

Nov. 11, 1947.

A. C. NIELSEN

2,430,823

COMBINATION LATHE TOOL

Filed April 5, 1945

3 Sheets-Sheet 1

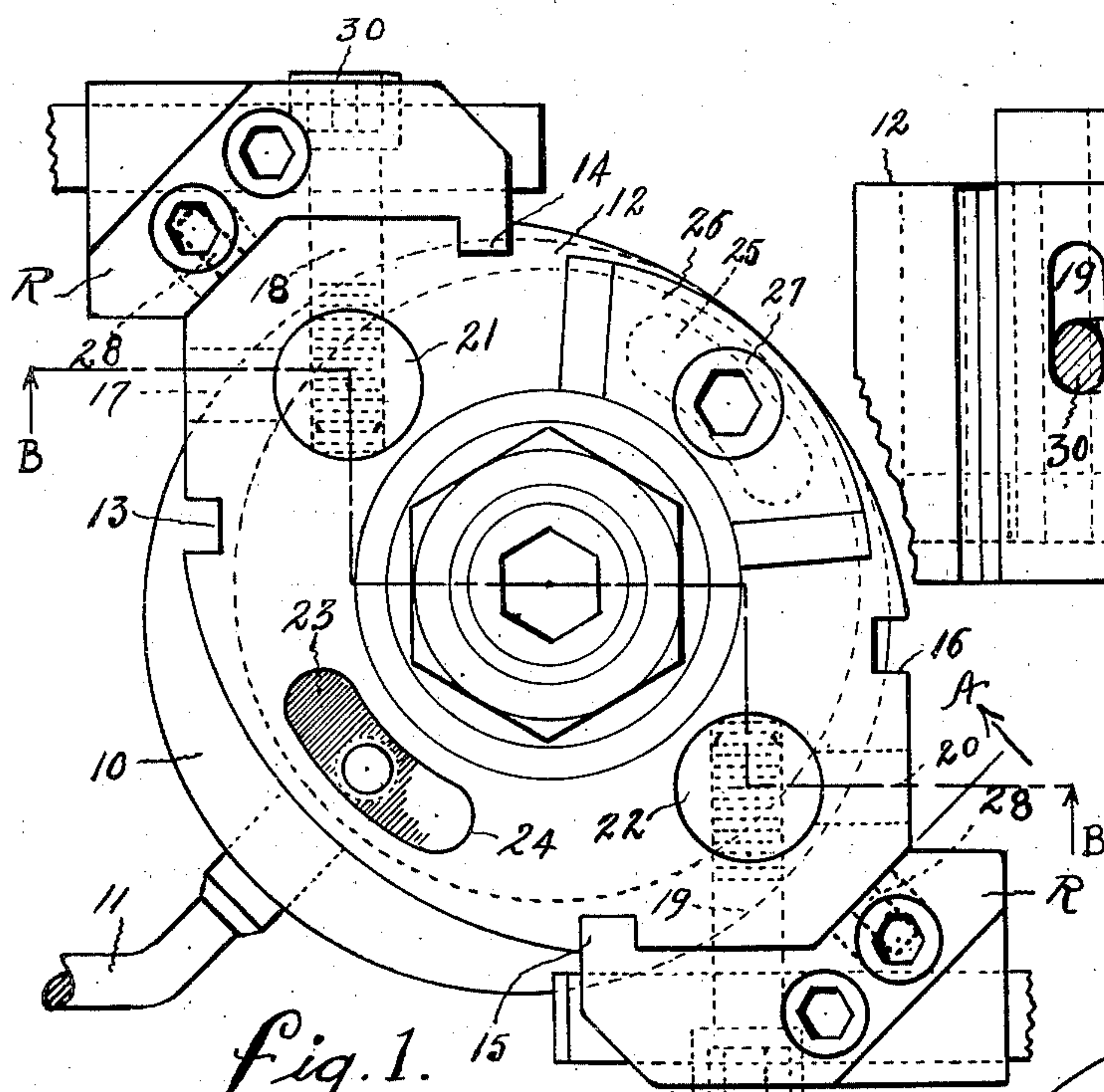


Fig. 1.

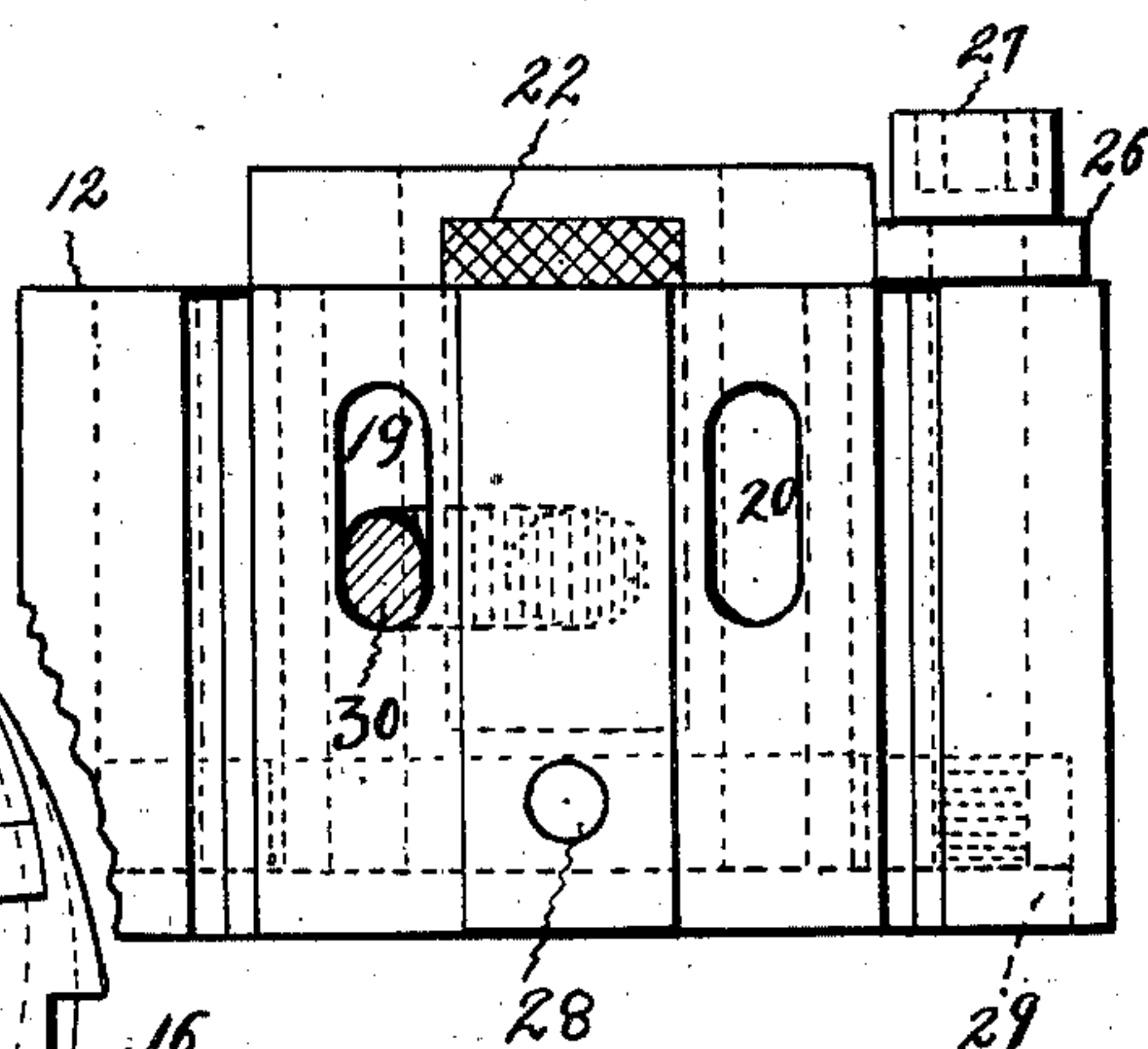


Fig. 2.

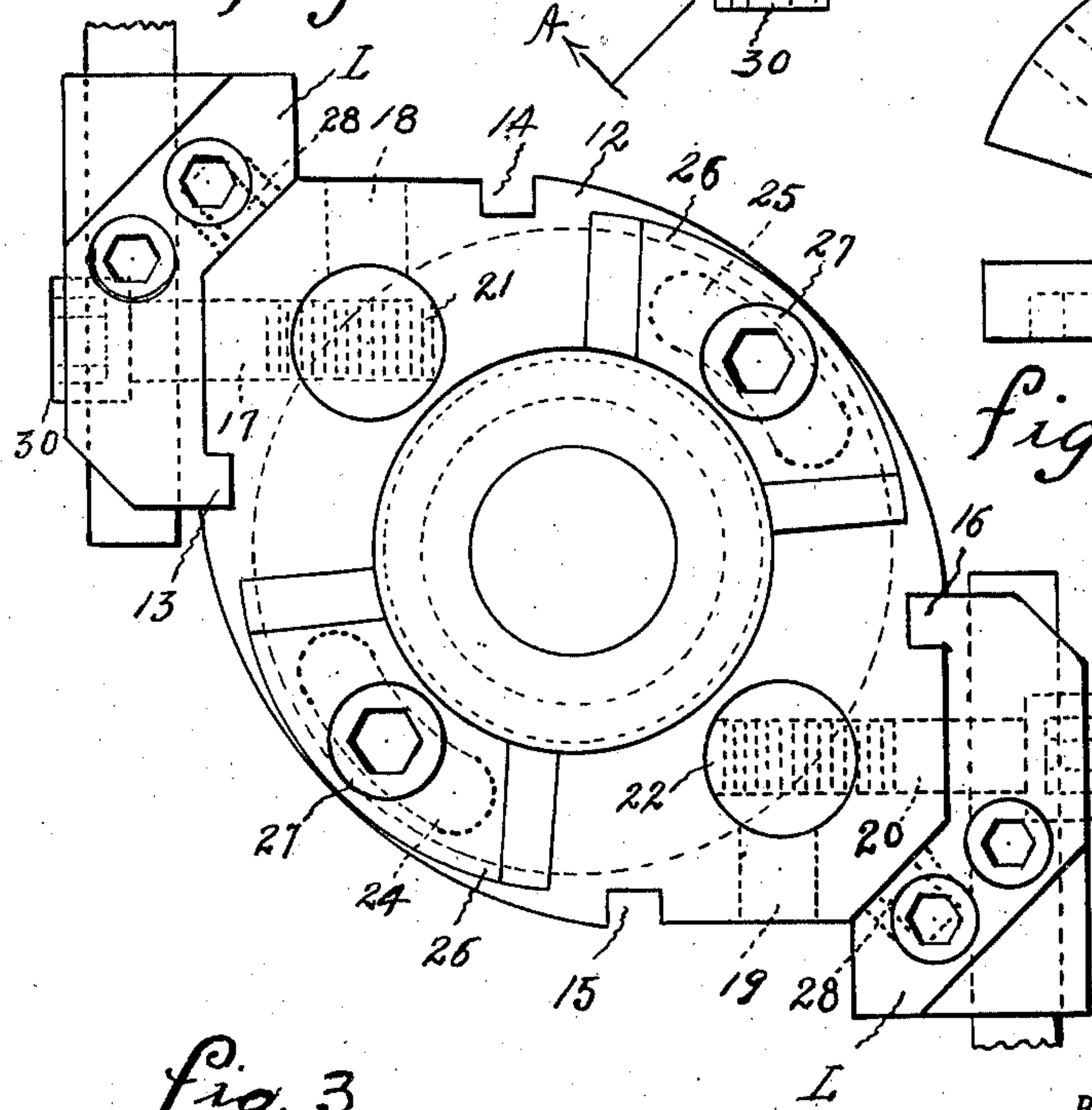


Fig. 3.

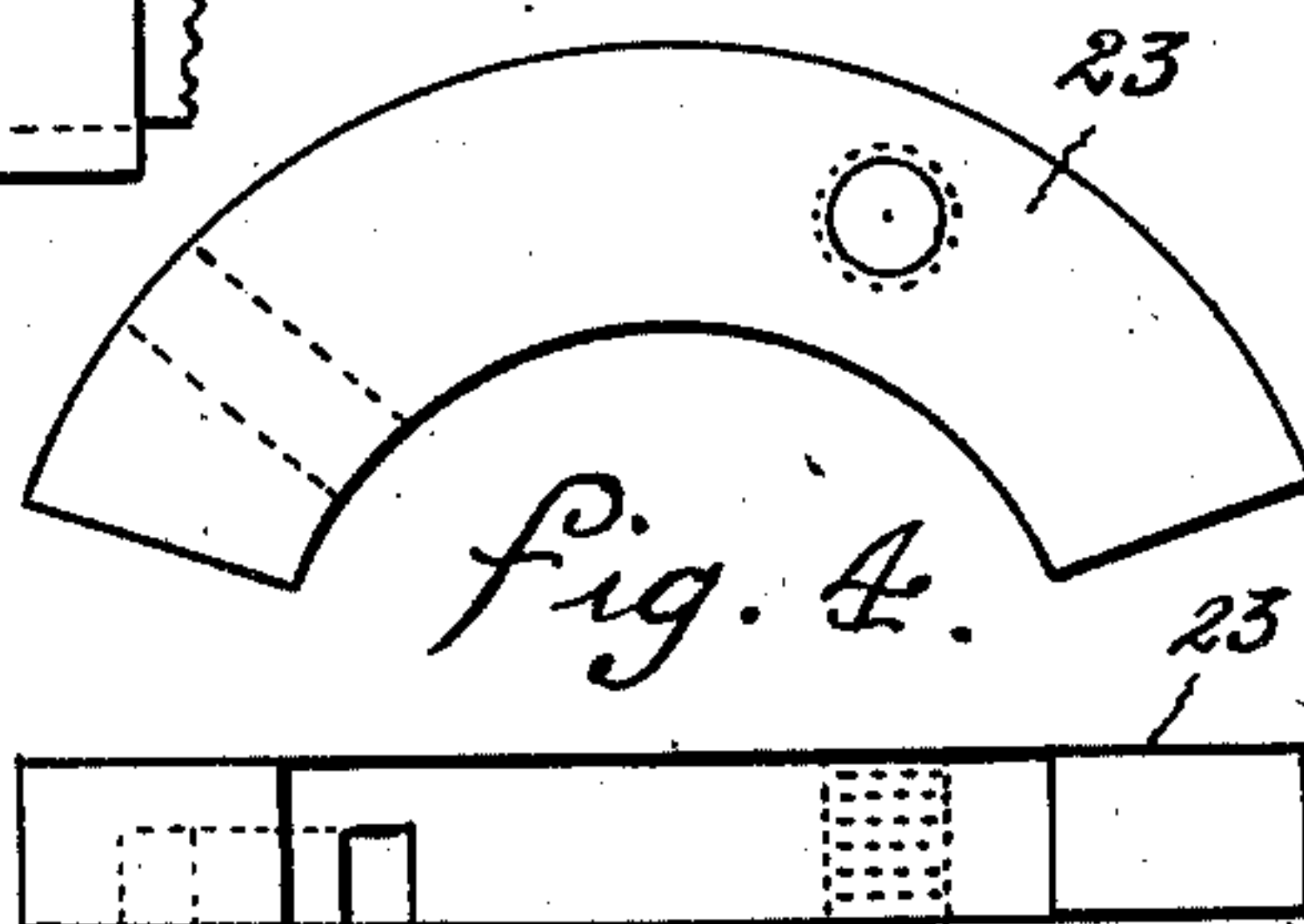


Fig. 4.

Fig. 5.

Fig. 6.

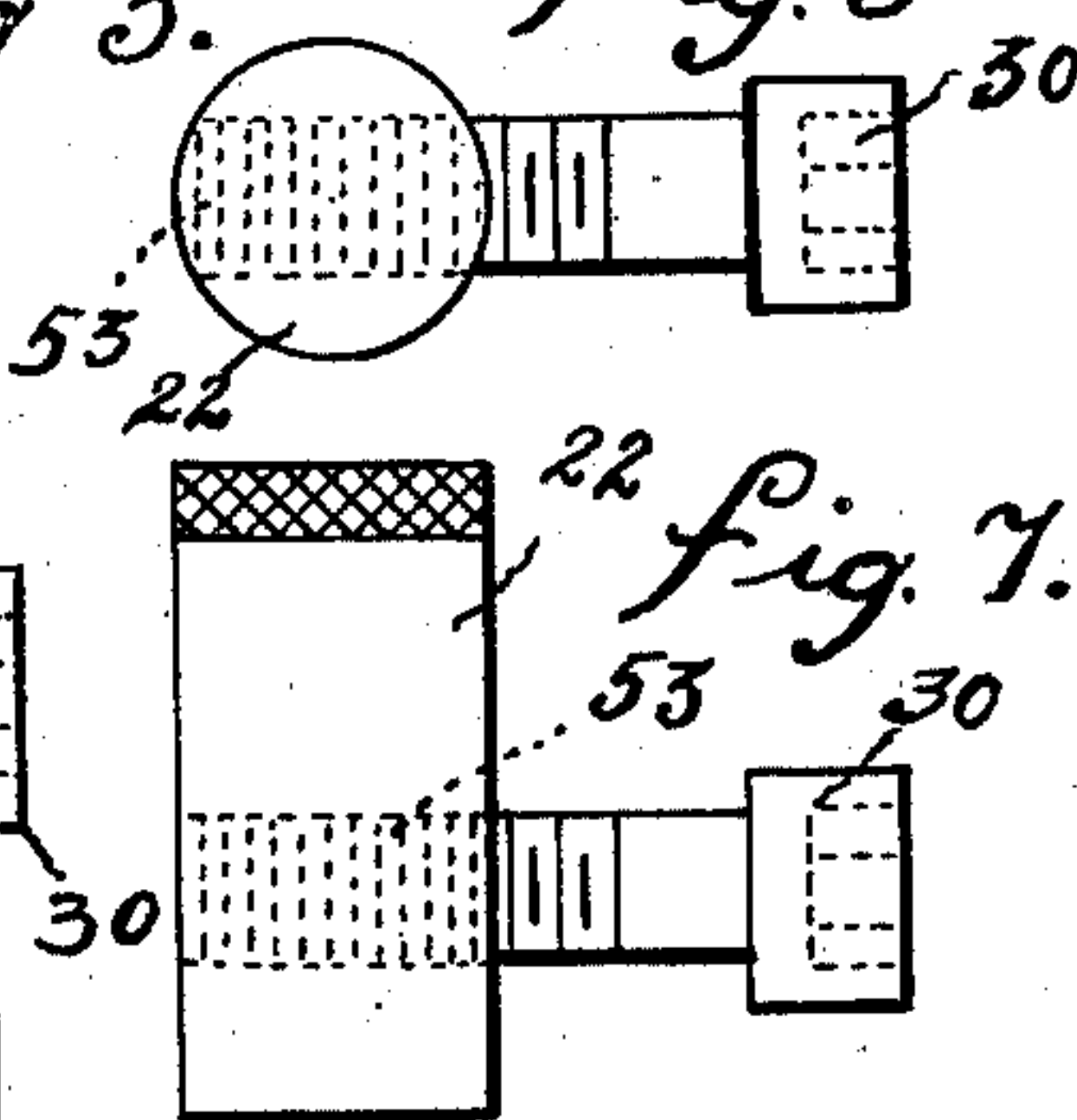


Fig. 7.

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3 Sheets-Sheet 2

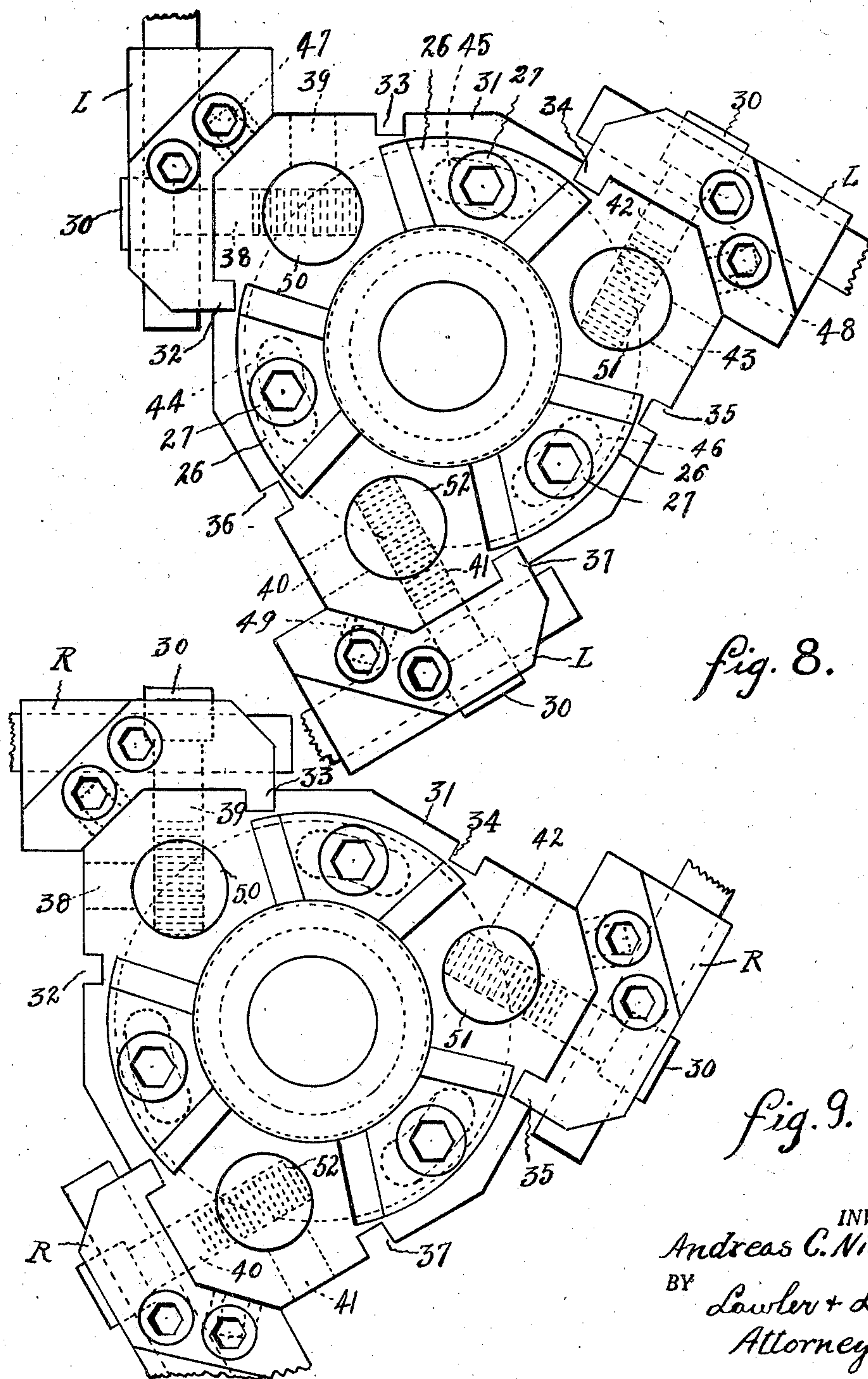


fig. 8.

fig. 9.

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3 Sheets-Sheet 3

Fig. 10

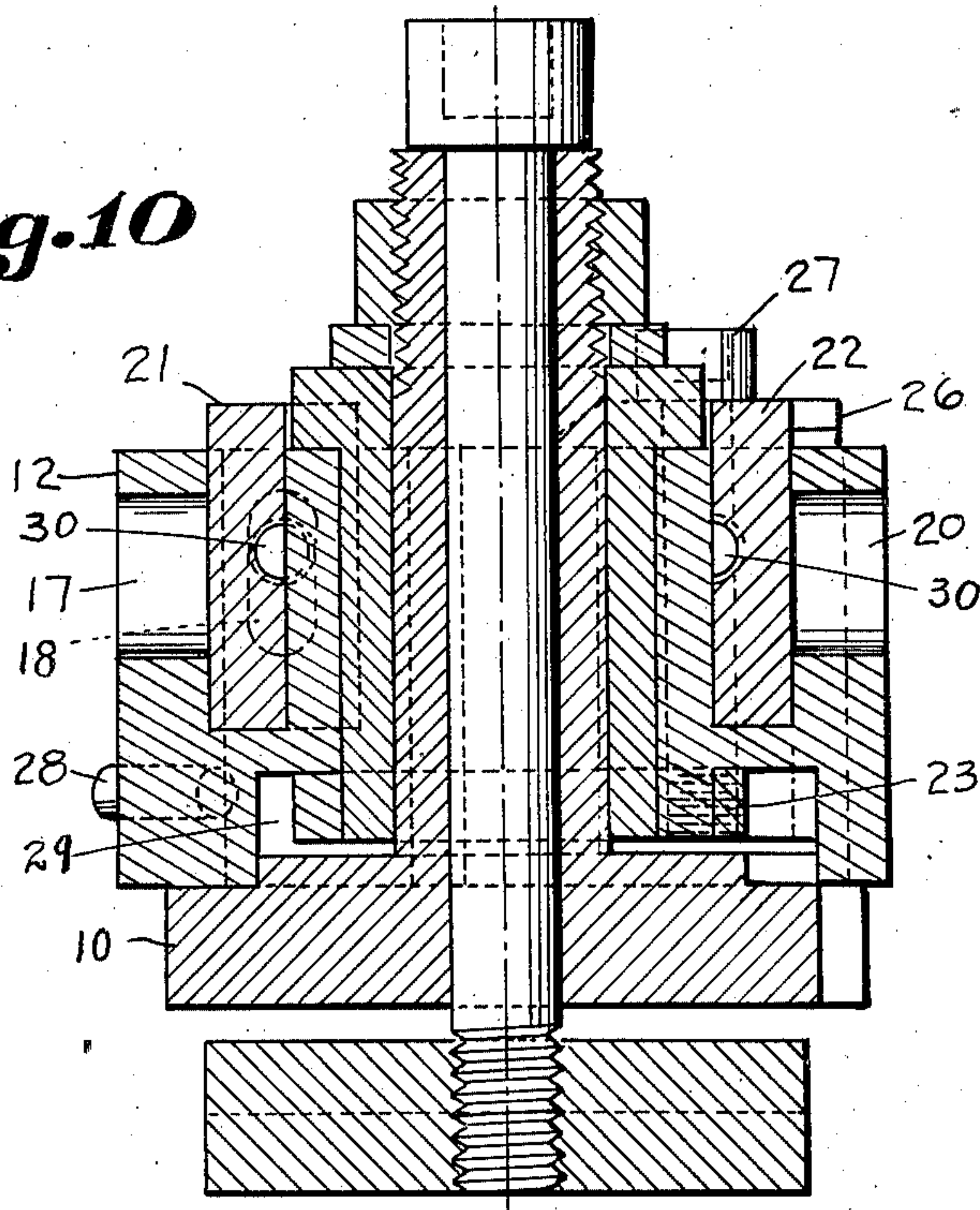
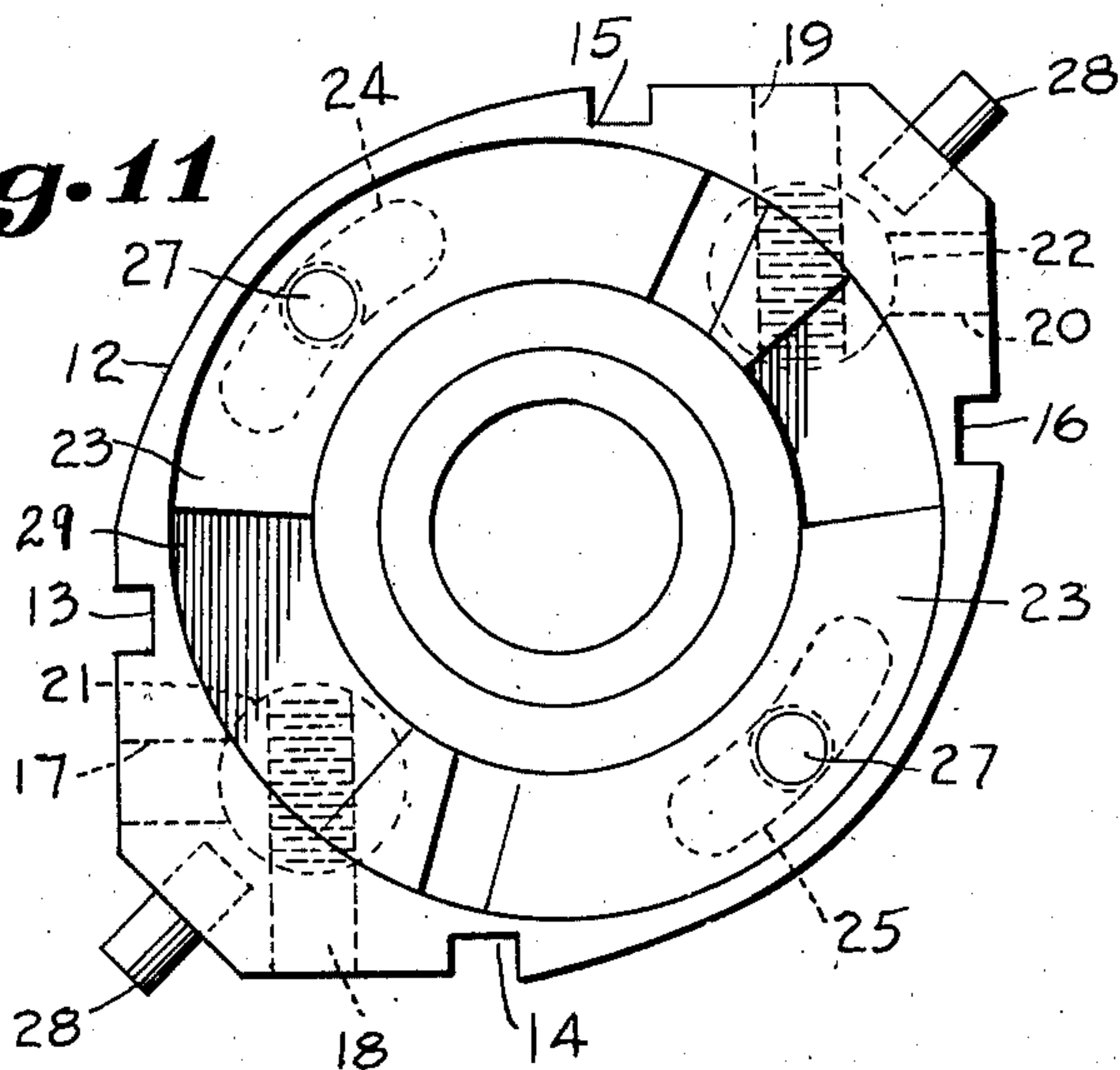


Fig. 11



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UNITED STATES PATENT OFFICE

2,430,823

COMBINATION LATHE TOOL

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Application April 5, 1945, Serial No. 586,693

1 Claim. (Cl. 29—48)

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The invention has for its principal object to provide a novel rotatable turret body on which a plurality of cheek plates may be removably and adjustably secured and which can be produced at minimum cost.

The novel rotatable turret body, as will be evident from the following description, provides a very efficient means for mounting a variety of cheek plates adapted to accommodate a diversity of tools adapted to lathe operations, so that they may be easily selected and quickly mounted and brought into operative relation with the work being machined.

The turret body, per se, incorporates means which can be easily constructed for securing the cheek plates thereto, and which can be readily positioned to meet the demand in mounting the cheek plate in which the selected tool is mounted.

The main objects of this invention therefore are:

First to provide an improved rotatable turret body, on which to mount the cheek plates.

Second, to provide an improved means for securing the cheek plates on the turret body which can be manufactured with a minimum cost.

Third, to provide an improved rotatable turret body having these advantages and on which a variety of tools mounted in cheek plates may be easily and quickly mounted and brought into operative position.

Objects pertaining to details and economies achieved in the manufacture of the rotatable turret body will definitely appear from the detailed description to follow. The invention is clearly defined and pointed out in the claim.

Preferred embodiments of the present invention will be hereinafter described, with reference to the accompanying drawings, given merely by way of example.

In general it is my aim to set forth these and certain other improvements and refinements which I have invented and to designate by special characteristics the difference between the turret body set forth in my Letters Patent No. 2,369,600, granted February 13, 1945, on combination lathe-tools, to which I refer you for more complete information regarding the idea upon which are made the improvements herein set forth, and in which some of the mechanism herein shown employed are illustrated in exact detail.

Furthermore, the novelty as to the cheek plates, the base with its locking means, the segmental sections or ring in the turret body, the arcuate slots and the cover plates are likewise similar to

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those disclosed in the above noted Letters Patent. The means for adjusting the cheek plates on the turret body are likewise identical. The only difference is to be found in the construction of the turret body wherein the tool cheek carrying posts are eliminated thus cutting down the cost of manufacturing and at the same time increasing the effectual agency of the device in that it provides added means for mounting the cheek plates, which my former turret body lacked, and at the same time conserving the metal that would be otherwise machined away in providing the individual posts. The turret body is also more rigid, and the shouldered nuts are also eliminated which also necessitated special machining operations.

The cheek plates are made rights and lefts as illustrated in the drawings so that they may be interchangeably mounted on the turret body.

Figure 1 is a plan view of the rotatable turret body mounted on the base, and also showing the cheek plates R, R mounted thereon.

Figure 2 is a view looking in the direction of the arrows A—A in Figure 1.

Figure 3 is a plan view of the turret body showing the cheek plates L, L mounted oppositely to the cheek plates R, R shown in Figure 1.

Figure 4 is a plan view, and Figure 5 an edge view of Figure 4 of one of the notched segmental sections removed from the turret body.

Figure 6 is a plan view, and Figure 7 is an elevation of one of the cylindrical members with a threaded fillister head screw removed from the turret body that is employed to secure the cheek plate in position on the turret body.

Figure 8 is a plan view of another embodiment of a turret body showing the cheek plates L, L and L mounted and secured thereon.

Figure 9 is a plan view in the same relative position as that shown in Figure 8 showing the cheek plates R, R and R mounted thereon.

Figure 10 is a sectional view on line B, B in Figure 1.

Figure 11 is a bottom view of Figure 1, the turret body removed from the base.

Referring to Figure 1 of the drawing, the base 10 with its locking member 11 is illustrated; described and claimed in detail in the Letters Patent issued to me on February 13, 1945, and I do not further illustrate or describe the same herein.

The turret bodies 12 and 31 shown respectively in Figures 1, 2, 3, 8, 9, 10 and 11 are provided with a vertical, flat, central outside wall and a vertical outer side wall extending from each side thereof. The outer side walls are of equal width and forms equal angles with the central outside

wall. The outer side walls terminate in vertically arranged identical grooves 13, 14, 15, 16, 32, 33, 34, 35, 36 and 37 at right angles to each other as illustrated.

The turret body is provided with vertical cylindrical bores located centrally and inwardly of the central outside wall, in which the cylindrical plugs 21, 22, 50, 51, and 52 are rotatably and slidably mounted. In the cylindrical plug there is provided a transverse threaded bore as at 53.

A vertical slot is provided in each of the side walls as shown in Figures 1, 2, 3, 8, 9, 10 and 11 at 17, 18, 19, 20, 38, 39, 40, 41, 42 and 43 and intersect the vertical cylindrical bore in which the cylindrical plug is rotatably and slidably mounted. The threaded bore in the cylindrical plug is adapted to align with either of the vertical slots in the outer side walls.

The tool carrying cheek plate is provided with two angularly related flat surfaces corresponding with and engaging central outside wall and one adjacent side wall on the turret body. The tool carrying cheek plate is provided with a lateral bore extending through the surface engaging the side wall for the reception of a cap screw 30 that passes through the lateral bore into and through the vertical slot in the side wall to engage in the threaded bore in the cylindrical plug to clamp the tool carrying cheek plate in proper position on the turret body. The tool carrying cheek plate is provided with a lug adapted to engage in the vertical groove when mounted on the turret body. The cheek plate is reversible and when mounted either one of the side walls and adjacent vertical groove.

The outstanding studs in the turret body and their position therein are shown at 28, 28 in Figures 1, 2 and 3, and at 47, 48 and 49 in Figures 8 and 9. The arcuate slots that extend down through the turret body is shown at 24 and 25 in Figures 1 and 2, and at 44, 45 and 46 in Figures 8 and 9. The closure plates covering the arcuate slots are shown at 26, 26 in Figures 1, 2, 3, 8 and 9.

One of the segments removed from the turret body is shown in the detail drawings in Figures 4 and 5. The recess in the underside of the turret body in which the segments are mounted is shown at 29 in Figure 2. The segments are held in position by means of fillister head cap screws shown at 27 in the respective views.

When it is necessary to adjust the tool bit rotationally relative to the stock being machined, the predetermined socket fillister head cap screw is released, thus releasing the segment or ring in the recess, after which the turret body may be rotated to the right or left to bring the tool bit into proper position, and when properly positioned the released socket fillister head cap screw is tightened, securing the turret body in position on the base. The cheek plate may be adjusted up or down by releasing the fillister head cap screw 30. To elevate the cheek plate, the set

screw in the cheek plate that extends vertically downward into the chamber formed therein and into which the horizontally extending stud projects is screwed down thus elevating the cheek plate on the turret body. To lower the cheek plate the set screw is screwed up and may be then manually forced downward, when properly adjusted it is locked by tightening the fillister head cap screw 30 that engages in the transverse threaded bore in the cylindrical plug mounted in the turret body.

Of course, changes may be made in details of construction and arrangement of parts without departing from the spirit and scope of my invention. I do not limit myself, therefore, to the exact form herein shown and described other than by the appended claim.

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

20 A structure for reversably mounting a tool on a tool turret comprising a turret body mounted for rotation about a vertical axis, said body having a vertical, flat, central outside wall and a vertical outer side wall extending from each side thereof, the side walls being of equal width and forming equal angles with the front wall, said side walls terminating in vertically arranged identical grooves which are at right angles to each other, said body having a vertical cylindrical bore located centrally and inwardly of said central wall, a vertical slot in each of said side walls intersecting said bore, a cylindrical plug having a transversely extending, threaded bore, said plug slidably and rotatably mounted in said first mentioned bore to align its threaded bore with either of said vertical slots, a tool carrying cheek plate having two angularly related flat surfaces corresponding with and engaging said central and one adjacent side wall on the body, and terminating in a lug receivable in the said vertical groove adjacent the side wall, said cheek plate having a lateral bore extending through the surface engaging said side wall, and a cap screw extending through said last mentioned bore, the vertical slot in the side wall engaged by the plate and threaded into the threaded bore of said plug to clamp the plate in adjustable position, the cheek plate being reversible to engage either one of the aforesaid side walls and adjacent vertical grooves.

ANDREAS C. NIELSEN.

REFERENCES CITED

55 The following references are of record in the file of this patent:

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Number	Name	Date
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2,369,600	Nielsen	Feb. 13, 1945