

(No Model.)

Z. B. COES.  
CHUCK.

No. 525,444.

Patented Sept. 4, 1894.

Fig. 1.

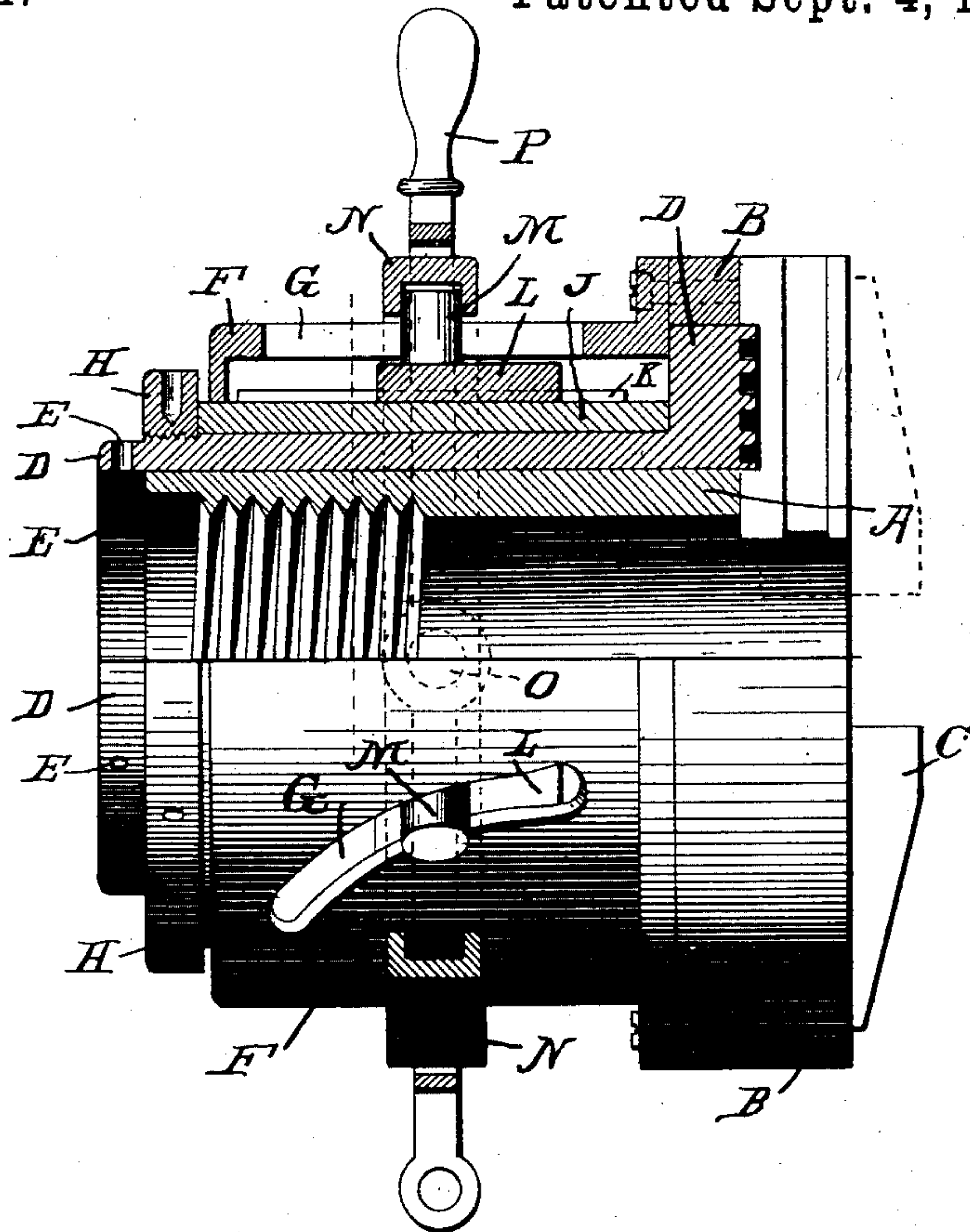
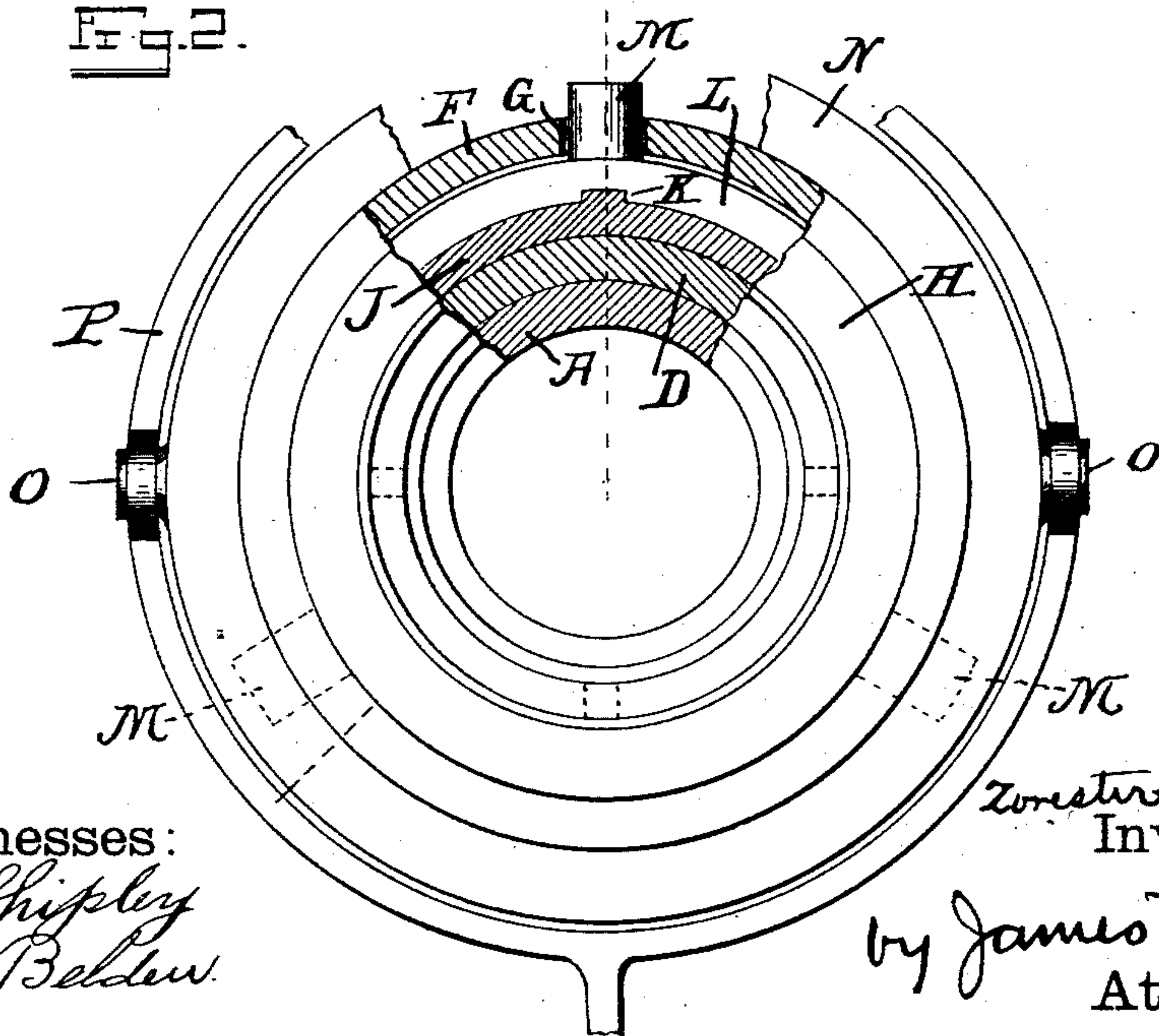


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## CHUCK.

SPECIFICATION forming part of Letters Patent No. 525,444, dated September 4, 1894.

Application filed May 7, 1894. Serial No. 510,305. (No model.)

*To all whom it may concern:*

Be it known that I, ZORESTER B. COES, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Chucks, of which the following is a specification.

This invention pertains to improvements in chucks for use on lathes, &c., and is designed to permit of grasping and releasing the work while the chuck is rotating, and is also arranged to permit of a considerable range in the size of work that can be grasped.

The improvements will be readily understood from the following description taken in connection with the accompanying drawings, in which—

Figure 1, is a side elevation, part vertical section, of a chuck embodying my improvements; and Fig. 2, a rear elevation, part vertical section of the same.

In the drawings:—A, indicates the body of the chuck, bored throughout and arranged to fit upon the nose of a lathe spindle or the like: B, the front flange of the body, radially grooved in the usual manner for the sliding jaws: C, the radially sliding jaws of ordinary form, toothed at the rear as is usual in scroll chucks: D, the scroll-piece consisting of the usual front flange surrounding the body and having the scroll threads upon its face to engage the teeth of the jaws, this scroll-piece having a long hub fitting and turning upon the hub of the chuck-body A: E, spanner holes in the rear end of the hub of the scroll-piece, whereby the scroll-piece can be turned and operate the jaws as usual in scroll-chucks: F, an exterior shell formed with or rigidly attached to the front flange B and therefore forming a rigid part of the chuck-body which is thus composed of hub A, flange B and shell F: G, longitudinal slots in the shell F, having a spirality of extremely quick pitch: H, a nut-ring screwed upon the rear end of the hub D of the scroll-piece: J, a sleeve fitted to turn upon the hub D of the scroll-piece and adapted to be clamped tightly endwise between the scroll flange and the nut H: K, a feather on the sleeve J: L, a short ring pivoted to slide upon and feathered to the sleeve J, the shell F being exterior to the ring L and sleeve J: M, studs projecting from the ring L

through the slots G: N, a shifting-ring surrounding the shell and interiorly grooved to engage the studs M: O, trunnions upon the shifting-ring: and P, a shifting lever engaging these trunnions and serving to exemplify means for moving the shifting-ring N and the ring L.

By operating the lever P the ring L will be moved sidewise and at the same time will be turned somewhat with reference to the shell by reason of the spirality of the slots G and this turning will result in the turning of sleeve J. This effect follows regardless of whether the chuck be stationary or revolving. When nut H is tightened up the sleeve J becomes a rigid part of the scroll-piece and consequently the movement of the lever will result in a certain degree of turning of the scroll-piece and a corresponding radial movement of the chuck-jaws. It is therefore obvious that the jaws can be moved in or out a trifle, by means of the lever, while the chuck is rotating. The amount of this jaw-motion is all that is needed to release or grasp the work. The amount of the jaw-motion which can thus be produced is very much limited by reason of the fact that the slots G can have but little length and that their incline must be gentle in order to get sufficient grasping power to the jaws. When the jaws, when open, will just freely receive a bar or other stock of a certain size then the jaw-motion due to the action of the lever is sufficient to grip and release stock of that size, but stock of a much larger or smaller size will require another preliminary adjustment of the chuck. The preliminary adjustment of the chuck to suit a given size of stock is made as follows:—While the chuck is stationary the nut H is slacked. This releases the scroll-piece entirely from the sleeve J. The scroll-piece may then be turned, by wrench-pin in holes E, to bring the jaws into proper radial position to suit the stock in hand, after which the nut H is tightened, thus again unifying the scroll-piece with the sleeve J and placing the scroll-piece again under the domination of the slots. The chuck having thus been adjusted to about the size of the stock the jaw-motion which can be gotten from the slot-control is sufficient to grasp and release that stock. The chuck will be found



particularly useful upon screw machines, and other turret lathes.

I claim as my invention—

1. In a scroll-chuck, the combination, substantially as set forth, with the chuck-body, scroll-piece and chuck-jaws, of a hub on the scroll-piece, a trunnioned sliding ring feathered on said hub, a spirally slotted shell engaging the trunnions and chuck-body, and means for shifting said ring endwise with reference to said shell and scroll-piece.

2. In a scroll-chuck, the combination, substantially as set forth, with the chuck-body, scroll-piece, and chuck-jaws, of a hub upon the scroll-piece, a sleeve fitted to turn upon said hub, a clamp for binding said sleeve rigidly to or freeing it from said scroll-piece, a shell united to the chuck-body exterior to said sleeve and having longitudinal spiral slots, a ring feathered to said sleeve within said shell and having trunnions projecting out through and beyond said slots, a shifting-ring exterior to said shell and engaging said trunnions, and means for moving said shifting ring along said shell.

means for moving said shifting ring along said shell.

3. In a scroll-chuck, the combination, substantially as set forth, with the chuck-body, scroll-piece and jaws, of a hub upon the scroll-piece fitted to turn upon the hub of the chuck-body and provided with spanner-holes at its rear end, a nut screwed upon the hub of the scroll-piece at its rear end, a sleeve fitted to turn upon the hub of the scroll-piece and be clamped rigidly thereto by said nut, a shell rigidly united to the chuck-body exterior to said sleeve and provided with longitudinal spiral slots, a ring feathered to said sleeve within said shell and having trunnions projecting out through and beyond said slots, a shifting-ring exterior to said shell and engaging said trunnions, and means for moving said shifting ring along said shell.

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