

Dec. 17, 1935.

A. M. ALGEO

2,024,903

BANDING MECHANISM

Filed May 31, 1933

3 Sheets-Sheet 1

Fig. 1.

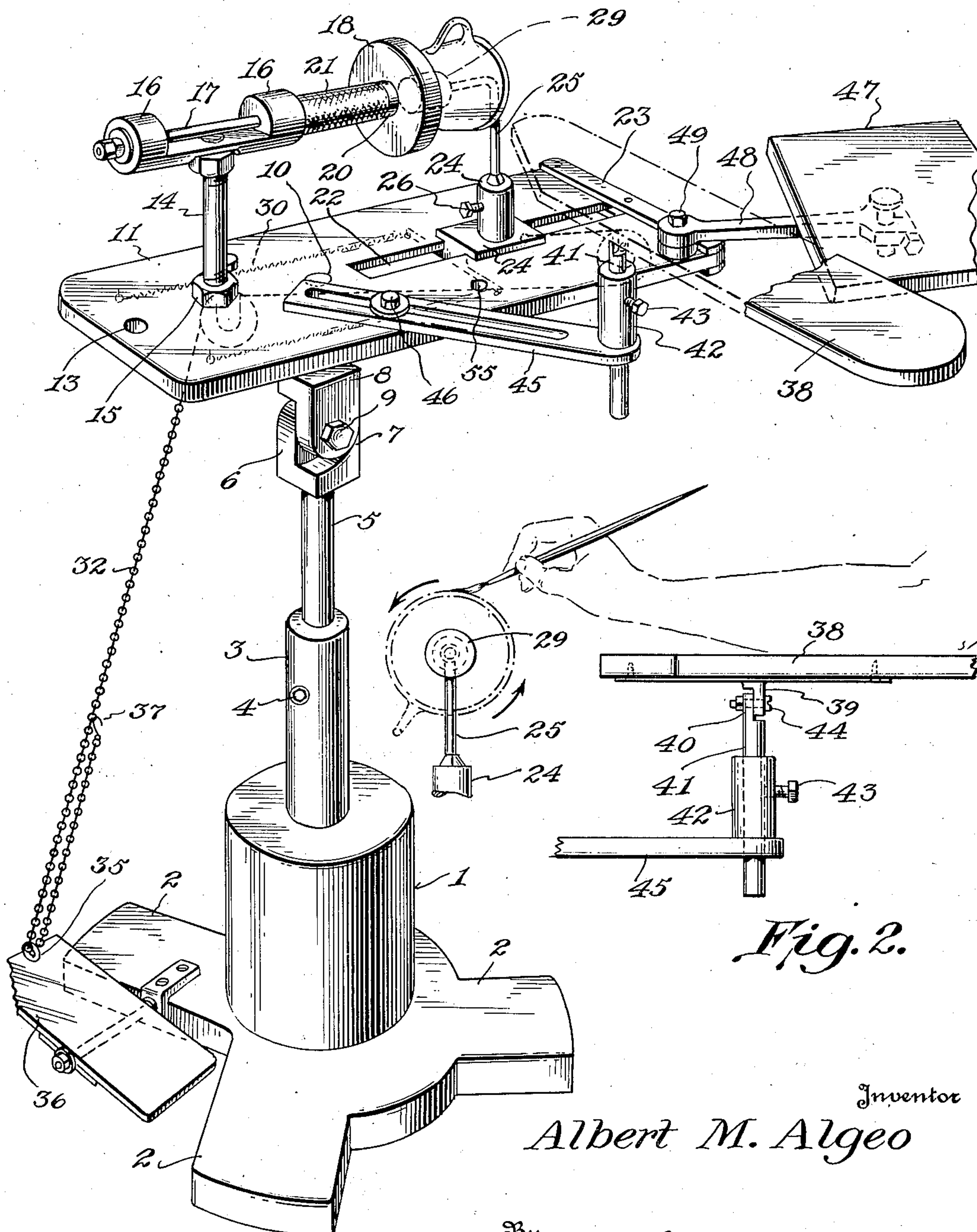


Fig. 2.

Inventor

Albert M. Algeo

By

Excelsior & Excelsior
Attorneys

Dec. 17, 1935.

A. M. ALGEO

2,024,903

BANDING MECHANISM

Filed May 31, 1933

3 Sheets-Sheet 2

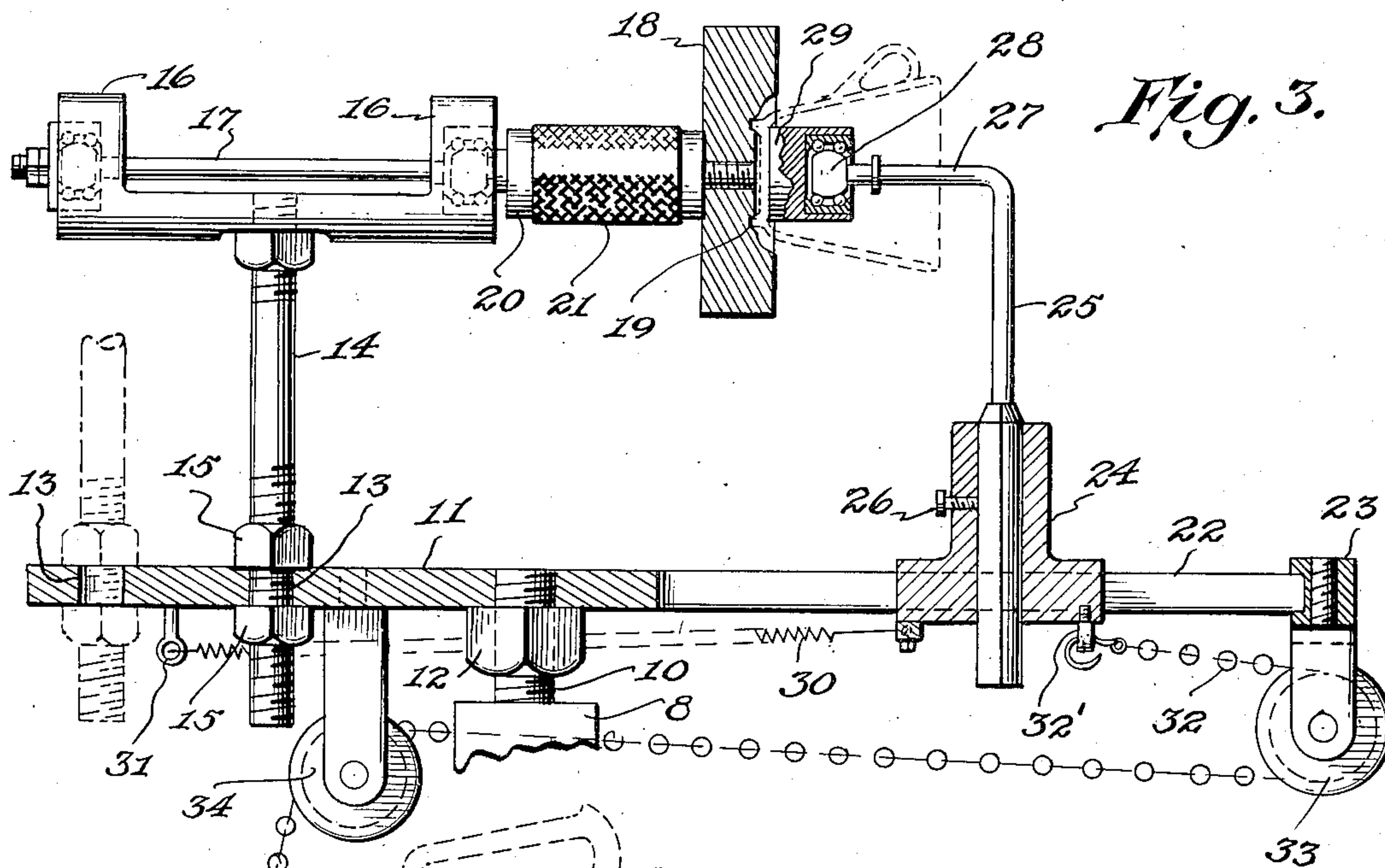


Fig. 3.

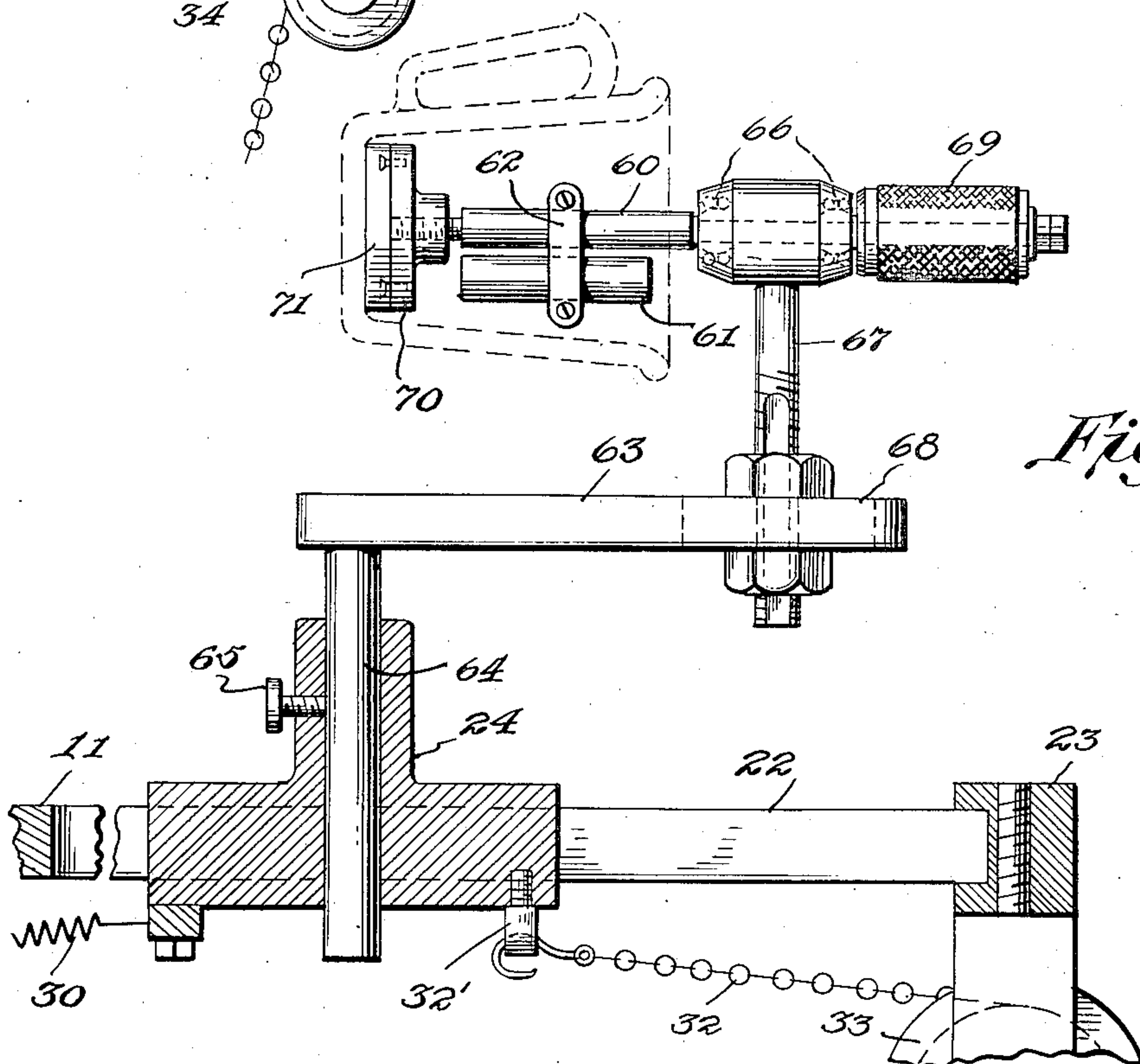


Fig. 5.

Inventor

Albert M. Algoe

By

Ernest H. Heston
Attorneys

Dec. 17, 1935.

A. M. ALGEO

2,024,903

BANDING MECHANISM

Filed May 31, 1933

3 Sheets-Sheet 3

Fig. 4.

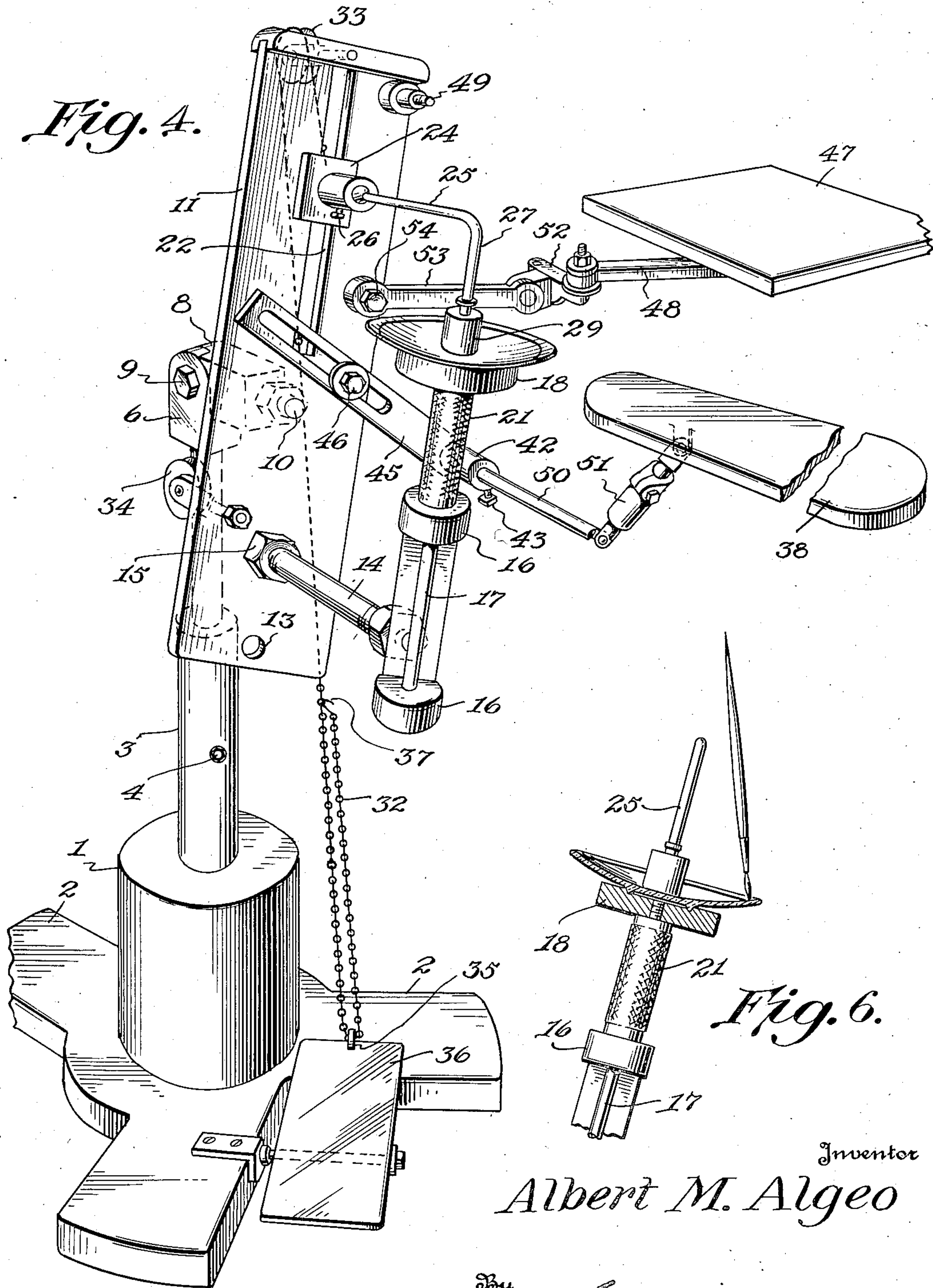


Fig. 6.

Inventor

Albert M. Algeo

By

Enclosure + Enclosure

Attorneys

UNITED STATES PATENT OFFICE

2,024,903

BANDING MECHANISM

Albert M. Algeo, Washington, Pa., assignor to
Hazel-Atlas Glass Company, Wheeling, W. Va.,
a corporation of West Virginia

Application May 31, 1933, Serial No. 673,765

3 Claims. (Cl. 91—60)

In the decoration of ceramic ware, such as china and the like, by placing bands of coloring material thereon, it is usual to place the article on the center of a rotatably mounted table and spin the table and supported article while applying to the article a brush carrying the coloring material. In such method some difficulty is encountered in centering the article and the method itself is not such as will permit of a high rate of output.

The present invention relates to the application of bands of coloring material to glassware, china, or other ceramic ware, and has for its primary object to provide a mechanism which will support the articles to be decorated in a centered position for spinning and yet which will admit of rapid manipulation so as to greatly expedite the production of decorated articles.

A further object of the invention consists in the provision of a clamp for the articles which may be easily and quickly operated either to secure or release the articles being operated upon.

Another object of the invention consists of an adjustable mechanism which will permit the articles to be spun on a horizontal axis, a vertical axis or any intermediate position most suitable to the particular shape of the articles being operated upon.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawings, in which,

Figure 1 is a perspective view of the complete apparatus as adjusted for use in placing bands on cups or similar receptacles.

Figure 2 is a fragmentary elevational view showing the arm rest in use.

Figure 3 is a fragmentary elevational view partly in section showing the clamping mechanism in detail.

Figure 4 is a perspective view of the mechanism shown in Figures 1, 2 and 3 but with the apparatus arranged for decorating a different type of articles, such as saucers, plates, etc.

Figure 5 is a view similar to Figure 3 showing a slightly modified construction of clamp, and

Figure 6 is a detail view showing the manner of applying bands to articles mounted on the apparatus as arranged in Figure 4.

Referring to the drawings in greater detail and especially to Figures 1, 2 and 3, the numeral 1 indicates a base member provided with lateral extensions 2 of sufficient extent to firmly support the apparatus mounted thereon. Extending upwardly from the base 1 is a socket member

3 provided with a set screw 4 for adjustably securing a rod 5 on which the apparatus is pivotally mounted.

The upper end of rod 5 is provided with a hinge knuckle 6 having an upturned edge 7. A complementary hinge knuckle 8 is pivotally connected to knuckle 6 by means of a bolt 9, and the design of the knuckles is such that they may have a relative movement of 90° but no more. The knuckles 6—8 may be locked against pivotal movement by tightening up on the bolt 9. The upper end of the hinge member 8 is provided with a threaded portion 10 to which is secured a table 11; a clamping nut 12 serving to lock the table in position. By the hinge construction it will be seen that the table may be adjusted from horizontal to vertical position or to any position intermediate these two extremes. Moreover, by loosening the nut 12 the table may be rotatably adjusted about the pin 10.

Fixedly mounted on the table 11, in either of the apertures 13, is a headstock including a pedestal 14 which is secured in position by means of nuts 15. A double bearing 16 is fixed to the upper end of pedestal 14 and has mounted thereon in a shaft 17. The bearings 16 are preferably of the radial type to permit free rotary movement of the shaft at all times. Fixed on the end of shaft 17 is a disc 18 forming a chuck or face plate for the reception of the base of the article being operated upon. This member 18 is preferably grooved as at 19 to provide a centering means for the articles.

Keyed to the shaft 17 is a cylindrical member 20 which is knurled on its outer surface as indicated by the numeral 21. This element 20 serves as a gripping means for the fingers of the operator in spinning the shaft 17 and also, by reason of its weight, cooperates with the plate 18 to provide the necessary inertia for the shaft 17.

The tailstock of the mechanism is slidably mounted in a longitudinal slot 22 formed in the table 11, which slot may be closed at its outer end by a crossbar 23. A crosshead 24 is provided with longitudinal grooves which receive the edges of the table bounding the slot 22, and a vertical opening through the crosshead receives the lower end of the tailstock pedestal 25. A set screw 26 provides the necessary vertical adjustment of the tailstock. The upper end of the element 25 is bent into horizontal positions as indicated by numeral 27, and has rotatably mounted thereon as by bearing 28 a head or mandrel 29. The bearing for the mandrel 29 is preferably of the self-aligning type to permit the head to automat-

ically adjust itself to the contour of the base of the article being clamped between it and the disc 18.

The tailstock 25 is normally biased into clamping position by tension springs 30 of which each has one end anchored to the underside of the crosshead and the other end to an eye-bolt 31 fixed to the underside of the table 11. To move the tailstock to article-releasing position a chain 32 or other flexible connection is provided. This chain has one end anchored to the cross-head 24 as indicated at 32' and then passes over guide pulleys 33 and 34 and has its opposite end secured to an eye 35 fixed on an operating pedal 36. The end of the chain is provided with a hook 37 adapted to engage in an appropriate link thereof to provide the necessary adjustment for various positions of the table 11. By pressing the foot upon the pedal 36 it will be obvious that the tailstock 27 is withdrawn against the tension of springs 30 to allow the removal of a decorated article and the substitution of an article to be decorated.

As will be readily understood, the band of coloring material is applied to the article by spinning the shaft 17 with the article clamped thereon, and then holding the tip of the brush bearing the color against the article. Obviously some means for steadying the arm of the operator is desirable in order to accurately position the band of color on the ware and for this purpose an arm rest consisting of an elongated plate 38 is provided. The plate 38 carries a bolt-receiving eye 39 on its underside which cooperates with a similar eye 40 formed on a rod 41 which is adjustably mounted in a sleeve 42 as by means of a set-screw 43. A bolt 44 passing through the eyes 39 and 40 provides for angular adjustment of the arm rest 38 while the slotted bracket 45 and bolt 46 provide for its bodily adjustment with respect to the table 11.

A mixing tile or palette for the paint or other coloring material being applied to the ware is indicated by the numeral 47. This member 47 is mounted on an arm 48, and the latter is pivoted to the table 11 as indicated by numeral 49.

With the apparatus as thus far described and as shown in Figures 1, 2 and 3, the arm rest and palette are adjusted to substantially the positions indicated, and the tailstock operated in the manner heretofore described to permit a cup or other similar receptacle to be centered and clamped between the headstock and tailstock. The bearings in these members cause them to automatically adjust themselves to variations in the ware or elsewhere. The operator now spins the ware by applying a spinning movement to the member 20, and with his arm preferably resting on the plate 38 applies the tip of the brush to the article at the desired distance from the end thereof. The spinning of the ware will of course cause the band or stripe to be applied around its entire circumference in the plane selected.

If it is desired to place a band on a more or less flat article such as a saucer the operation is greatly facilitated if the article is rotated in a more or less horizontal plane. It is primarily for this reason that some of the adjustments heretofore referred to have been embodied in the invention. For instance, by referring to Figure 4 it will be seen that the hinge 6-8 has been operated through 90° to bring the table 11 to vertical position and the table has been swung angularly about its pivot 10 to bring the saucer clamped to the headstock 18 to a position most suited to the hand

of the operator. Also, the bracket 45 is swung to a more suitable angular position so as to better adapt the arm rest 38 to the work; and in this connection it is to be noted that a rod 50 provided with a pivoted extension 51 is mounted in the sleeve 42 in lieu of the rod 41 shown in Figure 1, thus providing a more flexible adjustment for the arm rest. And again, the arm 48 for the palette 47 is removed from its pin 49 and connected by a universal joint 52 with an arm 53 which is secured to the table by a bolt 54 in aperture 55 (Figure 1).

In this arrangement of the apparatus for use with substantially flat ware the change of the table 11 from horizontal to vertical position produces a certain amount of slack in the operating cable 32 of the tailstock, and in order to make the necessary adjustment the cable is drawn further through the eye bolt 35 of the pedal and the hook 37 connected to the main body of the cable at the proper position. The pedal may now be operated in the usual way to release or clamp a saucer or the like in position, and as will be seen from an examination of Figures 4 and 6 the article is presented to the operator in a position best suited to the application of the brush.

In applying bands to articles provided with large handles or in which for other reasons the weight is not equally distributed it is desirable to provide some means to insure a smooth spinning of the article if the band is to be properly applied, and a modified construction for this purpose is shown in Figure 5. In this form of the invention the shaft 60 of the headstock is provided with a suitable counter-weight 61 which is detachably connected to the shaft by a clamp 62. The article to be banded will of course be mounted on the headstock with the handle diametrically opposed to the counter-weight, to insure a smooth turning of the shaft.

This modified form of headstock includes a baseplate 63 provided with a downwardly-extending rod 64 which is adjustably secured in the crosshead 24 by a set screw 65. The shaft 60 is mounted in a pair of radial bearings 66 fixed on the end of a vertical post 67 which has its lower end secured in a slot 68 in the base plate 63. A knurled drum 69 is secured to the outer end of shaft 60 for operating the same, and the inner end of the shaft is provided with a face plate 70 and rubber cushion 71 for engaging the base of the article being operated upon.

From the above description and the accompanying drawings it will be apparent that an efficient and simple apparatus for centrally supporting and rotating ware during the banding operation has been provided; that the device may be readily adapted to the decoration of either flat or cylindrical ware as desired; that the articles may be released or clamped by movement of the foot of the operator; and that the arm rest is capable of adjustment to suit any position of the work.

In accordance with the patent statutes I have described the preferred form of apparatus, but obviously many changes and modifications may be made in the construction shown without departing from the spirit of the invention, and all such changes and modifications are intended to be included within the scope of the appended claims.

What is claimed is:

1. Apparatus for banding ceramic ware including a base, a table pivoted to the base and adapted to be adjusted to either a vertical or a hori-

zontal position, means on the table for rotatably supporting for spinning movement a piece of work and including a slidably mounted tailstock, and foot-operated means for sliding the tailstock.

5 2. Apparatus for banding ceramic ware including a base, a table pivoted to the base and adapted to be adjusted to either a vertical or a horizontal position, means including a slidably mounted tailstock for rotatably supporting for spinning

movement a piece of work, a pedal and cable for sliding the tailstock.

3. Apparatus for banding ceramic ware including a table, a post rising therefrom, a shaft rotatably mounted on the upper end of the post, a face plate on the end of the shaft and forming 5 part of an article clamp, and a counterbalance weight detachably secured to the shaft.

ALBERT M. ALGEO.