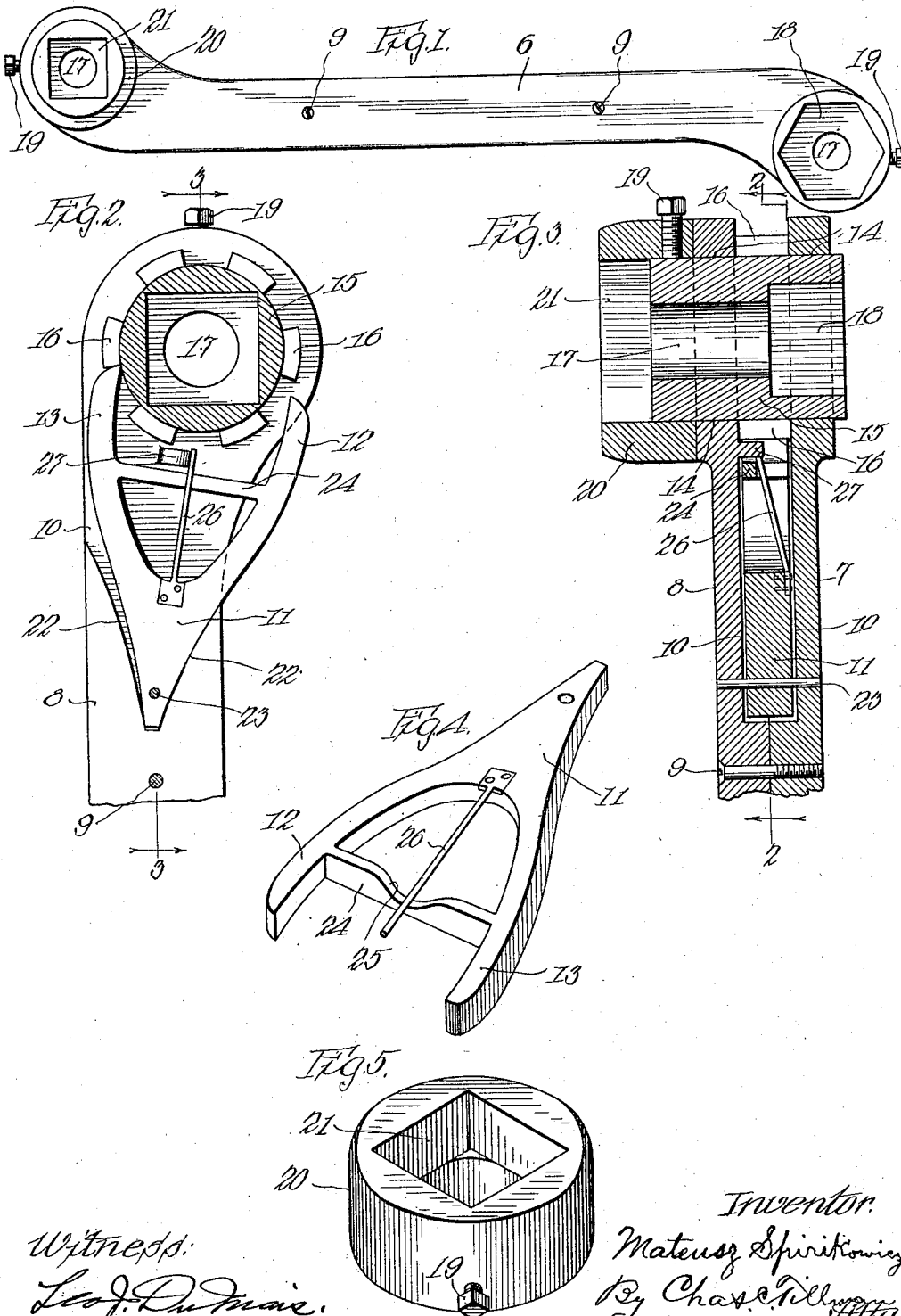


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WRENCH.
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1,179,341.

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UNITED STATES PATENT OFFICE.

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WRENCH.

1,179,341.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MATEUSZ SPIRIKOWICZ, a subject of the Czar of Russia, and resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches and particularly to that class of wrenches which comprise two approximately flat handle members secured together and holding in each end a ratchet wheel and a pair of nut seats or heads, the said ratchet wheel being operatively engaged by an integral two membered pawl pivoted to engage with the ratchet in accordance with the direction the handle is to be turned, and spring means operated in connection with a fixed stop or lug attached to the handle for positioning either member of the pawl in the ratchet as desired, and it consists in certain peculiarities of the construction, novel arrangement and operation of the various parts thereof as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide a double ratchet wrench of the class before referred to, which shall be simple and inexpensive in construction, strong, durable and efficient in operation, and so made that it will be adapted for engagement with nuts of different sizes and shapes, without any alterations in the device.

Another object of the invention is to provide a novel form of spring member and a duplex-pawl for engagement with the ratchet wheels of the nut seats or heads.

A still further object is to provide means whereby the nut seats or heads can be used interchangeably.

Other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In the accompanying drawing which serves to illustrate the invention—Figure 1 is a side view of a wrench showing it in its completed form. Fig. 2 is an enlarged view partly in section and partly in elevation of a portion of the wrench showing one of the members of the pawl in engagement with the ratchet wheel of the nut seat or head. Fig. 3 is a sectional view taken on line 3—3 of Fig. 2 looking in the direction indicated by the arrows. Fig. 4 is a detached

perspective view of one of the duplex-pawls and Fig. 5 is a similar view of one of the detachable nut seats or heads.

Like numerals of reference refer to corresponding parts throughout the different parts of the drawing.

The handle of the wrench, is indicated as a whole by the reference numeral 6 and may be made of any suitable size, form and material, but preferably of about the shape shown in Fig. 1 of the drawing. This handle consists of two pieces, 7 and 8, which are secured together, one on the other, by means of screws 9 or otherwise. Each of the members 7 and 8 of the handle, has extending from each of its ends and on the inner surface thereof a mortise 10, so that when said members are joined together the mortises 10 will provide a recess for the operation of a pawl 11 which is of the duplex form, or in other words, has two members 12 and 13 at its free end to alternately engage the ratchet wheel near which the pawl is pivotally mounted on the handle.

As the construction of each end of the wrench is substantially the same, it is not deemed necessary to describe both of them. Near their ends the members 7 and 8 of the handle are provided with a transverse opening 14 in which is located a cylindrical head 15 which is provided on its periphery with ratchet teeth 16 adapted to operate in the outer portion of the recess formed by the mortises 10 in the members of the handle. This head 15 is provided with a central opening 17 therethrough for the purpose of allowing rods having nuts thereon to be extended thereinto or therethrough, and said head has in one of its ends a nut seat 18 of any desired shape and size to engage nuts. On the opposite end of the head 15 from that in which the nut seat 18 is formed, is secured by means of a set screw 19 a collar 20 which also has a nut seat 21 of any suitable size and shape.

Each of the recesses 10 of the members of the handle is tapered at its inner end as at 22, see Fig. 2 of the drawing, so that when the pawl is in the position shown in said figure, it will be pressed by the wall of the recess resting against the side portion of the pawl near its pivoted end, as will be readily understood by reference to the last named figure of the drawing. The pawl is secured to the handle by means of a pivot 23 which

is passed through suitable openings in the handle and pawl. Extended transversely from one of the members 12 to the other member 13 of the pawl is a bar 24 which has on one of its surfaces a cam shaped depression 25 in which is located a spring finger 26 which is secured at one of its ends to the pawl at the juncture of the members 12 and 13 thereof. This finger 26 is deflected toward the bar 24 and also toward a stud or projection 27 on one of the members of the handle, within the mortise thereof and near the opening 14 therethrough. By this arrangement it is evident that when the pawl is shifted from one position to another, so as to cause its members 12 and 13 to alternately engage the ratchet, the finger 26 will be slightly raised by one of the sloping sides of the depression 25 in the bar 24, so that said finger will ride over the rounded portion of the stud 27 until it reaches the other side of said stud, when by reason of its resiliency it will again engage the stud and thus hold the other member of the pawl in engagement with the ratchet. By detachably securing the collar 20 on one end of the head 15 it is apparent that collars having nut seats of different sizes can be readily and interchangeably used on the cylindrical head so as to accommodate almost any size nut. The shifting of the pawl 11 can be quickly and efficiently done by placing the thumb of the operator on one of the members of the pawl and pressing it in the proper direction. Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is—

1. In a ratchet-wrench, the combination with a handle, of a head rotatably mounted thereon and having peripheral teeth and provided with a nut receiving seat at each

of its ends, a duplex-pawl pivotally mounted on the handle and striding the toothed portion of said head, a transverse bar connecting the members of the pawl transversely near their free ends and having a curved depression in one of its surfaces, a resilient finger secured at one of its ends to the pawl and extended normally in said depression, and a stud on the handle to engage said finger near its free end.

2. In a ratchet-wrench, the combination with a handle, of a head rotatably mounted thereon and having peripheral teeth and provided with a nut receiving seat at one of its ends, a collar detachably mounted on the other end of said head and having a nut receiving seat, a duplex-pawl pivotally mounted on the handle and striding the toothed portion of said head, a transverse bar connecting the members of the pawl near their free ends and having a depression curved at each of its ends in one of its surfaces, a resilient finger fixed at one of its ends to the pawl at the juncture of the members thereof and extended normally in said depression, and a stud mounted on the handle to engage said finger near its free end and having its free portion rounded.

3. As an improved article of manufacture, a pawl for ratchet wrenches consisting of a single piece having divergently extended members united transversely by a bar having in one of its surfaces a curved depression or recess, and a resilient finger fixed at one of its ends to the pawl and extended into said recess.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."