(No Model.)

S. MESSERER.

WATCH MAKER'S LATHE.

No. 404,099. Patented May 28, 1889.

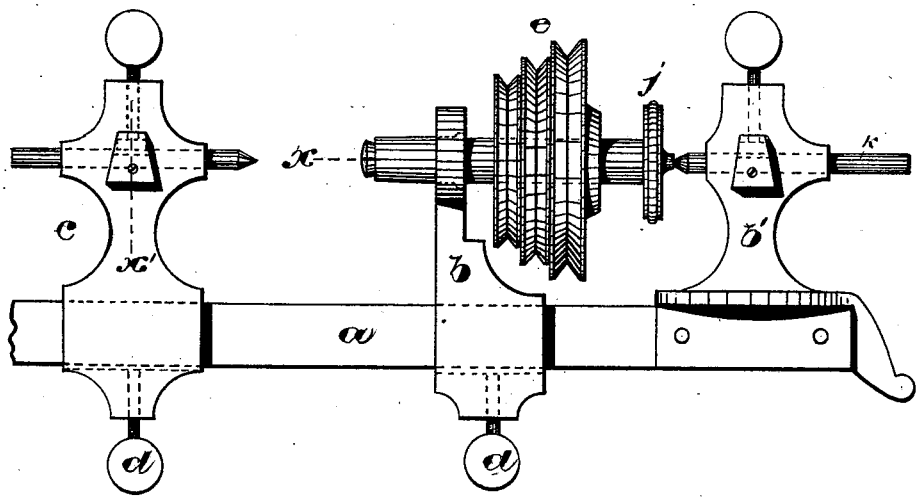

Fig. 1.

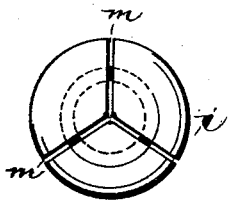

Fig. 4.

Fig. 2.

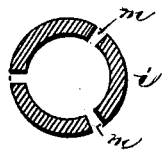

Fig. 5.

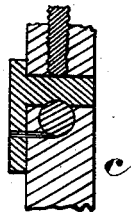

Fig. 7.

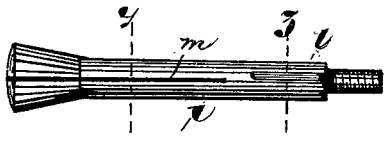

Fig. 3.

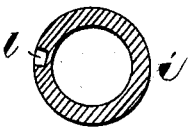

Fig. 6.

Witnesses,
E. L. Sherman
Alfred Gartner

Inventor
Stephan Messerer,
By His Attorneys
Drake & Co.

UNITED STATES PATENT OFFICE.

STEPHAN MESSERER, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO JEAN TACK, OF SAME PLACE.

WATCH-MAKER'S LATHE.

SPECIFICATION forming part of Letters Patent No. 404,099, dated May 28, 1889.

Application filed June 2, 1888. Serial No. 275,805. (No model.)

To all whom it may concern:

Be it known that I, STEPHAN MESSERER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Lathes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to that class of lathes adapted for fine work, such as is done by watch-makers and jewelers, the object being to reduce the cost of construction, to prevent the "draw-in" spindle from being accidentally disconnected from the chuck, a tubular spindle surrounding the same, and yet allow of ready removal or detachment of parts.

The invention consists in the improved lathe and in the arrangements and combinations of parts thereof, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a front elevation of the improved spindle. Fig. 2 is a sectional view of the draw-in spindle, taken on line *x*, Fig. 1, the belt-wheels on said spindle not being shown. Fig. 3 is an enlarged view of the chuck. Fig. 4 is an end view of the same enlarged still further. Fig. 5 is a section of the chuck, taken on line *y*. Fig. 6 is a section of the same, taken on line *z* of Fig. 3, said Figs. 5 and 6 being on the scale of Fig. 4; and Fig. 7 is a section taken on line *x'* of Fig. 1.

In said drawings, *b* and *b'* are respectively the front and rear head-stocks, and *c* indicates a tail-stock arranged on a suitable bar, *a*, the rear head-stock being rigidly or permanently secured in place thereon and the front head-stock and tail-stock being preferably adjustably secured thereon by suitable set-screws, *d d*.

Between the front and rear head-stock is arranged a suitable belt wheel or pulley, *e*, which is disposed on a tubular spindle, *f*, which serves also as a sleeve for an inner spindle, *g*. Said tubular spindle *f* is provided with an annular flange or rib, *h*, adapted to engage the head-stock *b* and prevent longitudinal movement thereof in the direction of the chuck. The spindle *g*, which works within the spindle *f*, is also tubular or hollow, and at one end thereof is provided with female screw-threads adapted to receive the inner end of the chuck *i*. At its opposite end the said spindle is provided with a finger-piece, *j*, and with a central recess to receive a point, *k*, carried by a rear head-stock, *b'*.

The chuck may be longitudinally grooved, as at *l*, Figs. 3 and 6, or otherwise constructed, to prevent its turning pivotally within the spindle, the latter being provided with set-screw *l'* to engage the said chuck. Said set-screw *l'* and groove may, however, be dispensed with. The chuck is also split at its forward end, as at *m*, Figs. 3, 4, and 5, forming grasping-fingers adapted to engage the pinion or staff being turned, the said end being also at the extremity thereof formed on an incline adapted to engage with the spindle or sleeve *f*, so that as the chuck is drawn in by the draw-in spindle *g* the fingers will draw together to grasp the article being turned and hold the same firmly in position for turning.

The parts *f*, *g*, and *j* are held in position between the front and rear head-stock by means of an adjustable center, *k*, so that the draw-in spindle *g* cannot be detached or disconnected from its operative position between the said head-stock when the chuck is being changed from one size to another, as will be evident upon reference to Fig. 2.

In operation, by simply turning on the finger-piece *j*, the spindle *g* may be turned so that the chuck may be released or brought into position in the lathe, and also the grasping-fingers grasp or be held in position with the article to be turned or released from said article, as may be desired.

It is understood that the finger-piece and the spindle *g* have a permanent relation to one another and are of one integral piece.

I do not wish to be understood as limiting myself to the arrangements and formations of

parts herein shown, as various changes may be made without departing from the spirit or scope of this invention—as, for example, the incline that is now shown on the chuck may be on the spindle or may be formed in a reverse direction.

Having thus described the invention, what I claim as new is—

1. In a lathe, the combination, with the front and rear head-stocks thereof, the latter being provided with a center, of a hollow spindle, *f*, a chuck within the same, provided with expansible jaws having a taper connection with the forward end of said spindle, a draw-in spindle screw-threaded to said chuck and socketed at its outer end to said center, and a finger-piece secured to said draw-in spindle and shouldered against the spindle *f*, substantially as described.

2. In a lathe, the combination, with the front and rear head-stocks thereof, the latter having an adjustable center, *k*, of a hollow spindle, *f*, provided with a flange, as *h*, a chuck, *i*, and a draw-in spindle, *g*, screw-threaded to said chuck at its inner end, and provided at its outer extremity with a socket to receive the center *k*, and with a suitable finger-piece, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of May, 1888.

STEPHAN MESSERER.

Witnesses:
CHARLES H. PELL,
C. H. BALDWIN.