

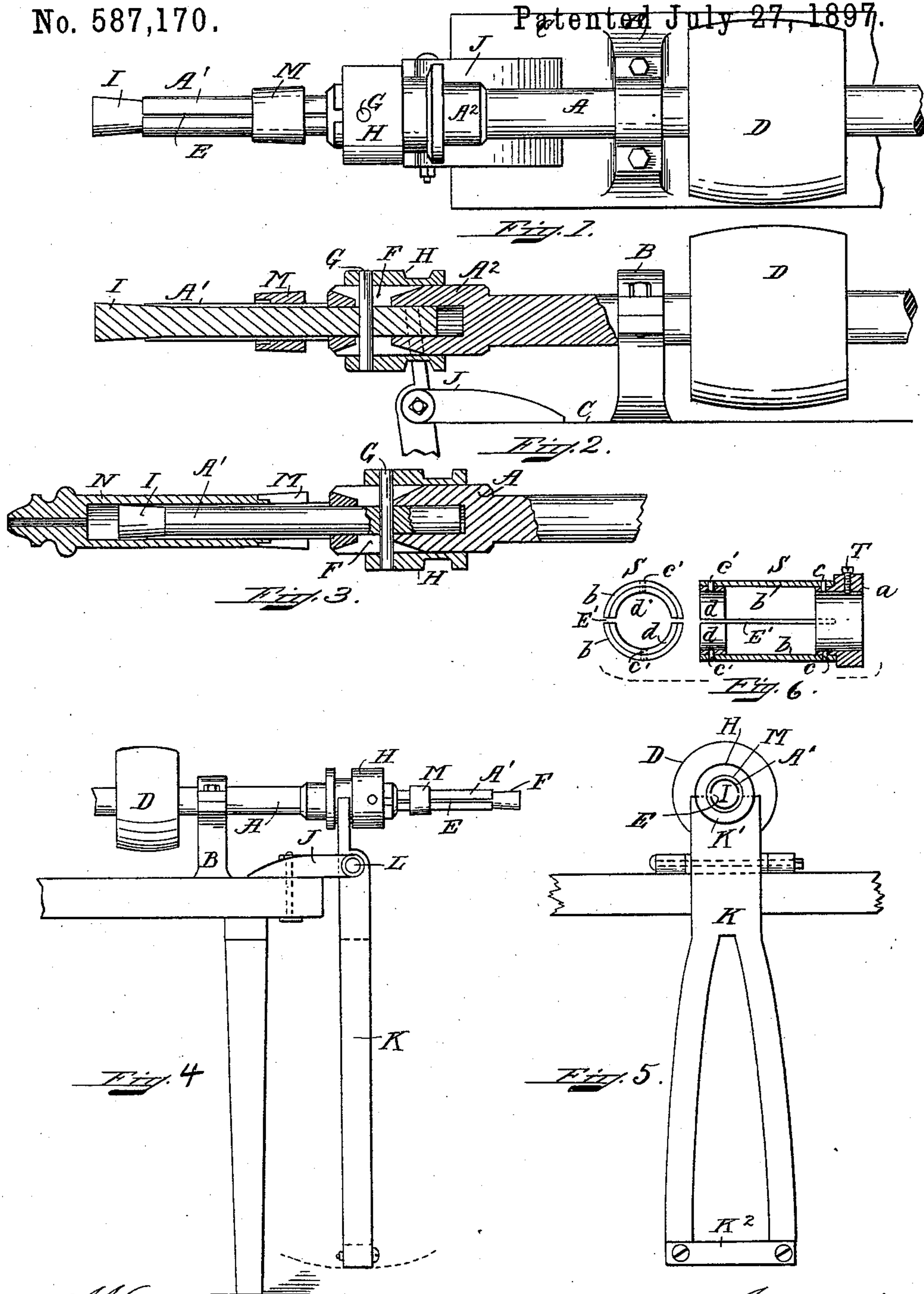
(No Model.)

C. H. BARTLETT.

ARBOR AND ATTACHMENT FOR HOLDING ARTICLES TO BE POLISHED
AND FINISHED.

No. 587,170.

Patented July 27, 1897.



Witnesses:
John A. Harrison
John L. Adams

Inventor:
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per Eugene Humphrey
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UNITED STATES PATENT OFFICE.

CHARLES H. BARTLETT, OF NEW PORTLAND, MAINE.

ARBOR AND ATTACHMENT FOR HOLDING ARTICLES TO BE POLISHED AND FINISHED.

SPECIFICATION forming part of Letters Patent No. 587,170, dated July 27, 1897.

Application filed February 21, 1896. Serial No. 580,284. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BARTLETT, of New Portland, in the county of Somerset and State of Maine, have invented a new and useful Improvement in Arbors and Attachments for Holding Wooden Articles to be Polished and Finished, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claim.

In the accompanying drawings, Figure 1 is a plan of my improved finishing and polishing devices. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a like section of the expansible arbor and showing a turned wooden article secured thereon by the expansion of the arbor. Fig. 4 is a side elevation of Fig. 1, reduced, showing the spindle as mounted upon a work-bench and the swinging treadle by which the rotating clutch or slide is moved horizontally on the spindle to expand or compress the same. Fig. 5 is an end elevation of the same. Fig. 6 is a longitudinal section and end view of an expansible sleeve employed on the spindle to suit work of various diameters and to avoid making spindles of various diameters.

An arbor or spindle A is mounted in standards B (only one of which is shown) upon a work-bench C. A pulley D is secured to the arbor and is driven by a belt connected with pulleys on a counter-shaft in the usual and well-known manner. The forward end A' of the arbor, which overhangs the edge of the bench, is hollow and divided by a longitudinal slit E therein, which renders the spindle expansible or compressible, according to construction. The hollow of the thinner outward portion of the spindle is extended by boring into the enlarged portion A², and this enlarged part has a transverse slot F through the same. This slot affords play for a pin G, which passes through the body of the clutch H, fitted on the arbor so as to rotate therewith and slide longitudinally thereon. The pin also passes through a taper expanding-rod I, which is moved by action of the clutch H inward and outward in the hollow spindle, causing the spindle to expand when the rod is moved inward and leaving it free to return by its elastic force to its normal position or condition when the rod is moved outward.

The clutch H has a circumferential groove H' therein. A bracket J is bolted to the bench, Fig. 5, and from this bracket is suspended a swing treadle-lever K, pivoted to the bracket at L. The upper part K' of lever K is fitted to enter and operate in groove H' of the clutch H. The lower end of lever K is bifurcated and has a cross-bar K² attached thereto, upon which the operator places his foot to swing the lever in and out to actuate the clutch H.

In Figs. 1, 2, and 5 the expanding-rod is shown as thrown forward or outward and not operating to expand the spindle, this position being secured by a movement inward, by the foot of the operator, of the lower end of lever K, which, by its connection with the groove H', causes the clutch H to move outward or toward the operator, and, through the connecting-pin G, also moves the expanding-rod I in the same direction, thus relieving the spindle and allowing it to contract to its normal size, ready to receive any article to be placed thereon. A sliding collar M, having a recessed front face, as shown, is employed on the spindle for a purpose which will be explained.

In Fig. 3 the practical operation of the spindle is illustrated. A fancy box N is placed upon the spindle and the expanding-rod forced inward by swinging the treadle outward, thus causing the interior surface of the spindle to impinge the exterior surface of the chamber of the box and thereby to hold the box firmly while the finishing operations are performed thereon, and without the liability of splitting the box, which is so common and wasteful of labor and material in the old way of forcing the article by hand onto an inelastic spindle or an elastic one previously expanded.

In the case illustrated the outward thrust of the expanding-rod, by the means and in the manner described, releases the elastic sides of the spindle and their reaction leaves the box free to be removed without danger of cracking or breaking the fragile shell or wall thereof. The recessed collar M, before referred to, serves in cases like that of the box illustrated in Fig. 3 to shield the tenon of the box, as shown, from becoming smeared with the liquid varnish or polish applied to the exterior surface of the body of the box in the process of finishing, thus keeping the tenon

free from obstructions to the cover when made, as usual, to nicely fit thereon.

Wide differences in the diameters of articles to be held and operated upon in the manner and for the purposes described would necessitate the employment of expansible arbors of various diameters; but I avoid a multiplication of such arbors by the employment of an expansible sleeve like that shown in Fig. 7, which will be much less expensive. This sleeve S may be fitted at its ends to the diameter of the arbor A' and have a corresponding slit E' from its outer end inward and at its inner end may be secured to the spindle by a set-screw T or in any other convenient and suitable manner. A multiplication of such expansible sleeves will be comparatively cheap and their employment in the manner shown and described will be convenient and effective. The sleeve may be composed of a hub *a*, bored to slide onto the spindle, and a divided elastic body *b*, which may be attached, as at *c*, and at the opposite end to a divided ring *d*, as at *c'*, the opening through the ring being also fitted to the expansible spindle *a'*.

By this construction sleeves of various diameters may be uniformly bored through their ends to fit a single spindle and have a uniform thickness of elastic shell or body *b*, whatever the diameter of the sleeves may be, the variations in their diameters being mainly due to changes in the diameters of their end pieces, hub *a*, and ring *d*. When the sleeve is properly secured in place on the spindle A' and in place of shield M, it will expand therewith, and thus hold work of larger internal diameter the same as the spindle alone will hold work of smaller diameter, as illustrated in Fig. 3.

I claim—

The combination of an expansible arbor A', and means for expanding and rotating the same, with an expansible sleeve S, mounted upon the arbor and arranged to be expanded by and with the arbor, as and for the purposes specified.

CHARLES H. BARTLETT.

Witnesses:

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