

No. 696,406.

Patented Apr. 1, 1902.

R. A. BREUL.
WRENCH.

(Application filed June 5, 1901.)

(No Model.)

Fig. 2.

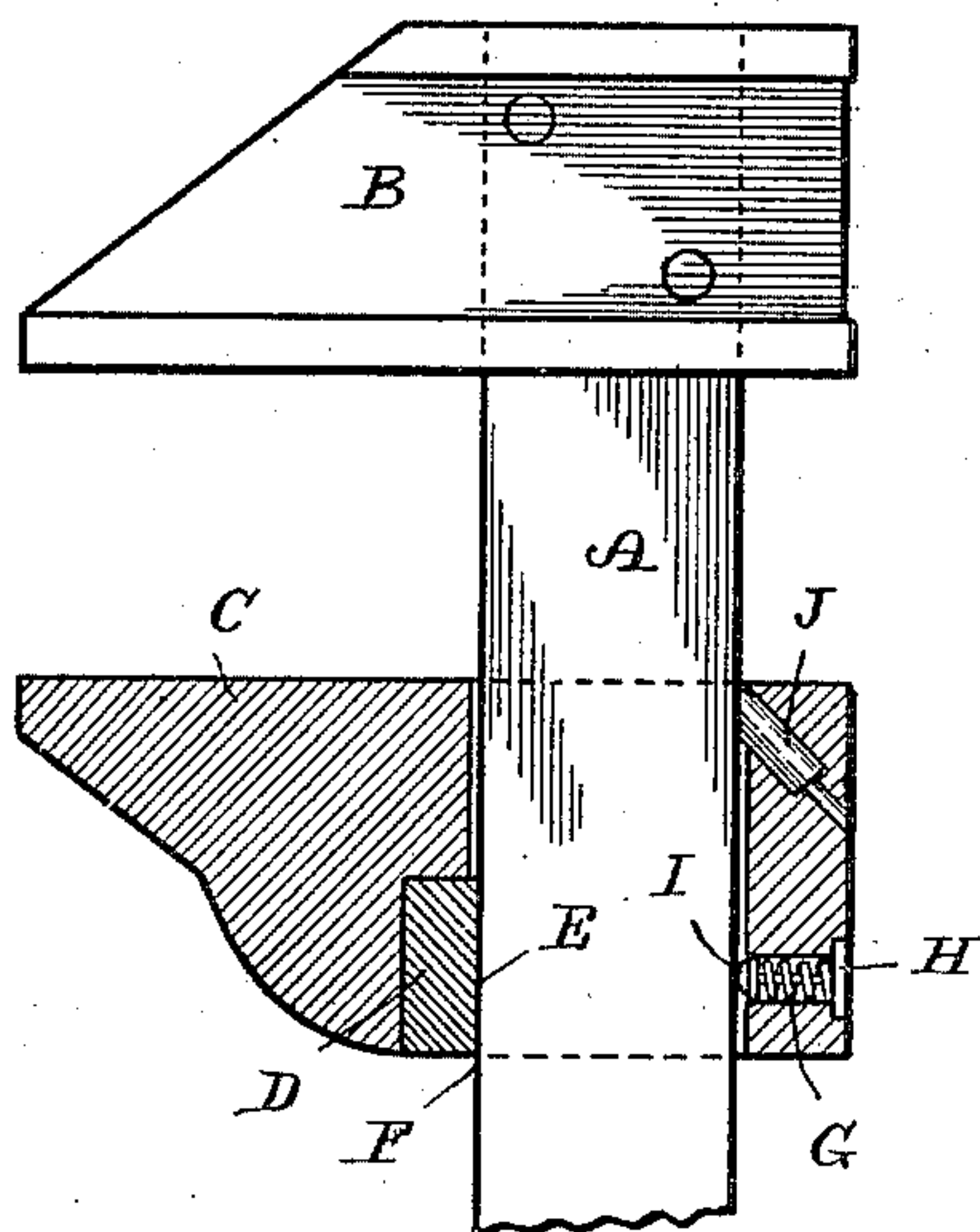


Fig. 1.

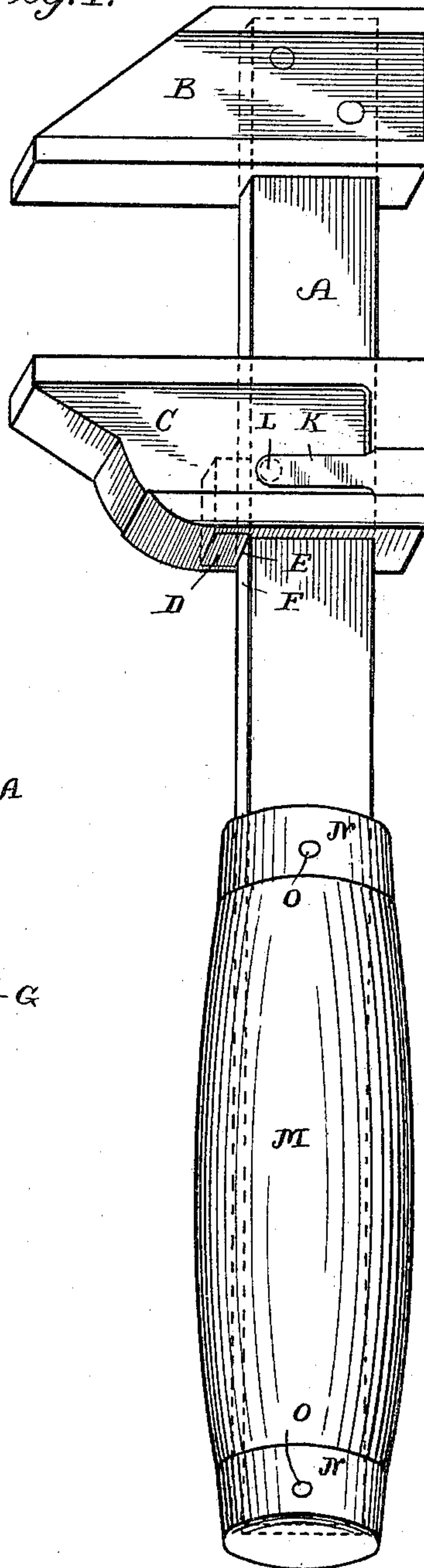


Fig. 4.

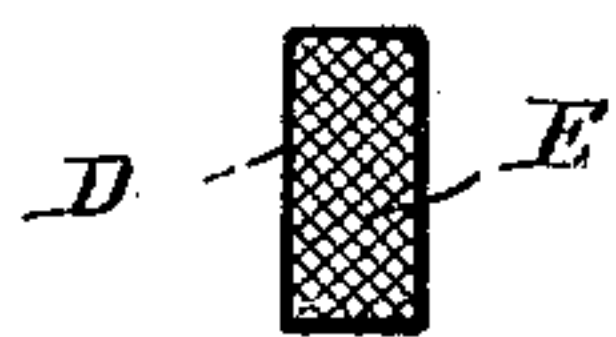


Fig. 5.



Fig. 3.

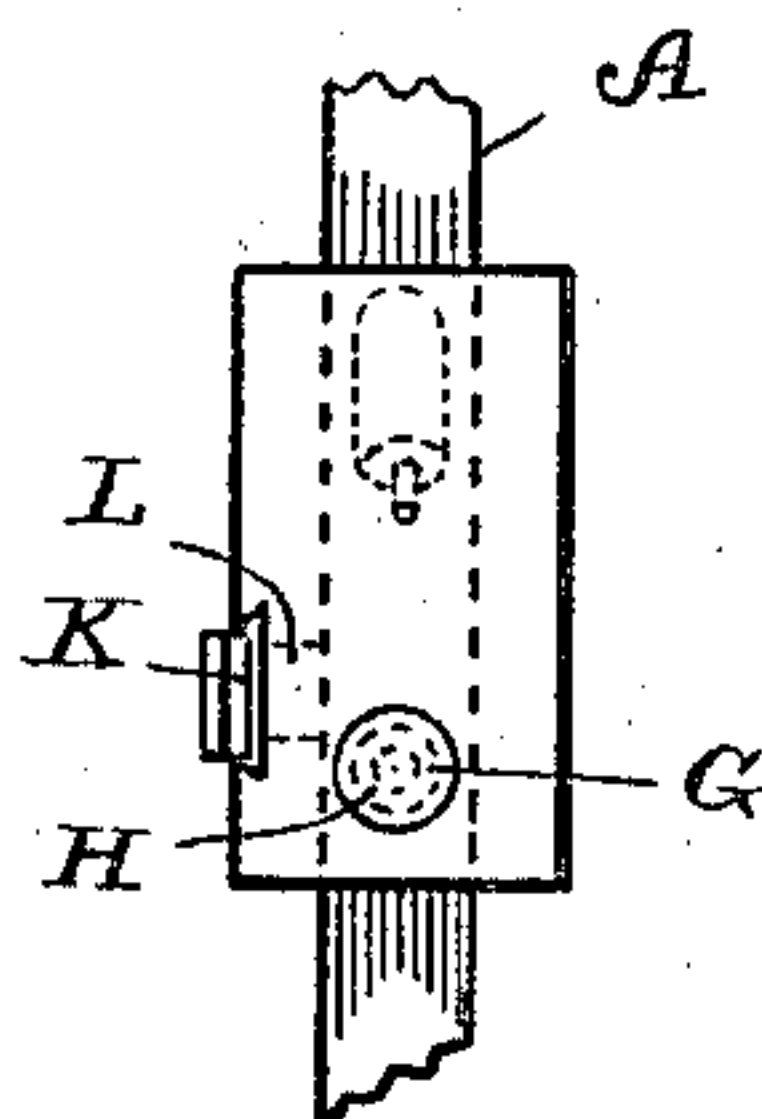
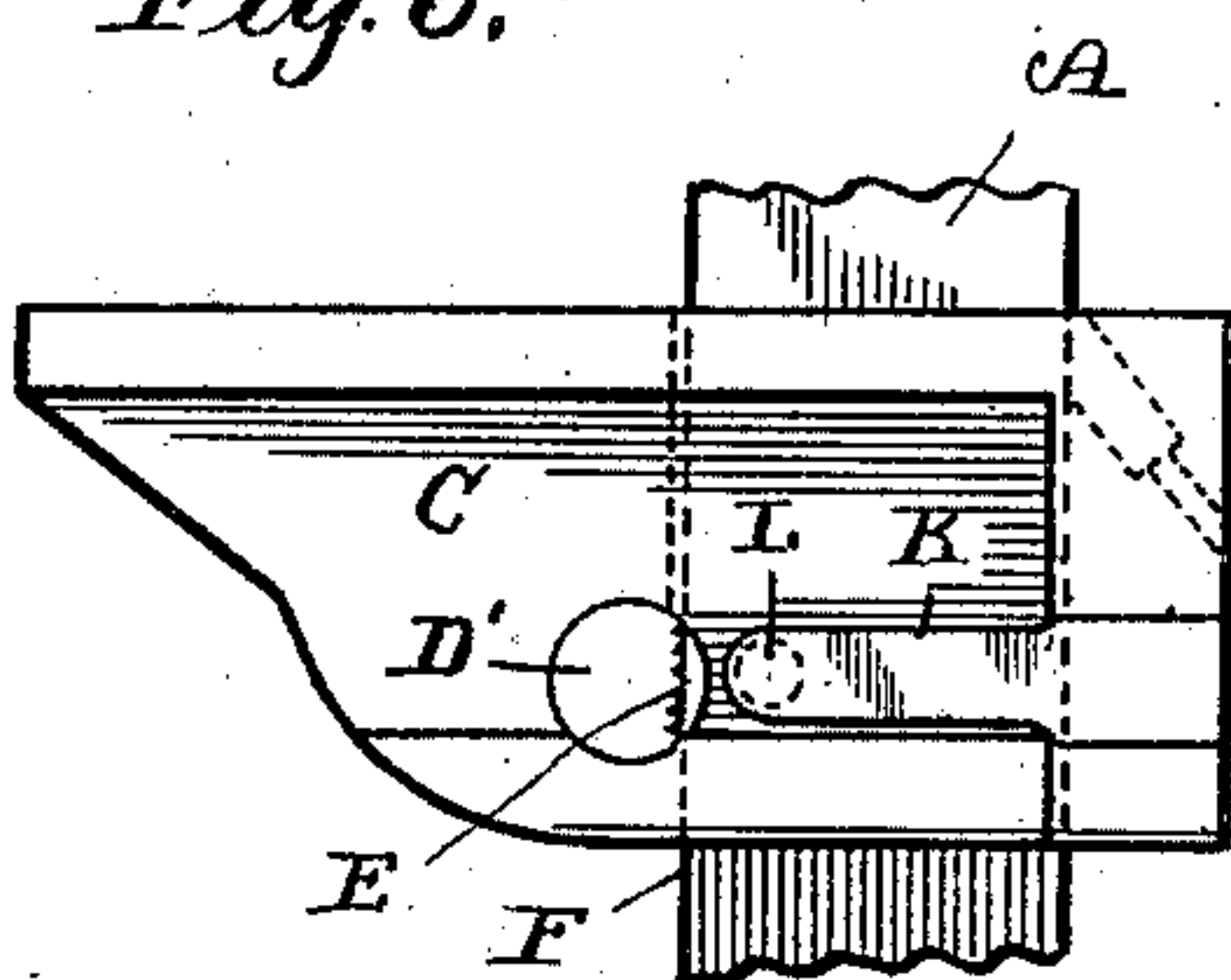


Fig. 6.



Witnesses

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RICHARD A. BREUL, OF BRIDGEPORT, CONNECTICUT.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 696,406, dated April 1, 1902.

Application filed June 5, 1901. Serial No. 63,288. (No model.)

To all whom it may concern:

Be it known that I, RICHARD A. BREUL, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to new and useful improvements in wrenches of the adjustable-jaw type, such as are used in various work for adjusting nuts, screws, and the like.

A large variety of adjustable wrenches have heretofore been devised and patented, and many such are now in use; but mechanical means are continually searched for the development of a free-acting jaw which is easily adjusted and likewise conveniently tightened or loosened. Only partial success has thus far been met in the above respect, and said devices are costly to manufacture or weak and defective points in them still exist. I have therefore devised a wrench, as will later be described, which is simple in construction, of handy shape, small in compass, and adapted to be instantly set to the desired size.

It is the object of my invention to provide a wrench for the above purpose the jaw of which may be quickly and readily adjusted to its work and firm in its engagement, yet be of the simplest possible construction, thus making it inexpensive to manufacture.

A further object of my invention is to provide an improved bar for the wrench which by its peculiar connection with the solid jaw, the handle and its ferrules is stronger and otherwise better adapted for the various uses.

With the above objects in view my invention resides and consists in the novel construction and combination of parts shown on the accompanying sheet of drawings, forming a part of this specification, upon which similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 shows a perspective view of my improved wrench complete. Fig. 2 is a sectional side elevation with the handle broken away. Fig. 3 is a detail rear elevation of the movable jaw. Figs. 4 and 5 are detail side elevations of steel engaging blocks which I use in the movable jaw. Fig. 6 is a detail

side view of the movable jaw with a modified form of engaging plug therein.

Referring in detail to the characters of reference marked upon the drawings, A indicates the handle-bar of my improved wrench, B a jaw pinned to the outer end thereof, and C a movable jaw adjustably mounted upon the bar A. In practice the bar referred to is perfectly smooth on all sides and the movable jaw slides freely thereon.

The means for securing the loose jaw to the bar consist first in providing in said jaw a square steel shoe D, (see Fig. 4,) having a serrated face E to engage the front edge F of the bar. A coil-spring G (see Fig. 2) is placed in a suitably-located hole at the back of the jaw and is held inclosed by a cap H. A pin I is located within the spring and is provided with an enlarged engaging head which bears or slides upon the bar instead of allowing the spring itself to so engage. This spring keeps the face E of shoe D in contact with the bar. In the back of said jaw, diagonally opposite the shoe D and close to the line of the operative face of the jaw, is a similarly-acting steel plug J, (see Fig. 5,) which is provided with a transversely-serrated face to engage the back edge of the handle-bar in the operation of the device.

In Fig. 6 I have shown a movable jaw having a transverse cylindrical shoe D', containing a flattened roughened side to operate against the edge of the bar. This shoe, like the square one, is held in place by a drive fit, as will be apparent.

In addition to the endwise friction by the spring-actuated pin in the rear of the jaw I provide a side friction, which serves to hold the jaw more firmly in place. This frictional device comprises a flat spring K, one end of which is dovetailed into a rib of the jaw and has its free end extended inward alongside of said jaw and bearing against a movable pin L, loosely fitted in a suitable hole through the side of said jaw. The inner end of this pin is consequently tightly held into frictional engagement with the flat side of the bar and also provides to some extent a fulcrum around which the jaw may swing so far as permitted by the bar. It will be thus apparent that in the operation of my wrench if

it is desired to adjust the jaws the operator would simply press down upon the back of the same, thereby compressing the spring G and slightly tilting the operative end of said jaw forward, thus raising both shoes from the edges of the bar, which position affords a free and unobstructed movement to said jaw. When the jaw is brought against the work, the action of the springs G and K re-
 10 tains the jaw in place, and when pressure is brought to bear by the application of a lift or pry to the handle the roughened surfaces of the hardened shoes will more firmly engage and embed themselves into the soft metal of
 15 the handle, thus affording a firm and positive engagement of the two in a manner to prevent any sliding of the jaw.

The wrench-shank is of equal section throughout, passes through the solid jaw and
 20 also through the inner handle-ferrule N and the handle M itself, and is pinned to the solid jaw and to both handle-ferrules. The handle is held by the ferrule-flanges only and can be taken off or replaced quickly by simply removing the end ferrule N', which is
 25 done by driving out the pin O, holding it to the shank. It will be seen that the end ferrule N' covers the end of bar and is different from the other ferrule in that it has no aper-
 30 ture through its bottom.

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

1. A wrench composed of a bar and a jaw
 35 fixed thereto, a jaw adapted to freely slide on said bar, a transverse circular plug passing through the lower front portion of said jaw, and having a flattened side, with a series of teeth in line with the shank-cavity, a down-
 40 wardly and rearwardly inclined plug having a series of teeth on its engaging end situated in a seat of the back portion of said movable jaw, a spring-actuated headed pin located in the lower rear part of said movable jaw and
 45 a cap inclosing said pin and spring.

2. In a wrench, the combination of a slid-
 ing jaw having on its lower front portion a circular plug with a flattened roughened side surface in line with the shank-cavity therein,
 50 a hole in its lower rear portion containing a spring-actuated plug, a cap to retain said plug and spring, a second circular plug in the

upper rear portion with a roughened end surface also in line with the shank-cavity.

3. A wrench composed of a bar having a
 55 jaw secured thereto, a jaw adapted to freely slide on said bar, said loose jaw having in line with the shank-cavity in its lower front portion a circular plug having a flattened side surface containing a series of teeth, and also
 60 provided in the upper rear portion of its shank-cavity with a series of teeth contained on the upper end face of a downward and rearward inclined circular plug.

4. In a wrench, the combination of a slid-
 65 ing jaw having on its lower front portion a plug with a flattened roughened surface in line with the shank-cavity therein, a flat spring secured to the side of the movable jaw, a movable pin mounted in a hole through the
 70 side of said jaw and forced against the wrench-bar by said spring, a circular plug in the upper rear portion of the movable jaw with a roughened end surface also in line with the shank-cavity. 75

5. In a wrench, the combination with a bar
 having a fixed jaw, of a sliding jaw thereon with a plug having a roughened flat surface in line with the bar-cavity therein, a friction-
 80 pin mounted in said jaw and bearing on the side of the bar, a flat spring secured to the jaw and bearing against the pin to hold it in engagement with the bar, substantially as de-
 scribed.

6. A wrench comprising a bar having a jaw
 85 fixed thereto, a movable jaw slidably mounted on said bar, a plug secured in said jaw and having a serrated surface to engage the front of the wrench-bar, a circular plug with a serrated face for contact with the rear of the
 90 said bar in the upper rear portion of said movable jaw, a spring-actuated pin in the back of said jaw, and a spring-actuated pin in the side of the jaw, both of said pins being ar-
 95 ranged to frictionally engage the bar upon which said jaw is mounted.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 31st day of May, A. D. 1901.

RICHARD A. BREUL.

Witnesses:

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 W. V. DEVITT.