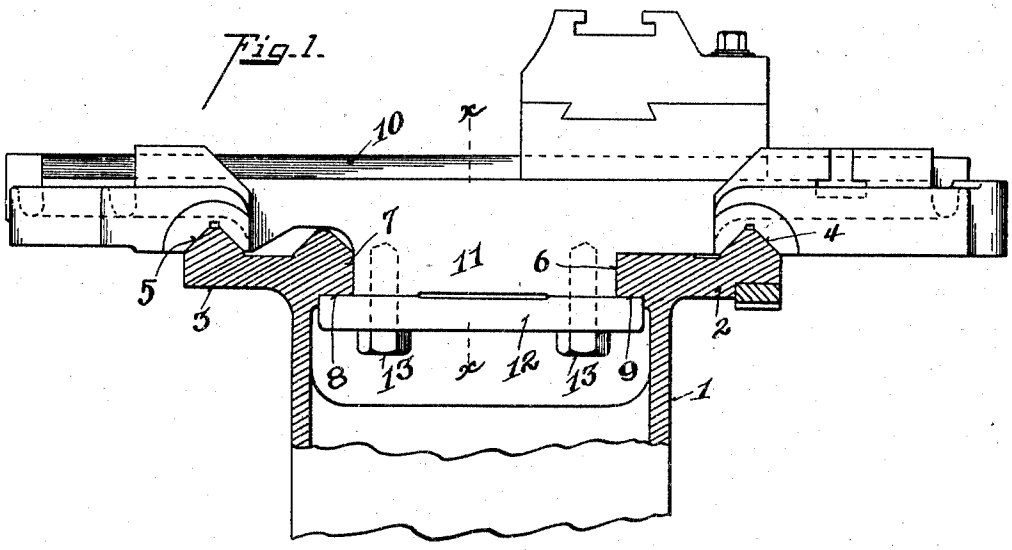
No. 783,680. PATENTED FEB. 28, 1905.

N. D. CHARD.

LATHE.

APPLICATION FILED SEPT. 12, 1904.

Fig. 1.



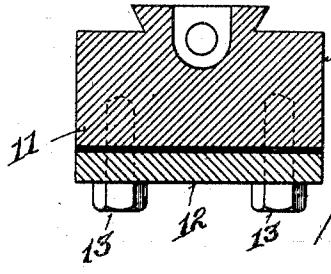


Fig. 2.

Witnesses
Oliver B. Kaiser
Leo O'Donnell

Inventor
Nicholas D. Chard
By Wood Thorn
Attorneys

PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 783,680. Patented February 28, 1905.

UNITED STATES PATENT OFFICE.

NICHOLAS D. CHARD, OF CINCINNATI, OHIO, ASSIGNOR TO THE LODGE & SHIPLEY MACHINE TOOL COMPANY, OF CINCINNATI, OHIO, A CORPORATION.

LATHE.

SPECIFICATION forming part of Letters Patent No. 783,680, dated February 28, 1905.

Application filed September 12, 1904. Serial No. 224,077.

To all whom it may concern:

Be it known that I, NICHOLAS D. CHARD, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Lathes, of which the following is a specification.

My invention relates to a new and improved gibbed-way connection between the bed and carriage of an engine-lathe.

The features of my invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a central vertical section of lathe-bed with carriage shown in elevation embodying my improvement. Fig. 2 is a section on line *x x*, Fig. 1.

The object of my invention is to provide a gibbed-way connection between an engine-lathe carriage and bed of such construction that the upper and outward strains of the apron or carriage relative to the bed shall be borne by the bed at right lines to the direction of strain.

Another object of my invention is to take from the rail which guides the carriage all lateral strain and substantially all bearing strain except that of guiding the carriage longitudinally of the bed.

1 represents the bed of the lathe.

2 represents the front longitudinal rail of the bed, and 3 the rear longitudinal rail of the bed. These rails are provided with the guide V-ways 4 5. The rails extend inwardly and are provided with vertical sides 6 7 and the horizontal sides 8 9.

10 represents the carriage, having V-ways engaging the guide-rails 4 5. The carriage is provided with a central bearing-block 11, which projects downwardly between the rails 2 3, and has a vertical bearing against the vertical edges 6 7 of said rails.

12 represents a bottom bearing-plate extended under and between the inner edges of the rails 2 3 and having a bearing upwardly against the horizontal bearing-surfaces 8 9 of said rails.

13 represents clamping-bolts for securing the bearing-plate 12 to the block 11.

It will be observed that this construction is very rigid. All of the outward or lateral strains are borne by the vertical bearing-surfaces 6 7 of the V-rails and all the upward or vertical strains are borne by the horizontal bearing-surfaces 8 9 of the bed-surfaces. None of these vertical or lateral thrusts are borne by the guide V-rails 4 5, and hence these V-rails have the sole function of longitudinally guiding the carriage. Thus as all strains are removed from these vertical guides the accuracy of the guide feature and its durability are greatly enhanced.

As there are no shelving, wedging, or angular strains imparted to the bed by the carriage, the tendency to spread the bed-rails apart is avoided.

As the bearing-surfaces of the block 11 and plate 12 bridge completely the space between and under the bed-rails, the strains on the opposite sides of the bed are substantially equally distributed and an anchorage is given the carriage upon both sides of the bed which increases the rigidity and durability of the entire machine.

Having described my invention, I claim—

In an engine-lathe, a bed provided with two bed-rails, said rails on their upper surfaces being provided with longitudinal V guide-rails, said rails having vertical guide-surfaces on their inner edges, and horizontal guide-surfaces within the bed, a carriage having V-ways engaging the said V guide-rails, said carriage having a bearing-block projected downward between the bed-rails and engaging the vertical bearing-surfaces thereof, a bearing-plate within the bed between the bed-rails having an upward bearing engagement against the horizontal bearing-surfaces of the bed-rails, and clamping-bolts securing the bearing-plate to the bearing-block, substantially as described.

In testimony whereof I have hereunto set my hand.

NICHOLAS D. CHARD.

Witnesses:
OLIVER B. KAISER,
LUISE BECK.