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W. G. LIEBIG.

SUPPORTING TABLE FOR BORING HOLES IN BRUSH BACKS.

APPLICATION FILED AUG. 3, 1906.

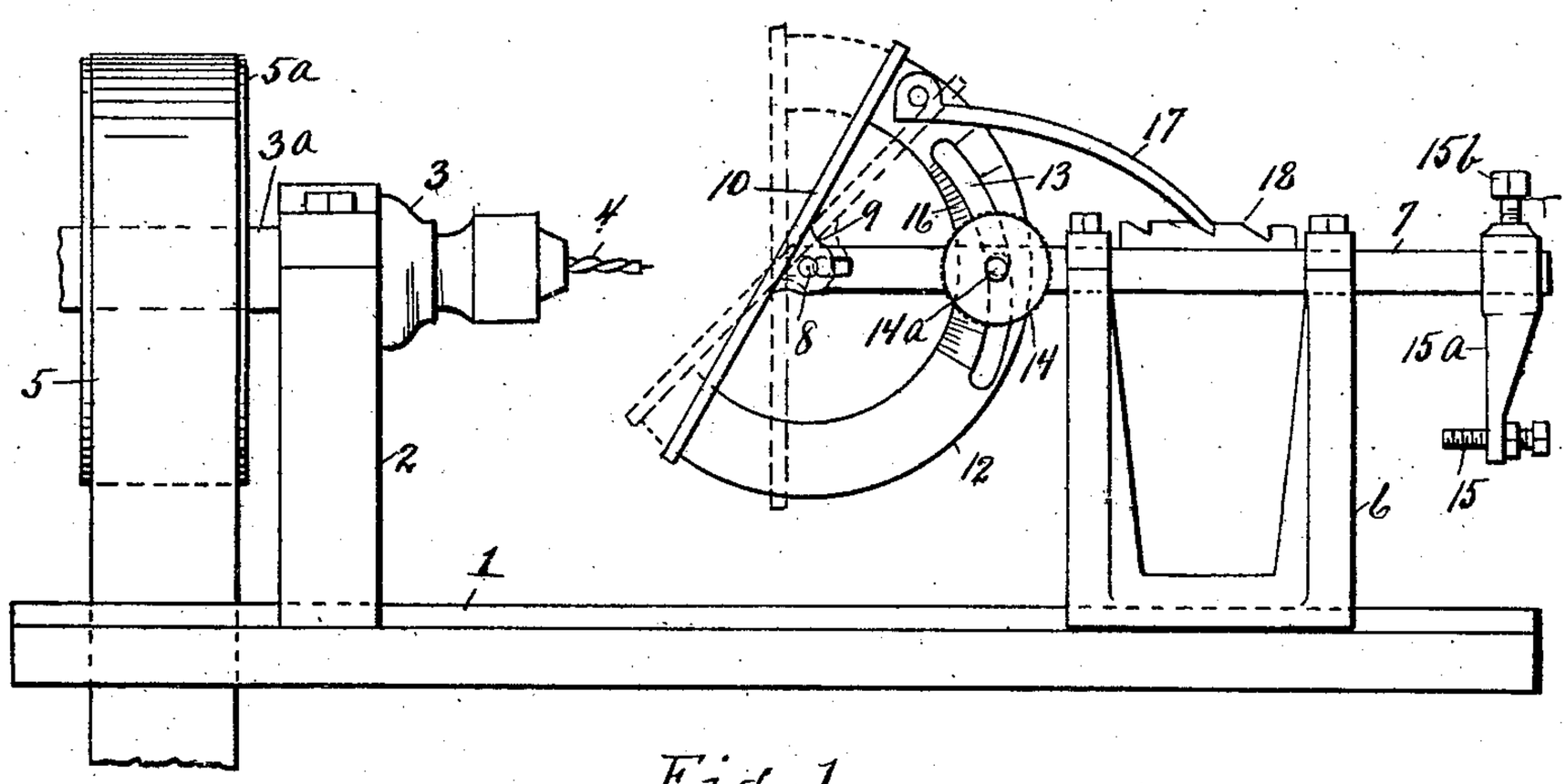

Fig. 1.

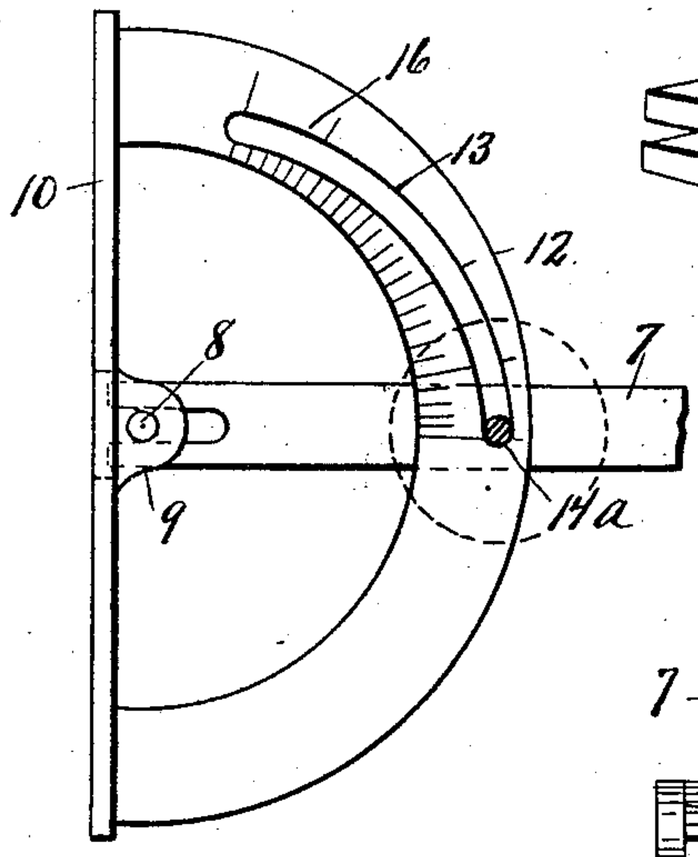

Fig. 2.

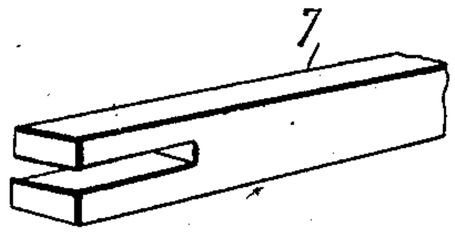

Fig. 5.

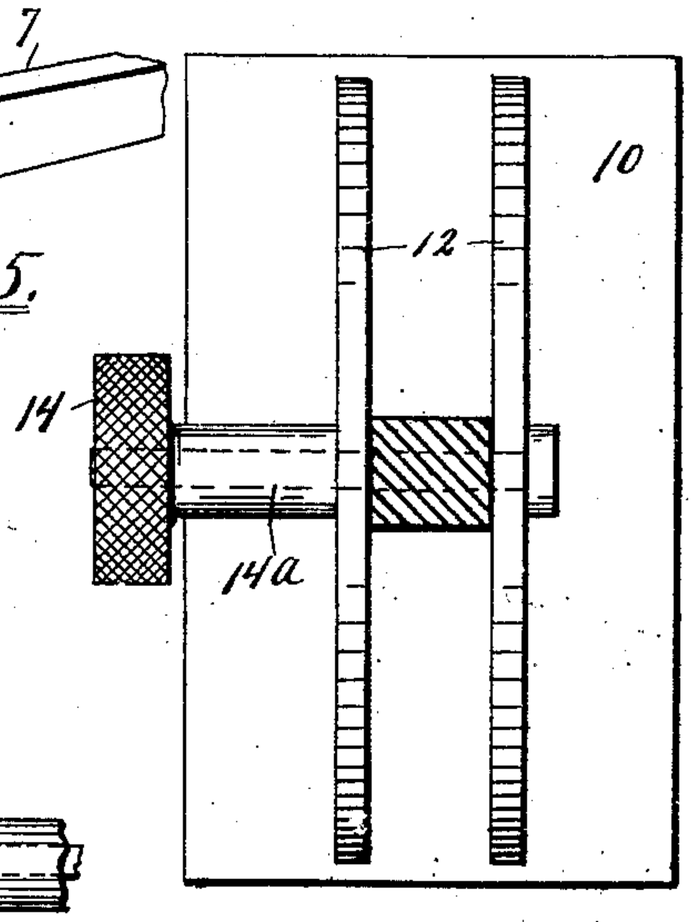

Fig. 3.

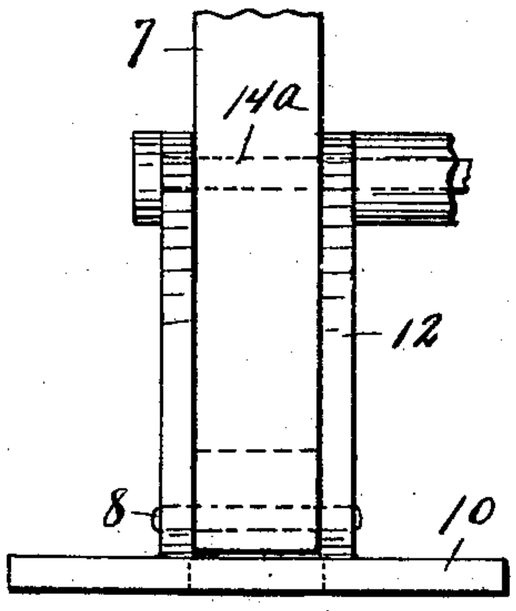

Fig. 4.

WITNESSES.
Alice Townsend.
Lotta Lee Hayton.

INVENTOR.
William G. Liebig
by Parker & Burton
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM G. LIEBIG, OF DETROIT, MICHIGAN.

SUPPORTING-TABLE FOR BORING HOLES IN BRUSH-BACKS.

No. 869,313. Specification of Letters Patent. Patented Oct. 29, 1907.

Application filed August 3, 1906. Serial No. 328,978.

To all whom it may concern:

Be it known that I, WILLIAM G. LIEBIG, who am a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Supporting-Tables for Boring Holes in Brush-Backs, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to adjustable supports for woodworking machines, and has for its object an improved supporting table or plate whereon wooden brush backs may be supported at any angle desired, while the holes in which tufts of bristles are to be inserted are being bored, without causing a variation in the depth of the holes bored because of such changes in angularity.

In the drawings:—Figure 1, is a side elevation of the supporting table and of enough of the adjacent mechanism to show its mode of operation. Fig. 2, is an enlarged view of the table and a part of its supporting shaft. Fig. 3, is a plan view of the table from beneath. Fig. 4, is a plan view of the table edge and parts adjacent, taken from above. Fig. 5, is an enlarged detail of the forked or slitted end of the table-supporting shaft.

1 represents a stationary bench from which rises the support 2, in which is horizontally journaled a rotatable head 3, carrying an auger 4. The shaft 3^a, of the head is rotated by the traveling belt 5 and fly wheel 5^a, (rigidly secured to the shaft), over which it passes. From the other end of the bench 1, rises the support 6, in whose upper end is slidably journaled the shaft 7. The forward end of this shaft is forked horizontally, to permit the longitudinally sliding engagement therein of the pin 8. The tongue 9 consists of two similar projections from the under face of the flat portion 10; the forked end of the shaft 7 fits closely between them, so tightly in fact that the entire brush supporting table is held from lateral wavering. Through holes in these tongues 9 and between the forked ends of the shaft 7 passes the pin 8, which constitutes the bearing which guides the horizontal motion of the entire portion 10 with respect to the end of the shaft 7. Extending from one end to the other of the under face of this plate or table is a semicircular arc 12, whose upper half, a quadrant, contains the slot 13, which extends through an apparently irregular course from a point near the outer edge of the arc at its center to about the same distance from the inner edge near its point of union with the flat portion 10. Its exact position upon the arc and its centering are, however, made a matter of very careful calculation and adjustment. Through this arc, passes the stem 14^a, of an adjusting screw 14, by means of which it and the plate 10 may be locked in position at any desired angle to the horizontal shaft 7.

If it be desired that the holes be bored perpendicularly to the surface of the brush back, the flat table 10 is arranged in exactly vertical position, the brush back rested thereon and held manually while the operator moves the table and its sliding shaft 7 toward the rotating auger 4, his position being preferably at the fly-wheel end of the bench, and facing toward the table with an arm on each side of the auger mechanism. When the hole is bored, the table and slidable shaft 7 are pushed back far enough to permit the moving of the brush back to a new position, when it is again advanced as before and a new hole bored. The table and shaft are prevented from advancing too far, and thus deepening the hole unduly by engagement of the stop 15, which is held in bracket 15^a, against the support 6. The position of the bracket 15^a, along the shaft 7 may be regulated by the screw 15^b.

If it be desired that the holes be bored in the brush back obliquely to its surface, the adjusting screw 14 is loosened and the table set at the angle desired, the graduated scale 16 making this an easy matter, when it is locked in position. It is further held in place by the engagement of the pivoted finger 17 in one of the teeth of the rack 18. The engagement of the pin or screw 14^a in the slot 13, combined with the sliding engagement of the pin 8 in the horizontally slotted or forked end of the shaft 7, operates to throw the plate 10 so that its supporting surface is exactly the same distance from the auger 4, as it was when perpendicularly adjusted, which would not otherwise be the case, since the exact pivotal center is not at this surface, but about the axis of the pin 8, as to which any point in the surface of the table 10 would be a peripheral point. By this means adjustment for distance from the auger point, after each adjustment for angularity of the table is avoided. As the degree of the table's displacement from perpendicularity is increased, the inclination of the slot 13 from the rear to the front edge of the arc 12 tends to draw the plate inwardly along the shaft 7, but at the same time this is automatically counteracted by the sliding of the pin 8 as permitted by the horizontally forked end of the shaft 7, and at all times an exact equilibrium of position is preserved.

What I claim is:—

1. In a machine for boring holes in brush backs, in combination with a supporting standard, a rotatable auger horizontally journaled thereupon, a longitudinally slidable shaft and a support therefor, its direction of possible travel being parallel with the longitudinal axis of said auger, and its forward end being forked horizontally, a table provided with an integral supporting arc fixed to its under surface, said table being slidably pivoted to the forked end of said shaft and said arc having therein an eccentric slot, a regulating pin passing through said slot and said shaft by whose engagement against the sides of the slot, as the table and arc are turned about

said slidable pivot as a center, the distance of the center of the supporting surface of the table from the end of the shaft is kept unchanged, and a stop governing the travel of said shaft and thereby of the pivot of said table for different depths of hole to be bored substantially as described.

2. In combination with a rotatable auger, said auger being otherwise fixed in position, a fixed horizontal guideway toward which said auger points, a shaft horizontally and slidably journaled therein, the end of said shaft nearest the auger being forked an abutment stop carried by that end of the shaft farthest from said auger, whereby the movement of the shaft may be limited, a table slidably pivoted in the forked end of the shaft, a semicircular arc piece extending from end to end of the non-engaging face of the table, said arc piece having an eccentric slot therein, and a controlling pin engaging through said slot and said shaft, whereby in combination with said slidable pivoting of the table the distance of its engaging face portion is maintained unchanged with respect to said shaft throughout the variety of positions at which it may be set, and a stop whereby the travel of said shaft and thereby of the pivot portion is regulated for various depths of holes to be bored substantially as described.

3. In combination with a longitudinally slidable supporting shaft, one end of which is slit horizontally, a brush back supporting table comprising a flat portion slidably pivoted to said slitted end of the shaft, a semicircular arc fixed to the under side of said flat portion, said arc having in it an eccentric guide slot, a holding pin passing through the shaft and said slot, whereby the distance of the flat portion from the body of the shaft is kept constant during its adjustment to various positions, and whereby it may be locked in place, and a regulating bracket adapted to control the travel of the shaft and thereby of the pivoted table for various depths of holes to be bored substantially as described.

4. The combination of a horizontally slidable shaft having one of its ends slit horizontally, a supporting plate provided with projections on its under face through which it is slidably pivoted to said slitted end, means whereby the travel of said shaft and thereby of the pivoted plate is controlled for various depths of hole to be bored a semicircular arc fixed to the ends of said supporting plate, said arc having an eccentric guide slot therein, and a locking pin whereby the arc and plate may be held in position, said pin being also adapted to cooperate by engagement through the slot, with the slidable pivoting of the plate in maintaining its engaging surface at a fixed distance from the body portion of the shaft at any position of angularity with respect to the shaft to which it may be adjusted, substantially as described.

5. In combination with a forked end of a shaft, a supporting table having an integral arc piece extending from end to end of its under surface, there being an eccentric slot extending through a portion of said arc, and a plurality of projecting tongues at the center of said surface, between which tongues the parts of said forked end engage, a pivot pin engaging through said tongues and between said forked portions whereby the table is slidably pivoted to the shaft, a regulating pin extending through said shaft and engaging through said eccentric slot, whereby the center of the engaging surface of the table as it is moved about said shaft is kept at the same distance from said end by its compensatory forward projection due to the eccentricity of said slot, said projection counteracting the tendency to a decrease of said distance as the angularity of said surface with respect to the shaft is changed from the perpendicular, and a stop governing the travel of said shaft and thereby of the pivot of said table for different depths of hole to be bored substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

WILLIAM G. LIEBIG.

Witnesses:

LOTTA LEE HAYTON,

WILLIAM M. SWAN.