(No Model.) 2 Sheets—Sheet 1.

W. VON PITTLER.

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No. 485,773. Patented Nov. 8, 1892.

Fig. 2.

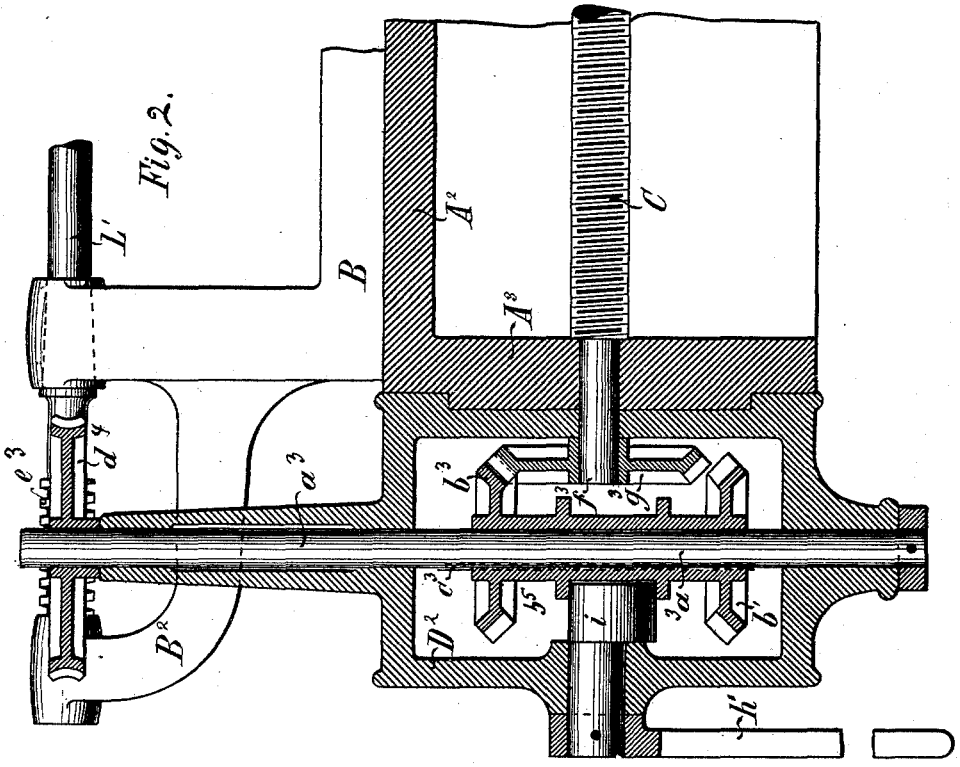
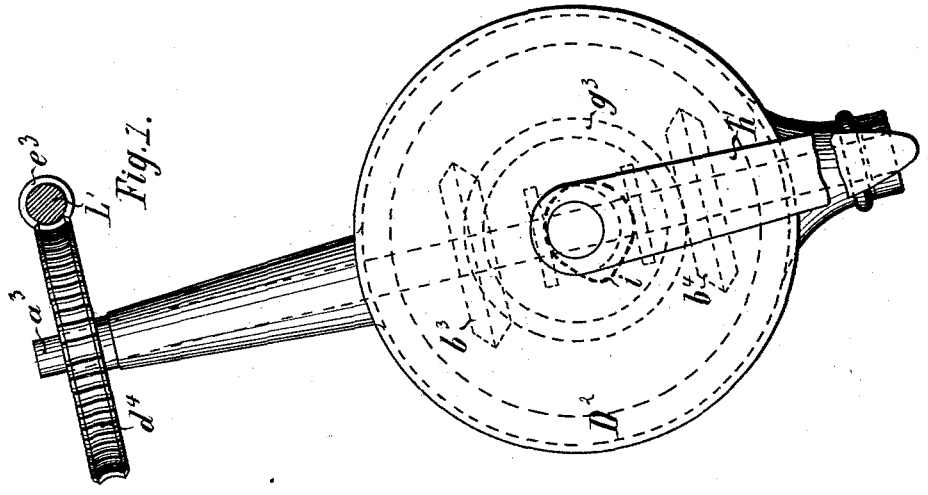


Fig. 1.



Witnesses:
Henry Huber
W. Reinhern

Inventor
Wilhelm von Pittler
by Goepel & Raegener
Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

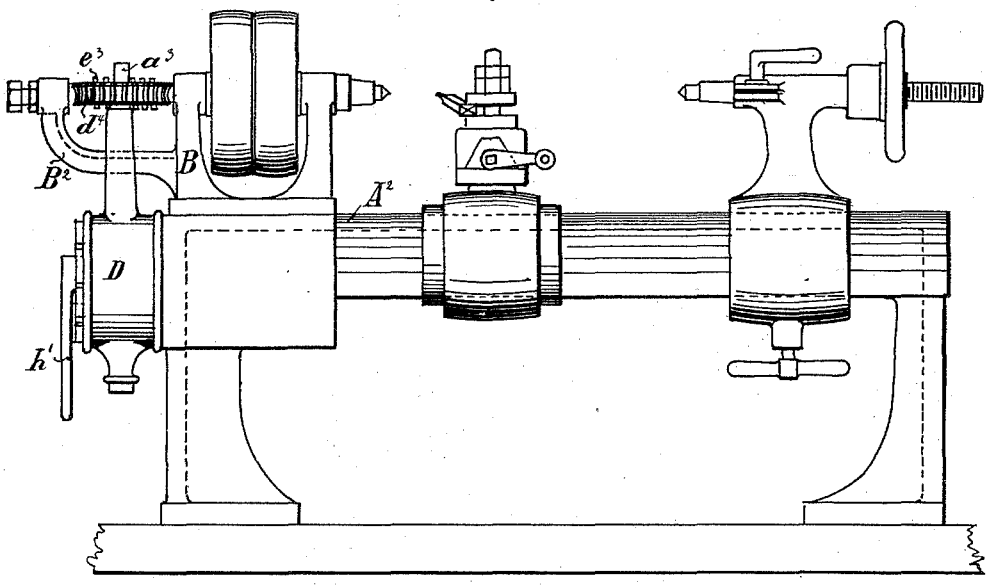
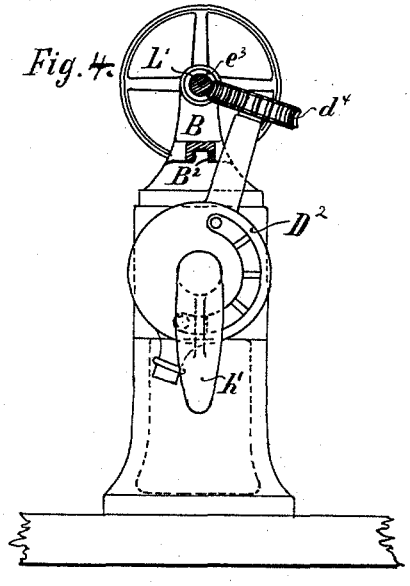


Fig. 4.



Witnesses:
Henry Huber
W. Reinicken

Inventor
Wilhelm von Pittler
by Goepel & Wagener
Attorneys.

UNITED STATES PATENT OFFICE.

WILHELM VON PITTLER, OF LEIPSIC, GERMANY.

LATHE.

SPECIFICATION forming part of Letters Patent No. 485,773, dated November 8, 1892.

Application filed April 16, 1890. Serial No. 348,227. (No model.)

To all whom it may concern:

Be it known that I, WILHELM VON PITTLER, a subject of the German Emperor, residing at Gohlis, Leipsic, in the Kingdom of Saxony and German Empire, have invented certain new and useful Improvements in or Relating to Turning-Lathes and Similar Tools, of which the following is a specification.

This invention relates to improvements in lathes adapted for turning, drilling, mining, &c., and which are adapted for small shops, locksmiths, grinders, tool-makers, watch-makers, &c.

The object of my invention is to provide a machine of this kind in which the direction of motion can readily be reversed and the speed easily changed, as may be desired.

In the accompanying drawings, Figure 1 is an end view of my improved metal-working machine, showing the mechanism for changing motion and speed, parts being broken out and others being in section. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a longitudinal elevation of the entire machine, and Fig. 4 is an end view of the same.

Similar letters of reference indicate corresponding parts.

A box-shaped casing D^2 is mounted to turn on the end piece A^3 of the bed-rail A^2 and on the end of the screw-spindle C, passing through said end piece A^3. In the casing D^2 a vertical shaft a^3 is arranged, which carries at its upper end a removable worm-wheel d^4, adapted to engage a worm e^3, formed on the end of the shaft L′, which shaft is mounted in the bracket B^2 of the head-stock frame B. A sleeve b^5 is mounted to slide on the shaft a^3, and is rotated from the same by a spline c^3. On one end of said sleeve b^5 a bevel cog-wheel b^3 is fixed and on the other end a cog-wheel b^4 is fixed, both of which bevel cog-wheels b^3 and b^4 are adapted to engage a bevel cog-wheel g^3, fixed on the end f^3 of the screw-spindle C. A cam or concentric i is adapted to work in a circumferential groove formed in the sleeve b^5, and said cam or concentric can be turned or actuated by a lever h', fixed to the stem of said cam or concentric i and arranged outside of the casing D^2. The direction of rotation of the spindle C can readily be reversed by shifting the lever h' so as to disengage one of the bevel cog-wheels b^3 or b^4 from the wheel g^3 on the spindle C and to engage the other bevel cog-wheel b^3 or b^4 with the bevel cog-wheel g^3 on the spindle at the same time. The speed of the screw-spindle can readily be changed by removing the worm-wheel d^4 and replacing it by a worm-wheel of greater or less diameter. This can readily be accomplished, as the entire casing D^2, carrying the shaft a^3, can be turned on the end part of the spindle and the end part of the bed-rail to have the requisite inclination according to the diameter of the worm-wheel, which inclination increases with the diameter of said worm-wheel.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a metal-working machine, the combination, with a bed-rail and a screw-spindle in the same, of a casing mounted to turn on the end of the bed-rail and on an extension of the spindle, a shaft in said casing, a sliding sleeve on said shaft, bevel cog-wheels on the end of the sliding sleeve, a bevel cog-wheel on the end of the spindle, adapted to engage either of the bevel cog-wheels on the sleeve, and a driving-wheel on the upper end of the shaft in the casing, substantially as set forth.

2. In a metal-working machine, the combination, with a bed-rail, of a screw-spindle in the same, a casing mounted to turn on the end of said bed-rail and on an extension of the spindle, a shaft in said casing, a sliding sleeve on said shaft, bevel cog-wheels on the ends of said sleeve, a bevel cog-wheel fixed on one end of the spindle and adapted to engage either one of the bevel cog-wheels on the sleeve, an eccentric or cam arranged between collars on the sleeve, a lever on the stem of said eccentric or cam, and a driving-wheel on the upper end of the shaft in said casing, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILHELM VON PITTLER.

Witnesses:

BOUREL POERSCHMANN,

CARL BORNGRAEBER.