

M. B. HILL.
HOLDBACK AND FACE PLATE DOG FOR LATHES.
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995,003.

Patented June 13, 1911.

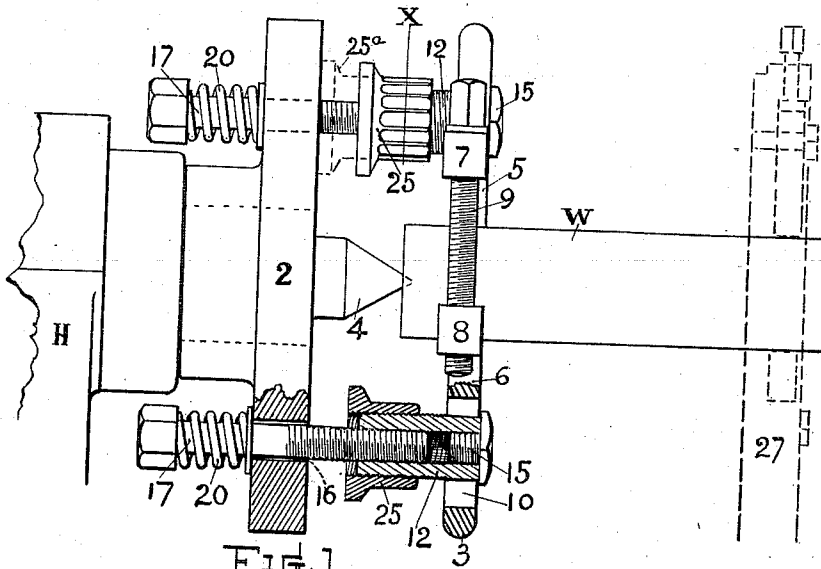


FIG. 1.

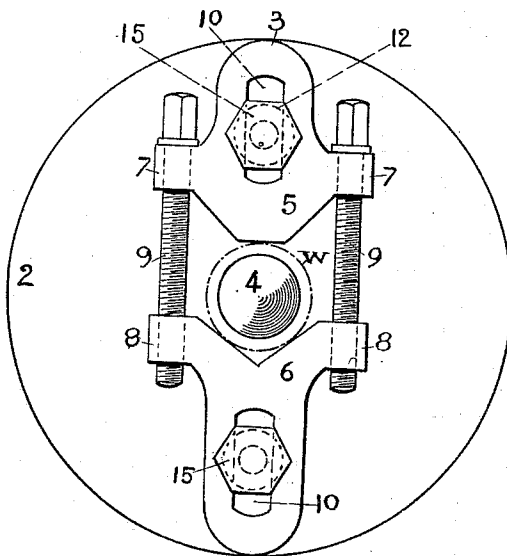


FIG. 2.

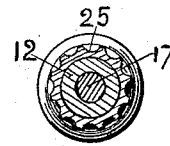


FIG. 3.

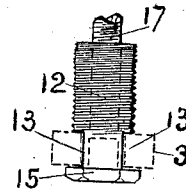


FIG. 4.

Witnesses.

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HOLDBACK AND FACE-PLATE DOG FOR LATHES.

995,003.

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To all whom it may concern:

Be it known that I, MILTON B. HILL, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Holdback and Face-Plate Dog for Lathes, of which the following is a specification, reference being made therein to the accompanying drawings.

The prime object of my invention is to provide an efficient and convenient dog appliance for holding a piece of work to the head-center of a lathe, for employment in cases where one end of the work is run in a steadying rest, or without a tail-stock center support. Also to afford, in connection with the face-plate of a lathe, an adjustable dog or driver provided with means, substantially as described, for holding the dog and the work to the face-plate in a non-rigid manner, or with slightly yielding resistance, which will avoid the tendency of the work cramping or springing in the steadying rest.

Another object is to provide a hold-back dog with means whereby the position of the dog in relation to the face-plate, may be conveniently maintained while removing one piece of work and replacing it by another in the dog.

I attain these objects by the mechanism illustrated in the accompanying drawings; wherein—

Figure 1 represents a part side, part sectional view of my improved hold-back and face-plate dog. Fig. 2 is a front view of the same. Fig. 3 is a cross section of one of the hold-back connections at line X on Fig. 1; and Fig. 4 is a plan view of one of the threaded sleeves.

Referring to the drawings, H indicates a portion of the head-stock of an ordinary engine lathe.

The numeral 2 indicates the face-plate, which is secured to the end of the lathe-spindle in the usual manner, and 4 indicates the pointed center.

According to my invention, I employ a holding-dog 3 consisting of two jaws 5 and 6, which are united by clamping screws 9 that pass through ears 7 on one jaw and are threaded into ears 8 on the other jaw. Each jaw is provided with a slot 10 in radial alinement with the center 4. Within the slot 10 in each jaw there is arranged an internally and externally threaded sleeve 12, which is slabbled off flat on the sides, as at

13, (see Fig. 4) to pass through the slot in the jaw with an easy fit and to prevent rotation therein. This sleeve is retained in connection with the jaw by a flat headed stud or screw 15, which is threaded into the interior of the sleeve, or by other suitable means. Openings 16 are formed in the face-plate 2, which may be radial slots or round holes, as in any instance desired; and through said holes I arrange bolts 17, the ends of which are screw-threaded into the interior of the respective sleeves 12; and between the head of each bolt and the back of the face-plate I provide an expanding coil-spring 20 that presses against the head of the bolt and the back of the face-plate for drawing back the dog with a force equaling the tension of the springs. Annular washers can be arranged between the springs and face-plate when desired. Upon the exterior of the sleeve there is arranged a threaded hand-nut 25, which is adapted to be turned up against the front of the face-plate, as indicated by dotted lines at 25^a, or run back upon the sleeve to a free position, as shown in full lines. The exterior of said nut is best made fluted, milled or corrugated, as shown in Figs. 1 and 3, so as to be conveniently turned by the hand of the operator, or by a suitable spanner or wrench. The screw-bolts 17, sleeves 12 and hand-nuts 25 are of similar construction for each of the two jaws of the clamping-dog.

The piece of work W is centered upon the point 4, and is secured between the clamping-jaws of the dog by turning down the screws 9; the outer end of the work, if the piece is of considerable length, being supported in a steadying rest, disposed approximately as indicated by dotted lines 27.

In the assembling of this improved appliance for operation, the screw-bolts 17 are turned into the sleeves 12 to a sufficient distance so that the springs 20 assume sufficient tension to hold the dog 3 back toward the face-plate with the required degree of force; so that when the work is clamped in the holding-dog 3, the hold-back bolts 17 and springs 20 tend to draw the work strongly toward the face-plate and prevent its loosening upon or escape from the center point 4; and as the springs afford a slight degree of elasticity the work is carried without liability to any cramping or undue friction in the steadying rest 27. When it is desired to take out one piece of work from the dog

and put in another, the hand-nuts 25 are first screwed along the exterior of the sleeves 12 and into firm contact with the face-plate, and there serve for preventing any expansion of the springs, while the jaws 5 and 6 of the dog are released from the work; thus maintaining the position of the dog at the same place in relation to the face-plate, while one piece of work is removed and another is put in and clamped. The hand nuts are then run back on the sleeves, allowing the tension of the springs to act for holding back the dog and work as above specified.

When not required for use the hold-back devices can be readily removed from the face-plate, by unscrewing the bolts from the interior of the sleeves, and withdrawing the same from the holes in the face-plate. By reverse of this operation the hold-back devices can be readily reassembled for use.

From the foregoing description it will be seen that my invention provides a very efficient, simple and convenient mechanism for the purpose stated; and an appliance which is applicable to any ordinary engine-lathe.

I claim—

1. A hold-back and face-plate dog mechanism for lathes, comprising a face-plate having openings therethrough; a pair of radially slotted dog jaws, and means for clamping said jaws upon the work, internally threaded sleeves confined in the slots of said jaws, hold-back bolts extending through the openings in the face-plate and threaded into said sleeves, and expanding tensioned springs arranged between the

heads of said bolts and the back of the face-plate.

2. A hold-back and face-plate dog mechanism for engine lathes, comprising a face-plate having openings therethrough, a work-holding dog provided with openings or slots in its respective jaws, internally and externally threaded tubular sleeves secured to said jaws, hold-back bolts extending through the face-plate and threaded into said sleeves, expanding tensioned coiled springs surrounding said hold-back bolts between the bolt-head and back of the face-plate, and rotatable hand-nuts threaded upon the exterior of said sleeves and adapted to screw against the front of the face-plate, for the purpose set forth.

3. In a mechanism for the purpose specified, the combination, with the face-plate and lathe center; of a work-clamping dog, hold-back bolts passing through said face-plate, means for adjustably connecting the ends of said bolts with the dog, springs that exert a backward pressure upon said bolts, and adjustable devices at the front of said face-plate adapted for preventing action of said springs and maintaining the given or proper relation of the work-clamping dog in respect to the face-plate, while changing the work therein.

Witness my hand this 29th day of November 1910.

MILTON B. HILL.

Witnesses:

CHAS. H. BURLEIGH,
E. W. JENKINS.