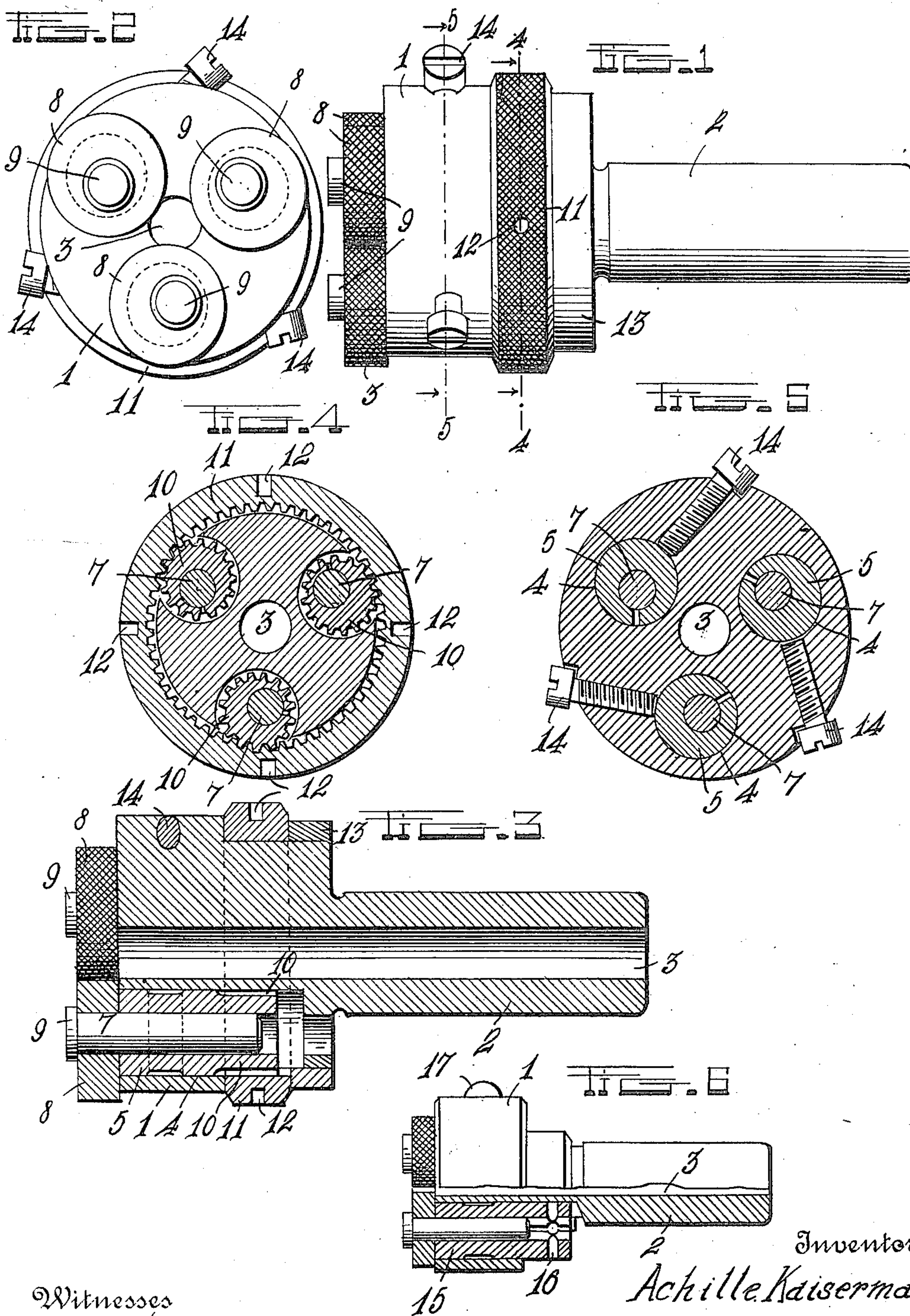


A. KAISERMAN.
 NURLING TOOL.
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UNITED STATES PATENT OFFICE.

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NURLING-TOOL.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ACHILLE KAISERMAN, a citizen of the United States, residing at Kankakee, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Nurling-Tools; 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 nurling tools.

The object of the invention is to provide a high speed nurling tool having means whereby the main disks or cutters may be adjusted for use on work of different diameters and means to hold the disks in their adjusted position.

With the foregoing 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 side view of a nurling tool constructed in accordance with the invention; Fig. 2 is an end view of the same; Fig. 3 is a central vertical longitudinal section of the tool; Fig. 4 is a cross sectional view on the line 4—4 of Fig. 1, Fig. 5 is a similar view on the line 5—5 of Fig. 1, and Fig. 6 is a side view partly in section of a modified form of the tool.

Referring more particularly to the drawings, 1 denotes the head and 2 the shank of my improved tool. Through the head 1 and shank 2 is arranged a centrally disposed bore 3. In the head 1 around the central bore 3 is formed a series of cylindrical passages 4. There are preferably three of the passages 4 and they are arranged in position and spaced apart at the same distance from the central bore 3.

In each of the passages 4 is revolubly mounted a split sleeve or tool holding tube 5. The sleeves or tubes 5 are provided with a longitudinal bore or passage which is eccentrically disposed therein as shown. In the eccentric bores or passages of the sleeve or tubes 5 is arranged the supporting pins 7 of the nurling disks or cutters 8 which are arranged on said pins at their outer ends and bear against the end of the head 1 as shown. The pins 7 are provided on their

outer ends with heads 9 which retain the disks or cutters in operative position on the outer end of the heads 1. The inner ends of the sleeves or tubes 5 project beyond the inner end of the head 1 and said projecting ends of the sleeves are provided with an angular series of gear teeth 10. Operatively engaged with the geared ends of the sleeves 5 and bearing against the inner end of the head 1 is an internally geared operating ring 11 said ring having a milled outer surface whereby the same may be firmly gripped and the ring is also provided at intervals with sockets 12 to receive a nail or other implement to facilitate the turning thereof. The operating ring 11 is held in position on the geared ends of the sleeve 5 by a collar 13 which is shrunk or otherwise secured on the inner portion of the shank 2 as shown. By means of the gear teeth on the ends of the sleeves and the internally geared ring 11, the sleeves 5 may be rotated in the passages 4, thereby turning the working surfaces of the nurling tool near to or farther from the center of the bore 3 in the head 1 and shank 2 thus adjusting the tool for operation on work of different diameters, said work being inserted through the bore in the usual manner.

In order to hold the sleeves in their adjusted position I provide a series of set screws 14 which are screwed into the eccentric passages 4 at the proper angle through the side of the head 1. When the screws are driven into the passages in the sides of the head 1 the inner ends of the screws will bind against the sleeves 5 and thus lock the same in position. The set screws 14 besides holding the sleeves 5 in adjusted position also clamp the sleeve into tight engagement with the pins 7 of the nurling disk thus securing the disk in place. The sleeves 5 are split to permit this clamping operation by the set screws 14. It will thus be seen that the set screws 14 serve a double function of fastening the sleeves 5 in their adjusted position to hold the nurling disk at the proper place as well as locking the sleeves into close engagement with the pins 7 of the disk thus holding the latter in operating position in the sleeves.

In Fig. 6 of the drawings is shown a slightly modified form of the tool. The form of tool shown in Fig. 6 is the same in all respects to that shown in the first figures of the drawing except as to the adjust-

ing mechanism for the sleeves which hold the pins of the nurling disk.

In Fig. 6 of the drawings is shown sleeves 15 which are split in the same manner as the sleeves 5 in the first figures of the drawing and have their inner ends projecting beyond the inner end of the head 1. In the projecting ends of the sleeve 15 are formed a series of radially disposed passages or sockets 16 with which are adapted to be engaged a nail or other instrument by means of which the sleeves may be readily turned in the passages of the head 1 to bring the nurling disks on the outer ends thereof in their respective position for operation upon the work in the central bore of the tool. After the sleeves have thus been adjusted they are secured and the pins of the nurling disk locked by set screws 17 which correspond with and operate in the same manner as the set screws 14 of the first form of the tool.

By means of a nurling tool constructed as herein shown and described, the nurling disk may be quickly and easily adjusted and locked in their adjusted positions for operating upon work of size or diameter.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the 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 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:—

1. In a nurling tool, a head, a shank formed thereon said shank and head having formed therein a central holding bore, a series of split sleeves arranged in said head concentric to the holding bore, said sleeves having formed therethrough eccentric holes or passages, disk holding pins arranged in said eccentric passages, nurling disks on the outer ends of said pins, means arranged on the inner ends of said sleeves whereby the latter are turned to adjust the position of the working surfaces of said nurling disks whereby the latter are engaged with work of different size, and means whereby said

sleeves are fastened in their adjusted position and said disks held secured therein.

2. In a nurling tool, a head, a shank formed on said head, said shank and head having formed therein a centrally disposed work holding bore, a series of split sleeves revolubly mounted in said head concentric to said bore, head pins arranged in said sleeves eccentric to the center thereof, nurling disks or cutters arranged on said pins, an annular series of gear teeth on the ends of said sleeves, an internally geared operating ring engaged with geared ends of said sleeve, means to retain said ring in position whereby the same may be operated to revolve said sleeves and thereby adjust said eccentrically disposed nurling disks whereby the latter are engaged with work of different diameters, and means to secure said sleeves in their adjusted positions and to hold said disk pins in place to secure the disks on the outer ends of the sleeves.

3. In a nurling tool, a head having formed therein series of concentrically arranged cylindrical passages, a shank on said head, said shank and head having formed therewith a continuous centrally disposed work holding bore, a series of split sleeves arranged in the passages in said head, said sleeves having formed therein eccentrically arranged passages, disk holding pins engaged with the passages in said sleeves, nurling disks arranged on the outer ends of said pins, annular series of gear teeth formed on the inner ends of the sleeves, an internally geared operating ring engaged with the geared ends of said sleeves, whereby the latter may be turned to adjust the nurling disk held thereby into engagement with work of different sizes, a series of set screws arranged in said head and adapted to be engaged with said split sleeves whereby the latter are secured in their adjusted position and clamped into engagement with disk holding pins whereby the latter are secured in place.

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

ACHILLE KAISERMAN.

Witnesses:

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