V. A. KOTTINGER.

LATHE CENTER.

APPLICATION FILED NOV. 11, 1919.

1,358,164.

Patented Nov. 9, 1920.

4 SHEETS—SHEET 1.

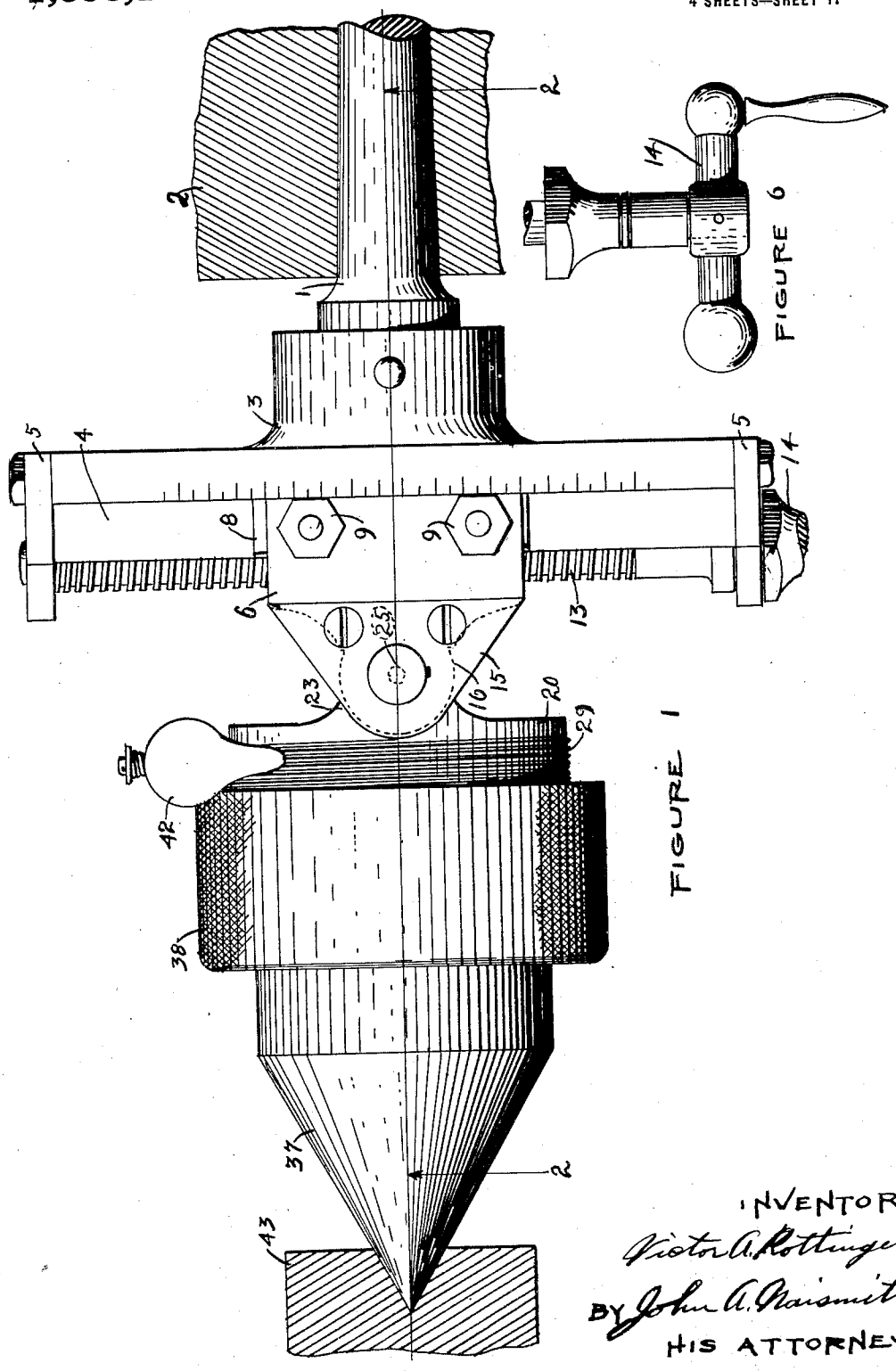


FIGURE 1

FIGURE 6

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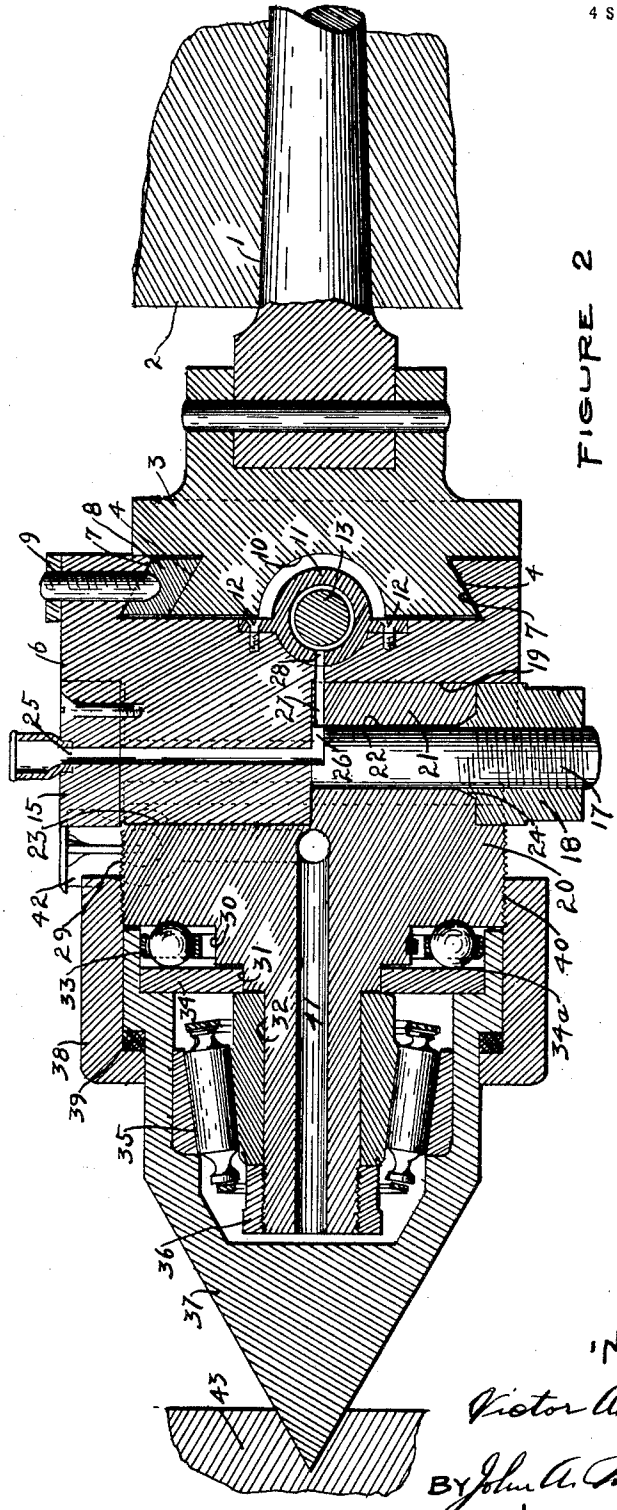


FIGURE 2

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4 SHEETS—SHEET 3.

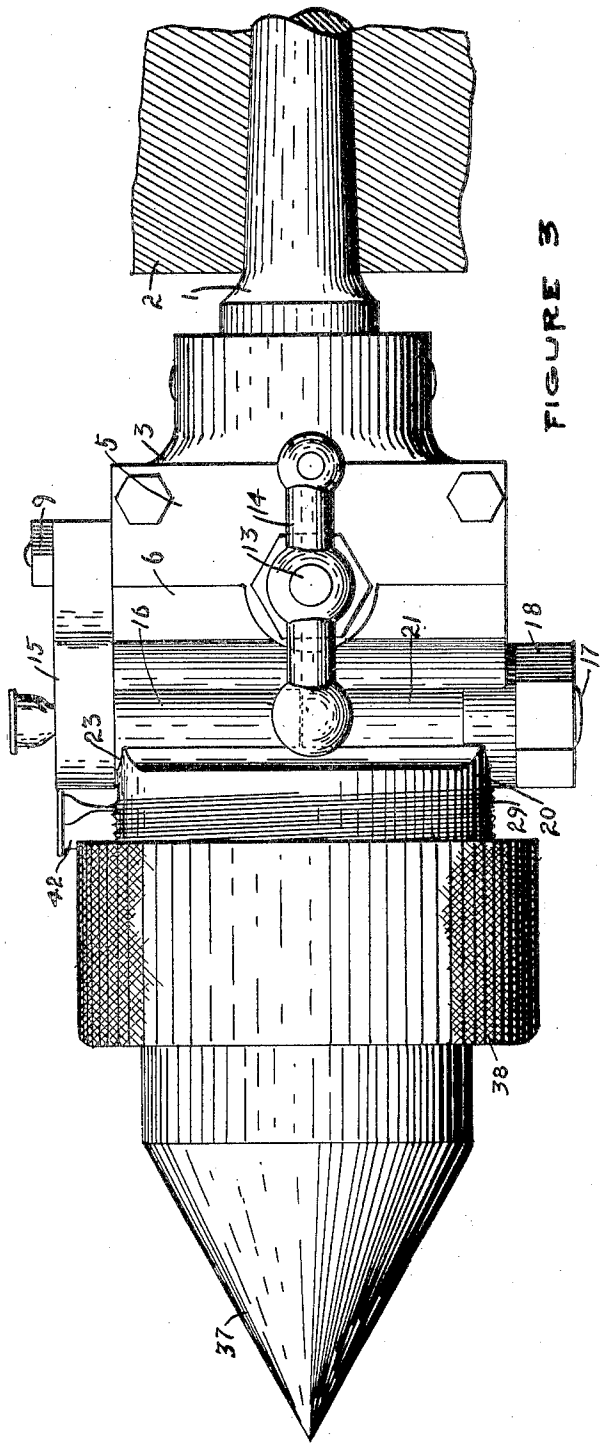


FIGURE 3

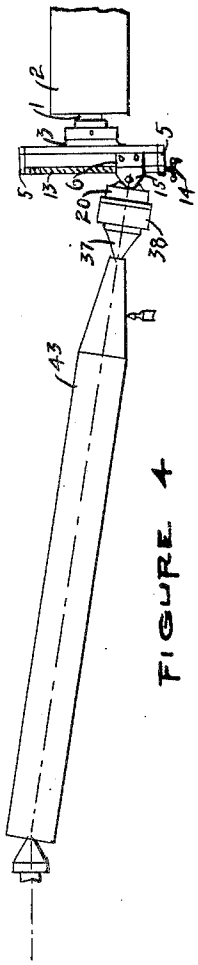


FIGURE 4

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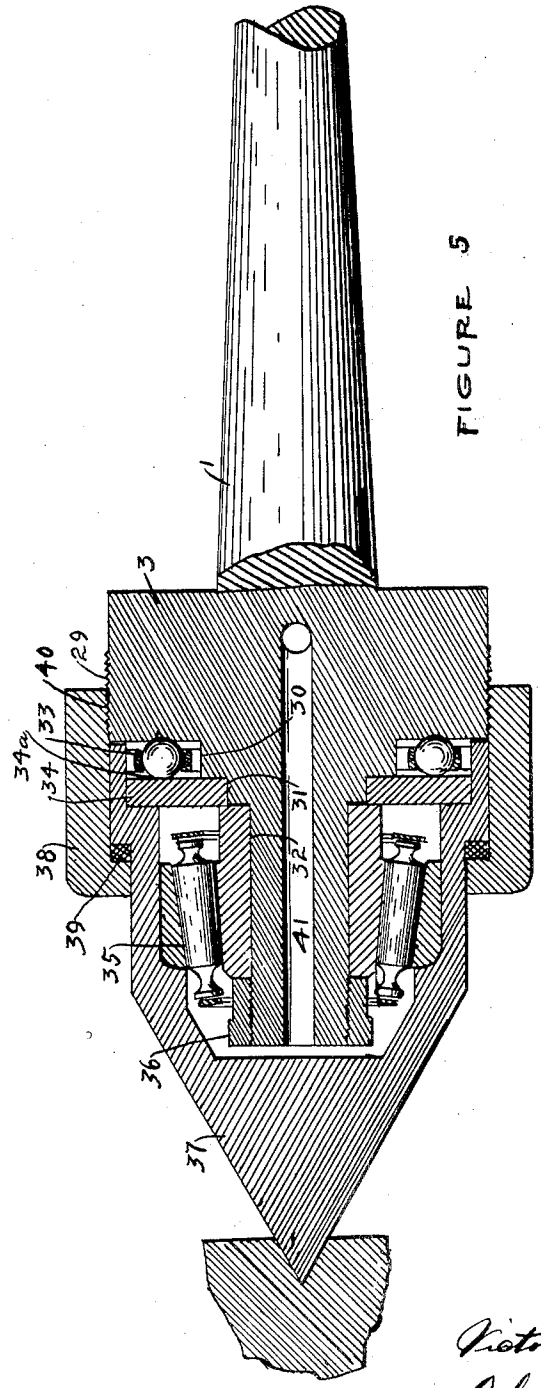


FIGURE 5

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VICTOR A. KOTTINGER, OF SAN JOSE, CALIFORNIA.

LATHE-CENTER.

1,358,164. Specification of Letters Patent. Patented Nov. 9, 1920.

Application filed November 11, 1919. Serial No. 337,196.

To all whom it may concern:

Be it known that I, VICTOR A. KOTTINGER, a citizen of the United States, and resident of San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Lathe-Centers, of which the following is a specification.

My invention relates to a centering device for lathes, and it is the object of my invention to provide a device of the character indicated that will permit lateral adjustment of the lathe center without adjustment of the tail stock spindle, and that will permit the angular adjustment of the center in such a manner that it may always be set in axial alinement with the member being turned. Another object of my invention is to provide a device of the character indicated in which the lathe center will revolve freely with the member being turned and thereby obviate the necessity of repeatedly oiling and adjusting the point thereof and regrinding and shaping the same.

In the drawing:

Figure 1 is a plan view of the device, a part being broken away.

Fig. 2 is a sectional view on line 2—2 of Fig. 1.

Fig. 3 is a side elevation of the device.

Fig. 4 is a diagram illustrating the application thereof.

Fig. 5 is a vertical and longitudinal section through another embodiment of my invention.

Fig. 6 is a detail of the ball crank.

Referring more particularly to the drawing, 1 indicates the supporting member adapted to be mounted in the tail stock spindle of the lathe, a portion of the same being shown at 2. Rigidly mounted on member 1 and at right angles thereto, is a supporting guide member 3 having parallel undercut portions 4 formed in the face thereof and provided with end plates 5.

At 6 is shown a member provided with undercut portions 7 adapted to engage portions 4 in member 3 through the medium of gib 8 which is held in position in member 6 by adjusting screws 9, this construction permitting the lateral movement of member 6 with respect to member 3. Member 3 has a groove 10 formed therein along the central line of its face, and member 6 has an internally threaded member 11 set therein and held by screws 12 in such a position as to move freely in groove 10 when member 6 is mounted in member 3. At 13 is shown a cross feed screw engaging threaded member 11 and revolubly mounted in end members 5 as shown. Cross feed screw 13 is provided with ball crank 14 and when turned thereby operates to adjust member 6 with relation to fixed member 3.

Member 6 has a forwardly projecting triangular top portion 15 and a portion extending down to the axial line of the device shaped as shown in dotted lines at 16. From the axial line of the device, and in axial alinement with the circular portion 16, is a downwardly extending threaded clamp bolt 17 having a clamp nut 18 thereon, that portion of member 6 surrounding bolt 17 being formed to provide a circular portion 19.

At 20 is shown a cylindrical member having a rearwardly projecting lug 21 bored at 22 to engage bolt 17 and revolve freely thereon in circular portion 19 of member 6. The upper half of this portion of member 20 is formed as shown at 23 to engage the circular portion 16 of member 6. When member 20 and member 6 are assembled as shown they are locked in any required position by clamp nut 17 provided with a cone shaped portion 24.

Extending downwardly through member 6 and a distance into bolt 17 and in axial alinement with the same is a conduit 25, this conduit discharging at 26, and also by means of extension 27, at 28. Oil fed through this conduit lubricates the contacting surfaces of members 6 and 20 and also cross feed screw 13 in member 11.

Member 20 is threaded upon its largest circumference as at 29 and is provided with reduced shoulders 30, 31 and 32 respectively. Shoulders 30 and 31 carry the two members 33 and 34 of thrust bearing 34^a, and shoulder 32 carries a standard form of roller bearing as indicated at 35 and is threaded to engage a nut 36 as shown. Mounted upon bearings 34^a and 35 is a lathe center 37 held in place by means of a collar 38 fitted with washer 39 and screwed on to the threaded portion 29 of member 20 as indicated at 40. A conduit 41 is shown extending from the forward end of member 20 along the axis thereof to a point near the rear thereof and thence laterally to the exterior thereof where it is fitted with a suitable oil cup 42. By supplying this conduit with oil the bearings within the lathe cen-

ter 37 are kept perfectly lubricated at all times.

Having now described in detail the precise construction of the device, it may be readily seen that the same may be fitted to the tail stock spindle of a lathe with the two centers in axial alinement, and required lateral adjustment made without adjustment of the tail stock spindle, and merely by the turning of ball crank 14.

In the form of the lathe centers commonly used the axes of the two centers of the lathe are always parallel, therefore, when they are offset a distance as shown in Fig. 4 for the purpose of cutting a taper upon a member as 43, the lathe center itself, not being truly positioned in the countersunk portion of member 43, is quickly worn down and must be frequently reground and repointed. In the present invention member 20 may be adjusted with relation to member 6 and secured in that position by tightening up clamp nut 18 so that the axis of the lathe center 37 will be held in alinement with the axis or member 43, no matter what the taper may be that is being cut thereon, thereby rendering the regrinding or renewing of center 37 entirely unnecessary. The device hereinbefore described therefore, in itself permits both lateral and angular adjustment of the lathe center and provides a maximum of efficiency with a minimum of labor and depreciation.

In Fig. 5 I show a simplified form of the device in which the lateral and angular adjustments of the lathe center 37 are omitted but the bearings 34ª and 35 are retained. In this form, as in the one previously described, the member 37 rotates with the member 43 thereby preventing the wearing away of the point of member 37, eliminating the usual friction at this point which requires frequent oiling and constant attention, and provides a live lathe center that revolves smoothly and uniformly with the work, and has a lubricating and bearing system that requires practically no attention after once being adjusted to the work in hand.

It is understood of course, that changes in form, proportions, method of operation and details of construction may be made within the scope of the appended claims.

I claim:

1. A device of the character indicated comprising a member adapted to be mounted upon the tail stock spindle of a lathe and provided with three annular concentric shoulders of progressively decreasing diameters, a ball thrust bearing operatively mounted on the two larger shoulders, a roller bearing operatively mounted on the shoulder of least diameter, means for locking said bearings in position on said shoulders, a lathe center provided with three annular interiorly formed shoulders of progressively decreasing diameters, the larger shoulder being adapted to engage said ball bearing, and the second largest shoulder being adapted to engage said roller bearing, and means for maintaining said lathe center in engagement with said bearings.

2. A device of the character indicated, comprising a member adapted to be mounted upon the tail stock spindle of a lathe, a member mounted thereon and laterally adjustable with relation to the axis thereof and provided with a forwardly extending cylindrical portion above the axial line of the device, a threaded bolt depending from said forwardly extending portion, a member adjustably mounted on said depending bolt, and a lathe center axially and revolubly mounted upon said last mentioned adjustable member.

VICTOR A. KOTTINGER.