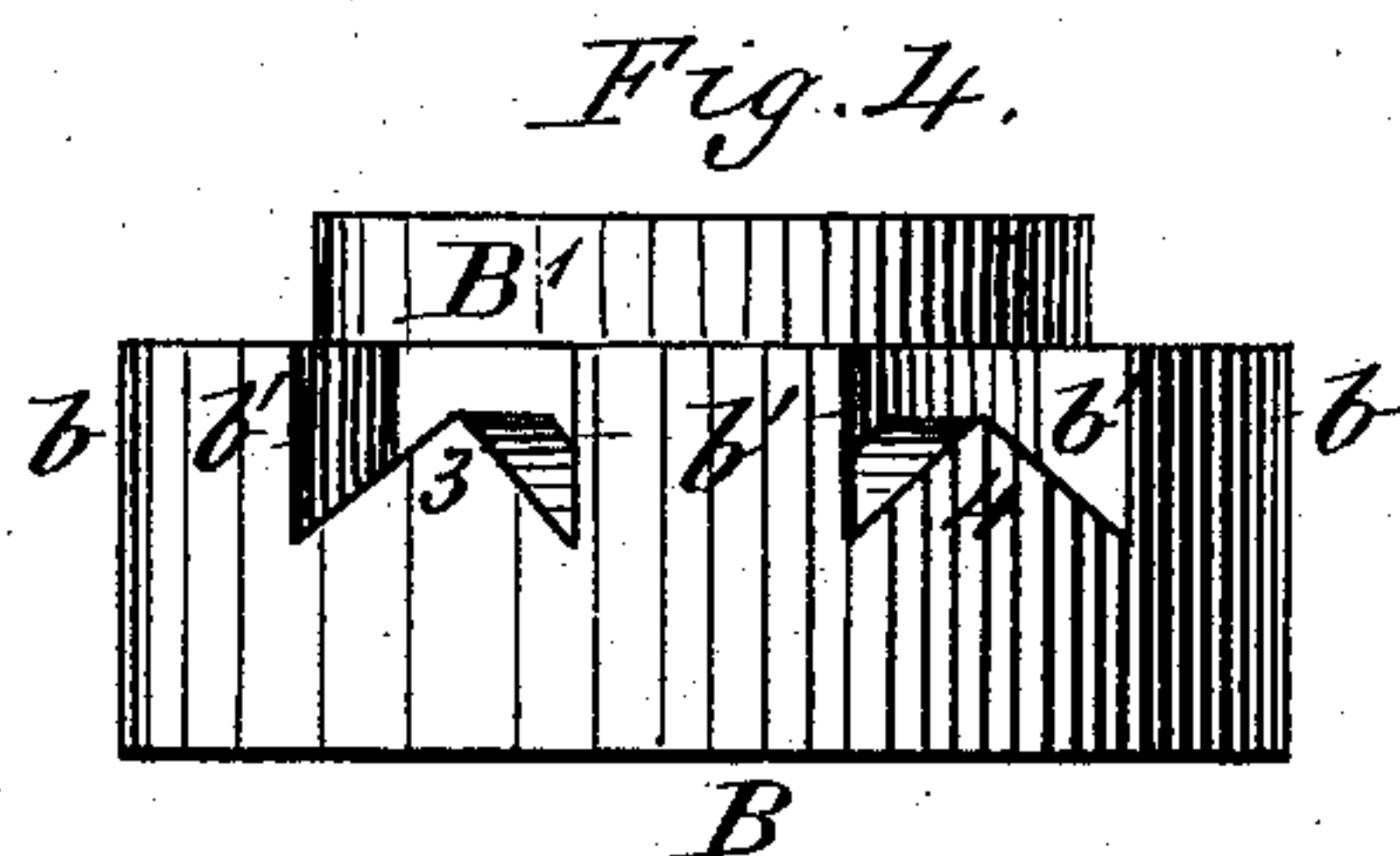
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# UNITED STATES PATENT OFFICE.

GUILLAUME GONTIER, OF COGNAC, FRANCE.

## RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 290,036, dated December 11, 1883.

Application filed August 2, 1883. (No model.) Patented in France June 30, 1883, No. 10; in England July 13, 1883, No. 3,468, and in Belgium July 14, 1883, No. 45,286.

*To all whom it may concern:*

Be it known that I, GUILLAUME GONTIER, a citizen of the French Republic, residing at Cognac, in the French Republic, have invented certain new and useful Improvements in Ratchet-Wrenches, (for which I have obtained Letters Patent in France, No. 10, under date of June 30, 1883; in Belgium, No. 45,286, under date of July 14, 1883, and in England, No. 3,468, under date of July 13, 1883;) 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in ratchet-wrenches; and it has for its object to simplify the construction of this class of tools, render them more efficacious and durable, and adapt them at the same time for use under the most varied circumstances.

In the accompanying drawings, Figures 1, 2, and 3 show my improved ratchet-wrench in side elevation, top plan view, and longitudinal vertical section, respectively. Fig. 4 is a detached elevation of the wrench or key holder. Fig. 5 is a section taken on line  $xx$  of Fig. 2. Figs. 6 and 7 show, respectively, by a top and bottom plan view, the key-holder. Fig. 8 is an elevation of an auxiliary wrench or key holder, and Fig. 9 is a detached view of the ratchet-pawl.

Like letters of reference indicate like parts wherever such may occur.

The wrench is composed of an annular wrench or key box or holder, B, the upper face of which is provided with a series of disconnected ratchet-teeth, 1 2 3, &c.—that is to say, ratchet-teeth are cut or formed at intervals and equidistant from one another in the face of the holder B—whereby a section,  $b$ , having its opposite walls,  $b'$ , vertical, is interposed between each two teeth 1 2 3, &c., as plainly shown in Figs. 5 and 6. The holder B has an annular projection,  $B'$ , of less diameter, that forms the fulcrum for the handle H, said handle terminating in a ring,  $h$ , that fits over the annular boss or projection  $B'$ , and

is held in place by a locking ring or disk, D, secured to the boss  $B'$  by means of screws  $d$ . The chamber  $B^2$  in the nut-holder is preferably square or of other angular form, for the reception of a wrench or key, N, that is secured within the chamber by means of a screw or screws, S, Figs. 3 and 5. Each tool will be provided with a set of such keys of different caliber, so that the wrench may be used on nuts or taps of different sizes.

It is frequently the case that a wrench of this class cannot be conveniently used where the bolts are located close to one another, or where such bolts project slightly above the adjacent bolts. To adapt the wrench for use under such circumstances, I provide an auxiliary key-holder, A, Fig. 8, adapted to be secured to the holder B by means of the screw or screws S, while the key is secured to the auxiliary holder by means of a screw or screws. By means of this auxiliary key-holder, the handle H is raised above the nuts or bolts adjacent to the one to which the wrench is applied, and may therefore be readily rotated.

The handle H has a boss or projection,  $H'$ , that is slotted for the reception of a pawl, P. (Shown in detail in Fig. 9.) The pawl has a bearing,  $p$ , for the free end of a leaf-spring,  $S'$ , secured at  $s'$  to the handle H, as plainly shown in Fig. 2, and an inclined face,  $p'$ . It (the pawl) is of such length as to project down into the recesses formed by the inclined faces of the teeth 1 2 3, &c., and the vertical walls  $b'$  of the holder.

The operation of the tool is as follows: Having selected a key of the proper caliber and secured the same in the chamber  $B^2$  of the key-holder or the corresponding chamber of the auxiliary key-holder, as the case may be, the key is applied over the nut to be unscrewed, the pawl being in the position shown in Fig. 5. If, now, a partial rotation is imparted to the handle from left to right, as the straight face of the pawl lies against one of the vertical walls  $b'$  of the holder it will carry the latter around with it, unscrewing the nut. If the movement of the handle is now reversed, the pawl will ride up the inclined face of tooth 4, Fig. 5, for example, and when about to ride over it, instead of falling into the recess  $r$ , the upper end of



the inclined face  $p'$  will bear against the upper edge of the vertical wall  $b'$  of said recess, and said pawl will continue to rise and ride over the upper face of the section  $b$ , to fall into the  
 5 recess  $a'$  on one side of tooth 5 without rotating the holder, the vertical face of the pawl again lying against the vertical wall  $b'$  of a section  $b$ . If the handle is now turned again from left to right, the pawl  $P$  will again carry  
 10 the key-holder along to rotate the nut, as will be readily understood. If it is desired to screw the nuts on the bolts again or to tighten up a nut after loosening the same, the position of the pawl  $P$  in the slot is reversed, and it will then  
 15 lie in the position shown in Fig. 9, whereby the operation of the wrench is reversed. The reversal of the position of the pawl is effected by turning the spring  $S'$  off the bearing  $p$  of the pawl  $P$ , as shown in dotted lines in Fig. 2, lift-  
 20 ing the pawl out of the slot of the boss  $H'$ , reversing the pawl, returning it into the slot, and placing the spring in position.

It is obvious that by means of the described construction I obtain a ratchet-wrench that is  
 25 not only simple, but very strong and durable, and that is adapted for use under almost any circumstances.

Having thus fully described my invention, what I claim, and desire to secure by Letters  
 30 Patent of the United States, is—

1. In a ratchet-wrench, a wrench or key holder having the ratchet-teeth 1 2 3 4, &c., formed at intervals in its face, an operating-handle, and a reversible pawl, whereby the function of the wrench may be reversed, as described. 35

2. A ratchet-wrench composed of a wrench or key holder having the teeth 1 2 3 4, &c., formed at intervals in its face, an operating-handle, a reversible pawl, and a removable wrench or key, as described. 40

3. A ratchet-wrench composed of a wrench or key holder having the ratchet-teeth 1 2 3 4, &c., formed at intervals in its face, an operating-handle, a reversible pawl, an auxiliary wrench or key holder, and a removable wrench  
 45 or key, as described, for the purposes specified.

4. The key-holder  $B$ , having an annular flange or boss,  $B'$ , and ratchet-teeth 1 2 3 4, &c., and the locking-disk  $D$ , in combination with the handle  $H$ , having ring  $h$ , the spring  $S'$ , and  
 50 pawl  $P$ , all constructed for operation as described.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of July, 1883.

GUILLAUME GONTIER.

Witnesses:

EDWARD P. MACLEAN,  
 LOUIS TOUSSAINT.