M. R. LEMMAN.

Machine for Grinding Lathe-Centers.

No. 160,921. Patented March 16, 1875.

Fig 4

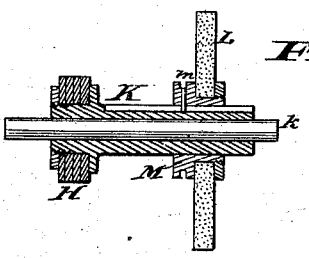


Fig. 1

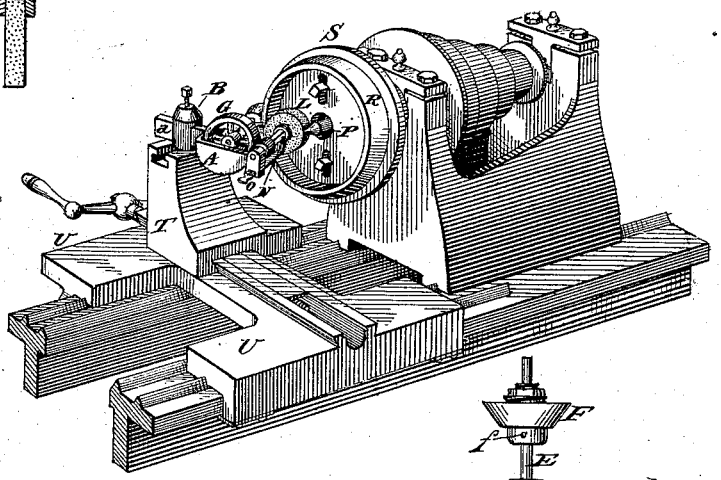


Fig. 3

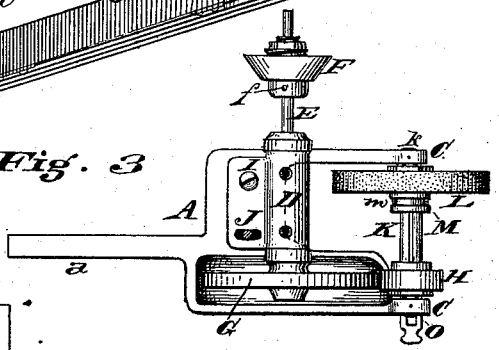
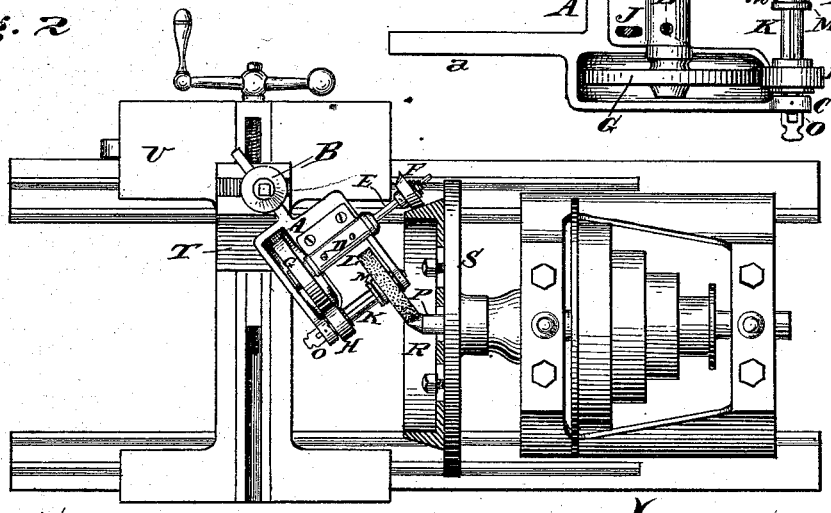


Fig. 2



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UNITED STATES PATENT OFFICE.

MARTIN R. LEMMAN, OF HAMILTON, OHIO.

IMPROVEMENT IN MACHINES FOR GRINDING LATHE-CENTERS.

Specification forming part of Letters Patent No. **160,921**, dated March 16, 1875; application filed April 24, 1874.

To all whom it may concern:

Be it known that I, MARTIN R. LEMMAN, of Hamilton, Butler county, State of Ohio, have invented a certain new and useful Improvement in Machines for Grinding the Centers of Lathes, of which the following is a specification:

My invention relates to devices adapted to sharpen up accurately the center of a lathe while the same is revolving in the head-block spindle, and without its having been previously annealed; and my invention consists of an attachment adapted to be held in the tool-post of the lathe, and operated automatically by frictional contact with a detachable ring, which forms a part of my device, and is secured to the face-plate of the lathe, the operation being such that the frictional contact referred to sets in rapid motion an emery-wheel journaled in the attachment, and so located that its periphery acts upon the conical center while the latter is revolving.

Figure 1 is a perspective view of an attachment embodying my invention, and secured to a lathe. Fig. 2 is a plan of the same. Fig. 3 is a plan of the attachment removed from the lathe. Fig. 4 is a sectional view of the spindle of the emery-wheel.

A is a frame, preferably of cast-iron, with a shank, *a*, formed upon it, to be secured within the ordinary tool-post of a lathe. The frame A has also formed upon it bearings C C for the support of the emery-wheel spindle, and has adjustably secured to it a journal-bearing, D, for the driving-spindle of the emery-wheel. E is the driving-spindle of the apparatus. It has a hub secured to it, which carries a series of leather disks, composing, in all, a conical frictional driving-pulley, F. At the other end of this shaft a large pulley, G, is secured, adapted to drive a small pulley, H, upon the emery-wheel spindle. In order that the frictional contact between the pulleys G and H may be regulated, I connect the journal-bearing D to the frame A by a pivot-screw, I, and by a screw, J, in a curved slot in the bearing, as shown in Fig. 3, so that the bearing D may swing upon a pivot, and enable the face of the pulley G to be adjusted with relation to the face of the pulley H, and to be secured at any point of adjustment. The pulley H is secured to a hollow spindle, K, fitted between the bearings C C, and the emery-wheel L is secured to a hub, M, which slides loosely upon the same hollow spindle K. An interior spindle, *k*, fixed in the bearings C C, supports the wheel-spindle K, through which it passes, and the emery-wheel hub has a pin projecting from it into a groove in the hollow spindle K, so that, when the hollow spindle K revolves, the wheel L, although adapted to loosely slide upon the spindle K, must always revolve with it. A groove, *m*, is turned in the hub M for the attachment of the fork N of the slide O. The slide O is adapted to be moved backward and forward by the fingers of the operator, and in such movement the emery-wheel is carried across the face of the center P, which it is to grind. A loose rimmed disk, R, is adapted to be secured to the ordinary face-plate S of the lathe, the periphery of which is turned off to match the periphery of the pulley F; and it will be seen that in the operation of the lathe-spindle this rim R is made to drive the emery-wheel, and as the latter is brought in contact with the center of the lathe by the adjustment of the tool-post B, slide T, and carriage U, or either, the wheel is caused, in the backward and forward movement of the slide O, to true up into perfect conical and concentric shape the center P. The hub of pulley F is secured to the spindle E by a set-screw, *f*, and is adjustable upon the spindle E to adapt the attachment for adjustment to long and short centers.

The use of ring R makes this machine capable of universal application, a given machine of very limited dimensions being adapted for truing up centers of the largest lathe as well as the smallest, for it depends on itself only for its action, and not upon the pulleys of the lathe, as heretofore.

I claim—

1. The detachable driving-ring R, in combination with a center-grinding attachment such as described, substantially as and for the purpose specified.

2. In combination with wheel L, spindle K, wheels H G F, spindle E, and frame A *a*, the pivoted adjustable bearing D I J, operating substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

MARTIN R. LEMMAN.

Witnesses:

R. M. HUNTER,

FRANK MILLWARD.