F. E. LANG.

TURN TABLE FOR STONEWORKING MACHINES.

APPLICATION FILED APR. 29, 1914.

1,125,566.

Patented Jan. 19, 1915.

3 SHEETS—SHEET 1.

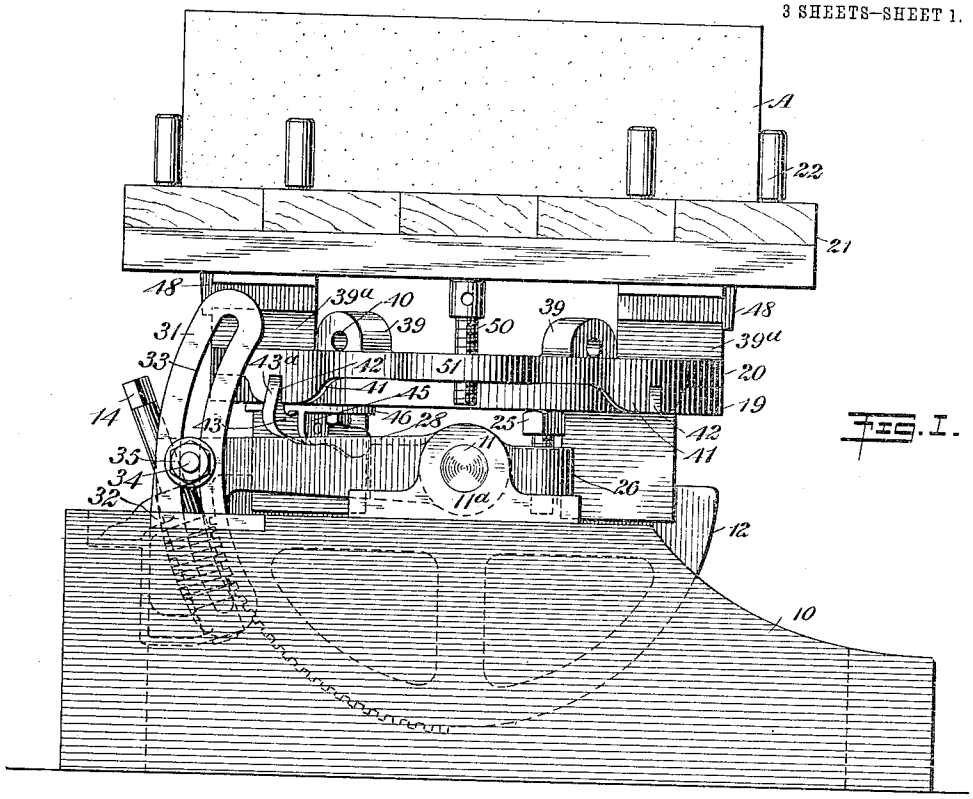


FIG. 1.

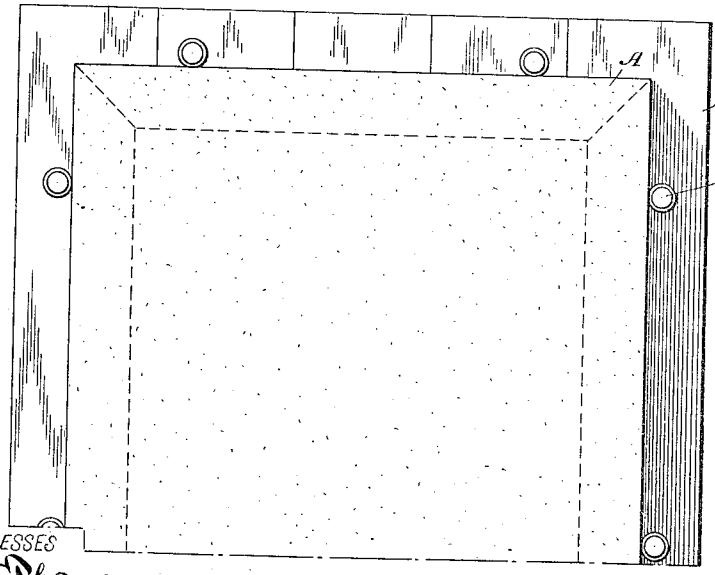


FIG. 2.

WITNESSES

G. Robert Thomas

J. L. McCulloch

INVENTOR

Frank E. Lang

BY Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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3 SHEETS—SHEET 2.

FIG. 3.

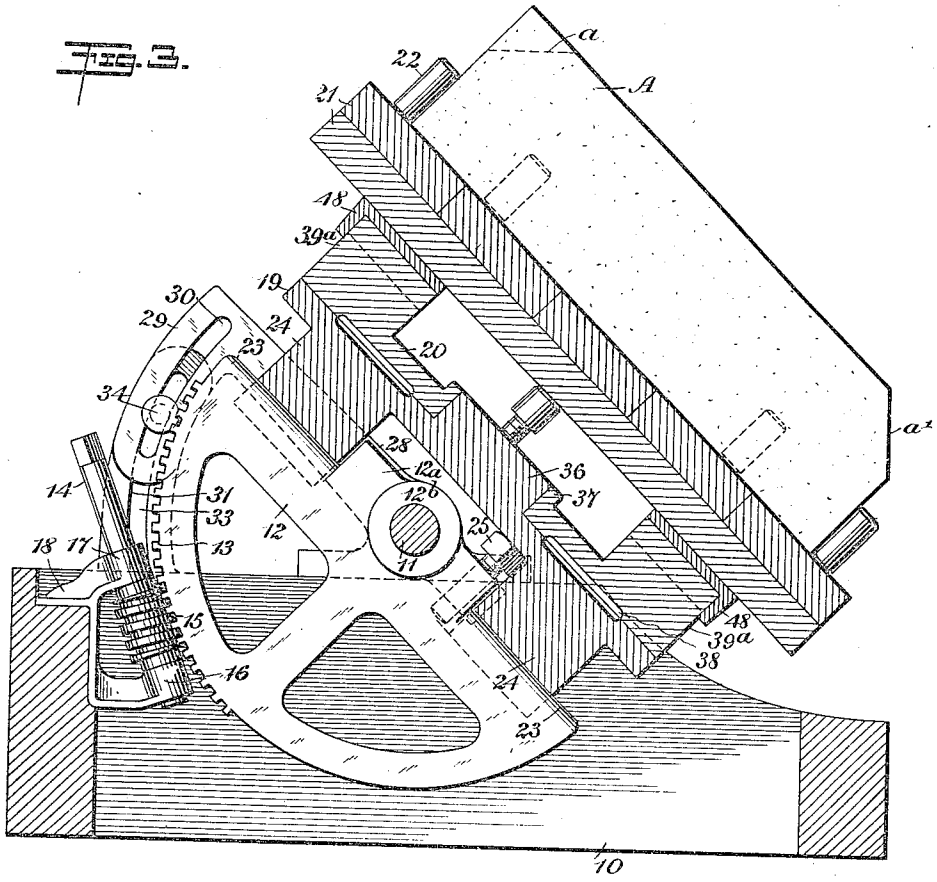
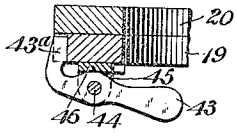


FIG. 5.



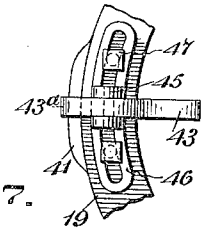


FIG. 7.

WITNESSES

G. Robert Thomas

J. L. McCluskey

INVENTOR

Frank E. Lang

BY Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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3 SHEETS—SHEET 3.

Fig. 4.

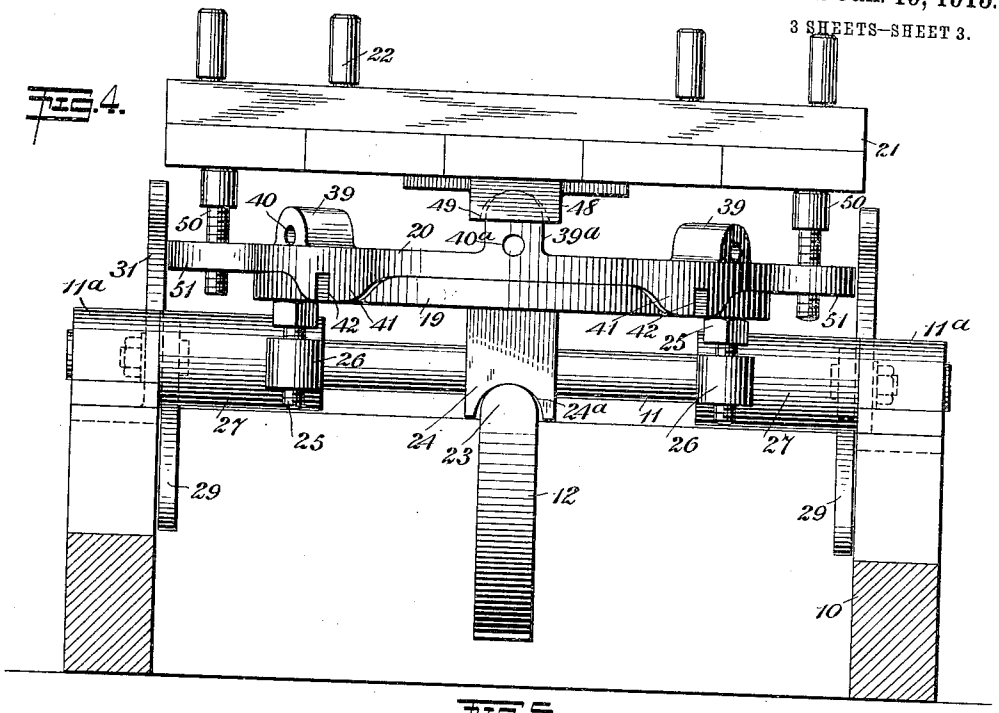
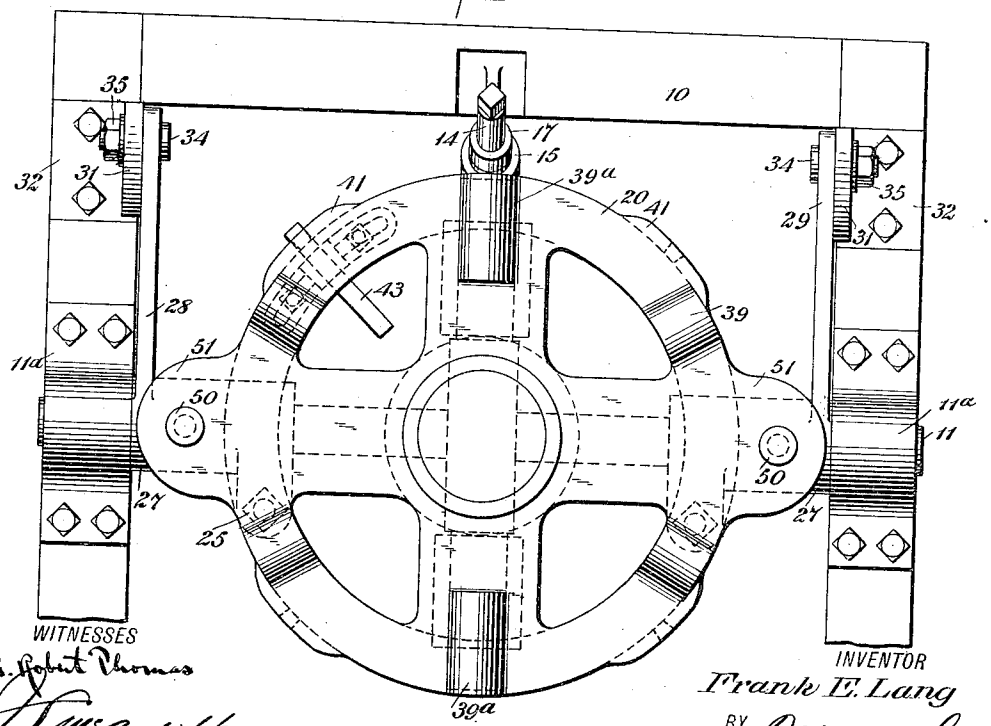


Fig. 5.



WITNESSES

G. Robert Thomas

INVENTOR

Frank E. Lang

BY Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK EDWARD LANG, OF BARRE, VERMONT.

TURN-TABLE FOR STONEWORKING-MACHINES.

1,125,566. Specification of Letters Patent. Patented Jan. 19, 1915.

Application filed April 29, 1914. Serial No. 835,175.

To all whom it may concern:

Be it known that I, FRANK E. LANG, a citizen of the United States, and a resident of Barre, in the county of Washington and State of Vermont, have invented a new and Improved Turn-Table for Stoneworking-Machines, of which the following is a full, clear, and exact description.

My invention relates to an adjustable turn-table designed to economize time and labor in handling stone to be finished under pneumatic surfacing, polishing machines, or under any similar machine that requires an adjustable table for the leveling and squaring of the stone, and the setting of the work at any angle.

A very large percentage of monumental stone cut in stoneyards and sheds, is of oblong shape, and these stones weigh from approximately eight hundred pounds to five thousand pounds. These stones are handled with a traveling crane, which usually is required to carry the stone to the surfacing machine, the stone being then set on blocks and the top leveled by driving wedges beneath the stone; the top surface of the stone is then cut with the operating arm of the surfacing machine. In order to cut the bevels or wash on the four sides of the stone by removing the arris, the crane is required to be returned four times, in the setting of the stone for the beveling, in addition to the initial trip for the top surfacing. Finally the crane is required ordinarily, to return a sixth time for the finished stone. All these operations require time and the employment of three or four men for the proper setting and adjusting of the stone.

The primary object of my invention is to provide a table whereby the operator can level and square the stone, and set the same at the required angles in a mere fraction of the time now required by several men.

In carrying out my invention, use is made of a suitable frame or support, on which a rock shaft has bearings and is provided with a fixed toothed sector at the under side, with which meshes a worm shaft to turn the sector through an angle. Means is provided to lock the sector and rock shaft in the positions to which they have been turned by the worm shaft. The sector rockably mounts a bed on which a turn-table is supported to turn relatively to the bed in addition to the rocking movement with the bed. On the turn-table is a stone-supporting table which may be rocked relatively to the turn-table in addition to the turning movement with the turn-table. The arrangement is such that the stone-supporting bed may be turned in its own plane through any desired angle, and may be rocked transversely to its own plane through any desired angle.

The invention will be more particularly explained in the specific description following.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is an end elevation of a stone working table embodying my invention, and indicating the stone supported on said table; Fig. 2 is a partial plan view; Fig. 3 is a transverse vertical section with the table tilted from the level position shown in Fig. 1; Fig. 4 is a side elevation with the parts disposed as in Fig. 1, the stone, however, being omitted; Fig. 5 is a plan view, the upper stone-receiving table being omitted to better show the parts beneath the same; Fig. 6 is a detail in transverse vertical section showing a latch to be hereinafter more particularly referred to; and Fig. 7 is an inverted fragmentary plan view of said latch.

In constructing the practical embodiment of my invention which is illustrated as an example, a suitable base or support 10 is provided, having a rock shaft 11 supported in bearings 11^a on said frame. Fixed on said shaft and depending from the under side is a sector 12, having worm teeth 13 is mesh with a worm 15 of a worm shaft 14, which turns in alined bearings 16, 17, on a bracket 18 secured to the frame 10. The worm shaft 14, as seen in Fig. 3, inclines downwardly, being tangential to the toothed sector 12. The sector 12 rockably mounts a

bed 19, carrying a turn-table 20, and said turn-table rockably mounts an upper stone-supporting table 21, which may be composed of crossed timbers, as indicated. Pins 22 may be driven into the upper surface of the table 21 around the stone A, after the latter has been positioned on said table.

To rockably support the bed 19 on the sector 12, the latter is formed with rounded bearing members 23 at opposite sides of the rock shaft 11, and on the under side of the bed 19 depending saddle members 24 are provided, presenting concave recesses 24ª (Fig. 4) receiving the rounded projections 23, and permitting the saddle members 24 to rock with the tilting of the bed 19. In order to tilt the said bed 19, I have shown in the present instance, screw studs 25, the heads of which bear against the under side of the said table. Preferably the studs 25 take into threaded lugs 26 produced on sleeves 27 keyed on the rock shaft 11 adjacent to the ends of the said shaft. Diametrically opposite the lugs 26, I form on the sleeves 27, arms 28 which extend at each side of the sector 12, at the same side of the shaft 11 as the worm shaft 14 is located. The arms 28 are utilized to lock the rock shaft and its sector in the positions to which they have been moved by the worm shaft 14. Thus the outer ends of the arms 28 terminate in down-turned arcuate members 29 having curved slots 30, and adjacent to the said arcuate members relatively fixed arcuate members 31 are provided, having curved slots 33 registering with the slots 30, said members 31 rising from brackets 32 secured to the top of the frame 10. Bolts 34 extend through the registering slots 30 and 33, and are provided with nuts 35 to bind the members 29, 31, in adjusted positions.

The upper side of the rockable bed 19 has a central boss 36 which is received in a corresponding eye 37 in the turn-table 20, so that the latter may be turned in its own plane relatively to the bed 19. Annular recesses 38 (Fig. 3) may be formed in the opposed surfaces of the bed 19 and turn-table 20 to reduce the contact surface. To make provision for turning the table 20 in its own plane, any practical number of protuberances 39 may be produced thereon, having holes 40 to receive a turning bar (not shown).

I provide latching means to lock the turn-table in position after having been turned through an angle in its own plane. The said means may consist of lugs 41 having vertical slots 42 opening from the under side. The table 20 may be turned to bring any particular slot 42 above a vertically rockable latch 43, which is pivoted as by a pin 44 between lugs 45 on a bracket 46 suitably geared as by bolts 47 to the under side of the rockable bed 19. The outer end 43ª of the latch is upturned to enter a registering slot 42.

The illustrated means for permitting a rocking movement of the upper stone-supporting table or bed 21, consists of rounded projections 39ª, which may be similar to the protuberances 39, and have holes 40ª similar to the holes 40 for receiving a turning bar. The protuberances 39ª are diametrically opposite each other and rise higher than the protuberances 39. The rounded upper sides of the protuberances 39ª receive saddles 48, having concave recesses 49, (Fig. 4) receiving the protuberances 39ª in a manner to permit the stone-supporting table 21 to be rocked. To rock or tilt the said table on the members 39ª, I have shown diametrically opposite adjusting screws 50, which take into peripheral lugs 51 on the turn-table 21.

With the described construction it will be seen that the stone may be leveled as in Fig. 1, for top surfacing, or the worm shaft 14 may be caused to turn the sector through any required angle, and thereby bodily tilt the complete supported structure, including the bed 19, turn-table 20, and upper stone table 21, as indicated in Fig. 3. This will dispose the stone A at the required angle for beveling, by removing an arris to the dotted line a to produce the bevel or wash, as indicated at a' (Fig. 3). The stone having been disposed at the proper angle for beveling, by turning the turn-table 20 on the bed 19, the four angles may be brought successively into position for the beveling. A universal movement is possible by reason of, first, the rocking of the sector with all the superposed structure; secondly, the rocking of the bed 19 and the members carried thereby relatively to the sector; thirdly, by the turning movement afforded by the turn-table 20; and fourthly, by the individual rocking of the stone-receiving table 21.

The improved apparatus enables a single operator to effect all the necessary adjustments without the use of wedges, and requires only that the crane perform the operations of bringing the rough stone to the table and removing the finished stone.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In an apparatus of the character described, a support, a rock shaft thereon, a toothed sector fixed on the shaft to be rocked in a vertical plane, a worm shaft meshing with the sector and having a bearing on said support, arms on the rock shaft at the sides of the sector and terminating in down-

wardly disposed arcuate members at opposite sides of the worm shaft, said arcuate members being formed of curved slots, fixed arcuate members on the support having slots registering with the slots of the first members, clamp bolts extending through the registering slots to hold the respective members in adjusted position, a bed rockable on the upper edge of the sector, said bed having concave bearing members at its ends, and the sector having mating members receiving the said concave members at opposite sides of the rock shaft, a turn table on said tiltable bed, means whereby to turn the table, means for locking the turn-table to the bed, to prevent turning, a stone-receiving table mounted on the turn-table to turn therewith and to be tilted relatively to the turn-table, and means for tilting the stone-receiving table.

2. In an apparatus of the character described, a rock shaft having a sector thereon, a bed supported on said sector to rock transversely to the rocking of the shaft and sector, a turn-table on said bed adapted to turn in its own plane and to rock with the bed, and a stone-receiving table rockably supported on the turn-table, to turn with the latter, and to rock relatively thereto.

3. In an apparatus of the character described, a rockable means, a turn-table supported to rock with said means and to turn in its own plane, and a stone-receiving table rockably supported on the turn-table, to turn with the latter and to rock relatively thereto.

4. In an apparatus of the character described, a rock shaft, means associated with said shaft to rock therewith, a turn-table mounted on said means to rock transversely to the rocking of the shaft and to turn in its own plane, and means supported on said turn-table to receive a stone to be dressed.

5. In an apparatus of the character described, a rockable means, a bed supported on said means to rock transversely to the rocking of said means, a turn-table on said bed, and a stone-receiving table mounted on said turn-table, to turn therewith and to rock thereon.

6. In an apparatus of the character described, a rock shaft, a sector on said rock shaft, means for actuating the sector, a bed supported on said sector to rock transversely thereto, a turn-table mounted on said bed to rock therewith, means whereby to turn the turn-table, means for locking the turn-table in different positions on said bed, and means supported on the turn-table for holding a stone to be dressed.

7. In an apparatus of the character described, a rock shaft, a sector fixed on said shaft, a bed supported on the sector and adapted to be tilted on the latter transversely to the rocking of the shaft and the sector, means adjustably supported on the rock shaft and engaging the bed, to tilt the latter on the sector, a turn-table mounted on said bed to rock therewith and to turn in its own plane, and stone-receiving means supported on said turn-table.

8. In an apparatus of the character described, a rock shaft, a sector fixed on said shaft, means engaging the sector, to rock the same, a stone-receiving table, means supported on the sector and supporting said stone-receiving table, to be turned or to be rocked transversely to the plane of turning, means for locking the rock shaft against turning, said locking means comprising an arm on the shaft, a relatively fixed arm adjacent to the first arm, and a device to fasten said arms in adjusted positions.

9. In an apparatus of the character described, a rock shaft, a sector fixed on said shaft, means for turning the sector, said sector having on the upper edge thereof rounded seats at opposite sides of the shaft, a bed having saddles at the under side presenting curved recesses conforming to the seats on the sector, adjusting screws at opposite sides of the sector and bearing against the under side of the bed, members on the shaft with which the said screws have threaded engagement, a turn-table mounted to rock on the said bed and to turn in its own plane, and stone-receiving means supported on said turn-table.

10. In an apparatus of the character described, a rock shaft, a sector fixed on said shaft, means for turning the sector, a bed supported on the upper edge of the sector to rock transversely to the rocking of the sector and shaft, sleeves on the shaft, lugs on the sleeves, adjusting screws taking into said lugs and bearing against the bed at opposite sides of the sector, stone-receiving means, means supporting said stone-receiving means to rock with said bed, arms on said sleeves at the side of the shaft opposite the lugs and adjusting screws, and means to lock said arms against movement.

11. In an apparatus of the character described, a rockable means, a bed supported on said means to rock therewith, a turn-table on said bed adapted to rock therewith and to turn in its own plane, a stone-receiving table, rounded projections on the upper face of the turn-table at diametrically opposite points, saddles on the under side of the stone-receiving table and rockably seated on said projections, and adjusting screws taking into the turn-table at opposite sides of the projections and saddles and engaging at their upper ends with the stone-receiving table.

12. In an apparatus of the character described, a sector mounted to rock, a bed mounted on said sector to rock transversely to the rocking of the latter, a turn-table mounted on the bed to rock therewith and to turn in its own plane, a stone-receiving means supported on the turn-table, and means for holding the turn-table in fixed relation to the bed, said means comprising a latch on the bed, and an annular series of members on the turn-table, either of which is adapted to be engaged by the said latch.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK EDWARD LANG.

Witnesses:
JAMES MACKAY,
MARY E. SEXTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."