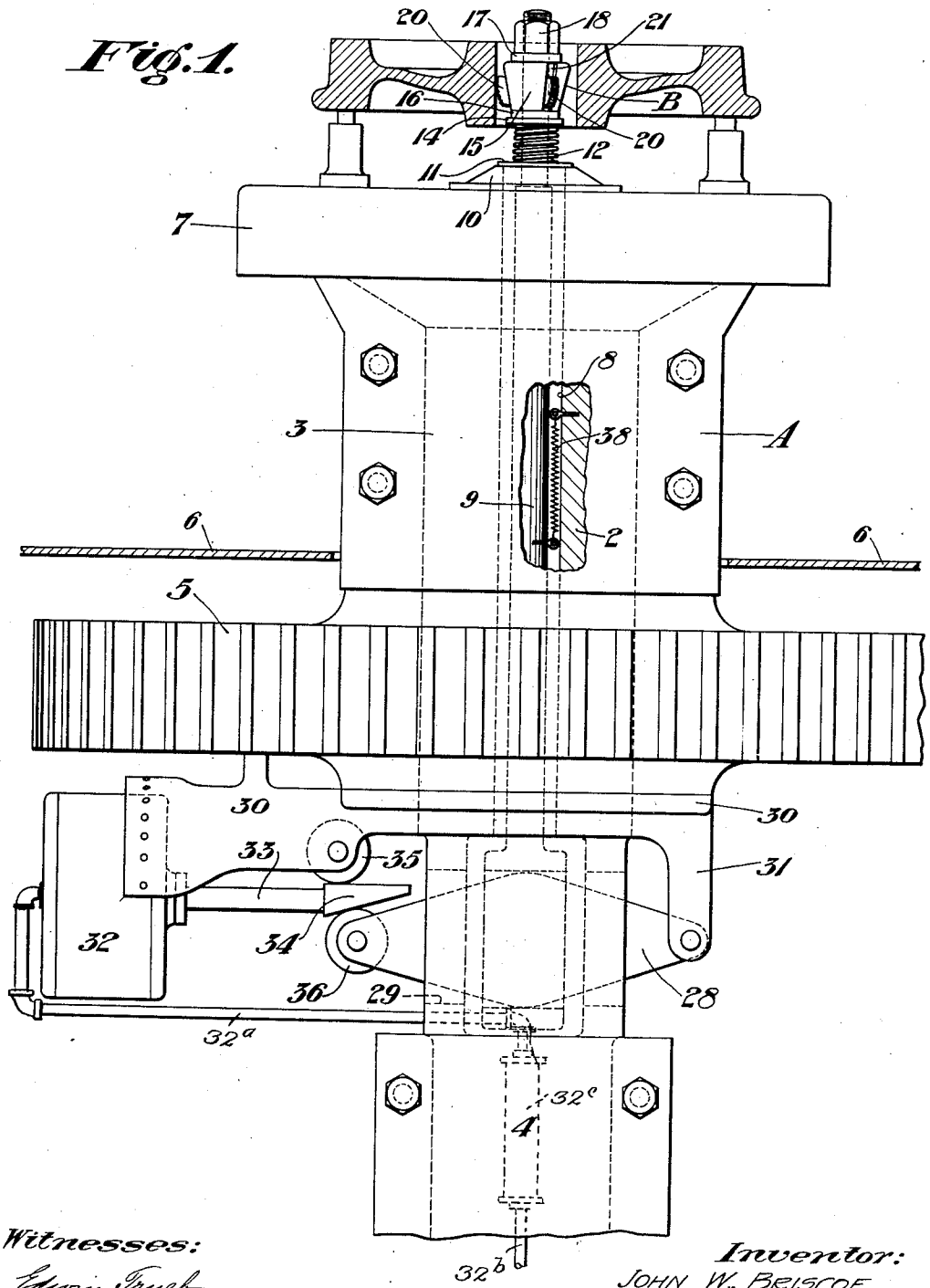
Jan. 5, 1926. 1,568,049

J. W. BRISCOE

CHUCK

Filed March 22, 1924 3 Sheets-Sheet 1

Fig. 1.



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Inventor:
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CHUCK

Filed March 22, 1924 3 Sheets-Sheet 2

Fig. 3.

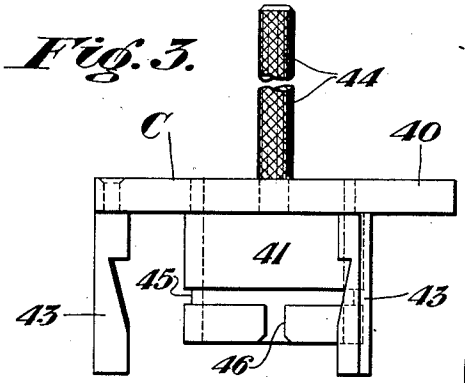


Fig. 4.

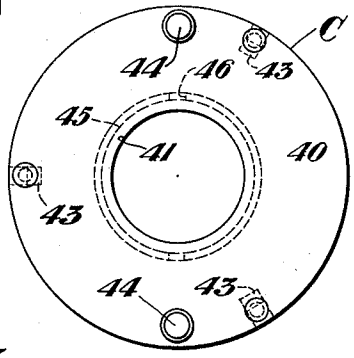
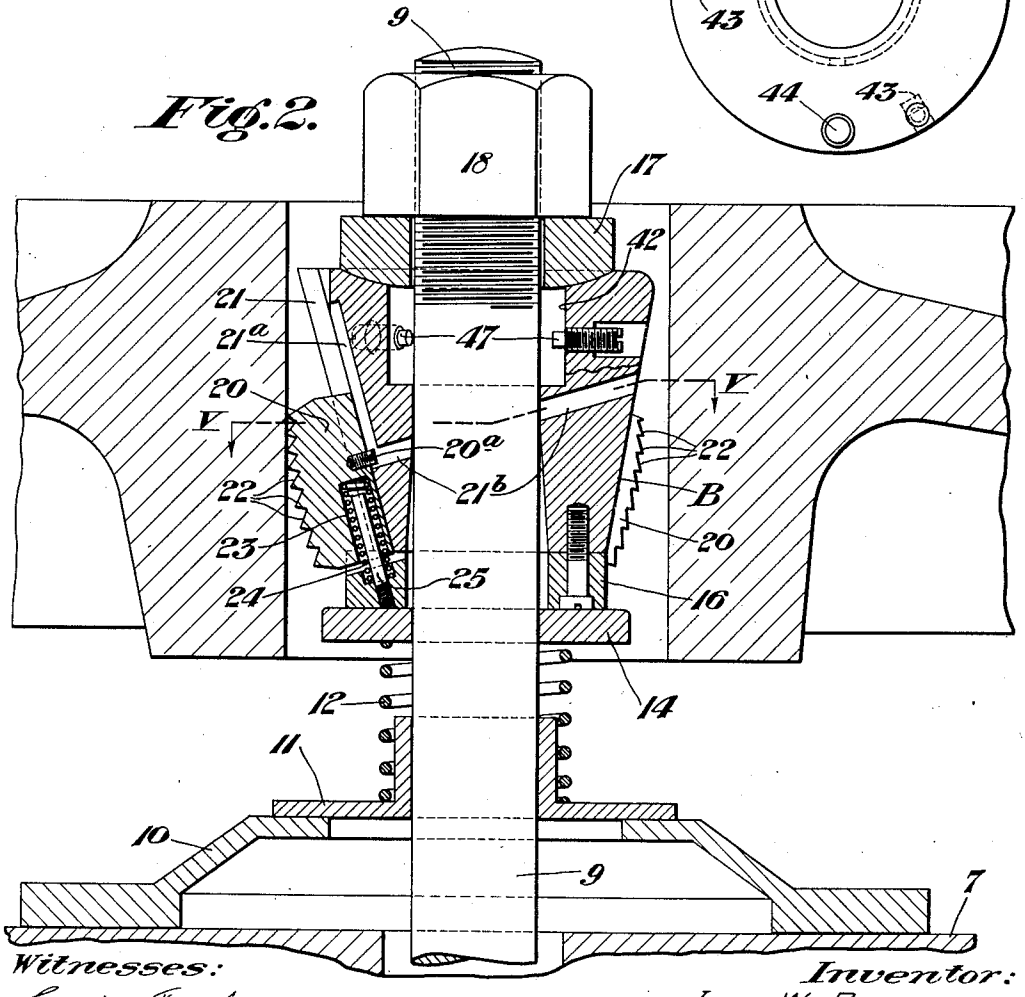


Fig. 2.



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CHUCK

Filed March 22, 1924 3 Sheets-Sheet 3

Fig. 5.

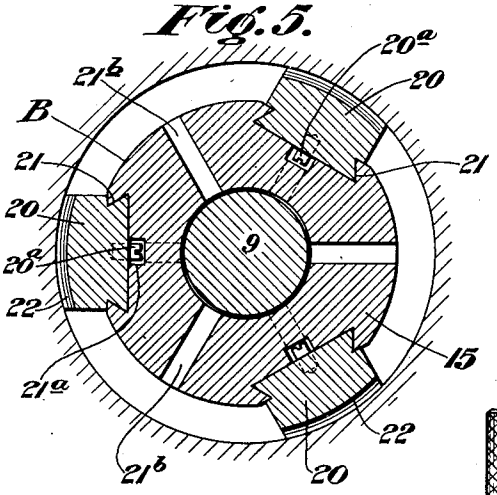


Fig. 6.

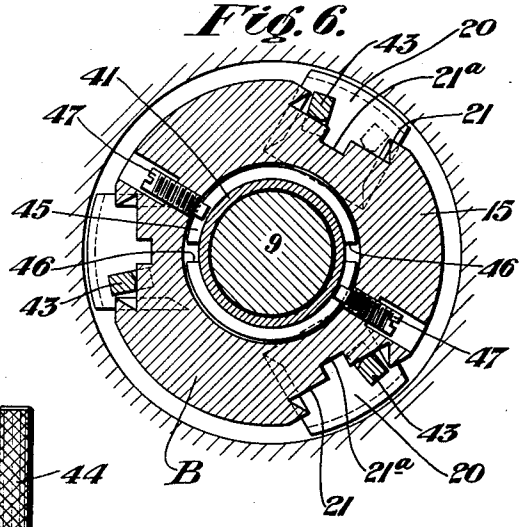
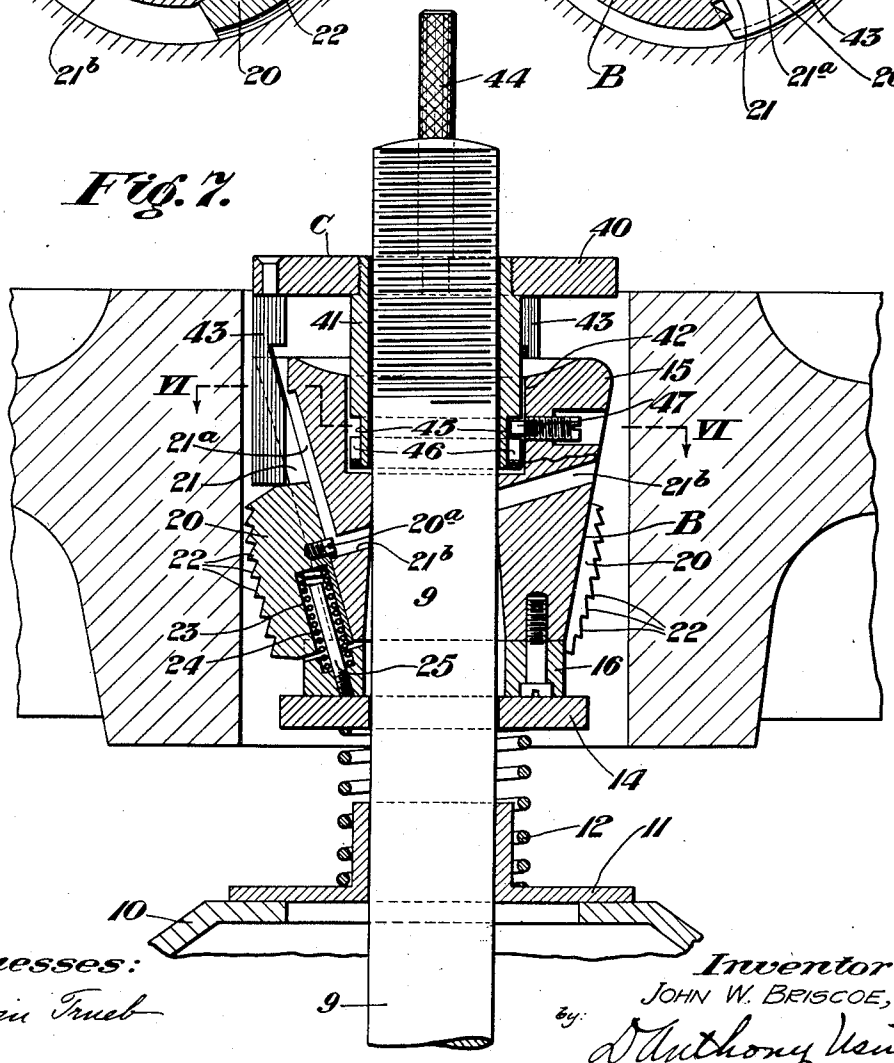


Fig. 7.



Witnesses:
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Patented Jan. 5, 1926. 1,568,049

UNITED STATES PATENT OFFICE.

JOHN W. BRISCOE, OF INGRAM, PENNSYLVANIA.

CHUCK.

Application filed March 22, 1924. Serial No. 701,066.

To all whom it may concern:

Be it known that I, JOHN W. BRISCOE, a citizen of the United States, and resident of Ingram, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Chucks, of which the following is a specification.

This invention relates to chucks and more particularly the chucks for boring mills and the like, and is designed primarily for holding car wheels and similar articles on the mill table during the turning operation.

One object of the invention is to provide an improved chuck and operating tool for holding the jaws of the chuck out of engagement with the work piece.

Another object of the invention is to provide the novel form of chuck having the construction, design, and combination of parts hereinafter described and illustrated in the accompanying drawings.

In the drawings, Figure 1 is a partial side elevation of a boring mill having a chuck embodying my invention thereon.

Figure 2 is an enlarged sectional detail elevation through the head of the chuck.

Figure 3 is a side elevation of the tool for depressing the chuck jaws.

Figure 4 is a top plan thereof.

Figure 5 is a transverse section taken on the line V—V of Figure 2.

Figure 6 is a transverse section taken on the line VI—VI of Figure 7.

Figure 7 is an enlarged sectional detail elevation showing the jaw depressing tool engaged with and holding the chuck jaws depressed.

Referring more particularly to the drawings, the letter A designates the boring mill, to which the invention is applied as a whole. The mill A comprises a central spindle 2 mounted for rotation in upper and lower bearings 3 and 4, respectively. The spindle 2 is provided intermediate its ends with an operating gear 5 below the floor 6 and at its upper end with a table 7.

The spindle 2 and table 7 are each provided with a centrally arranged vertically disposed opening 8 through which extends a post or shaft 9 forming part of the chuck.

A supporting plate 10 is mounted around the post 9 and engages the table 7. A bronze bearing member 11 is mounted around the post 9 and engages the plate 10.

A suitable coil spring 12 is mounted around the post 9 and has its lower end resting on the bearing 11, while its upper end supports a washer 14, which in turn supports the head B of the chuck.

The head B comprises a hollow conical body portion 15 having an end plate 16 secured to its lower end. The body 15 is provided with a centrally arranged opening through which the post 9 projects, and is removably held on said post by a washer 17 and nut 18 threaded on the upper end of the post.

The body portion 15 of the head is provided with a plurality of equally spaced work engaging jaws 20 slidably mounted in suitable dove-tailed vertically extending slots 21 and having serrated work engaging faces 22. The jaws 20 are provided with spring receiving openings 23 extending upwardly from their lower ends and adapted to receive coiled springs 24 mounted on guide pins 25 secured in the plate 16. Each of the jaws 20 is provided with a limit pin 20^a, which projects from the rear face thereof and extends into a limit slot 21^a formed in the back wall of the slot 21. Suitable holes 21^b are formed through the side walls of the body 15 to permit the mounting of the pins 20^a after the jaws are inserted in the slots 21.

The lower end of the post 9 is enlarged and slotted to form a saddle portion 27, through which is passed an operating lever 28, which projects through suitable openings 29 in the spindle 2.

A suitable supporting frame 30 is secured to the gear 5 and is provided with a depending lug 31 to which one end of the lever 28 is pivoted.

An air or other fluid pressure cylinder 32 is mounted on the frame 30 and is provided with a plunger 33 having a wedge shaped nose or end 34 adapted to be moved back and forth between a roller 35 mounted on the fixed frame 30 and a second roller 36 mounted in the free end of the lever 28. When the plunger 33 is forced between the rollers 35 and 36 it will rock the lever 28 downwardly and thus cause the lever to bear against and move the post 9 downwardly. The post 9, being connected directly through the washer 17 and nut 18 with the body portion 15 of the chuck, will move the body portion downwardly and cause the jaws 20 to engage the wheel to be machined.

A suitable spring 38 is secured to the post

9 and spindle 2 and is tensioned when the post 9 moves downwardly. The spring 12 is compressed by the downward movement of the post 9 and co-operates with the spring 38 to return the post 9 and head B to normal position upon the release of the lever 28.

The cylinder 32 receives fluid pressure through a pipe 32^a which is connected to a supply pipe 32^b by a swivel or ball joint 32^c. The pipe 32^b extends upwardly within the spindle 2 on a line with the axis of the spindle, so that the pipe 32^a will be free to rotate with the cylinder 32 when the machine is in operation.

The machine so far described is substantially of old and well known construction, and in the use of these machines it is neccessary to depress the jaw members 20 in order to insert the head B into or withdraw it from a wheel. That is, in preparing a wheel for machining, the head B is removed from the post 9 by unscrewing the nut 18 and removing the nut and washer 17. The jaws 20 are then depressed and locked in their depressed position and inserted in a wheel. The jaws 20 are then released, the head is then secured on the post 9 and the cylinder 32 operated to rock the lever 28 and move the post 9 and body portion 15 downwardly to cause the jaws to firmly engage the wheel. When it is desired to remove a wheel from the machine the cylinder 32 must be operated to release the lever 28 and allow the springs 38 and 12 to return the post 9 and head B to their uppermost position, and then the jaws 20 must be again depressed to release the wheel.

Heretofore the depressing of the jaws 20 and locking them in depressed position was accomplished by the use of a plurality of separate elements including a depressing member, and separate locking pins for each jaw. These elements were inefficient in operation and unsatisfactory in general.

The present invention provides a single tool C for depressing and locking the jaws 20 in depressed position.

The tool C comprises a top plate 40 having a downwardly extending centrally arranged cylindrical shoulder or collar 41 adapted to extend into a counterbored recess 42 in the body 15 of the head B, and depending jaw engaging legs 43 secured to the lower face thereof, and handle members 44 extending upwardly from the upper face thereof to facilitate the handling of the tool and head.

The shoulder or collar 41 is provided with a circumferential slot or groove 45 and vertical entrance slots or grooves 46 extending upwardly from the bottom of the collar and entering the groove 45.

Suitable locking bolts or pins 47 are threaded into the side walls of the body portion 15 and extend into the recess 42, and are adapted to enter the slot or groove 45 through the slots or grooves 46 so as to lock the tool C in jaw depressing position.

In operation, when it is desired to depress the jaws 20 the tool C is positioned so that the slots 46 are in line with the pins 47 and the legs 43 are in engagement with the upper ends of the jaws 20. The operator then forces the tool C downwardly until the pins 47 enter the slots 46 and are in line with the slot or groove 45, the tool is then given a slight turn to either the right or left to change the position of the pins 47 in the groove 45 and thereby lock the tool in depressed position. When the tool is thus locked in position the tool C and head B may readily be handled to insert or withdraw the head from a wheel by grasping the handle members 44.

While only one specific embodiment of my invention is illustrated and described in detail, it will be understood that various modifications may be made without departing from the scope of my invention as defined in the appended claims.

I claim—

1. The combination with a chuck having a head provided with at least one spring pressed jaw, of a jaw depressing tool adapted to be engaged with said jaw and move it against the spring tension into depressed position, and means on said head adapted to co-operate with said tool to lock said tool and jaw in depressed position.

2. The combination with a chuck having a head provided with at least one spring pressed jaw, of a jaw depressing tool adapted to be manually engaged with said jaw and move it against the spring tension into depressed position, said tool being provided with suitable slots adapted to receive suitable pins secured in said head to lock said tool and jaw in depressed position.

3. The combination with a chuck having a head provided with a plurality of spring pressed jaws, of a jaw depressing tool comprising a supporting plate having a plurality of jaw engaging and depressing limbs depending therefrom, and a head engaging portion, said tool being adapted to be manually engaged with said jaws and to depress said jaws against the spring tension into depressed position, and said head engaging portion being adapted to co-operate with said head to lock said tool in position to hold said jaws depressed.

4. The combination with a chuck comprising a central post member, a work engaging head removably secured on said post, and a plurality of vertically movable spring pressed jaw members slidably mounted in said head member, of a tool adapted to depress said jaw members and to facilitate the handling of said head, said tool comprising a supporting plate having a plurality of jaw

engaging and depressing limbs depending therefrom, and a centrally arranged depending shoulder portion adapted to enter a counterbored depression in said head and provided with grooves adapted to receive suitable locking pins secured in said head to lock said tool in position on said head, thereby holding said jaws in depressed position, and permitting the handling of said head by said tool.

5. The combination with a chuck comprising a central post member, a work engaging head removably secured on said post, and a plurality of vertically movable spring pressed jaw members slidably mounted in said head member, of a tool adapted to depress said jaw members and to facilitate the handling of said head, said tool comprising a supporting plate having a plurality of jaw engaging and depressing limbs depending therefrom, and a centrally arranged depending shoulder portion adapted to enter a counterbored depression in said head and provided with a horizontal groove adapted to receive suitable locking pins secured in said head to lock said tool in position on said head, and suitable vertically arranged entering slots extending upwardly from the bottom edge of said shoulder portion and entering said horizontal slot to permit said locking pins to enter said horizontal slot, said tool being adapted to be positioned on said head with said limbs engaged on said jaws and then forced downwardly to depress said jaws and cause said locking pins to enter said horizontal slot, said tool is then turned a fraction of a revolution to move said vertically arranged entering slots out of line with said pins, thereby locking said tool in position.

In testimony whereof, I have hereunto set my hand.

JOHN W. BRISCOE.