No. 777,955. PATENTED DEC. 20, 1904.

F. H. KANNING.

WRENCH.

APPLICATION FILED AUG. 19, 1904.

NO MODEL.

Fig. 1.

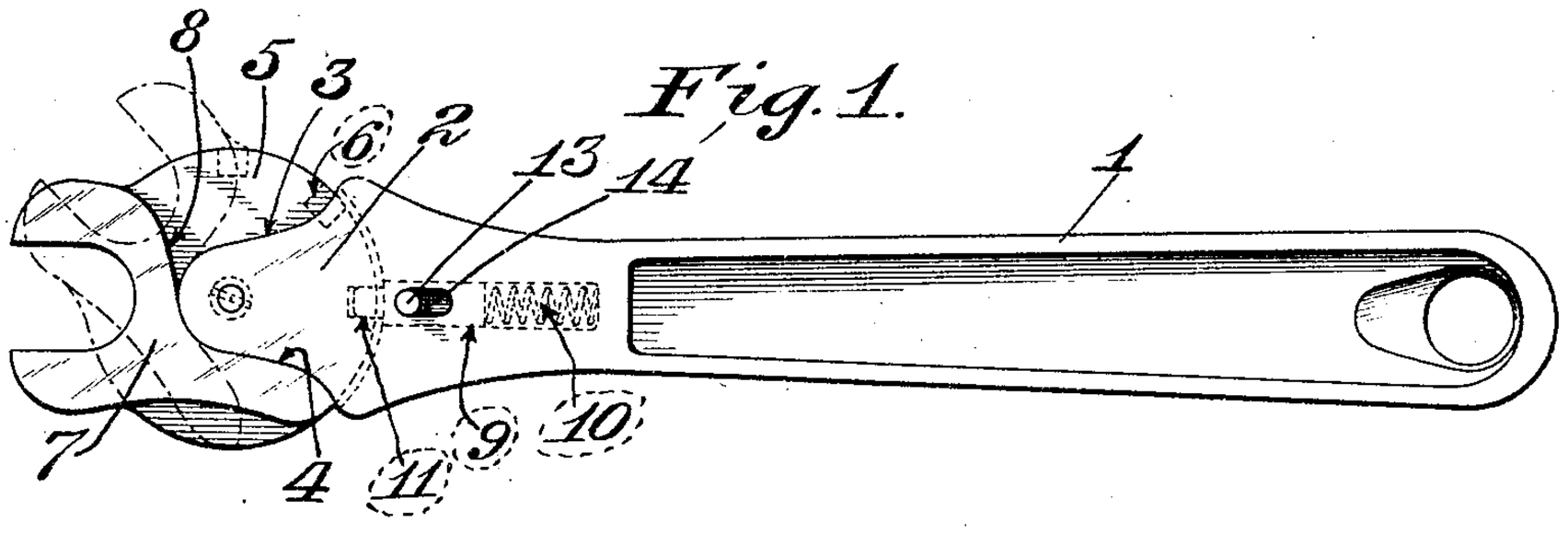

Fig. 2.

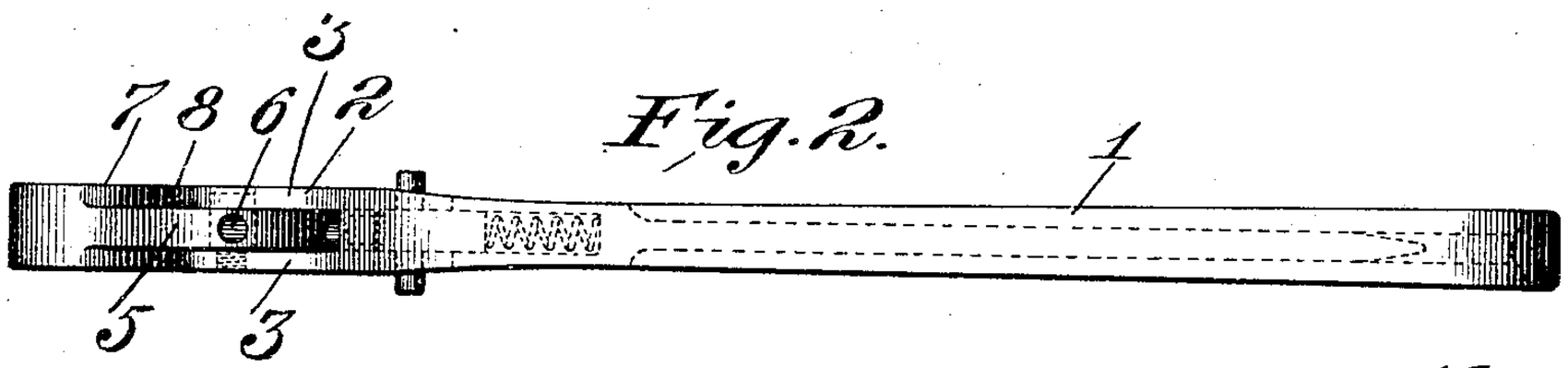

Fig. 4.

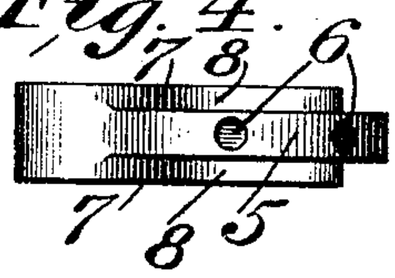

Fig. 3.

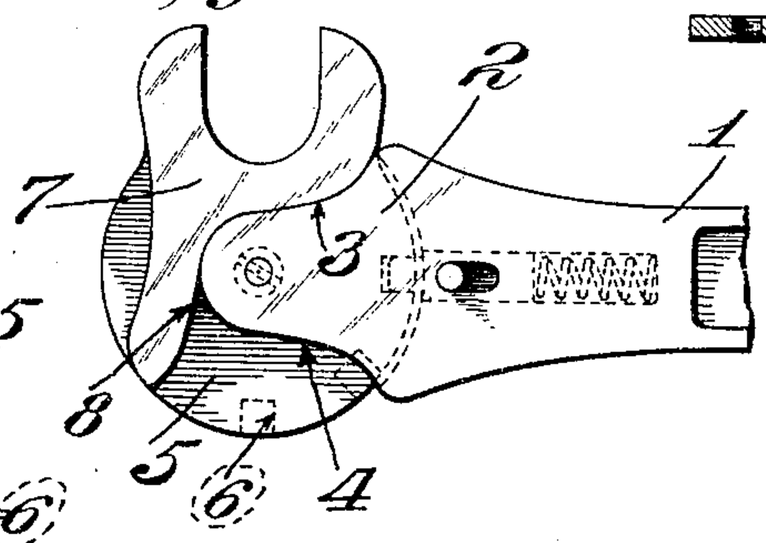

Fig. 6.

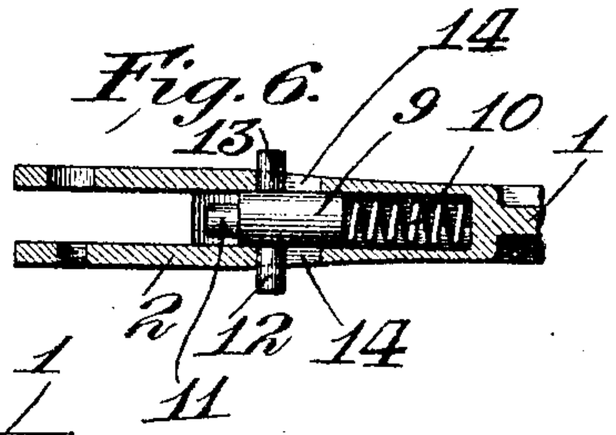

Fig. 5.

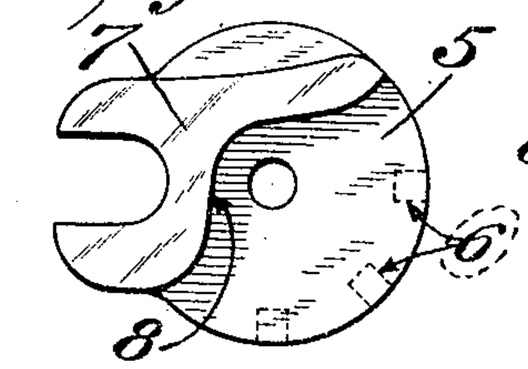

Fig. 7.

Witnesses:

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No. 777,955. Patented December 20, 1904.

UNITED STATES PATENT OFFICE.

FREDERICK H. KANNING, OF EAST ST. LOUIS, ILLINOIS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 777,955, dated December 20, 1904.

Application filed August 19, 1904. Serial No. 221,406.

To all whom it may concern:

Be it known that I, FREDERICK H. KANNING, a citizen of the United States, residing at East St. Louis, St. Clair county, Illinois, have invented a certain new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is a side elevational view of one form of wrench, showing the position assumed by the pivoted head when the shoulders on the shank and the shoulders on the head contact. Fig. 2 is an edge view of the wrench. Fig. 3 is a fragmentary side elevational view showing a portion of the shank and the positions of the shoulders when the nut-engaging jaw is arranged at a right angle to the shank. Fig. 4 is an edge view of the pivoted head. Fig. 5 is a plan view of the head. Fig. 6 is a vertical longitudinal sectional view through a portion of the shank, and Fig. 7 is a view in elevation of a wrench provided with nut-engaging jaws at the respective ends of the shank.

This invention relates to wrenches; and the primary object thereof is to provide a wrench having a pivoted head which carries a jaw which may be swung to different positions, so as to readily grasp nuts or taps located in obscure parts of machinery.

Another object is to provide a shank having an end with a shoulder or shoulders of standard form and size, and, further, to provide heads of standard forms and sizes which will be interchangeable for each other and which will have nut-engaging jaws of various sizes.

A further object of this invention is to provide shoulders on the heads which will coöperate with corresponding shoulders on the shank, so that in certain positions of the jaw the shoulders will afford a maximum amount of rigidity.

Other objects and advantages, as well as the novel details of construction of this invention, will be specifically described hereinafter, it being understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

The preferred form of the invention, as illustrated in Figs. 1 to 6, includes a shank or handle 1, having a slotted or bifurcated end 2. The bifurcated end of this shank is constructed so as to provide oppositely-disposed curved edges or shoulders 3 and 4. Between the arms of the bifurcated end of the wrench is pivoted a head 5, which in the present instance is illustrated as comprising a disk formed in its periphery with a plurality of recesses 6. These recesses preferably consist of concavities tapped out from the periphery, although in actual practice they may consist of slots. Carried by the head and preferably formed therewith is an approximately Y-shaped rib 7, the wider portion of the said rib comprising a jaw for the purpose of engaging a nut or tap. The lower edge of this rib 7 is in the form of a compound curve, as illustrated at 8, the curvature of one half of the lower portion of the rib conforming to the curvature of one of the shoulders or edges of the bifurcated end of the shank 1. The other half of the lower edge of the rib corresponds to the curvature of the opposite shoulder or edge of the shank. The purpose of so forming the lower edge of the rib 7 will be obvious by reference to Figs. 1 and 3, in which it will be seen that when the head is in the position illustrated in Fig. 1 the head will be braced against one edge or shoulder of the shank, and when in the position illustrated in Fig. 3 the head will be braced against the opposite edge or shoulder of the shank, so that the head and shank will be rigidly secured together in either of their temporary adjustments. In order that these said adjustments may be maintained, I provide a longitudinally-sliding dog 9, which is spring-pressed by the spring 10, so that the reduced end 11 of the dog may be forced into contact with any one of the recesses 6. In order that the dog may be temporarily withdrawn from engagement with the recesses in the head 5, I have provided the oppositely-disposed projections 12 and 13, which extend through the slots 14 in the shank. In actual practice it is intended to have a plurality of these heads,

each head being of standard size and having a rib conforming in shape to the rib 7, so that each of the heads will be provided with curved shoulders which will coincide with the curvature of the edges or shoulders of the shank to brace the wrench in either position, as shown in Figs. 1 and 3. The jaws will be of various sizes, however, and the fastening device comprising the pivot for the head will be removable, so that one head may be easily substituted for another. Thus by purchasing a single shank and heads provided with the various sizes of jaws the proper-sized jaw can be substituted as occasion may demand.

In Fig. 7 I have illustrated a slightly-modified form of wrench which might be called an S-wrench—that is to say, the jaws are provided on each end of the shank, so that two sizes may be carried by the same shank at one time.

While I prefer to manipulate this wrench with the jaws in either of the positions indicated in Figs. 1 and 3, I have illustrated a device provided for intermediate adjustments by arranging a plurality of recesses in the periphery of the disk. These intermediate adjustments, however, will be brought into play only when it is impossible to manipulate the nut when the jaw is in either of the positions indicated in Figs. 1 and 3.

From the foregoing it will be observed that by constructing a wrench in accordance with the one heretofore described I combine the advantages of a pivoted jaw-wrench with a rigid jaw-wrench in that I am able to adjust the jaw to different positions and at the same time preserve the rigidity thereof, so that the strain on the jaw will not be entirely communicated to the dog, which holds it in its adjusted position.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A wrench comprising a shank having the side edges of one end curved, a pivoted head carried by said shank and provided with a jaw, and a rib formed on the head and curved to conform to the curvatures of the opposite sides of the end of the shank, whereby said rib will abut against the opposite sides of the end of the shank in either of two positions, and means for holding the shank in either of the two positions; substantially as described.

2. A wrench comprising a shank having a curved end, a head pivoted to the curved end of the shank, an approximately Y-shaped rib formed on the head and curved to conform to the curvature of the end of the shank, and adapted to abut against one side of the curved end of the shank in either of two positions, and a dog for holding the head in either position; substantially as described.

3. A wrench comprising a shank having a bifurcated end, a head pivoted in the bifurcated end of the shank, said head comprising a disk having a Y-shaped rib, part of the rib extending beyond the periphery of the disk forming a jaw, said Y-shaped rib being adapted to abut against the edges of the shank in either of two positions, and a dog for holding the head in either adjusted position; substantially as described.

4. A wrench comprising a shank, a disk pivoted to the shank and having part of its periphery cut away, a Y-shaped rib on either side of the disk, the parallel portions of the Y-shaped ribs extending beyond the periphery of the disk and positioned on either side of the cut-away portion of said disk, one portion of each Y-shaped rib being positioned to one side of the axis of the disk, said ribs having edges in the form of compound curves, each portion of the compound curves being struck on an arc similar to the other portion, and means for holding the shank and disk in adjusted positions; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 17th day of August, 1904.

FREDERICK H. KANNING.

Witnesses:

G. A. PENNINGTON,

B. F. FUNK.