No. 867,201. PATENTED SEPT. 24, 1907.

W. H. KAUFFMAN.

STAY BOLT CHUCK.

APPLICATION FILED NOV. 27, 1906.

Fig. 1.

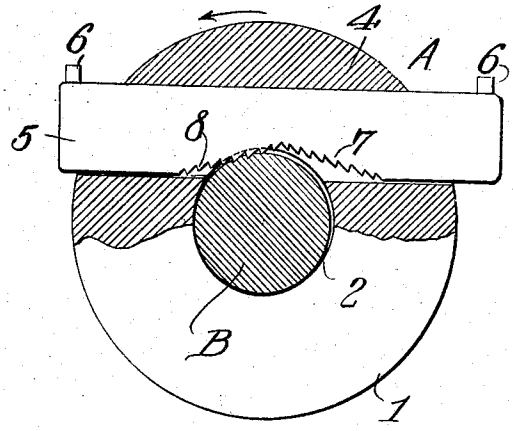



Fig. 2.

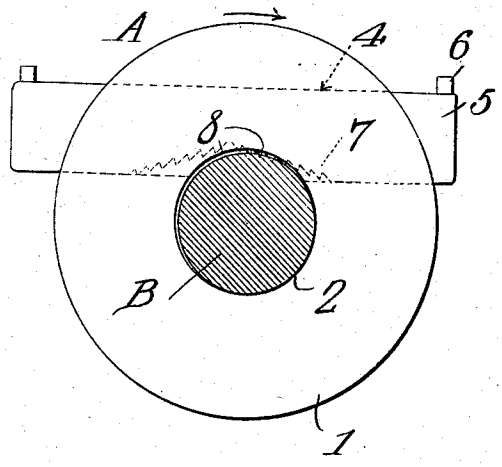



Fig. 3.

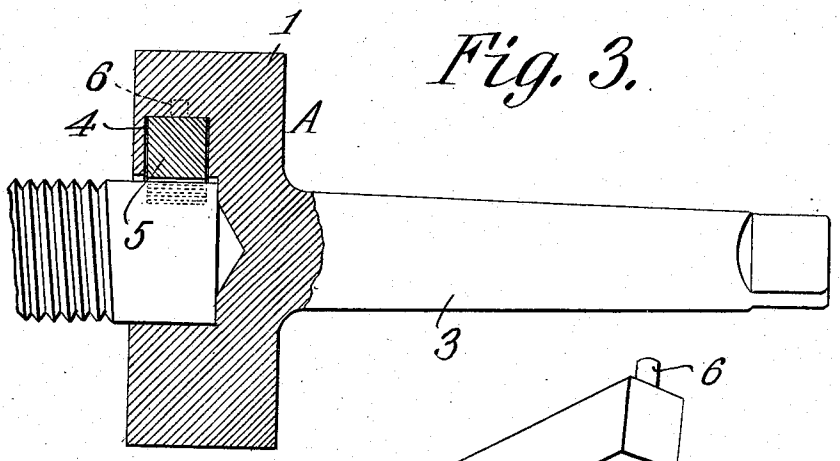
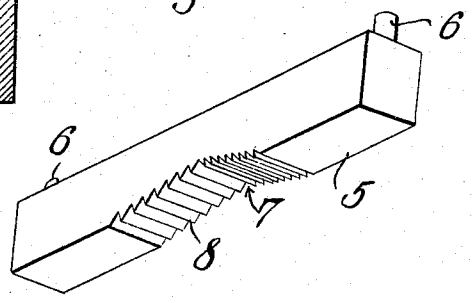



Fig. 4.




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# UNITED STATES PATENT OFFICE.

WILLIAM H. KAUFFMAN, OF DAVENPORT, IOWA.

## STAY-BOLT CHUCK.

No. 867,201. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed November 27, 1906. Serial No. 345,337.

*To all whom it may concern:*

Be it known that I, WILLIAM H. KAUFFMAN, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented a new and useful Stay-Bolt Chuck, of which the following is a specification.

The present invention relates to a stay bolt or stud chuck of that type in which a stay bolt or stud can be gripped at one end by means of a wedging member or pawl, and has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be comparatively inexpensive to manufacture and efficient and reliable in use.

A further object of the invention is to provide a device of this character in which the gripping member is double acting so that a stay bolt, or the like, can be gripped and turned in either direction at the will of the operator.

Another object of the invention is the employment of a double wedge which is freely mounted in the body or stock of the chuck, so as to be readily gripped or released with respect to the object to be operated on.

With these objects in view, and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a front elevation of the chuck with a portion broken away and illustrating the gripping member or dog engaging a stay bolt for turning it in an anti-clockwise direction. Fig. 2 is a front view showing the gripping member engaging the stay bolt to turn it in a clockwise direction. Fig. 3 is a longitudinal section of the stock portion of the chuck. Fig. 4 is a perspective view of the gripping member or dog.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

Referring to the drawing, A designates the chuck and B one end of a stay bolt, stud, or the like, which is gripped in the chuck. The chuck comprises a disk-shaped stock 1 having a central socket 2 which extends inwardly from the front face of the stock and is preferably cylindrical. Extending from the rear side of the stock in alinement with the axis thereof, and preferably formed integral therewith, is the shank 3 that is made with a Morse taper so as to readily fit in chucks of standard construction and also to fit any air or electrically driven motor of the portable or workman type. The stock 1 is provided with a transverse passage 4 that extends tangentially with respect to the socket 2, for the reception of the gripping member or dog 5. The passage 4 is preferably angular in cross section and the gripping member is of corresponding shape so as to have only a longitudinal movement therein. The ends of the gripping member extend through the open ends of the passage 4 and are provided with stops 6 whereby the gripping member is permanently retained in the stock. The stops 6 are so arranged as not to engage the ends of the passage 4 at any point within the range of operation of the gripping member and it is preferable to employ a socket having a circular periphery and to arrange the stops on the outer side of the gripping member, that is to say, the side opposite to that provided with the stay bolt engaging surfaces, in order that they will engage the ends of the shorter wall of the passage 4, as this will permit sufficient range of movement of the gripping member without the necessity of forming inwardly extending recesses in the socket to receive the stops. The central portion of the member 5 is cut away at 7 to form double wedges. These double wedge portions 7 are disposed at the opening between the socket 2 and the passage 4, so as to grip the stay bolt when the latter is inserted in the socket of the stop. The portions 7, in order to increase the gripping effect, are provided with serrations 8.

In operation, the chuck is adjusted to a stay bolt, or the like, by first moving the gripping member, so that the wedge portions 7 will be approximately symmetrically disposed with respect to the socket 2 to permit the stay bolt to be freely inserted. If it is desired to unscrew the stay bolt, the gripping member 5 is moved to the left, as shown in Fig. 2, so that the teeth 8 thereof will grip the bolt. To insure a tight grip, it may be desirable to strike the right hand end of the locking member a slight blow, thereby moving the latter to sink the teeth into the bolt. When the locking member is thus engaged, the chuck can be turned in a clockwise direction, so that the stay bolt will be unscrewed, assuming that the thread on the same is right hand. The grip on the bolt will be maintained as long as the chuck continues to turn in the one direction. When it is desired to release the stay bolt, all that is necessary is to give the chuck a slight turn in the opposite direction, whereupon the locking member will disengage itself from the bolt. In order to grip the bolt for the purpose of screwing the same into a bolt hole, the bolt is gripped and turned by the locking member in the manner shown in Fig. 1, and the turning of the chuck will maintain a firm grip on the bolt. It will thus be seen that the chuck is double acting in that the double wedge or gripping member will take hold of the object for turning it in either direction, and, furthermore, the gripping member can be very readily engaged or disengaged. The chuck is also capable of operating on stay bolts and other articles of different diameters by reason of the increased range of movement afforded the gripping member by the novel construction of the stock the stops being arranged to engage the corners of the stock formed between the shorter wall of the passage and the circular

periphery, so that the gripping member may be of a minimum length so as not to increase the clearance necessary to swing the stock, so that the tool is capable of use in close quarters such as in the crown sheet or headers of boilers where the stay bolts are arranged very closely.

I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, but I desire to have it understood that the apparatus shown is merely illustrative, and that various changes may be made, when desired, as are within the scope of the invention.

What is claimed is:—

1. A tool of the character described embodying a disk-shaped stock having a circular periphery and provided with an axial bore to receive the part to be turned and a passage extending transversely through the stock at one side of the bore and forming a relatively long inner wall and a relatively shorter outer wall both terminating at the circular periphery on opposite sides of the stock; a gripping member mounted to reciprocate longitudinally of the said passage and having gripping surfaces thereon adapted to coöperate with an article resting in the bore of the stock, and a pair of limiting stops projecting from that side of the gripping member which coöperates with the shorter wall of the passage and arranged to coöperate with the corners formed between the said shorter wall of the passage and the circular periphery of the stock to permit the gripping member to engage articles of different diameters.

2. A chuck embodying a shank, a socket portion having a circular periphery formed concentrically with the axis of said shank and provided with an axially arranged socket to receive the end of a bolt, a transverse passage being formed in the socket portion and arranged tangentially of the socket, the wall of the said passage toward the periphery of the socket portion being shorter than the inner wall, a gripping member mounted to operate in said passage and having a portion adapted to coöperate with a bolt resting in said socket, and limiting stops arranged on that side of the gripping member opposite to that adapted to engage the bolt and to coöperate with the circular periphery of the socket portion at the corners formed by the ends of the shorter wall of the transverse passage and the circular periphery of the stock.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM H. KAUFFMAN.

Witnesses:
C. L. HUNT,
M. K. WEIGEL.