(No Model.)

L. H. SANDERSON.

Lathe.

No. 238,971. Patented March 15, 1881.

Fig. 1.

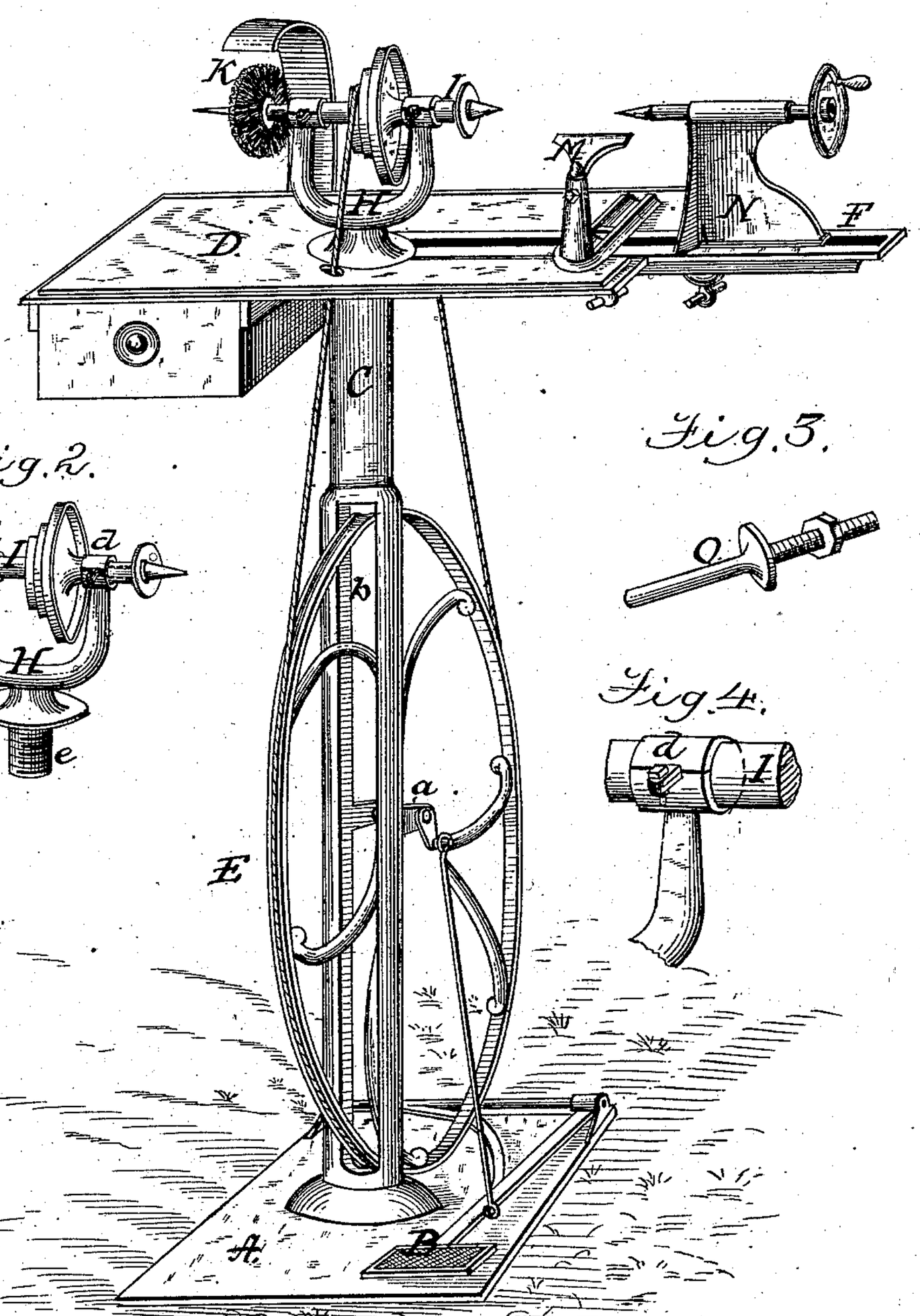

Fig. 2.

Fig. 3.

Fig. 4.

attest

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LUCIUS H. SANDERSON, OF NEW YORK, N. Y.

LATHE.

SPECIFICATION forming part of Letters Patent No. 238,971, dated March 15, 1881.

Application filed December 6, 1880. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS H. SANDERSON, a citizen of the United States, residing at New York city, in the county of New York and State of New York, 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of lathes used by watch-makers and jewelers; and the improvement consists in a standard supporting a bench or bed, and provided with a vertical opening and side journal-bearings for the driving-wheel and formed at the upper end with screw-threads.

My improvement also consists in the combination, with a driving-wheel arranged below the table, of a live spindle or arbor formed at one end with a socket suitably supported and provided with a speed-pully and a centering chuck or device.

My improvement also consists in a live spindle or arbor suitably mounted in journal-bearings, having at one end a socket to receive a centering chuck or device and at the other end a polishing device.

My improvement also consists in the construction and arrangement of the parts, as will be hereinafter more fully set forth and specifically claimed.

Figure 1 of the drawings is a perspective view of my improved turning and polishing lathe. Fig. 2 is a perspective view of the U-shaped journal-bearing and live-spindle with its attachments. Fig. 3 is a perspective view of the spindle which receives an emery-wheel or a grinding-stone. Fig. 4 is an enlarged detail view of the live-spindle and the sectional journal-box.

In the annexed drawings, forming a part of this specification, the letter A represents the base or platform, to which, at its forward end, is journaled the treadle or foot-board B. In the center of this base or platform is erected or secured a vertical standard or post, C, to support the bed or bench D of the lathe. This standard or post is formed with side journal-bearings *a* and a vertical slot, *b*, for the axle of the driving or fly wheel E, and the passage of the same, substantially as seen in Fig. 1 of the drawings. This standard is preferably round and made of cast-iron, also made hollow, to secure lightness and strength, and the upper end is formed with female screw-threads, for the purpose hereinafter stated. As before stated, the bed or bench is supported upon this standard or post C in any suitable manner to secure a firm connection. One end of the bed or bench is provided with guideways to receive a drawer, and the other end is formed with an extended slotted bed, F, for the tail-stock and tool-rest, and provision is made for the adjustment of the same.

The letter H represents a U-shaped head-stock, formed with branch arms having bearings with removable caps *d*, for the ready adjustment and detachment of the live-spindle with its attachments to or from the journal-bearings. This head-stock has formed therewith, by casting, a shank or stem, *e*, provided with male screw-threads to form the connection through the bench with the standard.

The live-spindle I, having its journal-bearings in the arms of the head-stock, is provided with a speed-pulley, which is located upon the spindle at a point within the arms of the head-stock and arranged over the driving or fly-wheel under the bench, so as to receive the driving-belt from the same in a direct line. The front or forward end of this live-spindle is formed with a socket or made hollow a suitable distance, and is provided with a detachable centering-stock to center and revolve the work to be operated upon; or this end may be provided with a chuck for receiving and centering the work, so that it may revolve true; and the other or opposite end of the spindle is tapered to a point, and on this end are adjusted and secured the buffs or brushes K for polishing jewelry. On a direct line with and in rear of the buffs or brushes is attached a removable and adjustable curved guard, serving as a protector, which collects any particles that may fly off from the wheel or buff when the same is in operation.

The letter M represents a tool-rest capable of vertical, lateral, and horizontal adjustment;

and N indicates the tail-stock with the dead-spindle capable of the well-known adjustments.

A mandrel, O, (see Fig. 3,) is used sometimes in lieu of the centering-stock on the live-spindle whenever the machine is used for polishing and grinding. Upon this mandrel, when inserted home in the live-spindle, are adjusted emery-wheels for grinding glass, &c., and grindstones for sharpening jeweler's tools.

The periphery of the driving or fly wheel is grooved to receive a band or belt which passes over the speed-pulley, substantially as shown in Fig. 1 of the drawings.

It will be seen from the foregoing description that this machine is designed for turning and polishing, and is especially adapted for watch-makers and jewelers.

The work to be turned is adjusted and centered by means of the centering-spindles in the head and tail-stocks, and the tool-rest is properly adjusted to the work to facilitate the workman in turning the work to a given length or diameter. After the work is turned it is removed from the centering devices or means and transferred to the other end of the spindle for the buffs or brushes, where the article may be highly polished.

The means that drive the lathe also operate the buffs or brushes for polishing.

I claim the right to vary the construction of the elements of novelty without departing from the spirit of the invention.

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

1. The combination of a vertical slotted standard having side journal-arms, a driving-wheel journaled to the side arms and working within the slot of the standard, the platform attached to the base of the slotted standard, the treadle mechanism attached to the said platform and connected with the crank of the driving-wheel, the U-shaped head-stock supporting the live-spindle and its attachments secured to the upper end of the standard, and a driving-belt passing over the driving-wheel and the speed-pulley, substantially as described.

2. In a jeweler's lathe, a cast-iron standard formed with a vertical slot and side journal-bearings, and provided at its upper end with screw-threads, substantially as and for the purposes hereinbefore stated.

3. In a lathe, the U-shaped head-stock with the screw-threaded shank or stem, adapted to be attached to a standard or post, having at its upper end female screw-threads for the attachment of the male screw-threads on the head-stock, substantially as described.

4. In a jeweler's lathe, a live-spindle having at one end a buffer or polishing means, and the other end formed with a socket to receive a removable tool, substantially as described.

5. The watch-maker's or jeweler's lathe, consisting of the following organized instrumentalities, to wit: the slotted standard, the platform with the treadle mechanism, the U-shaped head-stock, the live-spindle having at one end a polishing device and the other end formed with a socket to receive interchangeable tools, and the driving-wheel with the driving-belt, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LUCIUS H. SANDERSON.

Witnesses:
M. L. EASTERDAY,
E. P. HOLMES.