July 13, 1948. A. E. MEUNIER 2,445,147

STOCK CENTERING CHUCK

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Fig. 1.

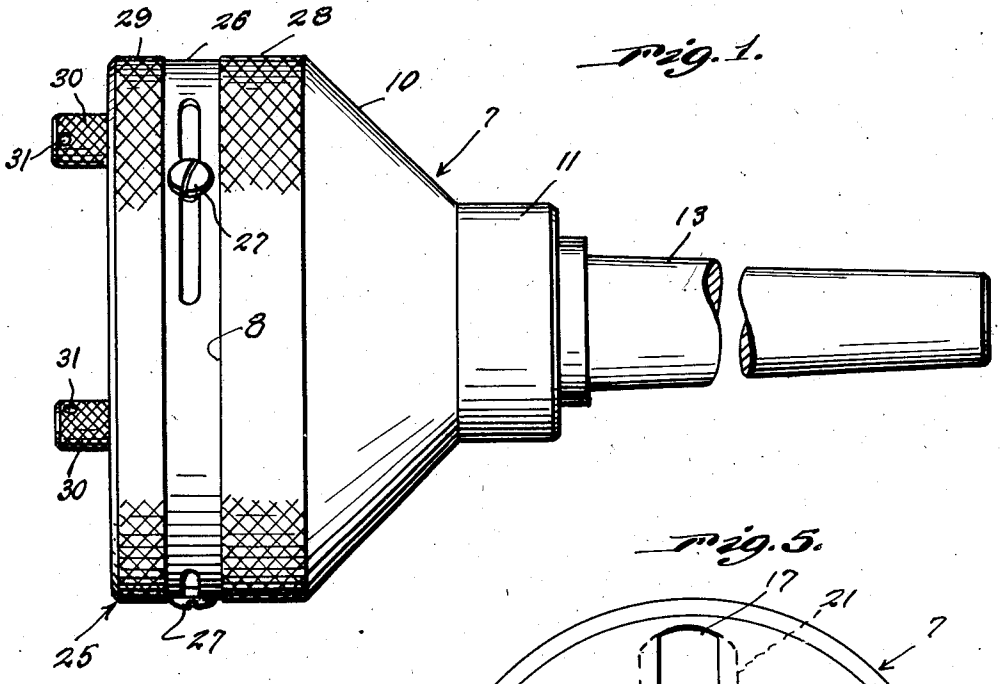


Fig. 5.

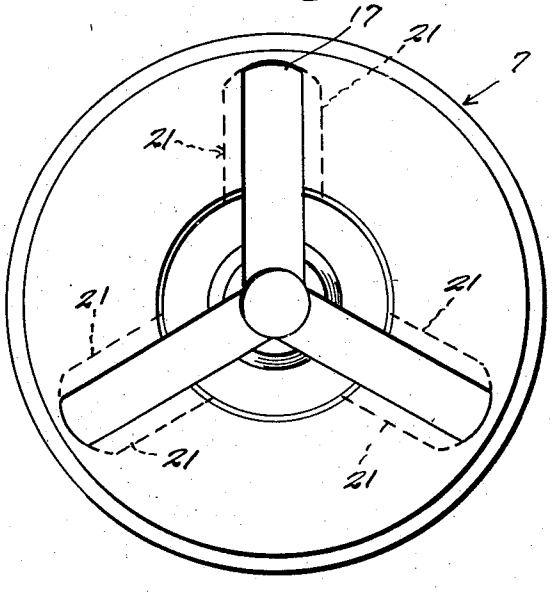
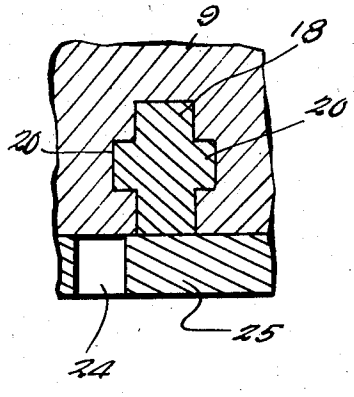


Fig. 6.



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Fig. 2.

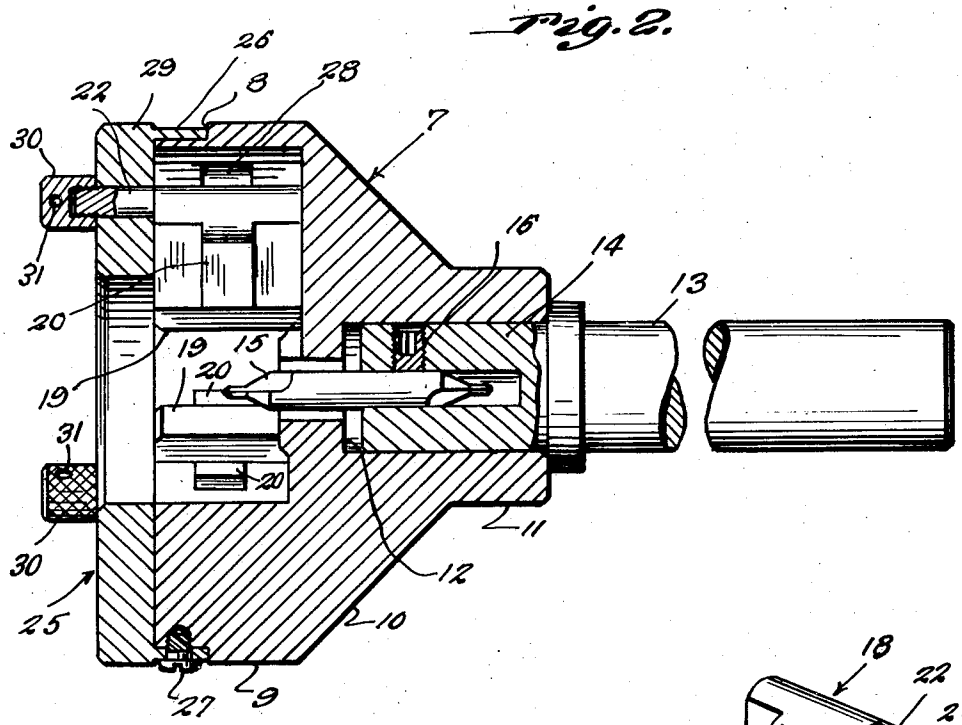
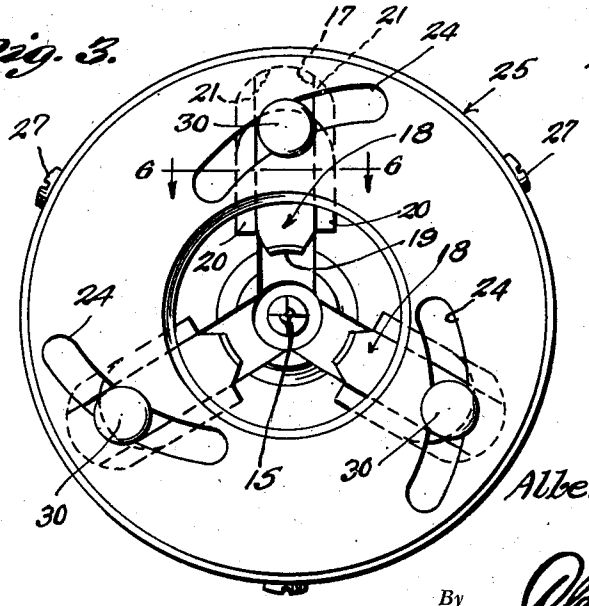


Fig. 3.



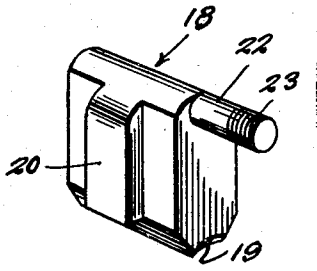


Fig. 4.

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UNITED STATES PATENT OFFICE

2,445,147

STOCK CENTERING CHUCK

Albert E. Meunier, South Attleboro, Mass.

Application June 10, 1943, Serial No. 490,357

1 Claim. (Cl. 77—18)

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This invention relates to a novel and improved centering chuck for forming lathe-centers in work to be turned in lathes, the same being adapted for centering either cylindrical or tapered shanks.

My primary aim is to provide a specially constructed chuck which is industrially appropriate, expertly balanced and of great utility, and whose parts are such as to save both time and money in machine shops by eliminating tedious prick-punching the center, and doing away with the present method of laying out the work with special calipering tools.

In reducing to practice the preferred embodiment of the invention, I have conceived an arrangement of carefully chosen parts coordinated to provide a mechanically superior, compact and convenient and simple and reliable structure achieving the desired results with efficiency and certainty, whereby to permit practical and expedient use of conventional countersinking tools.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is a side elevational view of a chuck constructed in accordance with the principles of the present invention.

Figure 2 is a central sectional view, with parts in elevation, illustrating the particular construction and arrangement of said parts.

Figure 3 is an end elevational view of the construction, that is, a view observing Figure 1 in a direction from left to right.

Figure 4 is a perspective view of one of the especially designed radially extensible and retractible work-engaging jaws.

Figure 5 is an elevational view of the face of the head showing the radial guideways, the remaining parts being removed for clarity of illustration of the construction.

Figure 6 is a detail horizontal section on the plane of the line 6—6 of Figure 3 looking in the direction of the arrows.

Referring now to the detailed description of the explicit construction representing the preferred embodiment of the invention, the chuck comprises what may be conveniently described as a relatively stationary head 7. This comprises a substantially cylindrical portion having an endless channel or groove 8. The body 9 tapers, as at 10, and merges into a reduced cylindrical neck portion 11. The portions 10 and 11 are formed with a socket 12 to accommodate the spindle portion of the shank or shaft 13. This spindle portion 14 is socketed centrally to accommodate the tool or center drill 15, the latter being retained in place by the set screw 16. The intermediate portion of the body constituting the juncture between parts 9 and 10 is provided with a bearing to accommodate the tool 15. The usable end of the tool projects through and beyond the apertured socket into the cavity which serves to accommodate the work (not shown). The body 9 is provided with circumferentially spaced, radial grooves 17 to accommodate the radially projectible and retractible chuck jaws 18. These are in the form of substantially rectangular blocks of the configuration shown in Figure 4 and have the work-engaging faces 19 shaped to conform to the general cylindrical contour of the work. Each jaw is provided with opposed ribs 20, these being confined and slidable in the countergrooves or keyways 21. Each jaw is also provided with an adjusting stem or pin 22 screw threaded, as at 23. The threaded ends extend outwardly and beyond the circumferentially spaced cam slots 24 provided in the oscillatory adjusting ring or cap 25. The part 25 is properly matched up and provided with an endless flange 26 fitting and turnable in the guideway or channel 8. Incidentally, the numeral 27 designates assembling screws. It will be noticed that the periphery of the body 9 is milled or knurled, as at 28. The peripheral gripping surface of the oscillatory adjusting cap or ring 25 is likewise knurled at 29, whereby to provide convenient finger grips for actuating the parts in relation to each other. Suitably knurled cap nuts 30 having tool holes 31 are carried by the projecting threaded ends 23 of the respective pins 22.

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In operation and to adjust the chuck for required sizes, simply loosen the clamping or binding nuts 30. This permits the ring 25 to be rotated or oscillated in relation to the body 9. To open the chuck, the ring 25 is turned in an anticlockwise direction, while to close it, it is turned in a clockwise direction. Obviously, the turning of the ring brings the cam slots into play and these exert thrust pressure upon the pins 22, thus moving the three chuck jaws simultaneously radially in or out, depending on the direction of rotation of the ring. In this manner, the work is effectively centered in relation to the drill 15 to provide the desired countersunk socket.

It is believed that the construction is reliable, accurate and easy to use and handle. It is susceptible of repair and assembly. It saves time, and is, therefore, a production device.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

I claim:

A stock centering chuck comprising a circular body having an axial shank socket in its inner end and a larger axial work-receiving socket in its outer end, said body further having an axial opening connecting said sockets and provided with radial grooves opening at their inner ends into the work-receiving socket, a shank for said body having its outer end portion fitted in said shank socket and formed in said outer end portion thereof with an axial tool socket, a tool secured in said socket and projecting through said axial opening into said work-receiving socket, radially adjustable work-centering jaws slidable in said radial grooves and having forwardly projecting threaded stems, a manually adjustable cap

for said jaws secured on the outer end of said body for limited rotation relative to the latter, said cap having a central work-admitting opening and a series of cam slots about said central opening through which said threaded stems project, and clamping nuts threaded on said threaded stems outwardly of said adjusting cap for securing the latter in rotatably adjusted positions and the jaws in radially adjusted positions.

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