S. COOPER.

BUFFING MACHINE.

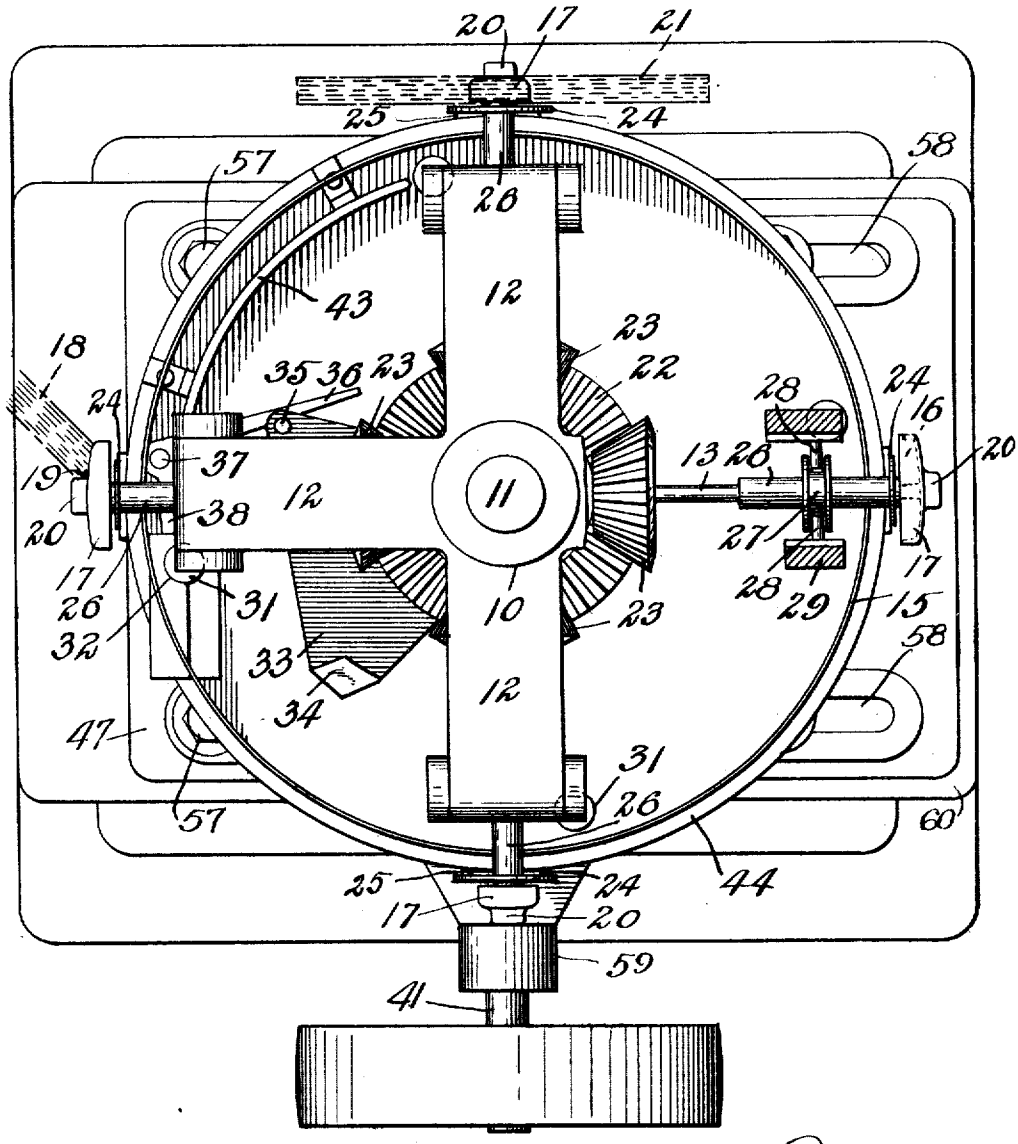
APPLICATION FILED AUG. 24, 1916.

1,267,634.

Patented May 28, 1918.

4 SHEETS—SHEET 1.

Fig. 1.



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By his Attorney

Frank X Kent

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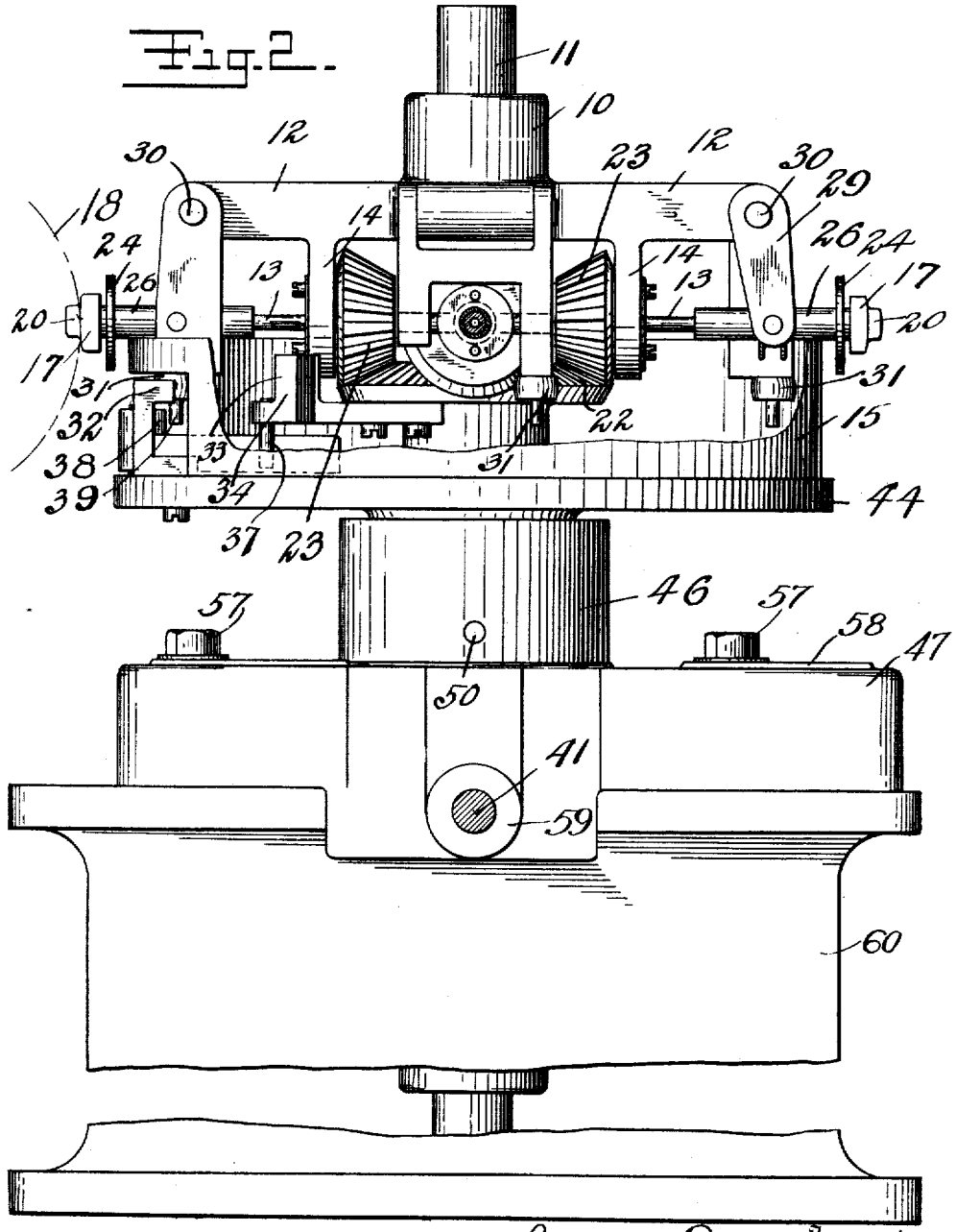
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4 SHEETS—SHEET 2.

Fig. 2.



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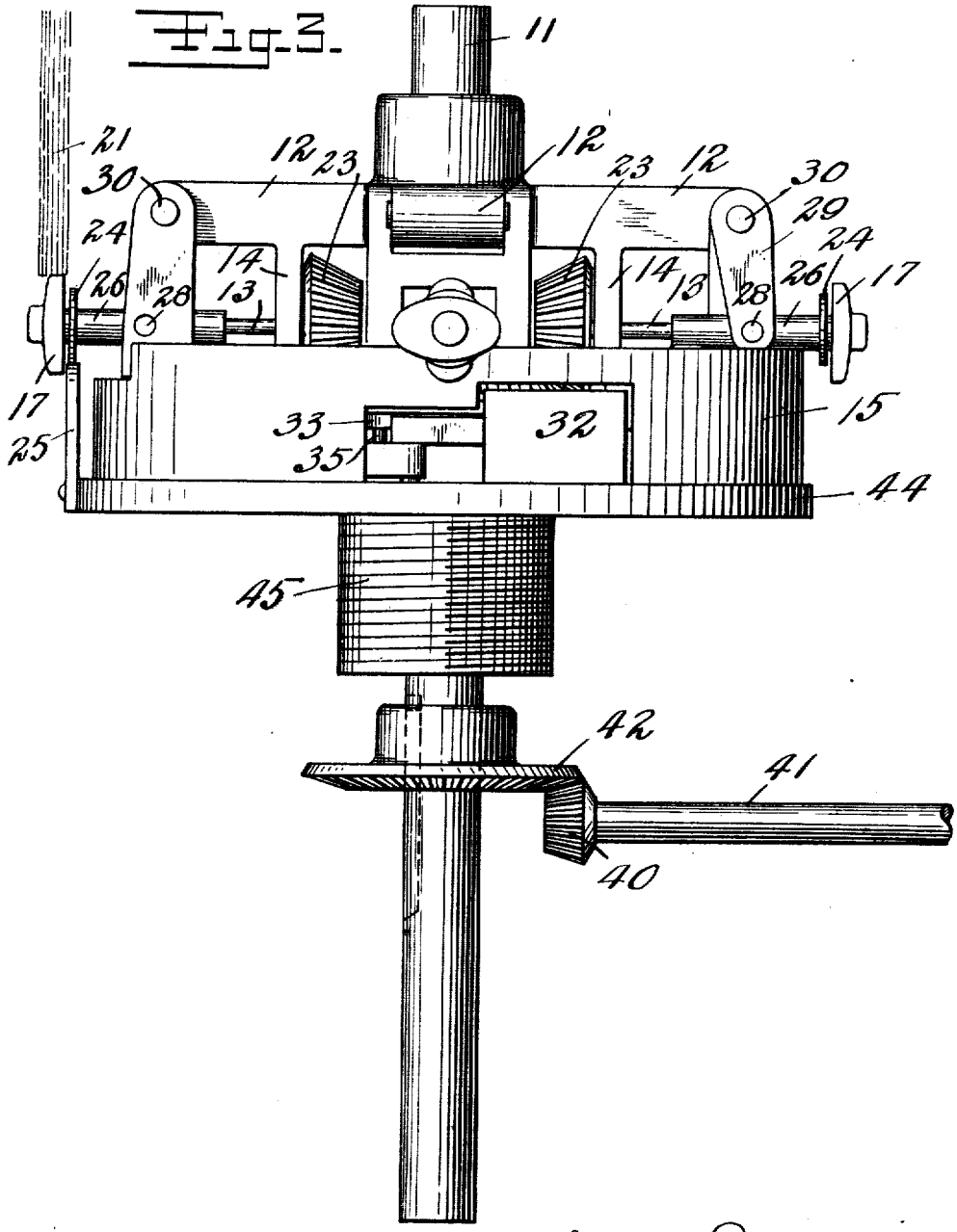
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4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

Fig. 4.

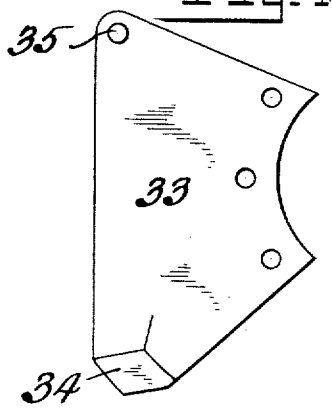


Fig. 5.

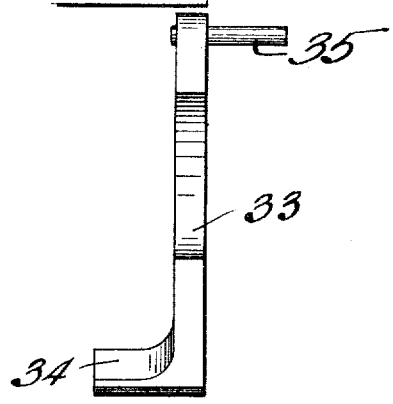


Fig. 6.

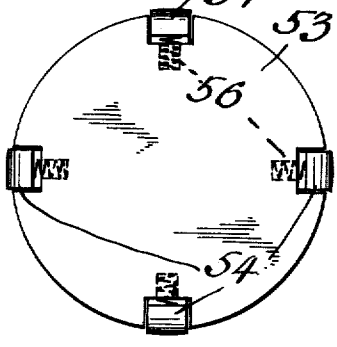


Fig. 7.

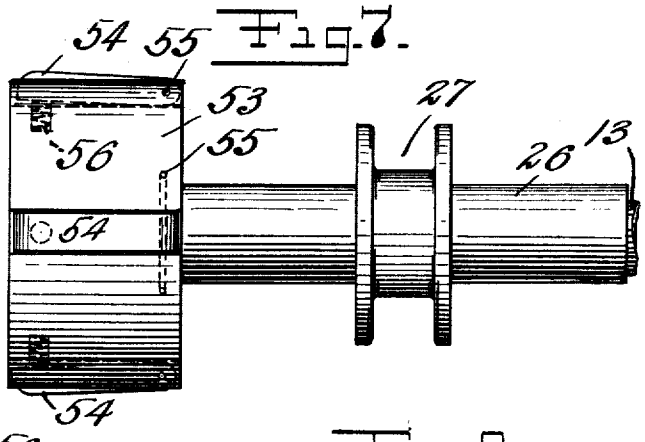


Fig. 8.

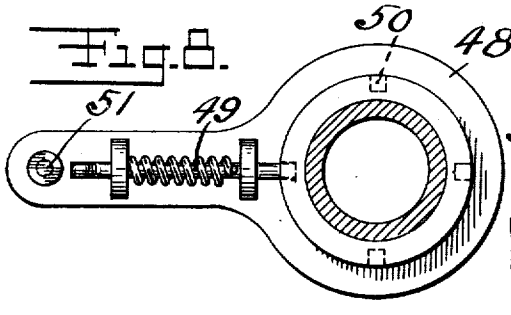
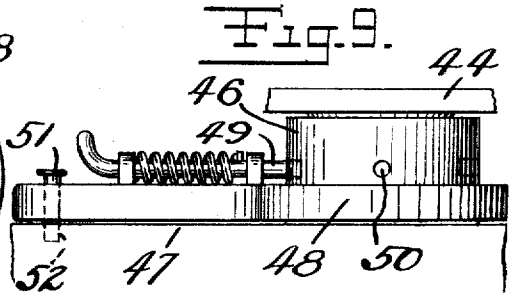


Fig. 9.



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Simon Cooper

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UNITED STATES PATENT OFFICE.

SIMON COOPER, OF NEW YORK, N. Y., ASSIGNOR TO BRASS GOODS MANUFACTURING CO., OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

BUFFING-MACHINE.

1,267,634. Specification of Letters Patent. Patented May 28, 1918.

Application filed August 24, 1916. Serial No. 116,590.

To all whom it may concern:

Be it known that I, SIMON COOPER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Buffing-Machines, of which the following is a specification.

This invention has for its object to provide a machine for automatically, economically and expeditiously polishing or otherwise treating objects such as can tops and the like, and particularly objects of an irregular or unusual shape such as the elliptical form of tops now used to a large extent on toilet powder cans.

A special object is to insure the reaching of all portions of the articles by the polishing or other finishing device.

Other objects are to firmly hold the articles being worked on and to enable the setting of the machine to meet different requirements.

In the accomplishment of the foregoing and other objects, such as will later appear, I employ a rotating turret for carrying the articles past the polishing or other device or devices and provide special means for holding the articles properly related to such device or devices. The turret is given an intermittent motion by special locking and tripping devices and the article supports are given a movement toward and away from the finishing device or devices.

The other features and details of structure will appear as the specification proceeds, attention being directed to the accompanying drawings forming part hereof, wherein I have illustrated the invention embodied in a concrete and practical form.

In the drawings, Figure 1 is a top plan view of the machine with one of the swinging locking and shifting devices shown in section; Fig. 2 is a broken side view of the same, with parts shown in section; Fig. 3 is a view at right angles to the plane of Fig. 2, showing the turret portion of the machine removed from its base; Figs. 4 and 5 are plan and side views respectively of the tripping and impelling device; Figs. 6 and 7 are end and side views of a form of gripping mandrel or support for objects of regular or round outline; Figs. 8 and 9 are plan and side views of a special construction of wrench for raising or lowering the turret.

Referring now to the drawings more in detail, 10 designates the turret, shown here in the form of a spider, journaled on the upright shaft 11 and having radiating arms 12 which support the radially extending shafts 13, said shafts being journaled at their inner ends in brackets 14 dependent from the spider arms and supported at their other ends by a track or rail 15.

These radial shafts 13, carry supports 16, adapted to receive and hold the articles under treatment, said articles being here shown as sifter powder can tops 17 of general elliptical form, and said supports being shown shaped to form mandrels over which the tops are frictionally engaged.

In the machine illustrated, the can tops are operated on at two points; at the first point by a rotary polishing brush indicated at 18 disposed at about a 45 degree angle to the axis of the supporting shaft so as to work in the angle 19 formed at the junction of the elliptical top, and the substantially round sifter portion of the cover, and at the second point by a brush indicated at 21 disposed substantially at a right angle to the axis of the shaft so as to work on the rim or skirt portions of the can tops.

The supporting shafts are rotated to present all sides of the articles to the brushes, in the present disclosure by a crown gear 22 on the shaft 11 engaging pinions 23 on the inner ends of the supporting shafts.

In order to bring all portions of the irregular shaped articles into the range of action of the brushes or operating devices, I provide cams or supports 24 on the radial shafts corresponding in outline to the shape of the articles and arranged by engagement with the track 25 to shift the article-supporting shafts toward the brush, said cams being disposed with their high points or major axes in the planes of the low points or minor axes of the articles so as to bring the low points of the articles up into the plane of the brush and similarly lower the high points of the articles so they will be properly engaged by the brush.

The articles are further, in the machine illustrated, shifted toward and away from the brushes by mounting the mandrels or article supports on sleeves 26, slidingly keyed on the supporting shafts and grooved at 27 to receive the pins 28 of the shipper forks 29 which are pivoted on the spider

arms at 30. These shipper forks act also in the capacity of detents, being shown provided with rollers 31 to engage in a socket at 32 forming a keeper therefor.

The turret is given an intermittent rotation by means consisting in the present disclosure of an arm 33 outstanding from the drive gear 22 and carrying an upstanding lug 34 to engage the shipper forks, said arm carrying also a dependent pin 35 located in advance of said lug and disposed to engage a lever 36 pivoted at 37 and having an arm 38 arranged to engage the studs 39 (Fig. 2) on which the rollers 31 are mounted.

The upright shaft is driven by suitable means such as a bevel pinion 40 on the pulley shaft 41, meshing with a bevel gear 42 on the upright shaft, said pulley shaft being journaled in a lug 59 on the lower side of the base 47.

In Fig. 1 the trip pin 35 is shown in the act of operating the lever 36 to withdraw the detent carried by the swinging yoke 29 from the keeper 32, this yoke serving by the connection 27—28 to retract the article supporting sleeve 26 to carry the article inward out of the sphere of action of the brush. In this movement the yoke is swung into the plane of engagement by the impelling lug 34 which, as it engages the yoke, imparts rotative movement to the same and so to the turret which supports it. As the turret commences to rotate and the pin 35 leaves the trip lever 36, the yoke is held from again swinging outward and out of engagement with the driving lug 34 by the detent roll 31 coming into engagement inside a retaining track 43 which extends a distance sufficient for the turret to be carried far enough to bring the next set of articles into the planes of the brushes, at which point the next detent engages the keeper and the turret is thus again locked until the upright shaft completes another revolution and then trips and rotates the turret for another part-revolution. The continued rotation of the upright shaft during the periods of rest of the turret, rotates the article-supporting spindles, and this and the action of the patterned supports or cams causes all portions of the can tops or other articles to be presented to the brushes.

Adjustment of the turret with respect to the brushes is provided for by here making the relatively stationary base 44 for the turret, which supports the tracks 15—25, with a threaded stem or shank 45 which is surrounded, by a threaded sleeve 46 and which has a bearing against the sliding base 47 of the machine so that it may act in the capacity of a nut for bodily raising and lowering the turret. The manipulation of this adjusting and supporting sleeve is facilitated by the provision of a special form of wrench 48 encircling the sleeve and carrying a spring-pressed plunger 49 which takes into openings or recesses 50 provided for that purpose in the sleeve. Provision is made for securing the wrench so as to lock the sleeve in adjusted position in the form of a locking pin 51 to engage in a locking seat 52 in the base.

For purposes of adjustment the sliding base 47 is shown provided with longitudinal slots 58, receiving bolts 57 which secure it to a main base 60 so that when the brush 18 has become worn, the bolts 57 can be loosened and the sliding base be moved toward the brush to obtain proper pressure of the brush upon the article.

In Figs. 6 and 7 I have illustrated a special form of mandrel or support for round or regular shaped objects, wherein the mandrel body 53 carries a series of gripping devices or fingers 54, pivoted at 55 and thrust outwardly in position to engage an object placed over the mandrel, by springs 56. These article supports are mounted on sleeves 26, as before described, so that different forms of mandrels or article supports may be substituted to adapt the machine for handling articles of different shape.

I claim:

1. In a machine of the character set forth, the combination of a revolving turret, radially extending rotating shafts carried by said turret, means for supporting objects to be finished on said shafts and finishing means disposed at different angles in the path of movement of the objects supported on said shafts.

2. In a machine of the character set forth, the combination of a revolving turret, radially extending rotating shafts carried by said turret, means for supporting objects having major and minor axes on said shafts, supports on said shafts patterned after said objects and arranged with their minor axes in line with the major axes of the objects, finishing means disposed in the path of movement of said objects and tracks disposed in the path of movement of said patterned supports.

3. In a machine of the character set forth, a revolving turret having radially extending arms, shafts movably supported by said arms, means on said shafts for supporting irregular shaped objects thereon, supports on said shafts patterned after said irregular shaped objects, finishing means disposed in the path of movement of said objects and tracks disposed in the path of movement of said patterned supports in position to shift the supports and shafts toward said finishing means.

4. In a machine of the character set forth, the combination of a revolving turret, radially extending rotating shafts carried by said turret, means for supporting objects to be finished on said shafts, finishing means

disposed in the path of movement of the objects supported on said shafts, and means for intermittently rotating said turret and means for temporarily locking the turret and its contained shafts in coöperative relation to the finishing means aforesaid.

5. In a machine of the character described, a continuously rotating shaft, a crown gear on said shaft, a turret concentrically arranged with respect to said shaft, radially disposed shafts carried by said turret, pinions on said shafts engaging said crown gear, means for supporting objects on said shafts, tracks for supporting the outer ends of said shafts and finishing means disposed in the path of movement of said objects.

6. In a machine of the character described, a continuously rotating shaft, a crown gear on said shaft, a turret concentrically arranged with respect to said shaft, radially disposed shafts carried by said turret, pinions on said shafts engaging said crown gear, means for supporting objects on said shafts, tracks for supporting the outer ends of said shafts, finishing means disposed in the path of movement of said objects, and coöperating means on said crown gear and turret for intermittently rotating said turret.

7. In a machine of the character described, a continuously rotating shaft, a crown gear on said shaft, a turret concentrically arranged with respect to said shaft, radially disposed shafts carried by said turret, pinions on said shafts engaging said crown gear, means for supporting objects on said turrets, tracks for supporting the outer ends of said shafts, finishing means disposed in the path of movement of said objects, means for temporarily locking the turret with the objects carried thereby in coöperating relation with said finishing means, and means carried by said crown gear for releasing said locking means and carrying the turret forward to bring successive objects into active relation to the finishing means.

8. In a machine of the character described, a continuously rotating shaft, a crown gear on said shaft, a turret concentrically arranged with respect to said shaft, radially disposed shafts carried by said turret, pinions on said shafts engaging said crown gear, means for supporting objects on said shafts, finishing means disposed in the path of movement of said objects, means for intermittently rotating the turret to bring the objects into the sphere of action of said finishing means and means for shifting the outer ends of the shafts to maintain the objects supported thereby in active relation to the finishing means.

9. In a machine of the character described, a revolving turret, article supports on said turret, rotating brushes stationed at different points about said turret and disposed to operate on different portions of the articles presented thereto and means for rotating said turret with an intermittent motion to bring the articles supported thereby successively into the spheres of action of the different brushes.

10. In a machine of the character described, a turret, equidistantly spaced article supports on said turret, detents spaced to correspond with the spacing of the article supports, a keeper arranged to be successively engaged by the detents, a rotating element arranged to release the detents from the keeper, a driving element engaging the released detent to impart movement to the turret, and a track corresponding in extent to the spacing between the detents arranged to hold the detents thus engaged by the driving element.

11. In a machine of the character described, a revolving turret, radially extending shafts carried by said turret, longitudinally displaceable article supports mounted on said shafts, means for working on the articles carried by said supports, means for rotating the turret to carry the articles past said working means, and means for displacing the article supports longitudinally on the shafts toward and away from the working means aforesaid.

12. In a machine of the character described, a revolving turret, radially extending shafts carried by said turret, longitudinally displaceable article supports mounted on said shafts, means for working on the articles carried by said supports, means for rotating the turret to carry the articles past said working means, means for displacing the article supports longitudinally on the shafts toward and away from the working means aforesaid, and means for rotating the shafts and the article supports carried thereby.

13. In a machine of the character set forth, a turret, a shaft for rotating the same, a relatively stationary support provided with a threaded stem surrounding the shaft, a base, a threaded sleeve engaging said threaded stem and bearing on the base, a wrench encircling said sleeve and a spring-pressed plunger on said wrench engaging said sleeve, said sleeve having shoulders for engagement by said plunger.

14. In a machine of the character set forth, a turret, a shaft for rotating the same, a relatively stationary support provided with a threaded stem surrounding the shaft, a base, a threaded sleeve engaging said threaded stem and bearing on the base, a wrench encircling said sleeve and a spring-pressed plunger on said wrench engaging said sleeve, said sleeve having shoulders for engagement by said plunger, and a pin for locking said wrench to the base.

15. In a machine of the character described, a revolving turret, radially out-

standing rotating spindles carried by said turret, and article supporting sleeves slidably engaged over the ends of said spindles.

16. In a machine of the character described, a revolving turret, radially outstanding rotating spindles carried by said turret, article supporting sleeves slidably engaged over the ends of said spindles, a mandrel body on each of said sleeves and spring-pressed gripping fingers mounted in said mandrel body.

17. In a machine of the character described, a revolving turret, radially outstanding article-supporting spindles carried by said turret, rotating wheels stationed at different points about the turret and disposed at different angles with respect to the articles carried by the article supports to thereby operate upon different portions of said articles and means for intermittently rotating the turret to carry the articles successively into the planes of action of said wheels.

18. In a machine of the character described, a turret, radially outstanding article-supporting shafts carried by said turret, article working means disposed about said turret, means for rotating the turret to present the articles on said article-supporting shafts to said working means, and means for rotating said shafts as the articles supported thereby are presented to said working means.

19. In a machine of the character described, rotating article supporting means, means for working on the article carried thereby and a slidably adjustable base for said article supporting means adjustable toward and away from said working means.

20. In a machine of the character described, a main base, article working means in fixed relation to said main base, a sliding base on said main base adjustable with respect to said article working means, and an article supporting turret on said slidably adjustable base.

21. In a machine of the character set forth, the combination of a revolving turret, radially extending rotating shafts carried by said turret, means for supporting objects to be finished on said shafts, finishing means disposed in the path of movement of the objects supported on said shafts, means for temporarily locking the turret and its contained shafts in coöperative relation to the finishing means and a combined releasing and driving member adapted to release and subsequently drive the turret in its path of rotation.

22. In a machine of the character set forth, the combination of a revolving turret, radially extending rotating shafts carried by said turret, means for supporting objects to be finished on said shafts, finishing means disposed in the path of movement of the objects supported on said shafts, detents arranged adjacent each shaft, a keeper arranged to be successively engaged by the detents and a combined releasing and driving member adapted to release the detents and subsequently engage the same to drive the turret in its path of movement.

23. In a machine of the character set forth, the combination of a revolving turret, radially extending rotating shafts carried by said turret, means for supporting objects to be finished on said shafts, finishing means disposed in the path of movement of the objects supported on said shafts, detents arranged adjacent each shaft, a keeper arranged to be successively engaged by the detents, a lever associated with the keeper to withdraw the detent and a combined releasing and driving member adapted to actuate the lever thereby releasing the detent from the keeper and subsequently engage said detent to drive the turret in its path of movement.

In testimony whereof I affix my signature.

SIMON COOPER.

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