

No. 622,816.

Patented Apr. 11, 1899.

J. E. LIPPINCOTT.

MACHINE FOR ETCHING, STAMPING, OR MARKING GLASSWARE.

(Application filed Feb. 23, 1898.)

(No Model.)

3 Sheets—Sheet 1

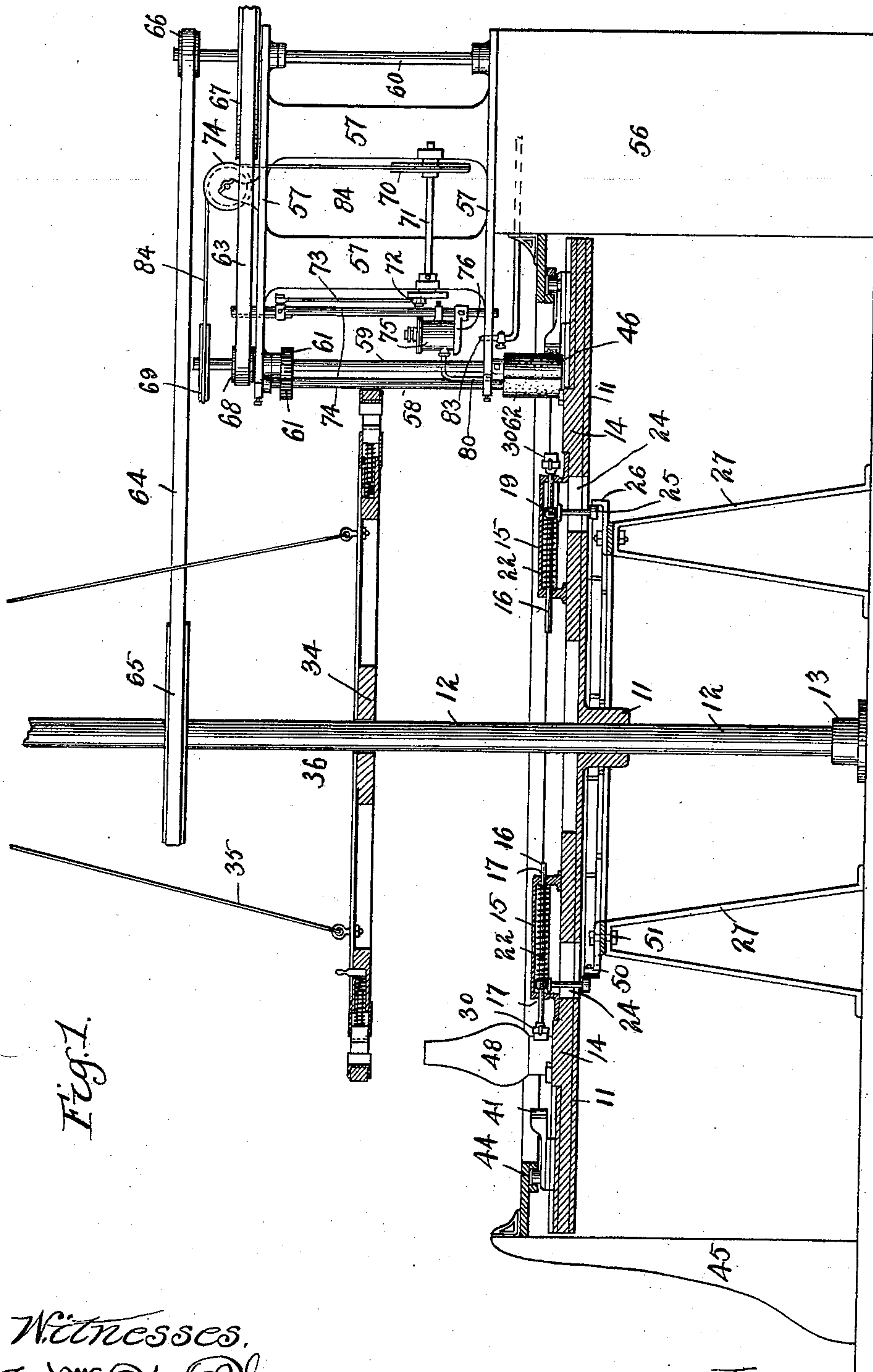


Fig. 1.

Witnesses.

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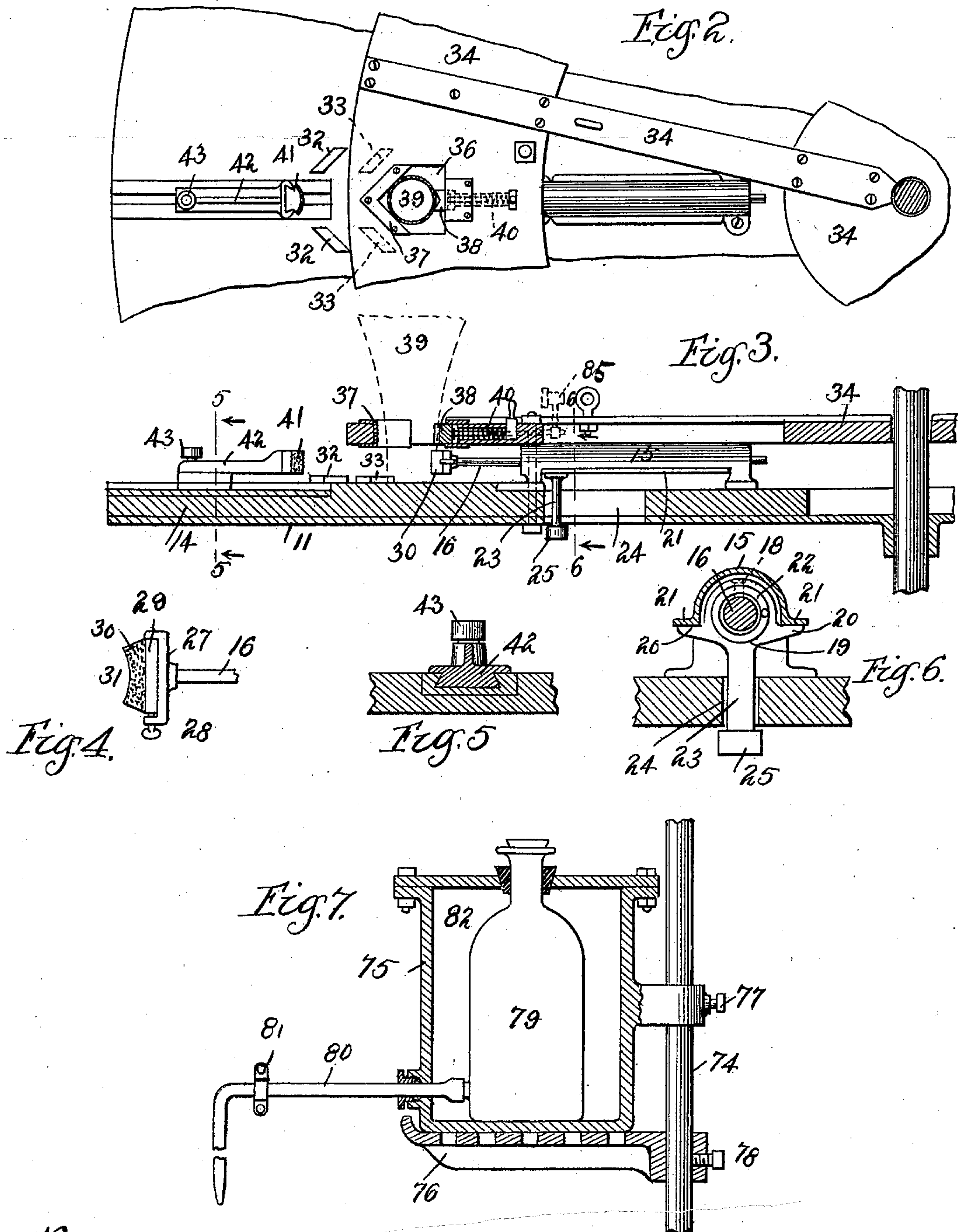
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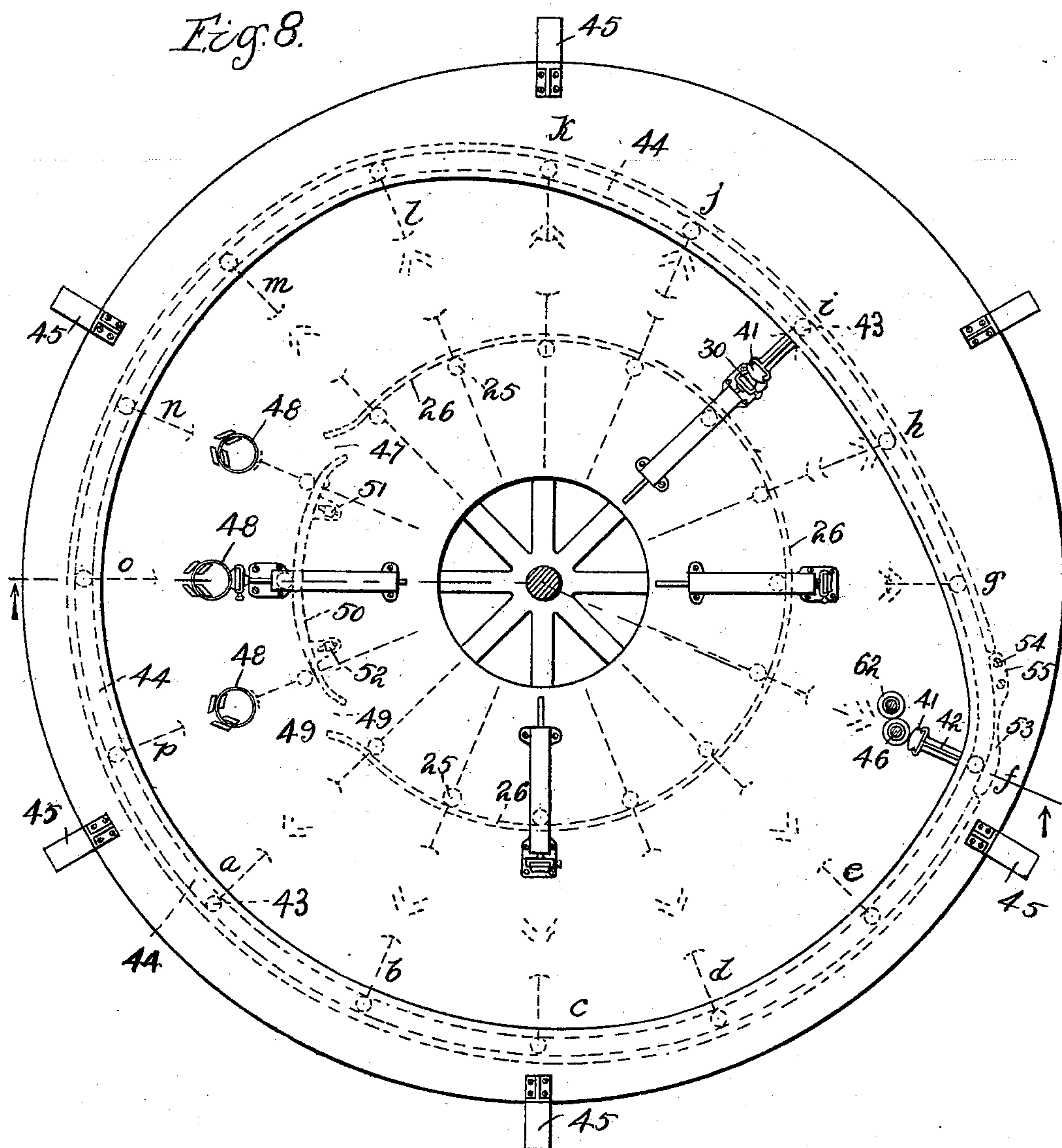
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

JASON EVANS LIPPINCOTT, OF ALEXANDRIA, INDIANA, ASSIGNOR TO THE LIPPINCOTT GLASS COMPANY, OF SAME PLACE AND CINCINNATI, OHIO.

MACHINE FOR ETCHING, STAMPING, OR MARKING GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 622,816, dated April 11, 1899.

Application filed February 23, 1898. Serial No. 671,335. (No model.)

To all whom it may concern:

Be it known that I, JASON EVANS LIPPINCOTT, a citizen of the United States, residing at Alexandria, in the county of Madison and State of Indiana, have invented a new and useful Machine for Etching, Stamping, or Marking Glassware, of which the following is a specification in its best form now known to me.

My invention relates to a machine for etching, stamping, or marking the tops or bottoms of lamp-chimneys, punch-tumblers, or other articles of glass, which is adapted to operate on articles having an approximately cylindrical or convex surface as well as other surface. While it may be used for etching or stamping any design upon such an article, it is particularly adapted to marking such articles with a crest or with a trade-mark of the maker.

It also consists in the features and details of construction hereinafter described and claimed.

The machine here described is one which I have used for marking lamp-chimneys; but I do not limit my invention to such use.

Figure 1 shows a side elevation of my machine, partly in section; Fig. 2, a detail view of an attachment for holding the tops of lamp-chimneys. Fig. 3 is a sectional side view of Fig. 2. Fig. 4 is a detail view of the stamp-pad. Fig. 5 is a view on line 5, and Fig. 6 a view on line 6, of Fig. 3. Fig. 7 is a sectional view of the acid-tank, and Fig. 8 a plan view showing the cams which control the acid and stamp pads.

In the drawings similar figures and letters represent similar parts throughout the several views.

11 is a large horizontal wheel mounted upon the vertical shaft 12, pivoted in the pedestal 13, and power is applied to the upper end of the shaft (not shown) to slowly revolve the wheel and shaft. The metal wheel has rigidly attached to its upper surface a covering of wood 14; but the entire wheel may be made of metal. Around the wheel, a little distance from the center and at equal circumferential distances apart, are rigidly secured the plunger-housings 15, having mounted therein the plunger-rods 16, adapted to slide

in and out through holes 17 in the ends of the housing. Fig. 8 shows a wheel adapted for sixteen of these plungers; but in practice any number may be used, and I have found most satisfactory a wheel with thirty-two such plungers. Each plunger has rigidly secured to it by a set-screw 18 (or any other convenient means) a yoke 19, having wings 20, adapted to slide back and forth on the under side 21 of the housing 15, thus preventing the plunger-rod from turning, while allowing it to slide in and out of the housing. The rod is forced outward from the center of the wheel by means of the coiled spring 22, surrounding the rod, bearing against the yoke 19 and the inner end of the housing 15. Projecting downward from yoke 19 and a part thereof is a rod 23, passing through slot 24 in the table and having at its lower end a roller 25, bearing against a circular cam 26, which is placed below the revolving table and rigidly supported and secured in position by the standards 27, secured to the floor of the room. As roller 25 is held against the inner face of cam 26 by spring 22 on plunger 16 when the wheel 11 is rotated, the roller 25 will travel along cam 26 and the plunger will therefore move in and out of housing 22 under the combined action of the cam and spring. The shape of the cam will be more fully described hereinafter.

At the outer end of the plunger-rod 16 is secured the clamp 27, in which is fastened, by means of thumb-screw 28, the block 29, bearing on its face the pad 30, made of sponge-rubber. The face of the pad is curved and adapted to fit the surface of the lamp-chimney or other surface which is to be stamped and bears the design 31, which is to be marked thereon. When a different-shaped article or a different design is to be marked, by loosening the set-screw 28 a properly-shaped stamp-pad may be placed on the plunger.

In front of each plunger and securely attached to the revolving table are two sets of blocks 32 and 33, respectively. These blocks 32 are at an angle and position adapted to have a large lamp-chimney placed between them and the stamp-pad and hold the chimney or other article while the chimney is being stamped. The inner blocks 33 are adapt-

ed to hold in the same way a smaller chimney, and they are so designed and placed as not to interfere with the use at a different time of a large chimney in blocks 32.

5 When it is desired to stamp the top of a chimney having a small top, it is necessary to hold the chimney more firmly (to prevent its tipping over) than blocks 32 and 33 will hold it. For this purpose I provide an auxiliary
10 wheel 34, which is adapted to fit over and be bolted to wheel 11, as shown in Figs. 2 and 3, when in use, and which may be raised up and out of the way and hung from any convenient support by cords 35 or other suitable
15 means. In this wheel 34 at intervals corresponding to the number of stamping-plungers and at positions in front of said plungers are holes 36, having the angular faces 37, adapted to receive and center the top of a
20 lamp-chimney. Opposite these faces is the spring-plunger 38, adapted to be forced against the chimney 39 by spring 40, thus holding the chimney securely in position in front of the stamping-plunger for marking
25 by stamp 30. This arrangement is also necessary, because blocks placed close enough for a small chimney would be in the way of the acid-plunger. At the rear of the spring-plunger 38 and connected therewith is a roller
30 85, and by placing a cam (not shown) similar to cam 44 above this auxiliary wheel the grip of the plunger upon the chimney in the opening of the wheel may be automatically made and released, so that chimneys may be put in
35 up to position *n*, will be held in passing positions *n* to *p*, and will be released after passing that point.

In order to have the stamping or etching properly done, it is necessary that the stamp-design 31 should receive a fresh coating of
40 acid just before it comes in contact with the article to be marked, and I do this by means of the acid-pads hereinafter described.

Around the outer edge of the wheel 11 and
45 directly opposite each stamping-plunger is radially placed an acid-pad 41, mounted on a carriage or plunger 42, adapted to slide back and forth in guides or ways in the wheel 11. At the rear of the carriage or plunger 42 is a
50 roller 43, adapted to move in the circular cam 44, which is rigidly secured slightly above the wheel to the supports 45, rising from the floor outside the wheel 11.

46 is an acid-roller, (mounted, and to which
55 acid is supplied, as hereinafter described,) against which each acid-pad 41 in succession presses as wheel 11 revolves and receives a coating of acid.

a to *p*, inclusive, represent successive positions of each stamping-pad and its corresponding acid-pad, and under control of cams 26 and 44 these pads move as follows as wheel 11 slowly revolves: At position *a* the stamping-pad is at its inside position and the acid-
60 pad at its outside position with reference to the center of the wheel, (shown by dotted lines, Fig. 8,) and as the wheel revolves they

remain in this position until position *f* is reached, where acid-pad 41 passes over acid-roller 46 and receives a coating of acid and
70 then begins to move in toward the center of the wheel, until at position *i* it comes in contact with stamping-pad 30 and gives it a coating of acid, and then moves outward again,
75 until at position *m* it reaches its original distance from the center of the wheel, (stamping-pad 30 having remained at the center of the wheel from *a* to *m*,) and it continues to travel in this position back to starting-point *a*. Between positions *m* and *n* there is an opening
80 in cam 26, and in passing from *m* to *n* the spring 22 forces the plunger 16 outward, so that roller 25 passes through opening 47 to the outside of cam 26 at position *n*, thus forcing the stamping-plunger against lamp-chimney
85 48, (or other article to be stamped,) where it is held until after passing position *p*, when the roller 25 moves through opening 49 back to its original position on the inside of the cam 26 at point of starting *a*. The articles
90 to be marked are placed on the wheel at positions *l* and *m*, are stamped in passing through positions *n*, *o*, and *p*, and are removed at or before position *e*.

It is evident that the stamping-pads may
95 be arranged around the outside of the wheel and the acid-pads arranged around the center of the wheel, or one pad may be made to travel in substantially a circle and the other pad do all the traveling backward and forward without changing the character of my
100 invention.

The part 50 of cam 26 which is between the positions *n*, *o*, and *p*, where the stamping is done, is a piece of spring-steel fastened
105 near its ends by bolts 51 and 52 or other means, so as to curve outward and form a spring as well as a cam to hold the stamping-pad 30 securely against the article to be marked. The spring may be adjusted by having slots where
110 bolts 51 and 52 pass through it into the support 27, thus allowing the cam to be adjusted to the proper position before the bolts are tightened. 53 is another piece of spring-steel fastened at 54 and 55 on the outside of cam 44,
115 and is adapted to yield as acid-pad 41 passes over roller 46 and cause the roller to press with substantially the same force against all parts of the pad, thus giving it a uniform supply of acid.
120

At one side of the wheel at position *f*, as shown in Fig 8, mounted on a stand or support 56, is the framework 57, on which are mounted the vertical shafts 58, 59, and 60. The two former overhang wheel 11 and are
125 geared together at their upper ends by gears 61 and carry on their lower ends the acid-roll 46 and a spreading-roller 62. These two rollers just clear the wheel 11 and roll together so as to spread any acid which may be on either evenly
130 on both. Shaft 59 is belted to shaft 60 by belt 63, and shaft 60 is belted to shaft 12 of main wheel 11 by belt 64. The respective pulleys 65, 66, 67, and 68 are so designed that

the surface speed of acid-roller 46 will be substantially the same as the surface speed of each acid-pad 41 as it passes over the roller when wheel 11 rotates, thus removing all chance of the rollers injuring the pad.

At the upper end of shaft 59 is a horizontal pulley 69, and 70 is a vertical pulley, over both of which a twisted belt 84 passes. 74 is an idle pulley, over which this belt also passes. Pulley 70 is attached to horizontal shaft 71, mounted on frame 57. At the opposite end of shaft 71 is a crank 72, connected by crank-rod 73 to a vertical rod 74, which is adapted to slide up and down in frame 57. The proportions of pulleys 69, 70 and crank 72 are such that rod 74 will be rapidly moved up and down, thus shaking up acid-tank 75 upon shelf 76, attached to said rod 74. The tank and shelf are adjustable up and down on the rod by means of set-screws 77 and 78. The tank 75 is made, preferably, of metal, is water-tight, and contains a rubber acid-bottle 79, corked so as to be air-tight. The bottle 79 has a rubber tube 80 leading from it to a point directly over acid-rollers 46 and 62, so as to drop acid upon said rollers, to be distributed over them and conveyed by roller 46 to acid-pad 41. 81 is a clamp adapted to control the flow of acid. As the acid-bottle is tightly corked and the opening in the rubber tube is very small, the acid will be held in it by air-pressure, except when the bottle is shaken, when the acid will be thrown out in small quantities. The bottle 79 is surrounded with water 82, which is kept hot by a gas-flame issuing from the jet 83, thus causing the acid to flow more easily upon the rollers and acid-pads and act more readily upon the article to be marked.

A system of gearing may be substituted for the belts shown for driving the acid-rolls and shaking the acid-bottle without changing the character of my invention. An air-blast may be supplied by a tube connected with any suitable blower to blow the drops of acid as they fall from the end of tube 80 upon the distributing-rollers 46 and 62.

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

1. The combination of a rotating wheel, means for securing an article to said wheel, a stamping-pad mounted radially upon said wheel and means for moving said stamping-pad along the radius of said wheel as it revolves into and out of contact with said article, whereby said article is marked, stamped or etched.

2. The combination of a rotating wheel, means for securing an article to said wheel, a stamping-pad mounted radially upon said wheel, means for applying acid or other marking material to said stamping-pad, and means for moving said stamping-pad along the radius of said wheel as it revolves into and out of contact with said article, whereby said article is marked, stamped or etched.

3. In a machine of the class described, in combination, a wheel, means for temporarily securing a glass article thereto, one or more radial plungers mounted upon said wheel, stamping-pads at the outer ends of said plungers, means whereby, as the wheel revolves, a plunger is caused to move outward during a portion of the revolution of said wheel and force its stamping-pad in contact with an article placed on said wheel opposite its stamping-pad, and means for causing said plunger to withdraw from said article during the remainder of the revolution of said wheel.

4. In a machine of the class described, the combination of a wheel, a plurality of stamping-plungers, each bearing a stamping-pad, arranged radially about the center of said wheel, an equal number of acid-plungers, each bearing an acid-pad, arranged around the outer edge of said wheel, substantially opposite said stamping-plungers, means whereby at one point in the revolution of said wheel each acid-pad is brought in contact with its stamping-pad, and means whereby at another point in the revolution of said wheel each stamping-pad is held in contact with an article temporarily placed upon said wheel whereby said article is stamped, marked or etched.

5. In a machine of the class described, the combination of a wheel, one or more stamping-pads arranged radially around the center of said wheel, another pad bearing acid or other stamping material substantially opposite each stamping-pad, means for causing each pair of pads to come in contact with each other at one point in the revolution of the wheel, and means whereby during another portion of the revolution of said wheel said stamping-pad is forced into contact with an article to be marked, whereby said article is stamped, marked or etched.

6. In a machine of the class described, the combination of a wheel, one or more stamping-pads arranged radially around the center of said wheel, another pad bearing acid or other marking material substantially opposite each stamping-pad, means for supplying stamping material to said second-mentioned pad, means for causing each pair of pads to come in contact with each other at one point in the revolution of the wheel, and means whereby during another portion of the revolution of said wheel said stamping-pad is forced into contact with an article to be marked, whereby said article is stamped, marked or etched.

7. In a machine of the class described, the combination of a wheel, one or more stamping-pads arranged radially around the center of said wheel, another pad bearing acid or other marking material substantially opposite each stamping-pad, two or more distributing-rollers in contact with each other against one of which each acid-pad passes in one revolution of said wheel, means for supplying marking material to said rollers, means

for causing each pair of pads to come in contact with each other at one point in the revolution of the wheel, and means whereby during another portion of the revolution of said wheel said stamping-pad is forced into contact with an article to be marked, whereby said article is stamped, marked or etched.

8. In a machine of the class described, the combination of a wheel, one or more stamping-pads arranged radially around the center of said wheel, another pad bearing acid or other marking material substantially opposite each stamping-pad, two or more distributing-rollers in contact with each other against which each acid-pad passes in one revolution of said wheel, a tank containing marking material at one side of said wheel, adjacent to said rollers, means for shaking said tank whereby marking material in small quantities is conveyed to said rollers, means for causing each pair of pads to come in contact with each other at one point in the revolution of the wheel, and means whereby during another portion of the revolution of said wheel said stamping-pad is forced into contact with an article to be marked, whereby said article is stamped, marked or etched.

9. In a machine of the class described, the combination of a rotating wheel, one or more plungers, each bearing a stamping-pad, mounted thereon, a spring adapted to force said plunger in one direction, and a cam adjacent to said wheel adapted to force said plunger in the opposite direction, whereby as said wheel revolves said plunger (and its stamping-pad) is moved backward and forward.

10. In a machine of the class described, a wheel, a housing attached to said wheel, a plunger mounted in said housing, a yoke attached to said plunger extending through a slot in said wheel, a spring surrounding said plunger between said yoke and one end of said housing adapted to force said plunger outward through the end of its housing, and a cam adjacent to said wheel adapted to act on said yoke and move said yoke and plunger back against the action of said spring.

11. In a machine of the class described, the combination of a rotary wheel having a marking apparatus attached thereto, the cam made in two parts (26 and 50) with openings 47 and 49 between them substantially as

shown, and a roller attached to said marking apparatus adapted to travel along said cam through said openings, whereby during a portion of the revolution of the wheel the marking apparatus is forced against the article to be marked and is withdrawn during the remainder of the revolution, substantially as described.

12. In a machine of the class described, in combination with a rotating wheel, a plunger adapted to be moved backward and forward along a radius of said wheel as it revolves, a clamp on the end of said plunger, a block bearing a stamping-pad having on its face a design, adapted to be marked upon an article, and means for fastening said block in said clamp.

13. In a machine of the class described, a rotating wheel, a cam adjacent to said wheel adapted to control the motion of acid-pads upon said wheel, one or more rollers adjacent to said wheel adapted to supply acid to said pads, in combination with means in the side of said cam opposite said rollers whereby as each pad passes over the roller the pressure of contact of said roller at all parts of the pad is substantially equal.

14. In a machine of the class described, in combination with one or more spreading-rollers, a substantially air-tight acid-tank adjacent thereto, means for shaking said tank whereby acid is delivered from said tank to said rollers.

15. In a machine of the class described, the combination of an auxiliary wheel adapted to be attached to and detached from said machine, openings in said wheel adapted to receive and center an article to be marked, and means at one side of said openings for holding said article in said opening of said wheel.

16. In a machine of the class described, the combination of a tank, a bottle substantially air and water tight containing acid, means adapted to conduct acid, leading from said tank or bottle to distributing-rolls, another tank, filled with water, surrounding said first-mentioned tank, means for shaking said tanks whereby acid is delivered to the distributing-rollers.

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