

A. W. GRAHAM.

NURLING TOOL.

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930,662.

Patented Aug. 10, 1909.

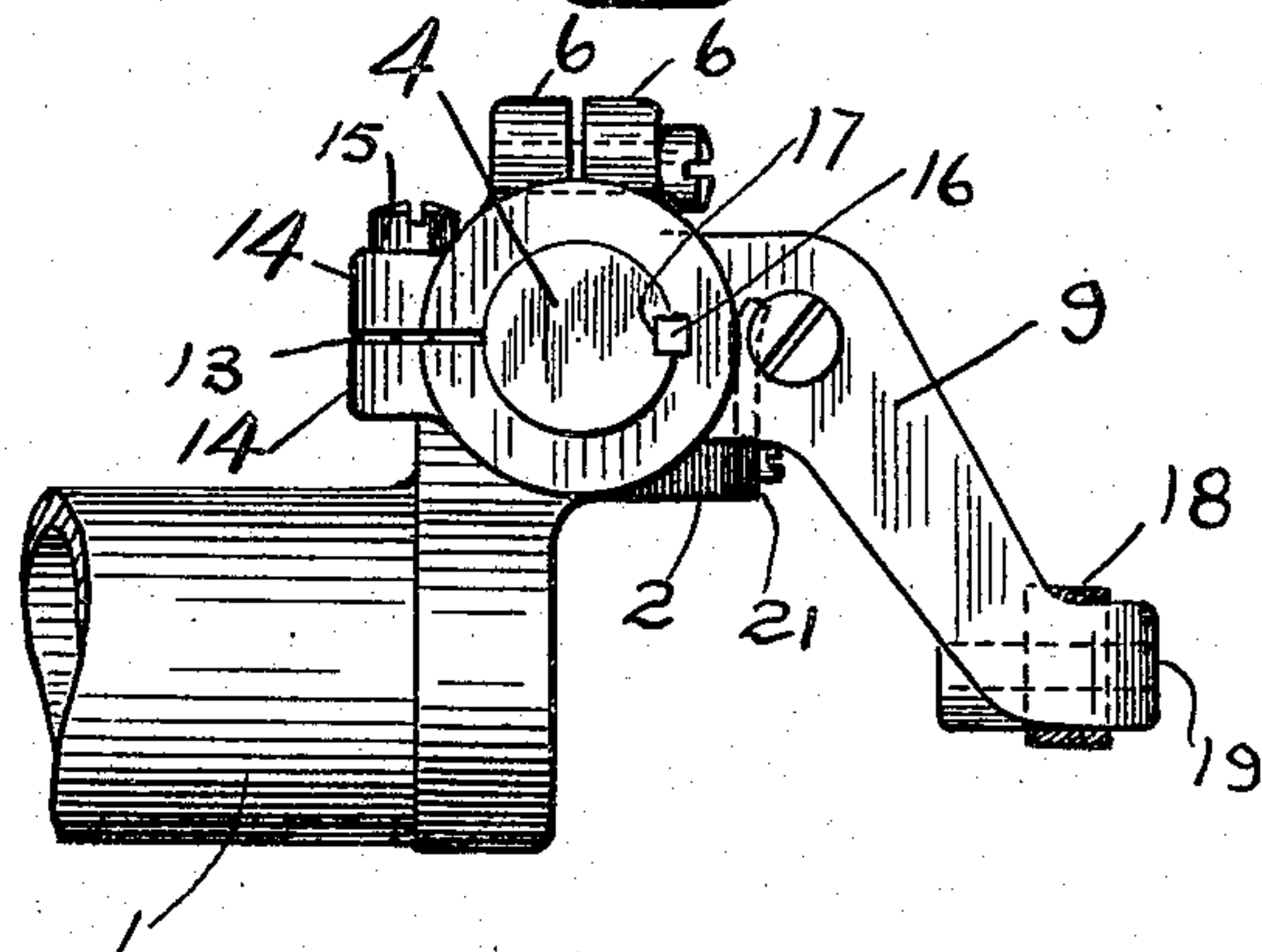
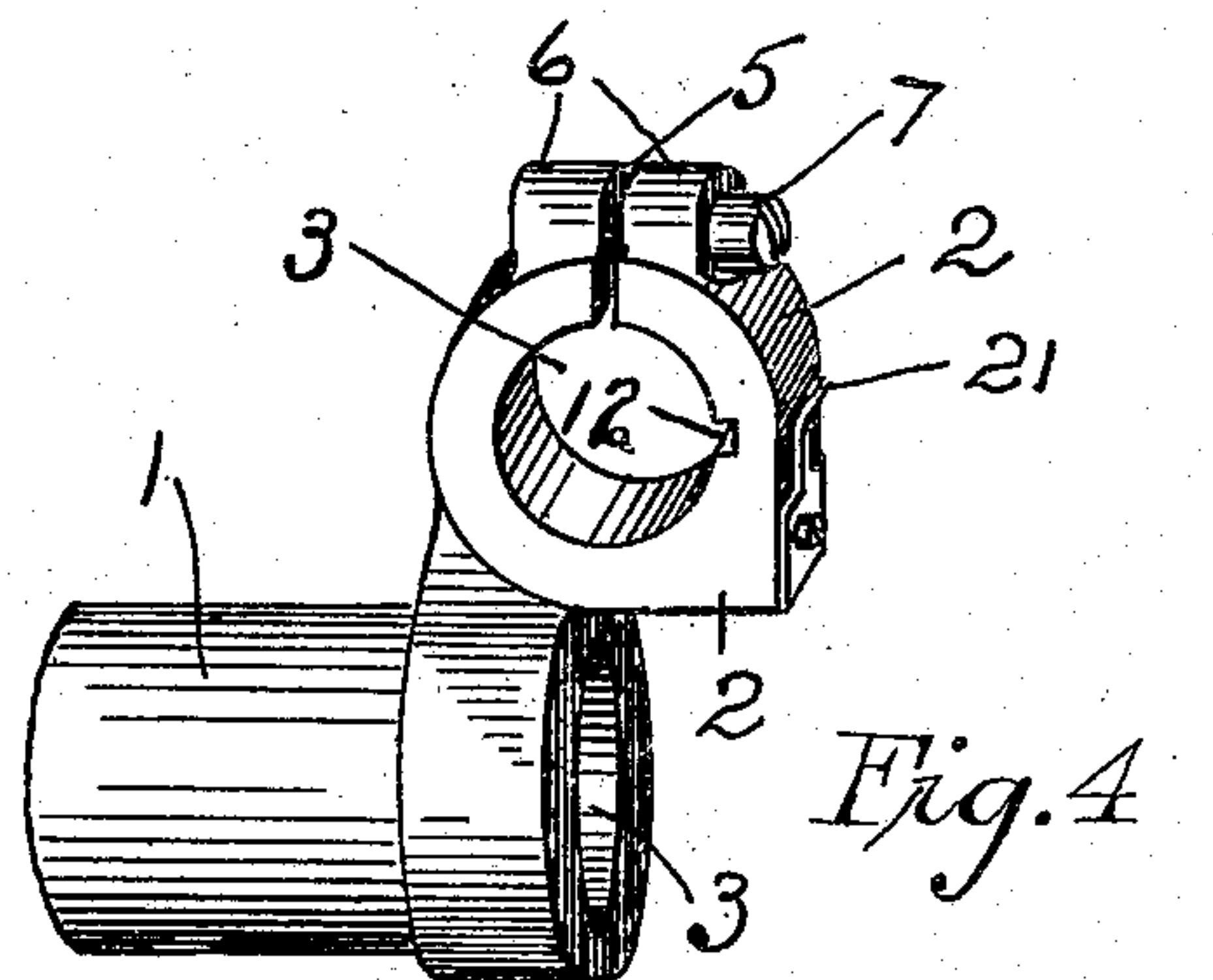
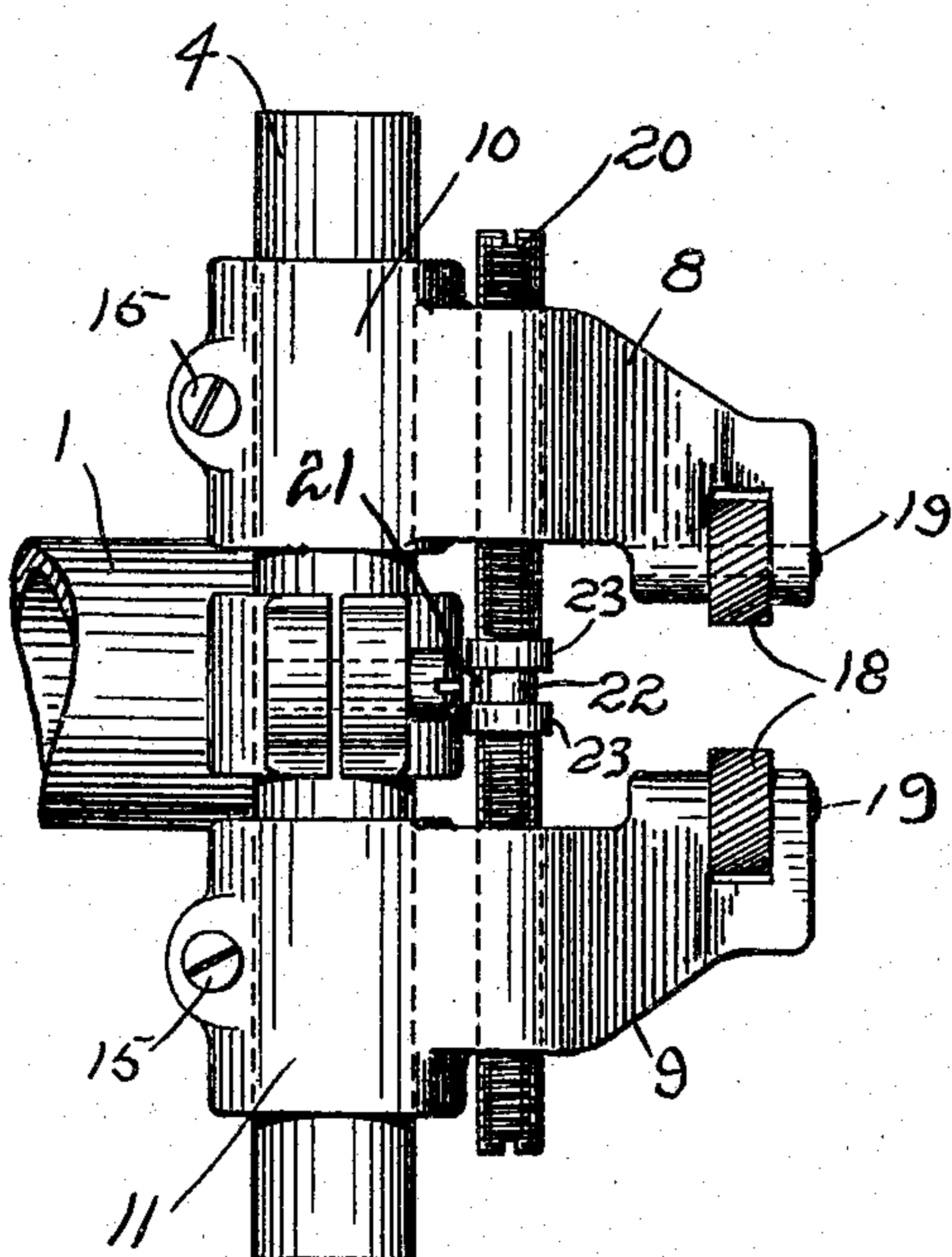
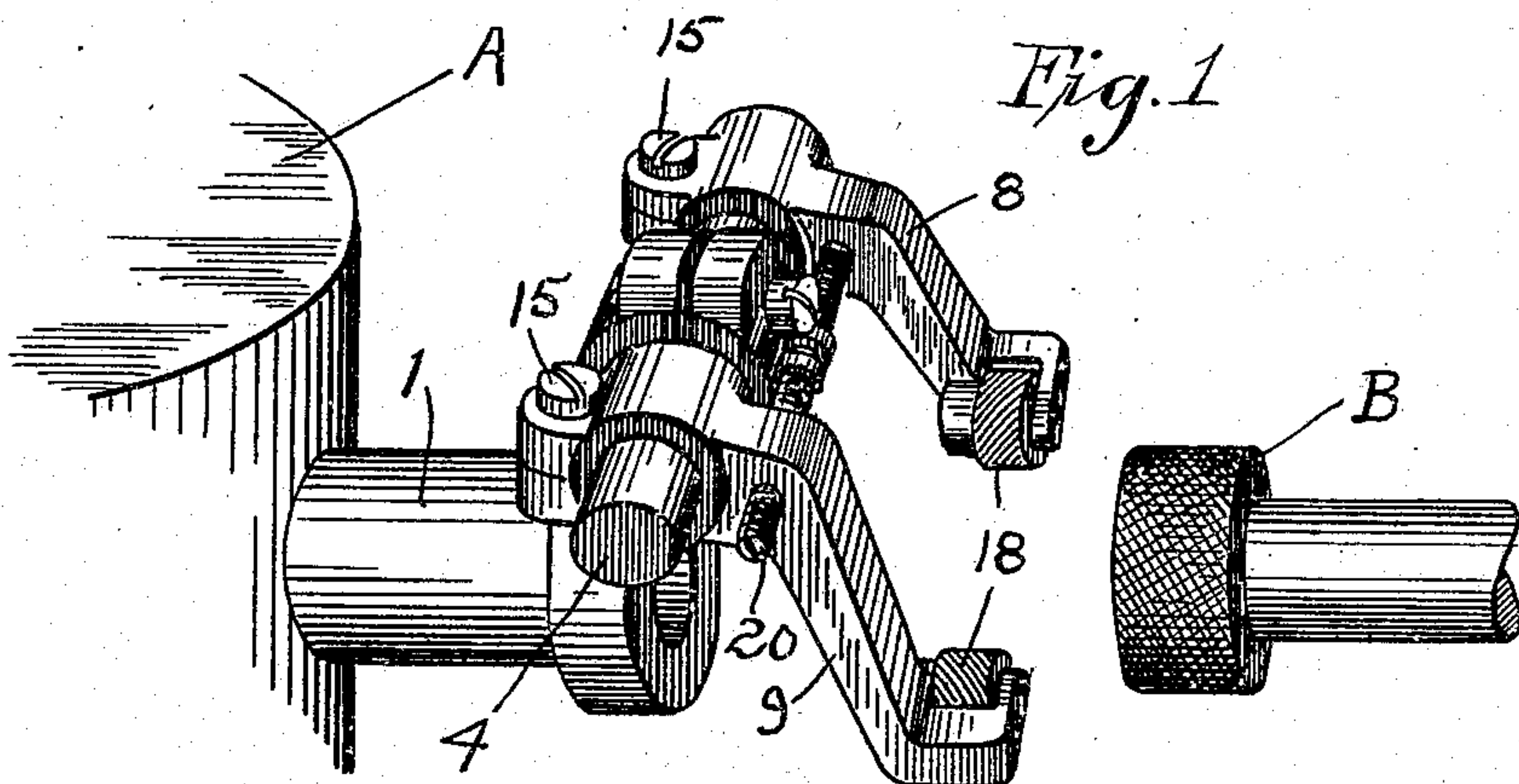


Fig. 2

Fig. 3

Witnesses  
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# UNITED STATES PATENT OFFICE.

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## NURLING-TOOL.

No. 930,662.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed January 27, 1908. Serial No. 412,736.

*To all whom it may concern:*

Be it known that I, ARTHUR W. GRAHAM, a citizen of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Nurling-Tools, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to nurling tools and has for its object to provide an effective tool of simple and practical construction having a pair of oppositely disposed adjustable nurl carrying arms.

A further object of the invention is to provide slides or guides for rigidly supporting said nurl arms and means whereby both of said arms may be adjusted simultaneously toward or from each other on said guides by the turning of a single screw, and also to provide means whereby said arms may be bound or fastened in their operating position after being adjusted.

An essential feature of my improved nurling tool is that the same may be applied to a turret head in a lathe and that its overhang is extremely short whereby it may be rigidly supported in the head and at the same time set to take up but the minimum amount of space.

Another feature is that on account of the off-set form of its arms it is capable of a great range of adjustment whereby it is adapted to operate on work of large diameters as well as on the smallest sizes.

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

In the accompanying drawings: Figure 1—is a perspective view illustrating my improved device held in the turret head and in position to operate on the work. Fig. 2—is a plan view of the device showing a portion of the supporting trunnion broken away. Fig. 3—is a side view of the device. Fig. 4—is a detail view in perspective illustrating the central supporting head mounted on its hollow trunnion.

Referring to the drawings, at 1 is the hollow trunnion or supporting shaft adapted to enter and be firmly held in the turret head of a lathe or the like by any of the well known means. On the outer end of this trunnion is formed an enlarged head 2, which

is provided with a hole 3 through it, considerably offset or set to one side of the center of the trunnion for the purpose of receiving the cross bar or guide 4. The upper portion of this head is split, as at 5, and is provided with ears 6—6 through which the binding bolt 7 is threaded for the purpose of setting up the head to firmly grip and hold said guide bar. This guide bar 4 may be made either round, square or any other suitable or desired shape. When the same is made round, which is the preferable form, it is keyed as at 12 in the trunnion head to prevent it from turning therein.

A pair of duplicate arms 8 and 9 are provided with bearings 10 and 11 adapted to fit over and slide endwise on said guide bar. These bearings are also split as at 13 and are provided with ears 14—14 through which the bolts 15—15 are threaded for the purpose of setting up these bearings on the guide bar. A feather-key 16 is also fitted in each of these bearings which is adapted to slide in a corresponding key-way 17—17 in the bar to prevent the arms from rotating thereon. Nurl wheels 18—18 are rotatably mounted on the pins 19—19 in the outer ends of these arms, which arms are offset or bent so as to bring the center of said nurls substantially over the center of the shaft or trunnion. In order that these arms may be moved in unison toward and from each other I have provided a right and left hand screw 20 passing through both of said arms, said screw being retained in its center position by means of the small dog 21 which is bolted to the head 2 and adapted to engage the grooved portion 22 between the collars 23—23 in the middle of said screw.

In the operation of my improved nurling tool the trunnion 1 is first inserted into the turret head A in the usual way and then the binding screws 15—15 in the jaws or arms 8 and 9 are released and the adjusting screw 20 operated to move the arms toward or from each other to set the nurls the desired distance apart in order to engage or operate upon the surface of the work represented at B in Fig. 1. After these arms are set in exactly the right position the binding screws 15—15 are set up firmly rigidly retaining or locking said arms to the bar against further movement. The tool then is adapted to continue to operate until the size of the work is changed.

By the use of a device of my improved



construction it is obvious that the jaws or arms may be readily drawn apart to a considerable extent and by their particular construction of being offset they are adapted to receive and operate upon work of very large diameters for so small and compact a nurling tool.

By the employment of two nurls the same are adapted to engage opposite sides of the work and thus prevent it from springing.

It is found in practice that my improved nurling tool is simple, inexpensive and durable in construction, may be quickly and easily operated and receive the finest adjustment. The working points are well supported and the tool stands up rigidly to its work.

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

1. A nurling device comprising a support provided with a split sleeve, a transverse guide bar adjustably mounted in said sleeve, clamping means for said sleeve, a pair of oppositely disposed nurl supporting arms each pro-

vided with a split socket mounted upon said guide bar, means for clamping said sleeves, means for preventing pivotal movement of said arms, an adjusting screw for said arms, and means carried by said support for preventing longitudinal movement of said screw.

2. A nurling device comprising a support provided with a split sleeve, a transverse guide bar adjustably mounted in said sleeve, clamping means for said sleeve, a pair of oppositely disposed nurl supporting arms each provided with a split socket mounted upon said guide bar, means for clamping said sleeves, means for preventing pivotal movement of said arms, an adjusting screw for said arms provided with a circumferential groove, and a dog secured to the front face of the support and projecting into said groove.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR W. GRAHAM.

Witnesses:

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E. I. OGDEN.