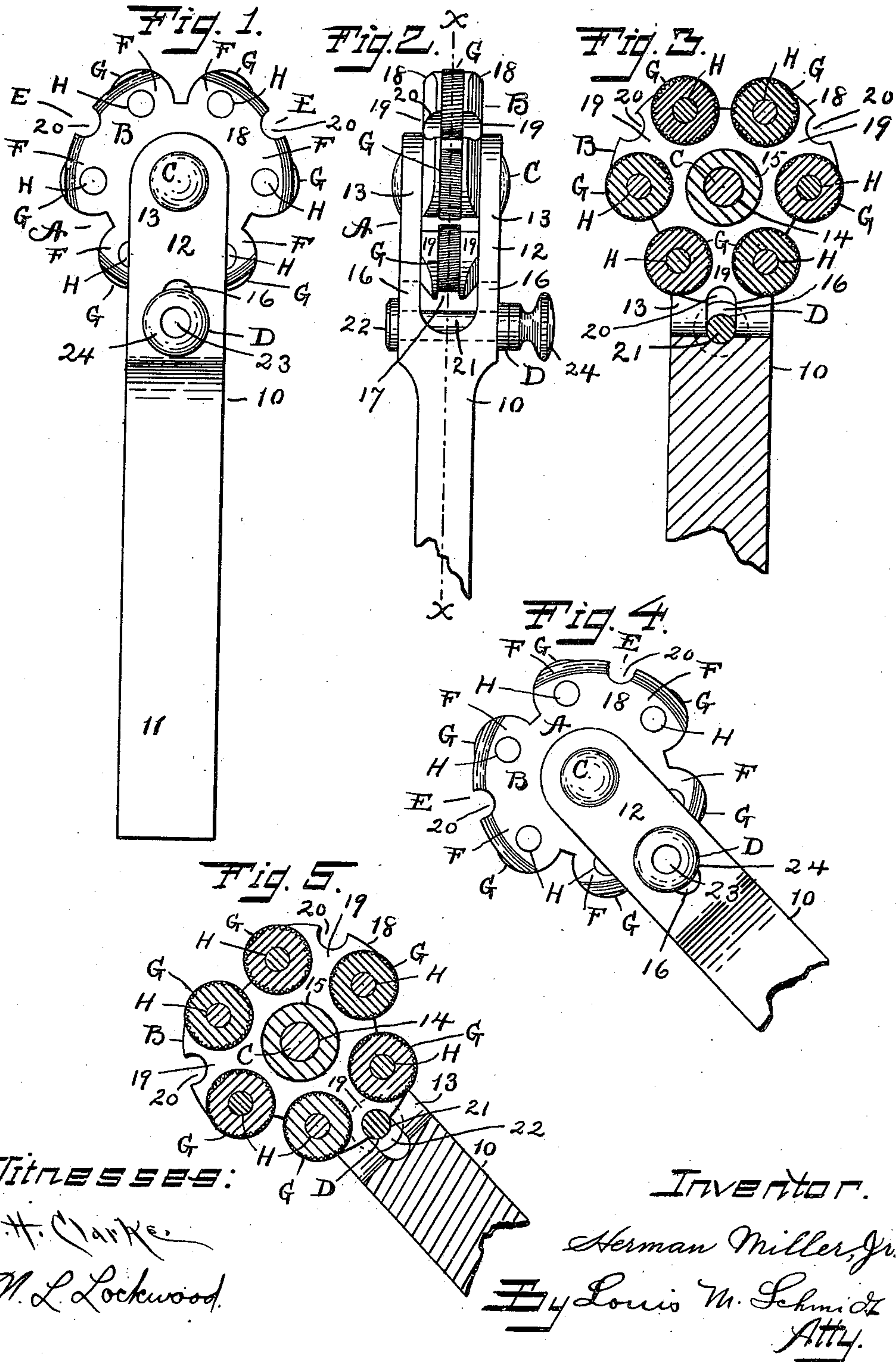


H. MILLER, JR.
 NURLING TOOL.
 APPLICATION FILED AUG. 5, 1910.

990,450.

Patented Apr. 25, 1911.



UNITED STATES PATENT OFFICE.

HERMAN MILLER, JR., OF NEW BRITAIN, CONNECTICUT.

NURLING-TOOL.

990,450.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed August 5, 1910. Serial No. 575,779.

To all whom it may concern:

Be it known that I, HERMAN MILLER, JR., a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Nurling-Tools, of which the following is a specification.

My invention relates to improvements in nurling tools and the objects of my improvements are simplicity and economy in construction and convenience and efficiency in use.

In the accompanying drawing:—Figure 1 is a side elevation of my nurling tool. Fig. 2 is an edge view of the same, the handle being in part broken away. Fig. 3 is a sectional view on the line $x x$ of Fig. 2. Fig. 4 is a side elevation of the said tool with the tool member locked and in position for using a single nurling element. Fig. 5 is a sectional view of the same on the line $x x$ of Fig. 2.

A is the body of my nurling tool and comprises a shank 10 which merges in one direction into the handle 11 and at the other end 12 is bifurcated so as to pivotally receive the tool member B, the pivotal means for support comprising the pivotal pin C passing through the arms 13 of the said bifurcated end 12 and a hole 14 in the central hub 15 of the said tool member B. The said arms 13 are provided with means for retaining a locking device D consisting of a pair of longitudinal slots 16, one in each arm. The said tool member B is a star shaped piece having the said central hub 15 which is solid except for the said bore or hole 14 and radially outward from the said hub is divided by a central slot 17 into a pair of webs 18 which are similar and have corresponding radial arms 19, each pair of which constitutes essentially a bifurcated arm E. Each arm E consists of a pair of branch arms F in each of which is pivotally supported on a pin H one of a pair of nurling cutters or tools proper G, preferably equidistant from the axial center of the said tool member B. The nurling cutters G of each arm E or

pair of branch arms F are of the same degree of cutting surface and mating for proper nurling effect and the tools or cutters G of the different arms E of different degree. The said locking device D consists of a screw 21 passing through the said slots 16, the body of which is a fit for the said slots 16 and also for the said locking slot 20 and having a head 22 on the back end in abutment with the lateral walls of the rear slot 16 and having a threaded front end 23 adapted to receive a nut 24, which latter is adapted to bear against the wall of front slot 16 and which nut may be unscrewed so as to permit sliding the said pin 21 back and forth in the said slots 16 so as to engage with the said locking slot 20 or away from such engagement and may be locked in either position as desired.

I prefer to have the pivotal supporting pin C for the tool member B and the pins H for the nurls G secured in place by a taper wedging fit in the back web 18 so that the said pins may be made essentially flush on the outside with their means of support, are readily replaceable, and are fixed and rigid when in use. As described, the said tool member B may be readily locked rigidly by means of the said locking device D or may be left free to turn on its axis. When free to turn, when a pair of nurling cutters G is brought to bear against the work a positive uniformity of bearing pressure of each member of the pair is insured. When the tool member B is locked by means of the said locking device D, the said tool member B will be rigid with reference to the handle 11 so that a single individual nurling tool G may be brought to bear against the work and produce the usual nurling effect of a single tool.

It is apparent that some changes from the specific construction herein disclosed may be made and therefore I do not wish to be understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes, in working my invention, as may fairly come within the spirit and scope of the same.

I claim as my invention:—

A nurling tool comprising a body member having a bifurcated end, a tool member pivotally mounted in the said end, the said tool
5 member comprising a central hub provided with radial arms and nurling cutters operatively mounted in the said arms, and a lock-

ing device adapted to lock the said tool member relatively to the said body member.

HERMAN MILLER, JR.

Witnesses:

W. L. LOCKWOOD,
SHEFFIELD H. CLARKE.

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