(No Model.)

J. R. BACK.

FRONT APRON FOR LATHE CARRIAGES.

No. 388,808. Patented Sept. 4, 1888.

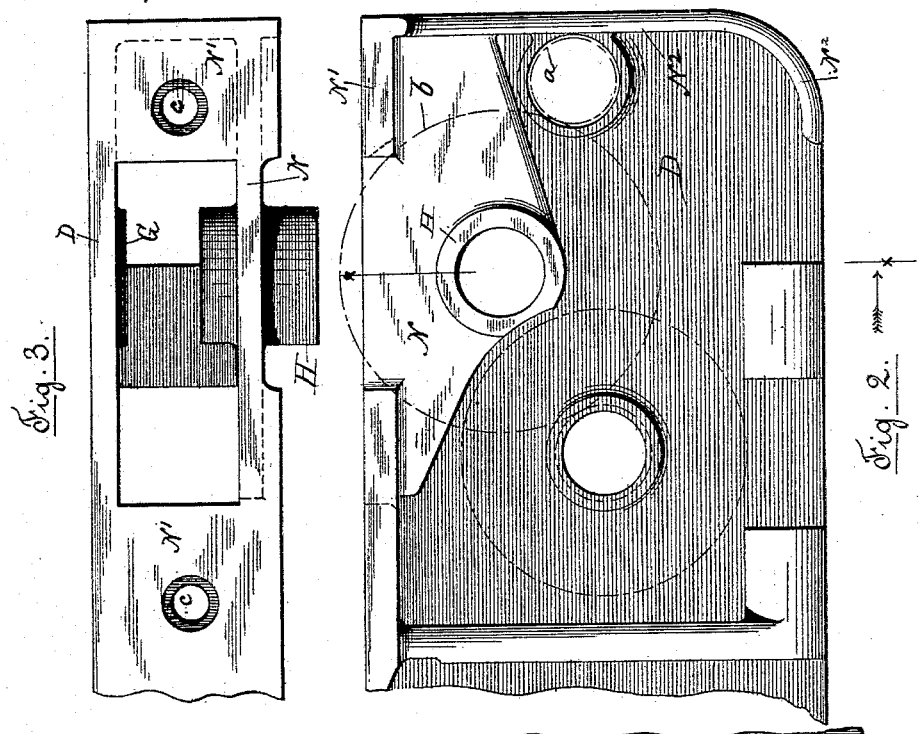

Fig. 3.

Fig. 2.

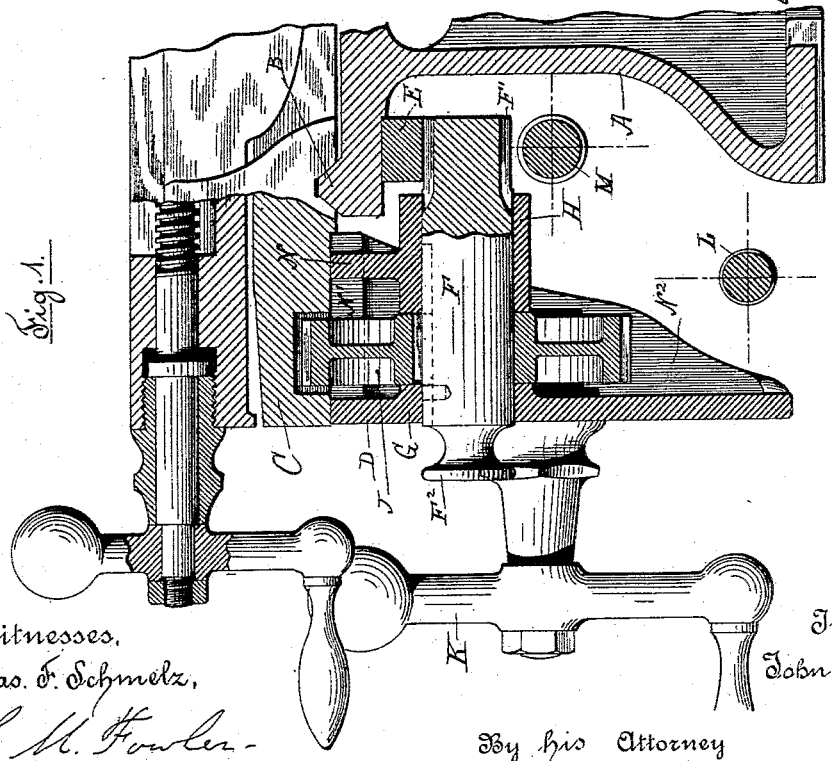

Fig. 1.

Witnesses,
Chas. F. Schmelz,
H. M. Fowler.

Inventor,
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By his Attorney
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UNITED STATES PATENT OFFICE.

JOHN R. BACK, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO FREDERICK E. REED, OF SAME PLACE.

FRONT APRON FOR LATHE-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 388,808, dated September 4, 1888.

Application filed May 14, 1888. Serial No. 273,805. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. BACK, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Metal-Turning Lathes, set forth in the annexed specification, which, together with accompanying drawings, forming a part of the same, contains a full, clear, and exact description of my invention.

My invention relates to certain improvements in the part of a metal-turning lathe known as the "apron;" and it consists in the features hereinafter described, and pointed out in the claim.

Figure 1 represents in sectional view a portion of an apron of a lathe, (shown on line X X, Fig. 2,) together with such part of the contiguous portion of the lathe as will aid in illustrating the nature of my invention. Fig. 2 is a rear view of the casting forming the frame-work of the apron; and Fig. 3 is a top view of the same, both Fig. 2 and Fig. 3, showing the casting as detached from the connected portions of the lathe.

Similar letters refer to similar parts in the several views.

A denotes a portion of the bed of a metal-turning lathe, and B one of the ways along which the tool-supporting carriage is moved lengthwise the bed of the lathe in the operation of turning.

C is a portion of the carriage, to the under side of which is attached the plate D, known as the "apron" and supporting suitable mechanism between it and the bed of the lathe for effecting the longitudinal or feeding motion of the carriage C along the ways of the lathe.

The mechanism supported by the apron for causing the feeding motion of the carriage varies in different makes of lathes; but it is usual to place a rack, E, attached to the overhanging portion of the lathe-bed, and the traversing motion of the carriage is accomplished by means of a rotating pinion, F', turning in a bearing in the frame-work of the apron and engaging the rack E.

In the construction shown in the accompanying drawings, F denotes a sliding spindle having a pinion, F', formed on one end and a milled knob, F^2, at the other or outer end to allow the spindle to be moved lengthwise in its bearings, and the pinion F' to be engaged or disengaged from the rack E. Rotating between the bearings G and H and having a spline-connection with the spindle F is a gear-wheel, J, to which rotary motion is imparted through the crank-lever K, having a pinion engaging the gear J, but not shown in the drawings, except as it is indicated by the broken line *a*, Fig. 2, the gear J being indicated in the drawings by the broken line *b*. Motion is also communicated in the usual and well-known manner to the pinion by means of the feed-rod and lead-screw, whose relative positions are shown at L and M, Fig. 1, through intermediate actuating mechanism which is common in metal-turning lathes; but as it forms no part of my present invention it is not herein shown or described. However rotary motion may be communicated to the spindle F and pinion F', the entire strain incident to traversing the carriage along the ways of the lathe is borne by the spindle F and pinion F', and it is important that a substantial and rigid support be given to the spindle F in the supporting-apron. I accomplish this result by forming the two bearings G and H in a single casting, making the plate D and the plate N integral and united by the flange N', through which screws are placed in the screw-holes *c c*, joining the apron to the remaining parts of the carriage. The plate N is also united to the plate D by means of the end flange, N^2, the two plates D and N being thus maintained in a parallel position and rigidly held against any strain upon the spindle F. The two bearings G and H are also easily made in true alignment with each other, and the spindle held in place so it may be rotated or slid in its bearings without undue friction. The expense of constructing the apron is very much reduced, as both bearings can be bored and reamed at one operation and their alignment thus rendered certain.

What I claim as my invention, and desire to secure by Letters Patent, is—

In the apron of a metal-turning lathe carrying a rotating spindle, having a pinion engaging a fixed rack on the bed of the lathe, whereby the feeding motion of the tool-carriage is effected, the spindle supporting frame consisting of the parallel plates D and N, integrally connected, and having the spindle bearings G and H, substantially as described.

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Witnesses:
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