W. H. KAY.

LAST ENGAGING DOG FOR LAST LATHES.

APPLICATION FILED MAY 20, 1920.

1,368,035.

Patented Feb. 8, 1921.

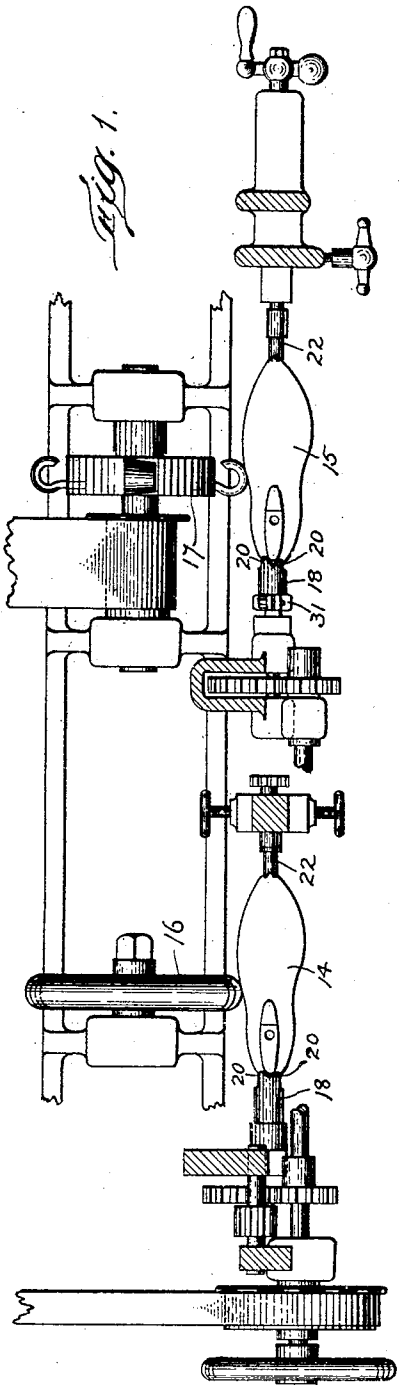


Fig. 1.

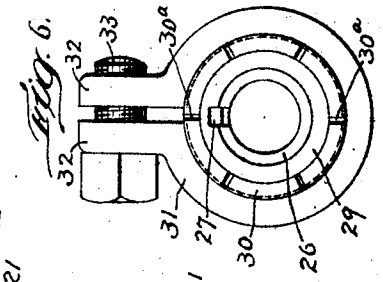


Fig. 6.

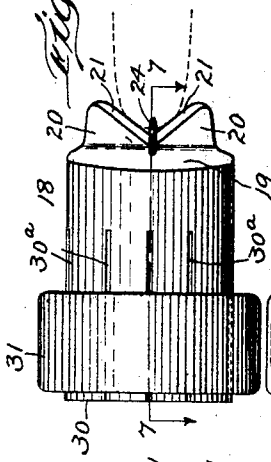


Fig. 5.

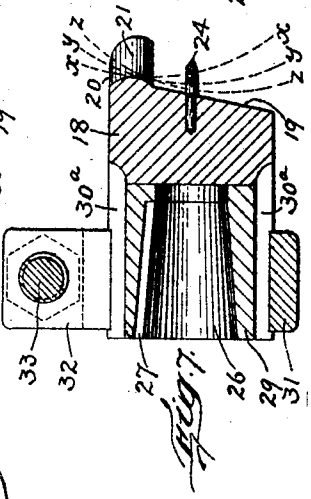


Fig. 7.

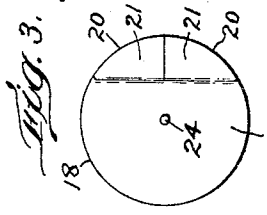


Fig. 3.

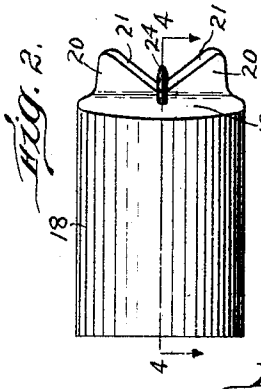


Fig. 2.

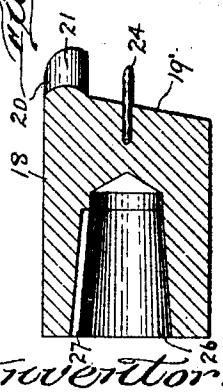


Fig. 4.

Inventor:
W. H. Kay.
By Wright Brown Quinby & May.
Attys.

# UNITED STATES PATENT OFFICE.

WILLIAM H. KAY, OF SWAMPSCOTT, MASSACHUSETTS.

## LAST-ENGAGING DOG FOR LAST-LATHES.

1,368,035. Specification of Letters Patent. Patented Feb. 8, 1921.

Application filed May 20, 1920. Serial No. 382,749.

*To all whom it may concern:*

Be it known that I, WILLIAM H. KAY, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Last-Engaging Dogs for Last-Lathes, of which the following is a specification.

This invention relates chiefly to last lathes for re-turning an old last which is of obsolete form, or has been rendered by wear incapable of further use, the size of the last being such that it may be converted into a smaller last by a re-turning operation performed by a last lathe, the shape or style of the last being at the same time suitably changed.

The invention is embodied in a dog of novel form and construction, adapted to be engaged with the live spindle of a last lathe, and to centralize the heel end of a last relatively to the spindle, and to securely engage the last while rotating it.

In a last lathe two dogs embodying the invention are employed, one engaging the heel end of a pattern last, and the other the heel end of a last to be re-turned.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a view showing partly in plan, and partly in section, various parts of a last lathe including two heel-engaging dogs, each embodying the invention.

Fig. 2 is a side view, and

Fig. 3 an end view of one of the said dogs.

Fig. 4 is a section on line 4—4 of Fig. 2.

Fig. 5 is a plan view, and

Fig. 6 an end view of the other dog.

Fig. 7 is a section on line 7—7 of Fig. 5.

The same reference characters indicate the same parts in all of the figures.

14 represents a pattern last, and 15 a last which is to be, or has been re-turned by a last lathe, said lasts being mounted in the swinging holder of an ordinary lathe, the pattern last bearing on the pattern wheel 16, and the last 15 being acted on by the rotary cutter head 17.

The heel end of each last is engaged by a dog embodying the invention, the dogs being of identical construction, excepting as to the means for coupling them to the usual live spindles of the lathe, whereby the dogs and the lasts engaged thereby are rotated.

Each dog includes a substantially cylindrical body 18, provided at its outer end with a transverse end face 19, and with last-centering means embodied in a pair of ears 20, projecting from one edge of the end face and having converging edges 21, adapted to bear simultaneously on opposite sides of the heel end portion of a last, so that longitudinal pressure exerted by the usual adjustable dog 22, constituting a part of the loosely rotating or dead spindle of the lathe, centralizes the heel end by forcing it toward the apex of the notch formed by the edges 21.

The end face 19 is offset inwardly from said notch to permit various inclinations of the heel end of the last, as indicated by the dotted lines $x$—$x$, $y$—$y$ and $z$—$z$, Fig. 7. From the end face 19 projects a fixed spur 24, which is coaxial with the body 18, and is adapted to enter an indentation previously formed for its reception in the heel end of the last.

When the last is operatively installed, its toe end is engaged by the loosely rotating dog 22, and its heel end is impaled by the spur 24, and gripped between the ears 20 of the positively rotated dog 18, so that the last is positively rotated, its heel end being positioned in accordance with the location of the indentation entered by the spur 24. The last is automatically centered by the converging edges 21, and its longitudinal inclination is determined by the location of said indentation.

It is often desirable to rotatively adjust the dog which engages the heel end of the last 15, but there is no occasion to thus adjust the dog which engages the heel end of the pattern last 14.

Each dog is provided with coupling means, adapted to be interengaged with complemental coupling means on the corresponding live spindle, the coupling means on each dog being preferably a socket 26, into which opens a slot 27, said socket and slot conforming to a correspondingly formed terminal on the corresponding live spindle. The socket 26 in the dog which engages the heel end of the pattern last is formed directly in the dog, as shown by Fig. 4, so that the dog has no rotative adjustability. The socket 26 in the dog which engages the heel end of the last 15, is formed in a bushing 29 (Figs. 6 and 7), on which the dog is rotatable. Said dog is provided with a cavity, the wall 30 of

which embraces the hub 29, and is compressible thereon, the wall of said socket being provided with slots $30^a$. A clamp 31 embracing the compressible wall 30, and including ears 32 and a clamping bolt 33, is adapted to compress said wall on the bushing 29, and thus secure the dog to the bushing, after the dog has been turned on the bushing 29 to the desired position.

The converging edges 21 of the ears 20 are preferably rounded, as shown by Figs. 4 and 7, so that they are not liable to scar the heel end of the last.

I claim:

1. A last dog comprising a substantially cylindrical body, having spindle-engaging means at its inner end, whereby it may be coupled to the live spindle of a lathe, in a position coaxial with said spindle, and provided with a pair of centering ears projecting from one side of its outer end and having converging faces forming a notch adapted to center the heel portion of a last pressed longitudinally against said faces, the outer end of the body being spaced from the centered heel end of the last, so that the said heel end may stand at various inclinations, and a spur coaxial with the body and projecting from the end face at one side of said ears, said spur being adapted to enter the centered heel end.

2. A last dog substantially as specified by claim 1, the said spindle-engaging means being embodied in a socket in the inner end of the said body, and formed to have a separable interlocking engagement with a live spindle.

3. A last dog substantially as specified by claim 1, the said spindle-engaging means being embodied in a bushing on which the said body is rotatively adjustable, said bushing being inserted in a cavity in the inner end of the body, and containing a socket formed to have a separable interlocking engagement with a live spindle, means being provided for securing the body to the bushing in any position to which the body may be rotatively adjusted.

4. A last dog substantially as specified by claim 1, the said spindle-engaging means being embodied in a bushing on which said body is rotatively adjustable, said bushing containing a socket formed to have a separable interlocking engagement with a live spindle, the body having a bushing-receiving cavity, the wall of which is slotted and compressible, and a clamp embracing said wall and adapted to compress the same on the bushing.

In testimony whereof I have affixed my signature.

WILLIAM H. KAY.