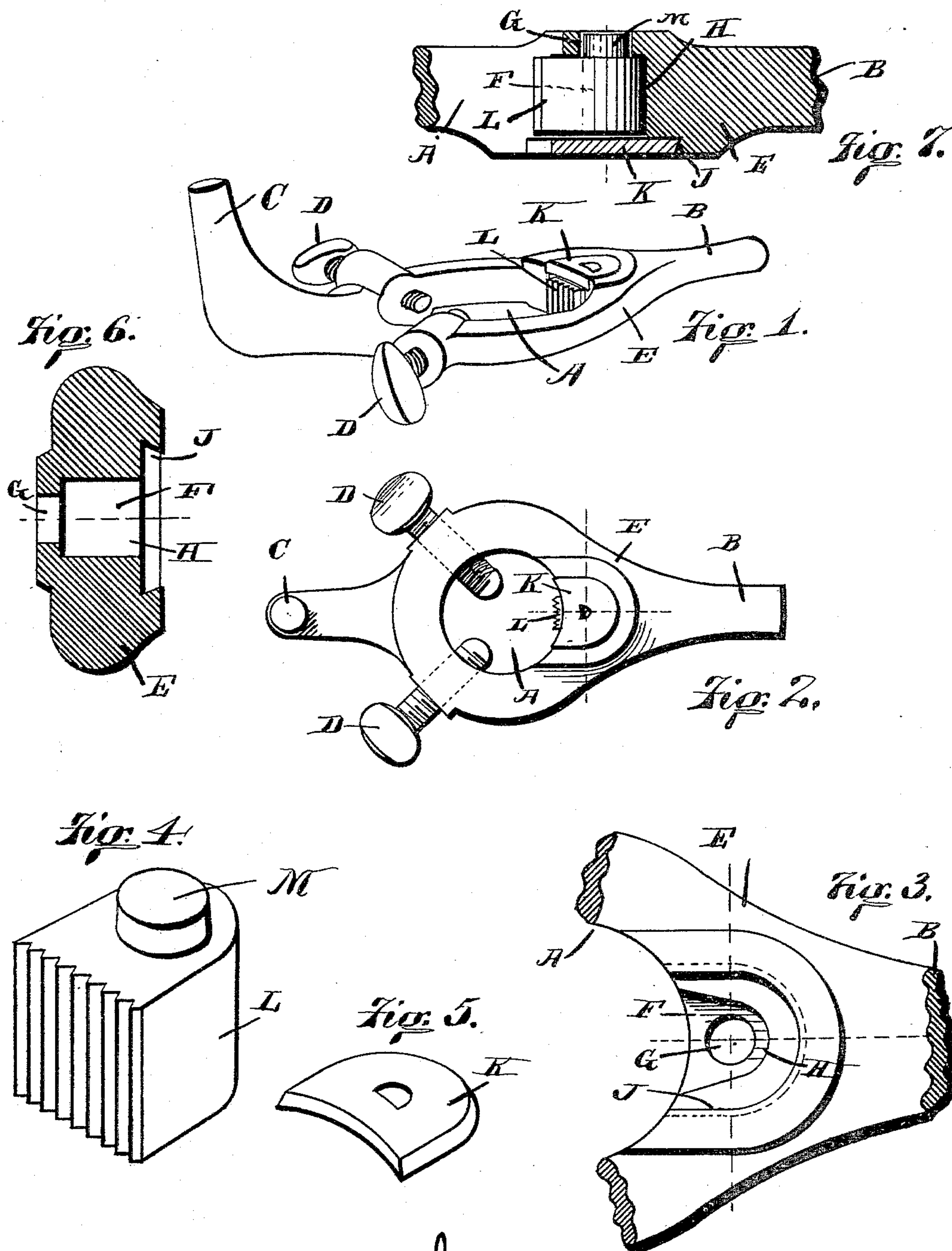


(No Model.)

C. W. SHARTLE.
LATHE DOG.

No. 411,620.

Patented Sept. 24, 1889.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES W. SHARTLE, OF MIDDLETOWN, OHIO.

LATHE-DOG.

SPECIFICATION forming part of Letters Patent No. 411,620, dated September 24, 1889.

Application filed April 8, 1889. Serial No. 306,475. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SHARTLE, of Middletown, Butler county, Ohio, have invented certain new and useful Improvements in Lathe-Dogs, of which the following is a specification.

This invention pertains to dogs to be employed in lathe-work and similar work where round articles are to be grasped and rotated. My present improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of a lathe-dog embodying my improvements; Fig. 2, a face view of the same; Fig. 3, a face view of that portion of the dog at which the jaw is pivoted, the jaw and its cover being removed; Fig. 4, a perspective view of the pivot-jaw in reversed position to expose the trunnion upon what would be the lower surface of the jaw viewed under the conditions upon which Figs. 1, 2, and 3 are made; Fig. 5, a view of the jaw-cover removed; Fig. 6, a vertical transverse section of the stock in the plane of the axis of the jaw-pivot; and Fig. 7, a vertical longitudinal section of the dog in the plane of the pivot of the jaw, this view showing the parts reversed in position—that is to say, the cover K is below, as if the dog shown in Fig. 1 were turned over, so that the tail C bent downwardly. Figs. 3, 4, 5, 6, and 7 are upon an enlarged scale.

In the drawings, A indicates the usual stock provided with an eye to receive the work which the dog is to drive; B, a tail projecting radially therefrom to serve in the lathe in rotating the dog through the medium of an ordinary driving-stud projecting from the face-plate of the lathe; C, a tail projecting radially from the stock opposite to the tail B, and turned at right angles to the general plane of the stock, this tail being adapted to engage one of the usual slots in the face-plate of a lathe; D, a pair of convergent set-screws screwed through the stock, one upon each side of the tail C, these set-screws projecting into the eye of the dog the axes of the two screws intersecting at a point eccentric to the eye of the dog, such point being located between the center of the eye and that wall of the

eye which is toward tail B; E, that portion of the stock formed by the juncture of the tail B with the metal surrounding the eye; F, a recess in that wall of the eye which is toward the tail B, this recess being open to the eye of the dog and also open at one face of the dog; G, a pivot-hole through the floor of this recess; H, that wall of the recess which is toward the tail B, this wall being concentric with the pivot-hole G; J, a cover-recess in the face of the stock over the recess F, this covered recess being dovetailed at its side walls and open toward the eye of the dog, so that the plate can be slid into the cover-recess and form a roof for the recess F; L, a pivot-block pivoted in the recess F and presenting a serrated face to the eye of the dog facing toward the set-screws D, the heel of this block being shaped to fit the wall H of the recess F, so as to take a bearing of oscillation therein; and M, a trunnion integrally formed with and projecting from one face of this jaw concentric with its heel-surface and adapted to fit within the pivot-hole G.

This dog is a self-gripping affair and the set-screws D are only required to serve in adjusting the size of the dog, so to speak. Therefore these set-screws may be thumb-screws. Assume that the set-screws are entirely absent and that a cylindrical piece of iron, as large as can be gotten into the dog, be inserted in the eye of the dog. If an attempt be made to rotate this piece of iron that attempt will cause a partial rotation of the jaw upon its pivot and will in an obvious manner cause that jaw to exert a biting grip upon the piece and prevent its further rotation in the eye of the dog. This occurs with either direction of rotary motion. It is further obvious that if the piece of work in hand be a trifle smaller than that just assumed the partial rotation required of the pivoted jaw before its forcible grip would take place might be greater than the dimensions of the recess F would permit, in which case the jaw would not grip the piece; hence the necessity of the set-screws for adjusting the practical size of the eye to properly conform to the size of work in hand. The object of having the set-screws diverge to a point eccentric to the eye of the dog is to enable these screws to be

moved farther inwardly, when very small work is in hand, without the points of the set-screws coming in contact with each other.

The working strains upon the pivot-block are met by the heel of the block bearing in the wall H of the block-recess, the trunnion being free from strains and serving as a mere expedient to keep the block from falling out of the recess when not under strain. The cover-plate is held in the recess J by mere friction and can be readily removed. The office of this cover-plate is to prevent the trunnion from leaving the pivot-hole.

While this jaw grips with enormous force, and while no wrench is needed in applying the dog to the work, it is still found in practice that the dog does not mar finished work to any such extent as is the case with ordinary dogs engaging the work by powerful set-screws. It is desirable that the serrated face of the pivoted jaw engage fairly lengthwise along the piece of work in hand. Consequently, when cylindrical work is to be driven, the serrated face of the jaw should be parallel to the axis of the jaw; but such a jaw as this would bite at one end of the serrations only when applied to tapering work. The dog would thus have a tendency to work off the same as is the case with ordinary set-screw dogs. In my improved dog, however, this trouble may be avoided by using a pivoted jaw whose serrated face is at an angle to the axis of the jaw, so that the face will have a fair bearing on the taper work in hand. The dog thus provided will take an unyielding grip on finished tapered work without seriously marring the work and will not work off the ordinary tapers.

The dog when constructed with two tails, as shown in the exemplification, one tail

straight and the other one bent, permits of the same dog being used for stud-driving or slot-driving, and the presence of the extra tail when one only is used for driving serves in protecting the comparatively light set-screws from being accidentally engaged by a driving-stud on the face-plate, and the two tails may also be used at once in connection with two driving-studs on a face-plate as a means for equalized driving.

I claim as my invention—

1. In a lathe-dog, the combination, substantially as set forth, of a stock having one or more driving-tails and an eye, a pair of convergent set-screws, and a jaw pivoted in the wall of the eye and presenting a serrated face into said eye opposite to the set-screws.

2. In a lathe-dog, the combination, substantially as set forth, of a stock provided with one or more driving-tails and with an eye, a pair of convergent set-screws, a recess in the wall of the eye opening toward one face of the dog, a cover-recess at the open face of said first-mentioned recess, a removable cover-plate fitting said recess, and a jaw pivoted in said first-mentioned recess and presenting a serrated face in the eye of the dog opposite to said set-screws.

3. In a lathe-dog, the combination, substantially as set forth, of a stock provided with an eye and with two oppositely-projecting radial driving-tails, one of which tails is bent at right angles to the face of the dog, and one or more set-screws inserted through the wall of the eye of the stock and projecting into said eye.

CHARLES W. SHARTLE.

Witnesses:

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J. H. PAINE.