

R. J. Cole,
Turning Lathe,
No. 40,994, *Patented Dec. 22, 1863.*

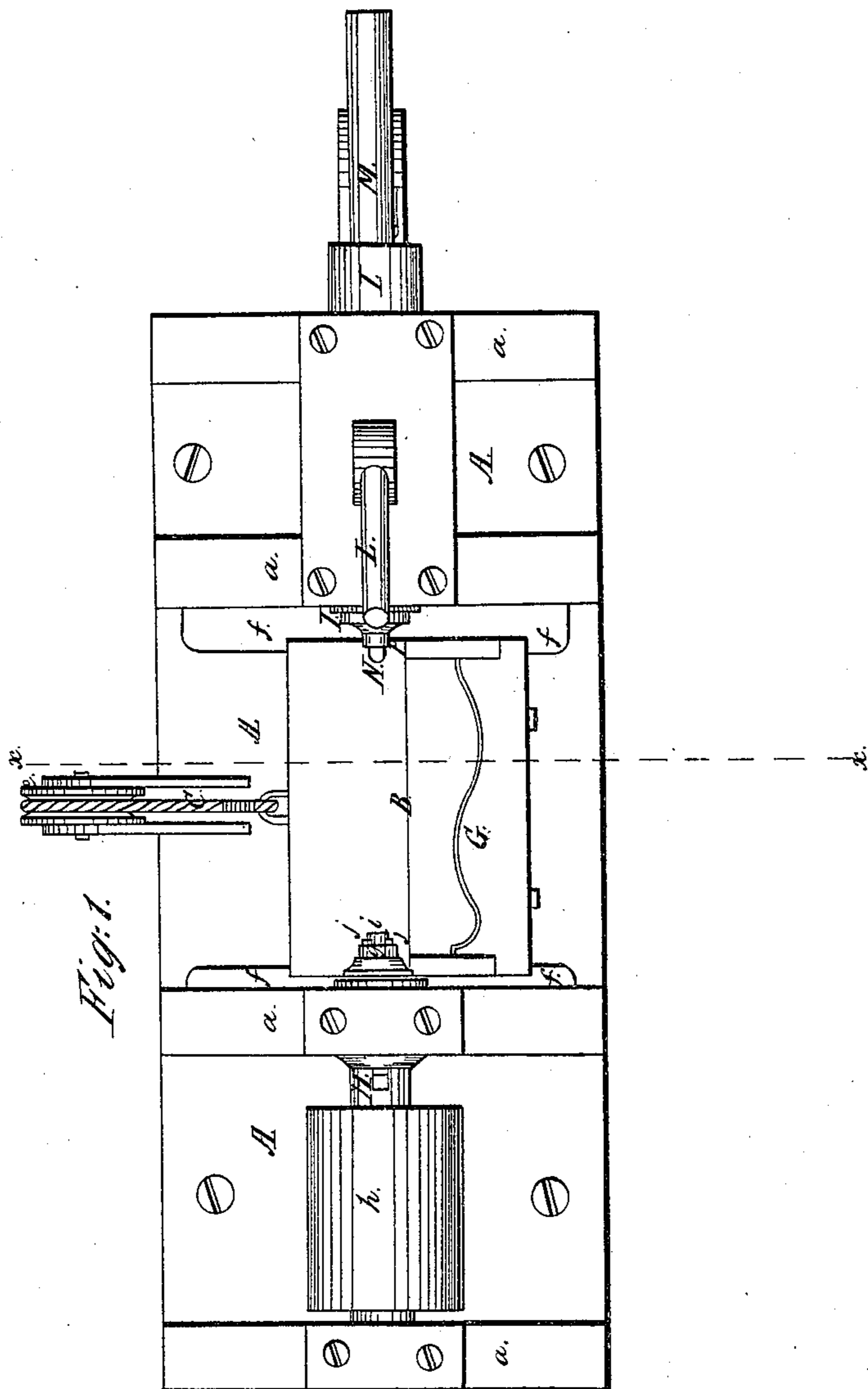


Fig. 1.

Witnesses.

E. W. Woodruff.
A. Moore

Inventor.

Reuben J. Cole.

By his attorney.

J. S. Brown.

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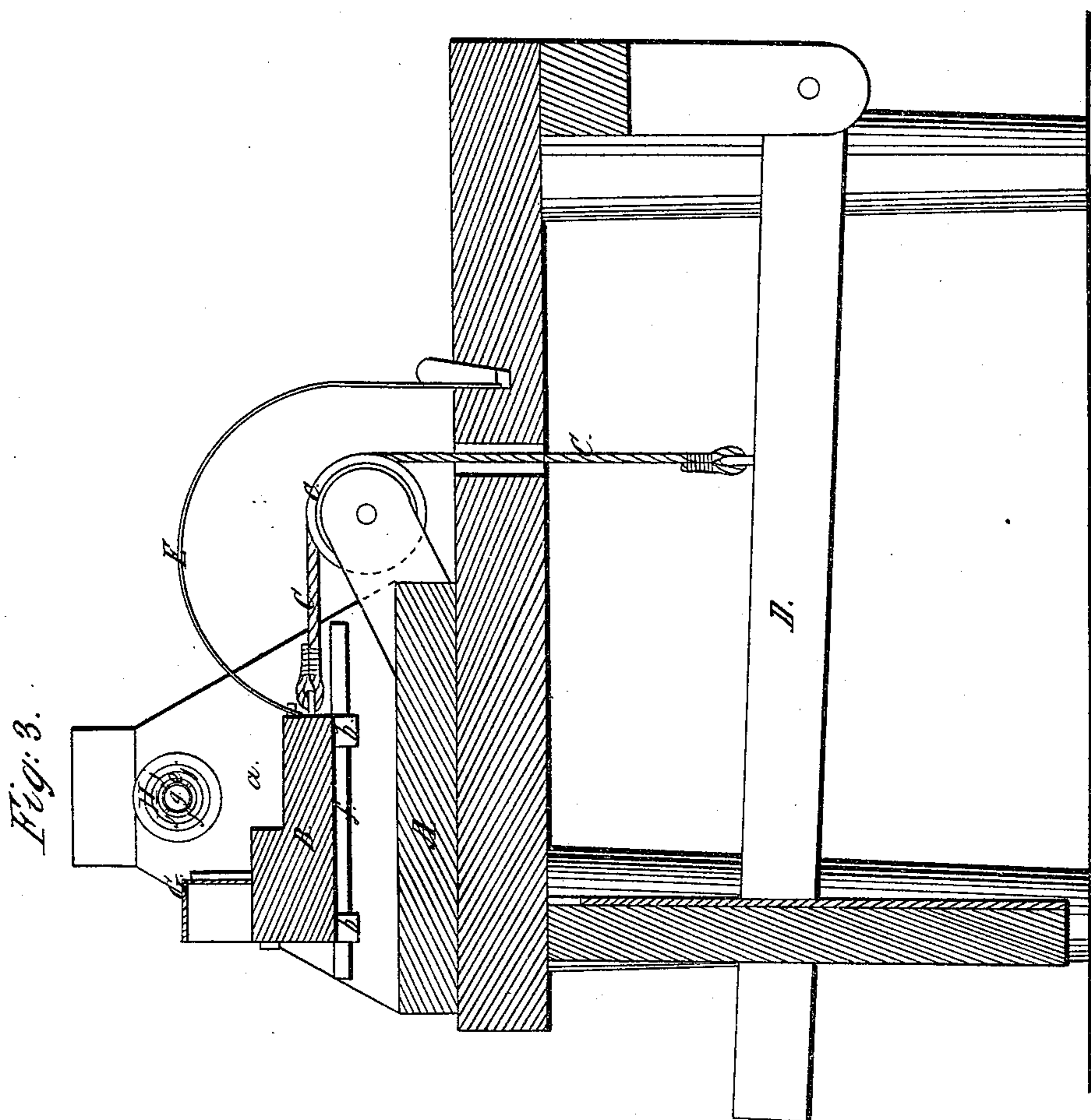


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UNITED STATES PATENT OFFICE.

REUBEN J. COLE, OF POULTNEY, VERMONT.

IMPROVEMENT IN TURNING-LATHES.

Specification forming part of Letters Patent No. 40,994, dated December 22, 1863.

To all whom it may concern:

Be it known that I, REUBEN J. COLE, of Poultney, in the county of Rutland and State of Vermont, have invented an improved turning-lathe, particularly adapted to turning and finishing articles of wood which require to be bored in the center, either partly or entirely through, and which I design especially to be used for turning, finishing, and boring curry-comb handles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a plan of the lathe; Fig. 2, a longitudinal vertical section thereof (together with the table or stand on which it rests) in the plane of the axes of its head and foot stocks; Fig. 3, a transverse vertical section of the same in a plane indicated by the line *xx*, Figs. 1 and 2.

Like letters designate corresponding parts in all of the figures.

I make a stock of cast-iron, the structure of which is as follows: A base-plate, A, of suitable dimensions, has cast upon each end permanent head and foot stocks *aaaa*. Between the head and foot stocks, respectively, is a movable table, B, resting and also sliding upon two parallel flanges or ways, *ff*, cast or otherwise affixed on the head and foot stocks. The table also is held in place by hooked flanges *bb*, working under those on the head and foot stocks. This table is drawn forward to the work by a foot-lever, D, and chain or cord C, or their equivalent, and thrown back by a spring, E, or its equivalent. To the table is attached and moving with it the knife or cutting-edge G, made to form the exact outline or shape of the article to be turned. In the head-stock is fitted the revolving spindle H, and pulley *h* for the driving-belt. The spindle is bored to receive a center, *g*, which sustains and revolves the block or piece to be turned. This center I make of a peculiar structure. It is fitted to the spindle with the usual tapering shank, but the outer end is a tube, *i*, projecting beyond the spurs *jj*, which surround and are attached to it. The advantages sought, and which I fully obtain by this peculiar center, are important and of great value in saving material and labor. The projecting tube *i* serves two very important purposes: First,

when a handle or any article is to be bored through, the end of the bit will enter the projecting tube without being exposed to injury, and will save the time and cost of changing to any other machine for boring quite through; second, the projecting tube *i* supports the end of the block without revolving it, while adjusting the opposite end, before forcing the block forward to the spurs *jj*, which put it in motion, and it thus enables me to get a perfect center, with a great saving of stock and time. In the foot-stock is the dead-spindle I, which does not revolve. This spindle also is of peculiar construction. On its upper side are a number of teeth or cogs, *m*. A lever, L, having a circular end with corresponding teeth, *ll*, is arranged to work into the teeth on the spindle, by which it is thrown forward and back to suspend the block or article to be turned, and release it when completed. This spindle is bored quite through the center, and its under side is slotted through to the center bore, *k*, the slot *n* extending from the rear end of the spindle forward as far as required. Forward of this slot *n* is another slot, or forming a continuation of the same, also cutting through to the central bore of the spindle, and extending nearly or quite to the forward end of said spindle, in the underside thereof. These slots or portion of one slot, as described, form, first, an outlet for the escape of chips when boring the handle or other article turned. Into the forward end of the spindle I is firmly fitted a tubular center, *p*, which moves forward and back with the spindle, and sustains the end of the block to be turned and bored, but does not revolve. Working within the central bore, *k*, of this spindle, and through it by separate power, (that is, by a power not necessary to any other operation of the lathe,) is a bit-stock, M, and bit N, formed for boring parallel with the grain of the wood, and placed with its concave side down to allow the chips to fall out through the said opening or slot *n* in the spindle and center before described, which may also be slotted in the under side, if desired. Second, attached to the under side of the bit-stock M is a projection, *r*, which works through the said slot or portion of slot *n* in the under side of the spindle. To this projection or ear is fastened a chain or cord, R, that extends over two sheaves or pulleys, *s t*, at the two ends respectively, one end of which chain or

cord is made fast to a foot lever, Q, and to the other end is suspended a weight, T. By this arrangement I introduce power through the slot *n* in the spindle I, and a forward and backward motion is given to the bit-stock and bit—forward by the foot of the attendant, and backward by the weight T.

With this lathe, as described, I am enabled to save a very large item of the expense of turning, finishing, and boring curry-comb handles and other articles of wood which require to be both turned and bored in the center.

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

1. The tubular center *i* in the live or moving spindle H, the same projecting beyond and in combination with the spurs *j j*, in a lathe designed to bore through the article to be turned.
2. The slotted spindle I in the foot-stock of

a lathe, (for turning curry-comb handles or other articles of wood requiring to be bored in the center,) through which power is introduced to operate a bit-stock and bit working in the center of the spindle, in combination with the bit stock and bit, substantially as described.

3. The employment of an opening or slot, *n*, in the under side of the spindle of the foot-stock, and in its tubular center, if necessary, for the discharge of chips, in combination with a bit-stock and bit working within the hollow spindle, substantially as described.

The above specification of my improvements in turning-lathes signed by me this 22d day of September, 1863.

REUBEN J. COLF.

Witnesses:

HENRY RUGGLES,
H. I. RUGGLES.