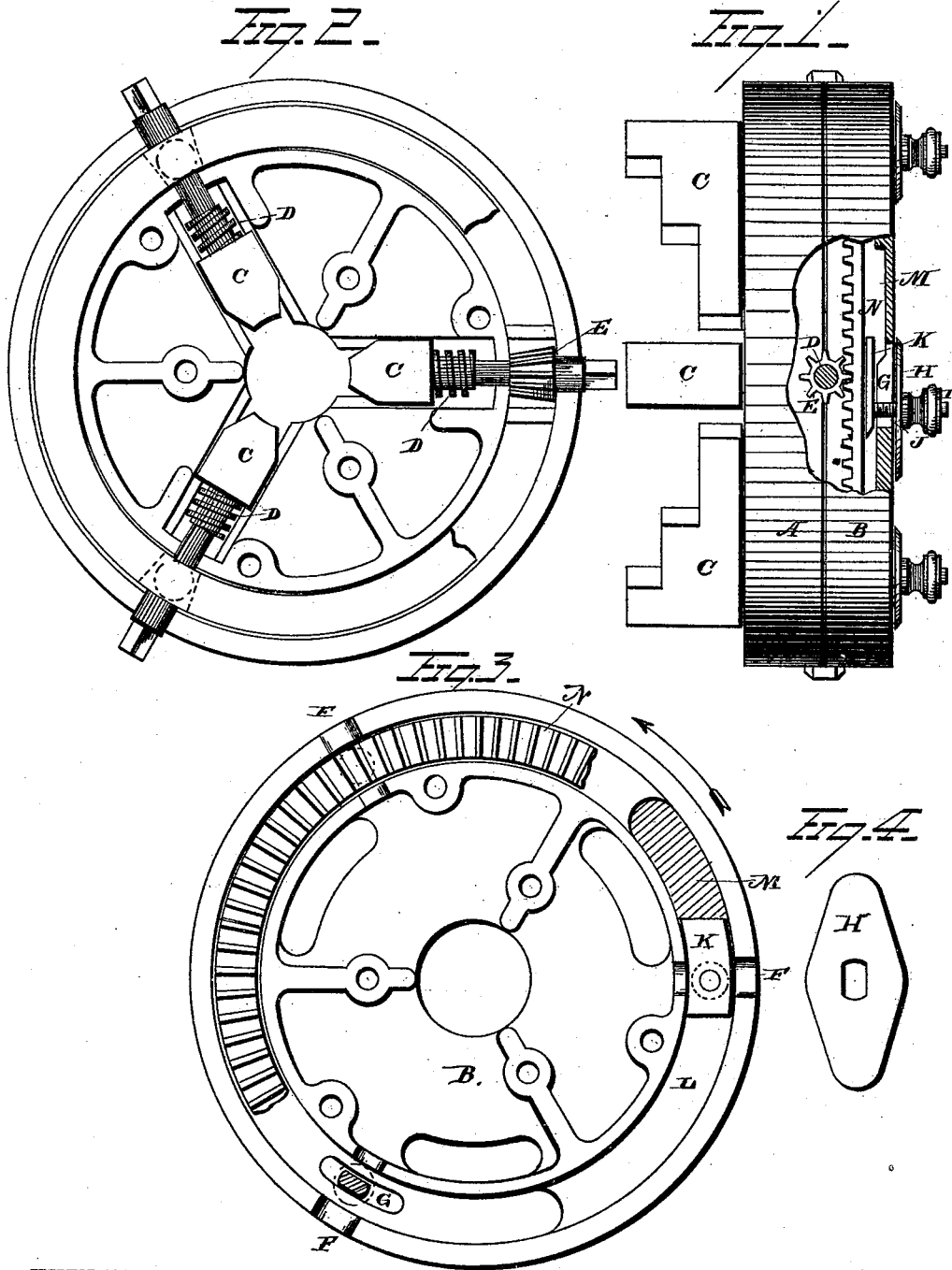


(No Model.)

J. C. BAKER.
LATHE CHUCK

No. 250,415.

Patented Dec. 6, 1881.



WITNESSES

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LATHE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 250,415, dated December 6, 1881.

Application filed June 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BAKER, of the city, county, and State of New York, have invented a new and Improved Lathe-Chuck, of which the following is a specification.

My invention relates to an improvement in that class of chucks in which the jaws are adapted to be independently or collectively operated, and which are generally known as "combined independent and universal chucks," the object of the invention being to provide an article of this character which shall combine simplicity of construction and ease of operation with durability and efficiency in use.

With these ends in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of a chuck constructed in accordance with my invention, a portion of the casing thereof being broken away to expose the internal mechanism of the chuck. Fig. 2 is a view in front elevation of my improved chuck, showing the jaws and their spindles, one side of the chuck being in section to show one of the pinions with which each of the spindles is provided. Fig. 3 is a view, partly in elevation and partly in section, of the rear half of the chuck-casing, showing the annular rack and the recesses which receive the sliding plates; and Fig. 4 is a view of one of the washers.

The chuck-casing is composed of front and rear sections, A and B, the former of which is provided with jaws C, operated by spindles D, having pinions E secured near their outer ends. The inner faces of the said sections are provided with semicircular grooves F, to receive the outer ends of the spindles, which are squared to be readily turned by a wrench or key. The rear section, B, of the casing is provided with a series of elongated slots, G, which are formed near and parallel with its edge, and which are covered by washers H, held closely against the chuck-casing by thumb-nuts I, screwed on the threaded outer ends of pins J, which pass through the said washers and slots, and which have segmental plates K secured to their inner ends. The pins aforesaid are slightly flat-

tened in form to prevent them from turning in the slots G, and to effect a similar result the holes in the washers are made conformable in shape to the shape of the pins. The plates K are received and have movement in an annular track, L, formed in the rear section, B, of the chuck-casing, and provided with a series of recesses, M, of sufficient length, breadth, and depth to receive the plates K. It is apparent that the said plates can be moved only through arcs of circles equal in length to the length of the slots G; and in order that in this limited movement they may be moved into and out of the said recesses M, the latter are sunk in the casing B in such manner that they adjoin the said slots, and the pins J are secured to those ends of the plates that are the most remote from the recesses. The walls of those ends of the recesses which adjoin the slots are beveled or inclined, as are also the rear ends of the plates, to permit the latter to be readily raised out of the recesses when desired, to render the chuck universal in action. An annular rack, N, located within the section B of the chuck-casing, is adapted to be both laterally reciprocated and turned therein. It is reciprocated to have its cog-teeth engaged with or disengaged from the pinion C, according as it is desired to make the action of the chuck universal or independent. On the other hand, it is turned to impart a simultaneous movement to all of the pinions, with which it is engaged when any one of them is turned.

Having thus described the construction of my device, I will now proceed to briefly set forth its mode of operation.

Let it first be supposed that all of the plates K are located in the several recesses M, in which they are locked by the nuts I. In this adjustment the rack, being unsupported, will rest in the track L, leaving the pinions E free and isolated. The jaws may now be operated independently by applying a wrench or key to the squared ends of their several spindles and turning them. To transform the chuck into one of universal action, each nut I is loosened and the pins are moved to the opposite ends of the slots G. This operation will raise the plates K attached to the pins above the level of the track L and force the rack N forward

into engagement with the pinions E of the spindles D. With the pinions thus connected, if any one of the spindles is turned, the rack will turn and impart a corresponding motion to each of the other pinions, and thus cause the jaws to simultaneously reciprocate, approaching or receding from each other, as the case may be.

Instead of throwing the annular gear into engagement with all the pinions, and thereby operating all the jaws simultaneously, said gear may, by adjusting one of the plates, be thrown in gear with any one of the pinions, and thereby operate any one of the jaws.

I am aware that a universal and independent chuck has been invented wherein the jaws are adapted to be operated simultaneously by an annular gear having a beveled rear surface, with which engages an adjustable cam-block. By arranging the cam-block so that it will engage the raised portion of the annular gear the latter will be forced in engagement with the pinions on the screw-shafts connected with the jaws. When the cam-block is adjusted radially with respect to the annular gear and engages in the sunken or depressed portion of its rear surface, the annular gear is thrown out of mesh with said pinions, thereby allowing the jaws to be operated independently. This construction requires an annular gear of special construction, and only a portion of its width is provided with a support.

I am also aware that an independent and universal chuck has been invented wherein all the jaws are adapted to be operated simultaneously by an annular gear, which latter is adjusted by means of a ring located between the rear surface of the gear and the chuck-casing. This ring is provided with a screw-threaded stud, that extends through a slot in the chuck-casing, the outer end of the stud being provided with a nut for holding the ring in any de-

sired adjustment. The ring is provided with recesses, which may be moved in or out of line with projections on the inner face of the chuck-casing.

Hence I would have it understood that I make no claim to the two forms of construction of independent and universal chucks above described.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In chucks in which the several jaws are provided each with a screw-spindle carrying a pinion, and which have annular toothed gears to mesh with said pinions, the recesses M in the inner surface of the chuck-case, jointly with the chamfered plates K, having flattened stems, which pass out through slots made in the back of the case concentric with the axis of the chuck, and with the washers H, covering said slots, attached to and movable with said stems, in virtue of all of which the toothed ring may be lifted into gear with all of the pinions or with any one alone, as may be desired, to make the chuck universal or special, or thrown out of gear with all said pinions, to allow the jaws to be operated independently, substantially as set forth.

2. In a chuck of the character hereinbefore described, the chuck-case provided with the recesses M on its inner surface, the plates K, provided with stems extending through slots made in the back of the chuck-case concentric with the axis of the chuck and the annular gear, whereby said annular gear may be thrown into and out of gear with the pinions on the screw-threaded spindles connected with the jaws by moving said plates into or out of said recesses M, substantially as set forth.

Witnesses: JOHN C. BAKER.

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