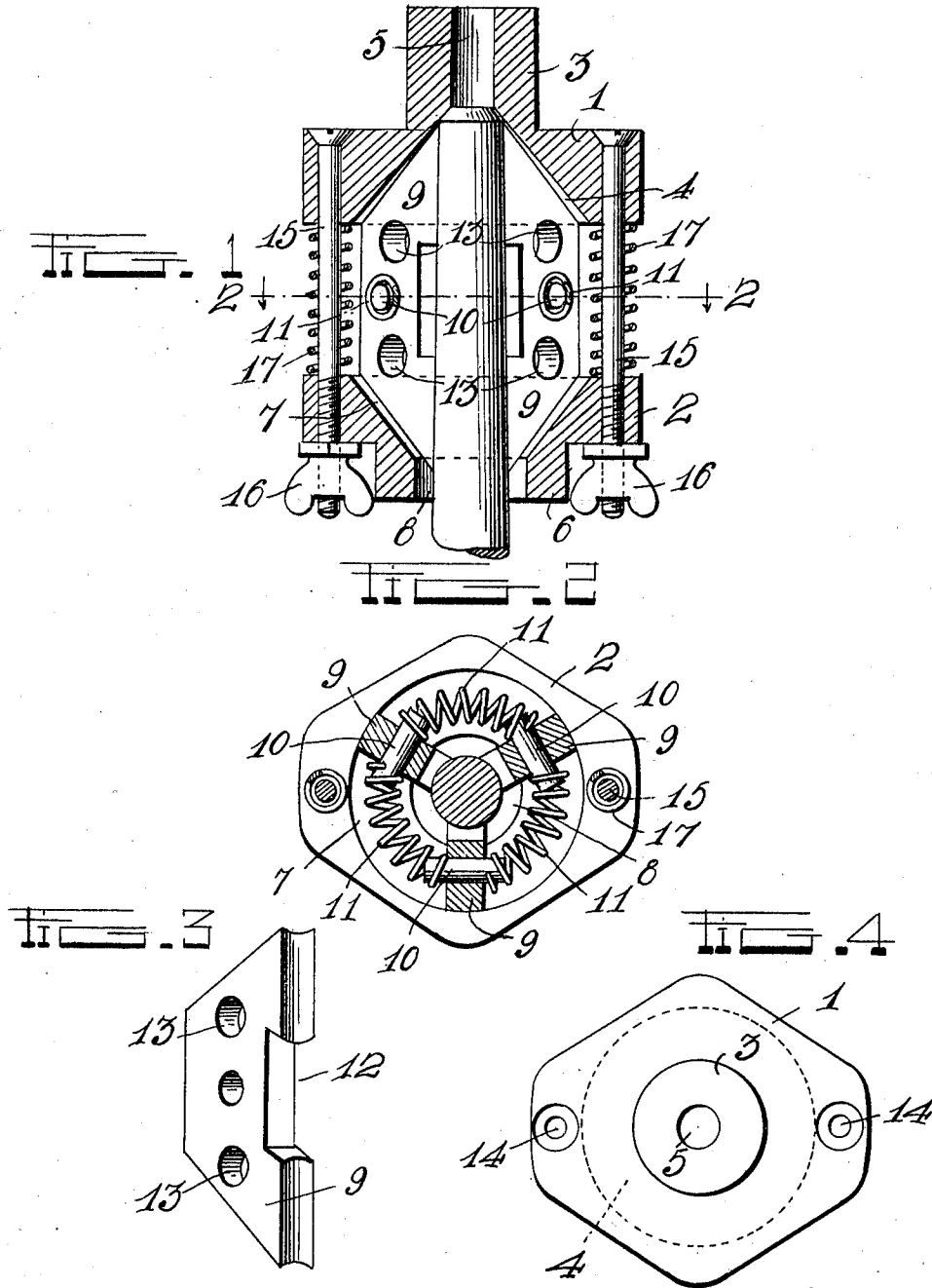


M. J. FOGARTY.
 WORK CENTERING DEVICE.
 APPLICATION FILED APR. 18, 1910.

988,452.

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Witnesses

C. R. Hardy
C. H. Griebner

Inventor

M. J. Fogarty

by *A. B. Wilson & Co.*
 Attorneys

UNITED STATES PATENT OFFICE.

MICHAEL J. FOGARTY, OF ILION, NEW YORK.

WORK-CENTERING DEVICE.

988,452.

Specification of Letters Patent.

Patented Apr. 4, 1911.

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To all whom it may concern:

Be it known that I, MICHAEL J. FOGARTY, a citizen of the United States, residing at Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Work-Centering Devices; and I do 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.

This invention relates to improvements in work centering devices.

The object of the invention is to provide a centering device by means of which billiard cues or other rods may be centered and securely held for drilling or other purposes.

With this and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a central longitudinal section of a centering device constructed in accordance with the invention showing the end of a billiard cue secured therein; Fig. 2 is a horizontal sectional view of the same taken on line 2—2 in Fig. 1; Fig. 3 is a detail perspective view of one of the centering plates; Fig. 4 is a plan view of the inner side of one of the clamping plates.

In the embodiment of the invention I provide a pair of clamping plates 1 and 2. On the outer side of the plate 1 is formed a reduced extension or boss 3 and in the inner side of the plate is formed a conical shaped recess 4 which communicates at its inner end with a bore or passage 5 formed in the boss or extension 3. On the outer side of the plate 2 is formed a boss 6 and in the inner side of said plate 2 is formed a tapered recess 7 the outer end of which communicates with a passage 8 formed in the boss 6 as shown.

Between the plates 1 and 2 is arranged a series of work holding and centering plates 9 the outer surface of the opposite ends of which is cut off at an angle corresponding to the angular inner surface of the recesses 4 and 7 formed in the plates 1 and 2. The cut off ends of the plates 9 are operatively engaged with the recessed portion of the plates 1 and 2 and are forced thereby into engagement with the work thus centering

the latter in the plates 9 and firmly holding the outer end of same in position opposite the inner end of the bore or passage 5 to receive an auger or drill bit which is inserted and operated through the bore 5.

Arranged through the center of each of the plates 9 is a transversely disposed pin 10 the ends of which project a suitable distance beyond the opposite sides of the plates 9 and with said projecting ends of the pins are engaged the opposite ends of a series of spacing and plate retracting springs 11 the pressure of which is exerted to force the plates apart when released by the clamping plates 1 and 2.

The work centering and holding plates 9 are notched out on their inner edges as shown at 12 and are provided with apertures 13 which are formed therein for the purpose of reducing the weight of the plates.

In the opposite ends of the plates 1 and 2 are formed bolt holes 14 which are adapted to aline with each other when the plates are in position and through which are inserted clamping bolts 15 the threaded ends of which project beyond the outer sides of the plate 2 and are adapted to receive clamping nuts 16 which when secured on the bolts will draw the plates 1 and 2 toward each other thereby forcing the work centering and holding plates 9 into firm engagement with the work thus centering and holding the latter in position to be operated in the manner described. On the bolts 15 between the inner surfaces of the plates 1 and 2 are arranged coiled springs 17 the pressure of which is exerted to force the plates apart when released by the nuts 16 thus releasing the centering plates 9 and permitting the springs 11 engaged therewith to retract the same from engagement with the work which may then be readily removed from the device.

In the operation of the device the nuts of the clamping bolts are unscrewed to permit the springs 17 to expand the clamping plates thus permitting the springs 11 to retract or open the centering and holding plates 9 after which the cue or other object to be operated on is inserted through the passage 8 in the plate 2 and between the inner edges of the holding and centering plates 9 after which the nuts 16 are tightened up on the bolts thereby drawing the clamping plates 1 and 2 together which operation will by reason of the engagement of the inclined sur-

face of the recesses 4 and 7 in said clamping plates and the beveled outer ends of the centering plates force said centering plates inwardly to exactly the same distance bringing the work into the center of the plates and rigidly holding the same in place. By means of this construction it will be seen that either cylindrical or tapered work may be centered and firmly held in the device.

10 While the device is herein shown and described as being particularly adapted for centering and rigidly holding the end of a billiard cue to permit the same to be drilled or otherwise operated on it is obvious that 15 the device may be formed in any suitable size for holding and centering other objects.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the 20 invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the 25 principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention, what I claim is:

30 1. In a work centering and holding device, opposing clamping members having opposing tapered recesses, a series of work centering and holding members having inclined ends to co-act with said tapered recesses in the clamping members whereby 35 when said clamping members are drawn together said centering and holding members will be forced into engagement with the work between them, means for drawing said clamping members together, resilient means 40 for moving said clamping members apart when released by the last mentioned means, and resilient means arranged between said centering and holding members for moving 45 them away from the work when the clamping members are separated.

2. In a work holding and centering device, a pair of clamping plates having formed therein tapered recesses and longitudinal passages communicating with the inner ends of said recesses, a series of work 50 centering and holding plates having in-

clined outer ends adapted to engage the tapered recesses in said clamping plates whereby when the latter are drawn together 55 said centering plates will be forced into rigid engagement with the work, a series of clamping bolts arranged in said clamping plates whereby the latter are drawn together, expanding springs arranged on said 60 bolts to force said clamping plates apart when released, and means to force the centering plates apart and out of engagement with the work when released by said clamping plates. 65

3. In a work holding and centering device a pair of clamping plates having formed therein tapered recesses, a series of work centering and holding plates operatively engaged with said recessed portions 70 of said clamping plates, clamping bolts arranged in said clamping plates whereby the latter are drawn together to operate said centering plates, expanding springs arranged on said bolts, spring holding and 75 guiding pins arranged in said centering plates and expanding springs arranged on said pins between said centering plates whereby the latter are forced apart and out of engagement with the work when released 80 by said clamping plates.

4. In a work holding and centering device, opposing clamping members having tapered recesses arranged to oppose each other, a series of work centering and holding 85 members having inclined ends to co-act with said tapered recesses whereby, when the clamping members are drawn together, the work holding and centering members will be forced into engagement with the 90 work, springs for forcing the clamping members apart, bolts for drawing the clamping members together against the tension of said springs, and means for forcing the holding and centering members apart 95 and out of engagement with the work when released by said clamping members.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MICHAEL J. FOGARTY.

Witnesses:

GEORGE F. OLIVER,
ANDREW F. CARP.