(No Model.)

E. P. BULLARD.

BRAKE FOR LATHE SPINDLES.

No. 408,291. Patented Aug. 6, 1889.

Fig. 1.

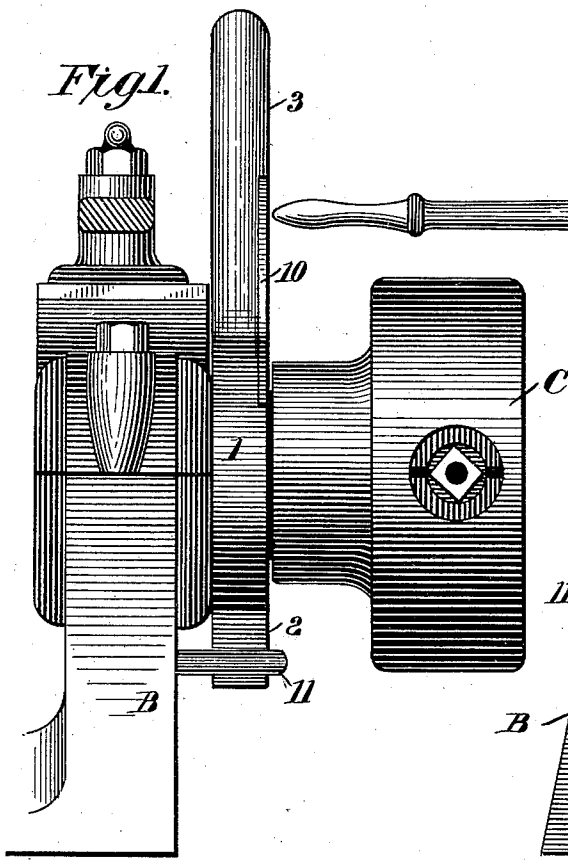


Fig. 2.

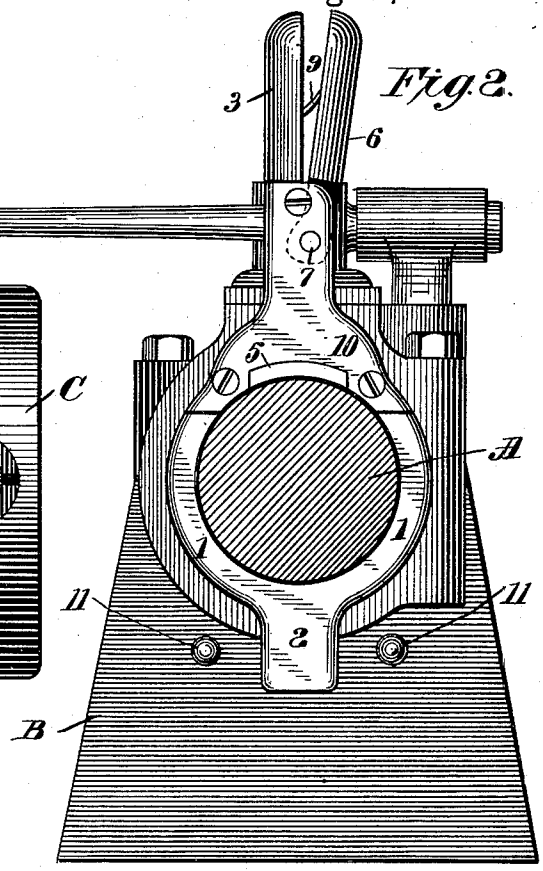
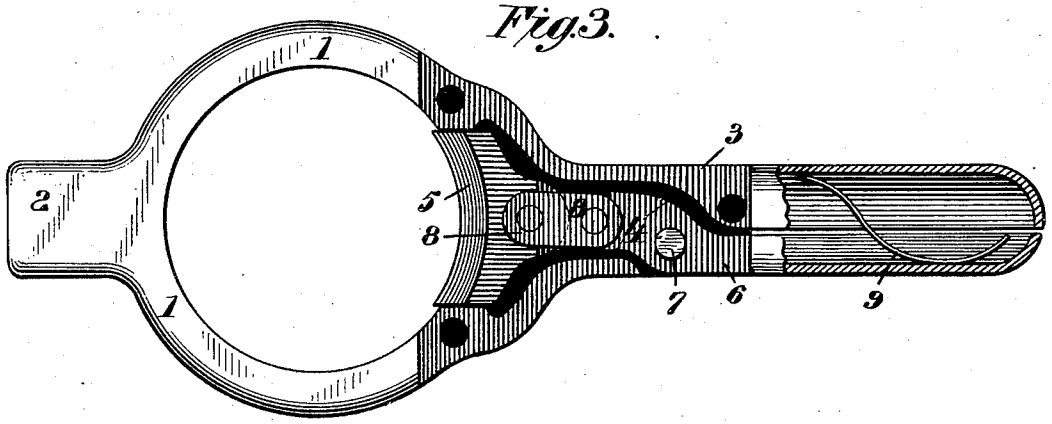


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD P. BULLARD, OF BRIDGEPORT, CONNECTICUT.

BRAKE FOR LATHE-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 408,291, dated August 6, 1889.

Application filed April 24, 1889. Serial No. 308,447. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. BULLARD, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Brakes for Lathe-Spindles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in brakes for use upon lathe-spindles or other rotating shafts; and the object of my invention is to produce a device of this description which shall be simple in construction and easy of application, whereby the movement of the shaft or spindle may be arrested or its speed reduced, and which, furthermore, may serve as a lever for turning the spindle by hand, so as to unscrew the chuck or bring the latter into any position desired; and with these ends in view my invention consists in the construction and combination of elements hereinafter fully set forth, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understood its construction and method of operation, I will describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of a lathe-spindle and chuck, showing my device applied to the former; Fig. 2, an end elevation with the spindle sectioned, showing the brake in plan view and in its disengaged position; Fig. 3, a plan view of the brake detached from the lathe and with the face-plate removed to show the shoe and the means for operating it.

Like reference letters and numerals denote the same parts in all the figures of the drawings.

A represents a lathe-spindle having a bearing in a standard B and carrying any ordinary chuck, as C.

In the brake, 1 is a collar adapted to surround the shaft or spindle, so that the latter may revolve freely within it. (See Figs. 1 and 2.)

2 is a downward projection from the collar, and 3 a handle, which is rigidly secured upon or formed with said collar. The upper part of the collar and the lower end of the rigid handle are recessed, as at 4, Fig. 3, and within this recess is arranged a brake-shoe 5, whose operative face is conformed to the inner curved surface of the collar.

6 is a movable handle pivoted to the rigid handle within the recess, as seen at 7, and the end of said handle is connected with the top of the brake-shoe by means of a link 8, pivoted to the shoe and handle. Said handle is curved at or near its fulcrum-point, so that the movement thereof toward or away from the rigid handle will impart to the shoe a movement toward or away from the center of the collar. A spring 9 serves to keep the handles normally apart and the face of the shoe flush with the inner surface of the collar, as seen at Fig. 2. A face-plate 10 incloses the parts which lie within the recess.

11 are stops arranged on the face of the standard and adapted to limit the movement of the brake as a whole around the shaft by reason of the engagement therewith of the projection 2 upon the collar.

It is well known that when the belt upon a lathe is shifted for the purpose of stopping the machine the spindle will by its momentum continue to revolve for some little time. With my improvement, however, the operator has only to grasp and compress the two handles upon the brake, when the shoe will be forced into engagement with the shaft. When it is so forced into engagement, the tendency of the shaft will be to carry the brake with it; but the engagement of the projection with one of the stops will prevent the rotation of the brake, and the friction of the shoe quickly stops the spindle. Upon release of the handles the spring withdraws the shoe from the engagement in which it has been held, and the machine may be started with only the added friction of its bearing within the collar. In addition to the usefulness of the brake above described in arresting the rotary movement of the shaft, it forms a most advantageous means for imparting to said shaft limited rotation. This may be accomplished by merely causing the shoe to engage

and using the handles as a lever to turn the shaft.

I have shown pins upon the standard to operate as stops for the brake; but any ordinary stop whereby rotation of the brake with the shaft is prevented will operate equally as well.

The shoe I prefer to make of brass or gun-metal, so that the wear upon the shaft may be as little as possible. A new shoe may be introduced into the brake by removal of the pivot between the link and shoe whenever the latter has by wear become incapable of being driven into operative contact with the shaft.

I claim—

1. The combination, in a device of the character described, with a collar adapted to surround the shaft, of a movable brake-shoe whose operative face forms a part of the bearing-surface of the collar, a rigid handle upon the collar, a complementary handle pivoted to the rigid handle, and a link interposed between the last-named handle and the shoe and whereby the latter is actuated, substantially as set forth.

2. In a device of the character described, the combination, with the collar adapted to surround the shaft or spindle, of a projection on said collar, and stops against which said projection may abut, a brake-shoe arranged and movable in the bearing-surface of said collar, and a pair of handles whereby said shoe is actuated relative to the collar, substantially as set forth.

3. The combination, with the collar adapted to surround the shaft, of the brake-shoe arranged and movable in the bearing-surface of said collar, a pair of handles whereby said shoe is operated, and means, as a stop, for limiting the movement of the collar around the shaft, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD P. BULLARD.

Witnesses:

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