

R. D. BABSON.  
NURLING TOOL.  
APPLICATION FILED DEC. 27, 1911.

1,116,005.

Patented Nov. 3, 1914.  
2 SHEETS—SHEET 1.

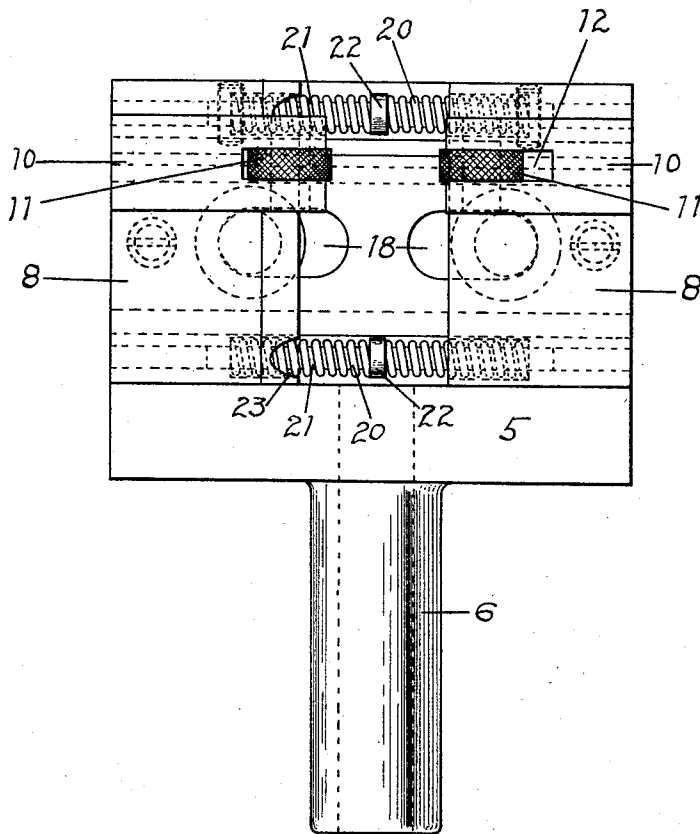


Fig. 1.

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*Gertrude S. Clark*

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By *Francis J. Dakin*  
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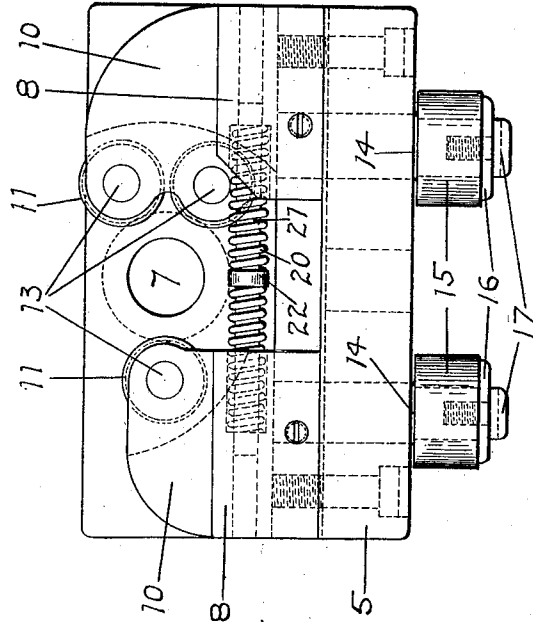


Fig. 2.

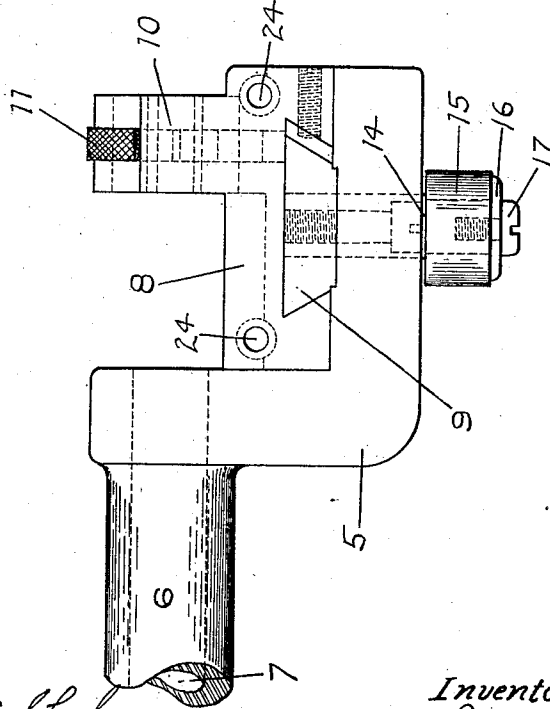


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## NURLING-TOOL.

1,116,005.

Specification of Letters Patent.

Patented Nov. 3, 1914.

Application filed December 27, 1911. Serial No. 668,081.

*To all whom it may concern:*

Be it known that I, ROGER D. BABSON, a citizen of the United States, residing at Brookline, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Nurling-Tools, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to nurling tools and more particularly to a nurling tool designed to be operated automatically and adjusted to work of any diameter.

In the ordinary form of nurling tool the nurling is done by means of rolls which are set to suit the diameter of the work to be nurlled and the work is then passed between the rolls. This device is open to two serious objections. In the first place the rolls have to be reset for each diameter of work; and in the second place the nurling must be done continuously, that is, the nurling on any piece of work begins at one end and is continuous so far as it goes. The latter defect is due to the fact that the work is pushed between the rolls, nurlled to the desired amount and then withdrawn. It is impossible to divide the nurling into bands or stripes because the rolls cannot be released from the work.

The main object of my invention is to provide a nurling tool by means of which the work may be nurlled at any desired portion continuously or intermittently and to this end I provide nurling rolls which are thrown into operative position and out of operative position whenever necessary.

A further object of the invention is to provide a nurling tool which does not require adjustment in order to accommodate work of any diameter.

Another object is to provide a nurling tool which may be operated automatically and which is adapted to be used in connection with automatic screw machines and similar devices.

Other objects of my invention will be specifically described hereinafter.

In the accompanying drawings illustrating my invention, Figure 1 is a plan view of a nurling tool constructed in accordance with my invention; Fig. 2 is a front elevation of the same; and Fig. 3 is a side elevation of the same.

Briefly, my invention consists in providing a plurality of nurling rolls so mounted

and arranged that they may be operated to grip the work to be nurlled, irrespective of its diameter, and may at any time be released therefrom.

In the illustrated embodiment of my invention, I have shown a nurling tool which is adapted for use in an automatic screw machine or other similar device and in this preferred form 5 designates a support provided with a shank 6 whereby it may be mounted in the turret or tail-stock of an automatic screw machine or similar device. The shank 6 is preferably provided with a bore 7 to permit the work to pass into the shank when necessary. Upon the support are arranged two carriers 8 which are transversely movable on said support and may be secured thereto by means of a dove-tail portion or guide 9 engaging the corresponding slots in the carriers. Each of these carriers has an upwardly extending portion 10 carrying one or more nurling rolls 11. The number or arrangement of these rolls may be varied, but I prefer to use three and arrange them as shown in the drawings, namely, two rolls on one carrier and one roll on the other, the single roll being arranged midway of the other two so that the three rolls together when gripping the work will hold it firmly against slipping.

The nurling rolls may be mounted in the carriers in any suitable manner. In the drawings the extending portion 10 of each carrier is shown as being provided with a recess 12 in which the roll or rolls, as the case may be, are rotatably mounted on spindles 13.

The lateral movement of the carriers may be secured by any suitable means and one such comprises a stud 14 projecting downwardly from the bottom of each carrier and having on its lower extremity a roll 15 held in place by a washer 16 and a screw 17. The support is provided with a suitable slot 18 through which the stud passes, the slot being of such diameter as to permit of all necessary lateral movement of the carrier.

When the tool is placed in an automatic screw machine the carriers are moved together into operative position in the usual and well known manner by cams or levers operating upon the rolls 15. I have not shown these cams or levers as they are well known and may be adapted to operate my device by any one skilled in the art.

Although in the embodiment shown in

the drawings both carriers are movable, such construction is not absolutely necessary, as either of the carriers may be fixed and the same result secured by the movement of the other carrier to and from the fixed carrier.

In order that the carriers may be restored to an inoperative position when the pressure exerted by the cams or levers on the studs is released, I provide helical springs 20, preferably four in number, and arranged as shown in Fig. 1, in pairs. To hold the springs in place against lateral movement they are mounted on spindles 21 having centrally disposed shoulders 22. Each carrier is provided with two chambers 23 to accommodate the ends of two of the springs and with a bore 24 of smaller diameter to receive the ends of the spindles when the carriers are moved toward each other, compressing the springs. Any suitable means, however, may be used for this purpose and I do not desire to limit myself to the specific means shown.

In the operation of my tool the work to be nurlled is properly adjusted in a central position between the nurling rolls and the latter are then pressed against it by means of the cams or levers operating upon the rolls 15 and studs 14. When the work has been nurlled to the desired amount the pressure on the rolls 15 is released and the carriers are then thrown back or separated by means of the springs 20 and the nurling rolls thereby removed from the work. If it is desired to add a band of nurling at another point the work is fed forward and the rolls again thrown against it and in operative position.

By means of my tool, the work may be nurlled continuously in bands or stripes or in spiral form, or in various other ways.

Within certain limits my tool may be applied to work of any diameter as it begins to operate as soon as the nurling rolls are thrown against the work with the necessary pressure all of which can be regulated by the cams or levers which operate the carriers.

While the preferred embodiment of the present invention has been illustrated and described, it is to be understood that the present invention is not limited to the exact details of construction shown and described but may be otherwise embodied within the spirit of the invention and the scope of the following claims.

What I claim is:—

1. A nurling tool comprising a nurl-carrier support, a guide on the support, two

longitudinally-disposed nurl carriers engaging the guide and carried by the support, normally held out of operative position by springs located parallel and close to said guide, said carriers having studs secured thereto, the nurl-carrier support being provided with slots in which said studs are adapted to move.

2. A nurling tool comprising a nurl-carrier support having a guide, two longitudinally-moving oppositely-disposed nurl carriers thereon, one of said carriers having two nurls and the other of said carriers having one nurl, the latter nurl being positioned midway between the two former nurls so that all the said nurls act as a steady rest for the work when they are in operative position, and means for holding said carriers in operative position.

3. A nurling tool comprising a support, two longitudinally-disposed nurl carriers mounted thereon, said carriers being provided with studs carrying rolls rotatably secured to the lower ends thereof, said rolls being adapted to move with said carriers toward each other, and longitudinally-acting springs for moving said carriers out of operative position.

4. A nurling tool comprising a nurl-carrier support having a guide, longitudinally-moving nurl carriers carrying nurls so positioned with relation to the work to be operated upon as to act as a steady rest thereto, and being held out of operative position by longitudinally-acting springs, said carriers being provided with studs adapted to be acted upon to move said carriers toward each other.

5. A nurling tool comprising a suitable support, two carriers movably mounted thereon and provided with studs whereby the said carriers may be moved to and from each other, a nurling roll carried by one of said carriers, a pair of nurling rolls carried by the other of said carriers, said single roll being arranged mid-way of the other two in order that the three rolls may grip the work firmly when in an operative position, and spring-actuated means for holding said carriers normally in an inoperative position.

In testimony whereof, I hereunto set my hand in the presence of two subscribing witnesses, this the twenty-sixth day of December, 1911.

ROGER D. BABSON.

Witnesses:

F. J. V. DAKIN,  
GERTRUDE F. COLE.