(No Model.)

LA ROY BARTLETT.

CHUCK.

No. 595,363. Patented Dec. 14, 1897.

Fig. 1.

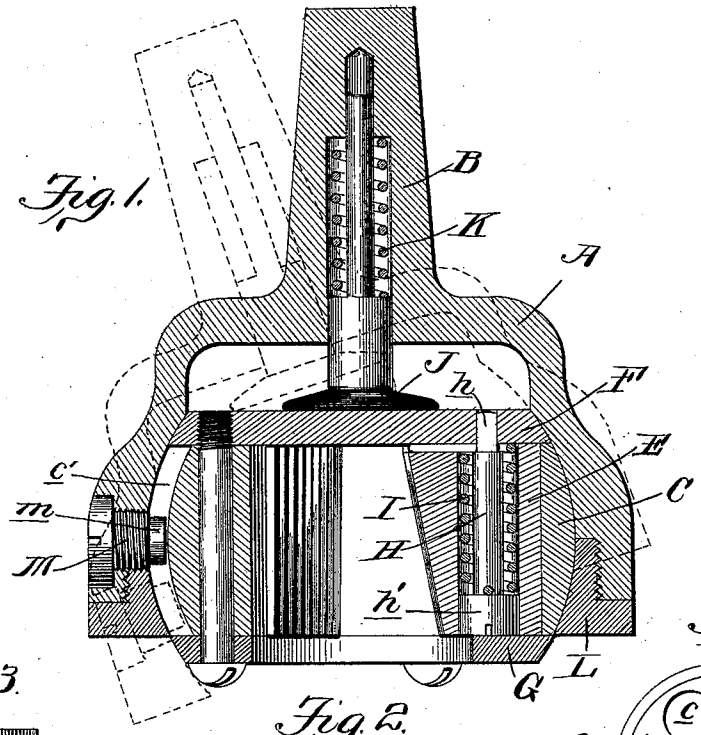


Fig. 2.

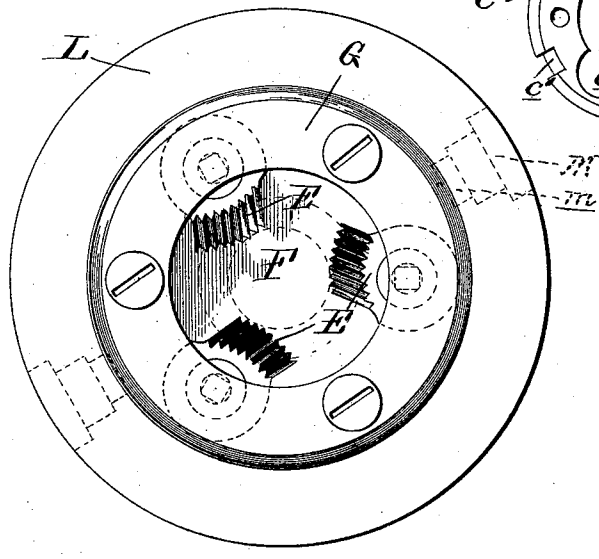


Fig. 3.

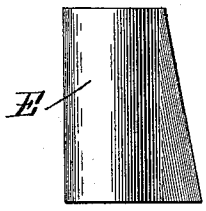
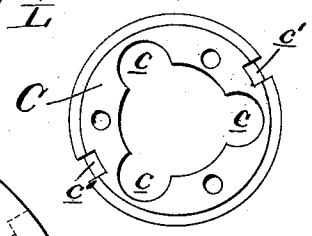


Fig. 4.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LA ROY BARTLETT, OF ST. LOUIS, MISSOURI.

CHUCK.

SPECIFICATION forming part of Letters Patent No. 595,363, dated December 14, 1897.

Application filed May 24, 1897. Serial No. 637,909. (No model.)

To all whom it may concern:

Be it known that I, LA ROY BARTLETT, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Chucks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a sectional view through my improved chuck. Fig. 2 is an end view of the same. Fig. 3 is a detailed view of one of the eccentrically-disposed clamping-jaws, and Fig. 4 is a detailed view of the universal jaw-block.

This invention relates to a new and useful improvement in chucks, and more particularly to that class of chucks which are designed to be used for screwing stay-bolts into boilers.

The object of the invention is to so construct a chuck that it can be used out of a straight line with relation to the axial line of the stay-bolt or other object operated upon.

Another object is to make the gripping action of the chuck on the stay-bolt automatic, the gripping-jaws automatically releasing the stay-bolt when said stay-bolt has been driven the desired distance.

With these objects in view the invention consists in combining with a suitable casing a universal jaw-block carrying eccentrically-disposed yielding jaws for coöperating with the stay-bolt to be driven.

Another feature of the invention resides in providing means for exerting a tendency on the jaw-block to normally hold the same in a straight line relative to its axis of rotation.

Other features of invention reside in the details of construction, arrangement, and combination of the several parts, all as will hereinafter be described and afterward more fully pointed out in the claims.

In the drawings, A indicates the casing, which is substantially cup-shaped, a squared stem B extending from the back of said casing, which stem is adapted to be engaged by a motor or a socket of a flexible shaft, whereby said casing is revolved.

C indicates the jaw-block, a small plan view of which is shown in Fig. 4, the periphery of said block, as shown in Fig. 1, being curved. This jaw-block is formed with a central aperture, around which are disposed wells or pockets *c*, preferably equidistant apart. In these pockets are received the clamping-jaws E. Clamping-jaws E are formed with a central aperture, the gripping-face of said jaws being formed with serrations or teeth, being inclined and eccentrically disposed relative to the axis of rotation of said jaws.

F indicates a back plate arranged behind the jaw-block and forming the rear wall of a pocket made by the central aperture in said jaw-block.

G indicates a ring arranged on the face of the jaw-block and held in position by suitable screws, whose heads impinge against the face of said ring, the rear ends of said screws being threaded into the back plate F. The clamping-jaws E are held in position by the back plate F and ring G, and as the wells or pockets in which said jaws are mounted are described by more than one-half a circle said jaws are confined therein, but still have sufficient rotary movement to enable them to grip the stay-bolt or other article upon which it is desired they shall operate.

H indicates a spindle having a squared shank *h* at its rear end fitting into a similar-shaped opening in the back plate F, whereby said spindle is prevented from rotating. This spindle extends centrally through the aperture in the clamping-jaws E and is provided at its forward end with a large end *h'*, which fills the space at this point.

I indicates a torsional spring, one end of which fits in a groove in the rear face of the clamping-jaw, while the other end passes through an opening in the forward end of spindle H. Spring I tends to normally hold the jaws in an open position, as shown in Fig. 2.

J indicates a yielding block bearing centrally against the rear face of plate F, said block being formed with a shank extending into a recess or pocket in the extension B of the casing. A spring K tends to force this block against the plate F, and as the block is formed with a flat bearing-face exertion is constantly made to hold the jaw-block at a right-angular relation to its axis of rotation.

As the curved periphery of the bearing-block, back plate F, and ring G are described from a center practically midway between

the foremost and rearmost face of the ring and back plate, it is obvious that some provision must be made to easily insert these parts in the casing and after such parts are in position to retain them in place. In order to accomplish this, I preferably provide a threaded ring L, which coöperates with the front edge of the casing, as shown in Fig. 1, whereby the jaw-block may be inserted or removed at will and held in position, due to the presence or absence of this threaded ring. It is also desirable that locking means be provided to prevent this ring from unscrewing after it is once in position, and to accomplish this I notch the rear face of this ring and pass screws M through the casing, which fit into these notches, as shown more clearly in Fig. 1. It is also necessary when the casing is rotated that the jaw-block be rotated therewith, at the same time permitting this jaw-block to move universally in the casing to accommodate its gripping-jaws to stay-bolts at an angle within its scope. To accomplish this, I preferably groove the bearing-block transversely its face at c', into which grooves extend projections m from the screws M. The back plate F and ring G, closing the ends of grooves c', will coöperate with the stem m and limit the angular movement of the jaw-block, preventing its displacement.

From the above description the operation of my improved chuck is obvious, and its many advantages will be appreciated by those familiar with the manner of using these devices. It is obvious that the jaw-block will accommodate itself to any variation of the stay-bolt while the same is being driven—such, for instance, as when the stay-bolt is bent and wabbles. The jaw-block will also accommodate itself should the chuck be applied to the stay-bolt out of line with the axis of rotation of said stay-bolt. In practice I have used the chuck in connection with a motor and have found that if left alone the chuck will continue to drive the stay-bolt until the stay-bolt has been driven home, when the chuck will automatically release the stay-bolt by simply stopping the motor. The device is inexpensive and not liable to get out of order and can be used by almost any one for various purposes without requiring much attention after it has been placed in position and properly started.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In a chuck, the combination with a suitable casing, of a universal jaw-block carrying gripping-jaws, and means which constantly exercise a tendency to keep said jaw-block in line with the axis of rotation of the chuck; substantially as described.

2. In a chuck, the combination with a suitable casing, of a jaw-block arranged therein and having a universal connection with said casing, and gripping-jaws rotatably mounted in said jaw-block, the gripping-faces of said jaws being eccentrically disposed to the axis of rotation thereof, and arranged on an incline relative to said axis of rotation of the jaws; substantially as described.

3. In a chuck, the combination with a suitable casing, of a jaw-block universally mounted therein, gripping-jaws yieldingly mounted in said jaw-block, and a bearing-block which yieldingly presses against the rear face of said jaw-block for normally holding the same in line with the axis of rotation of the device; substantially as described.

4. In a chuck, the combination with a suitable casing, of a jaw-block formed with a central aperture and pockets or wells, a back plate, a front ring, gripping-jaws arranged in said pockets or wells and between the back plate and ring; and springs coöperating with said gripping-jaws for normally holding them open substantially as described.

5. In a chuck, the combination with a suitable casing, of a jaw-block having a central aperture, gripping-jaws arranged in pockets around said aperture and projecting into said central aperture, and torsional springs engaging said gripping-jaws, said springs tending to normally keep said jaws open; substantially as described.

6. In a chuck, the combination with a suitable casing, of a jaw-block formed with a central aperture and pockets or wells around said aperture, apertured gripping-jaws arranged in said pockets, spindles passing through the apertures in said gripping-jaws, torsional springs engaging the spindles and gripping-jaws, and a back plate, in which said spindles are fixedly mounted; substantially as described.

7. The combination with a suitable casing, of a universal jaw-block mounted therein, transversely-disposed grooves in the periphery of said jaw-block, a ring I threaded into the front end of the casing to hold said jaw-block in place, screws passing through the casing and ring to present independent rotary movement thereof, and projections on said screws which extend into said grooves; substantially as described.

8. In a chuck the combination with a suitable casing, of a universal jaw-block mounted therein, a threaded ring for holding said jaw-block in position, screws which engage said ring and casing to prevent the ring from unscrewing, grooves in the periphery of said jaw-block, projections of the screws which fit into said grooves, a back plate forming an end wall of said grooves, and a front ring forming a front wall of said grooves; substantially as described.

9. In a chuck, the combination with a suit-

able casing, of a universal jaw-block mounted therein, a notched threaded ring for holding said jaw-block in position, screws passing through the casing and engaging the notches on said ring, yielding gripping-jaws carried by said jaw-block, grooves in the periphery of said jaw-block, a back plate for closing the rear end of said grooves, a ring for closing the front end of said grooves, projections which extend into said grooves for causing the rotation of said jaw-block with the casing and preventing its displacement, and a spring-pressed block having a flat face for engaging the back plate, said flat face tending to constantly keep the bearing-block in line with the axis of rotation of the casing; substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 13th day of May, 1897.

LA ROY BARTLETT.

Witnesses:
HUGH K. WAGNER,
F. R. CORNWALL.