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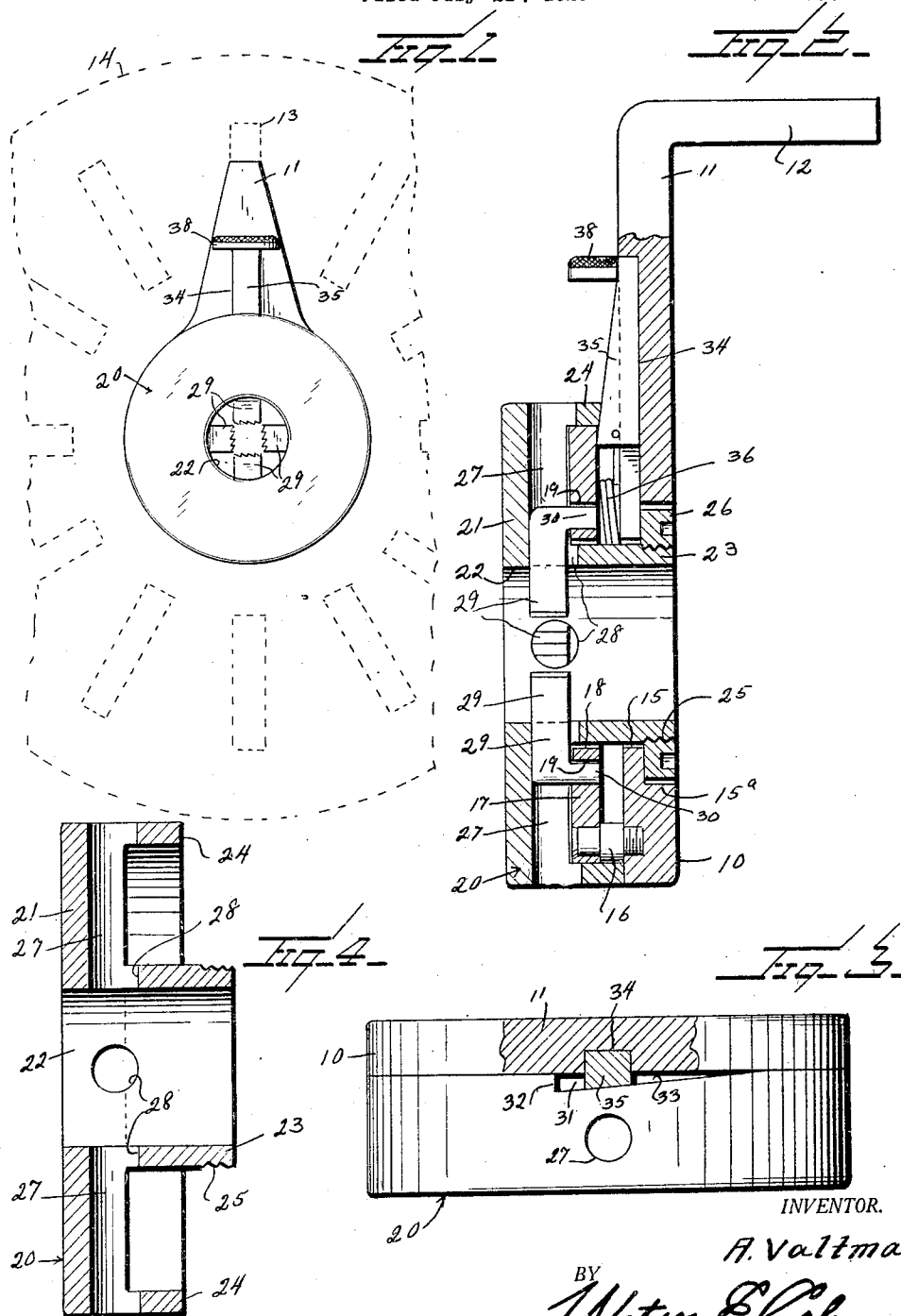
1,506,035

A. VALTMAN

LATHE DOG

Filed July 28, 1923

2 Sheets-Sheet 1



INVENTOR.

A. Valtman

BY
Watson E. Coleman
ATTORNEY

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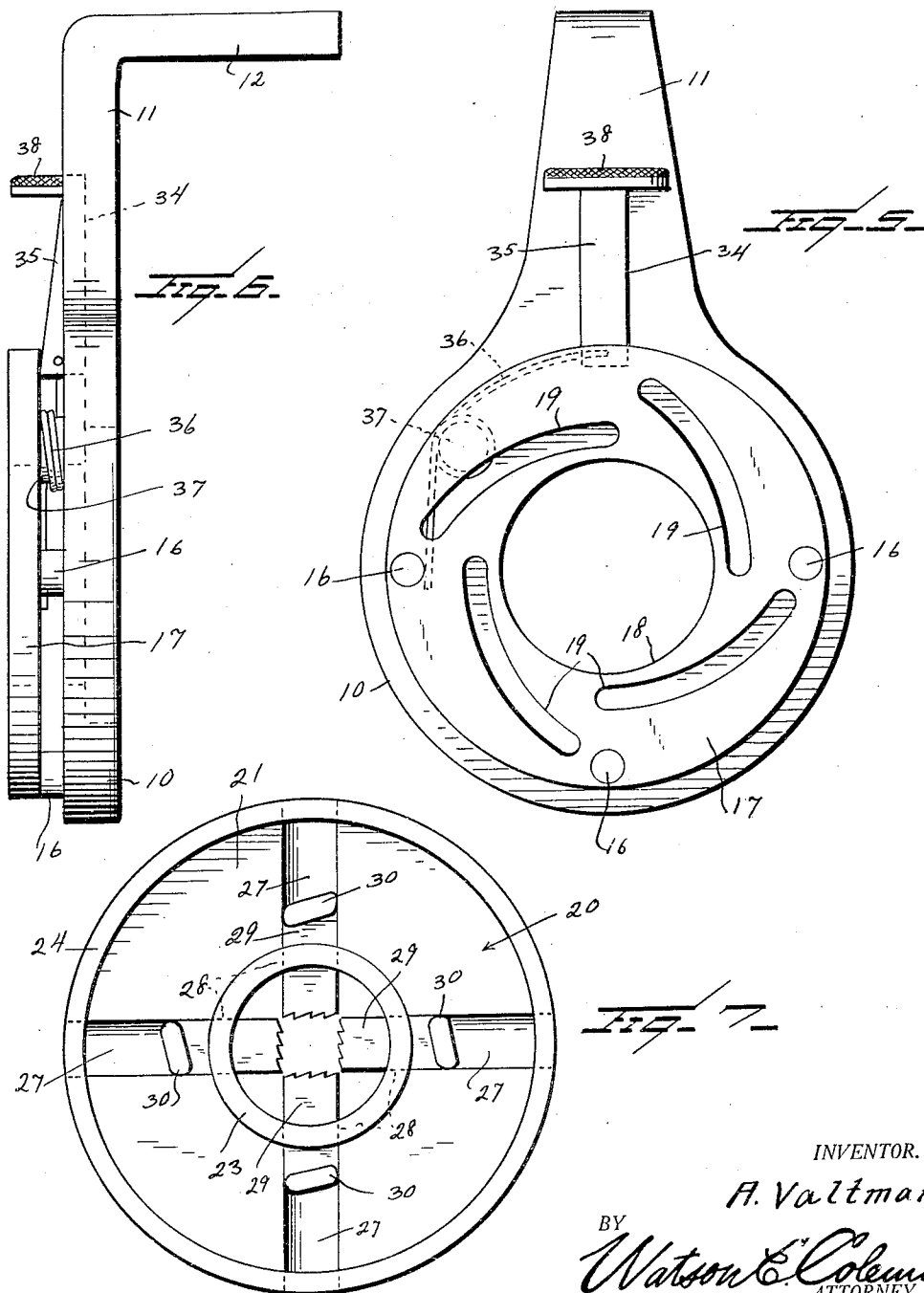
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UNITED STATES PATENT OFFICE.

ANTON VALTMAN, OF BOVEY, MINNESOTA, ASSIGNOR OF ONE-HALF TO HENRY VOLKE, OF BOVEY, MINNESOTA.

LATHE DOG.

Application filed July 28, 1923. Serial No. 654,376.

To all whom it may concern:

Be it known that I, ANTON VALTMAN, a citizen of the United States, residing at Bovey, in the county of Itasca and State of Minnesota, have invented certain new and useful Improvements in Lathe Dogs, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to lathe dogs and more particularly to a universal lathe dog.

An important object of the invention is to provide a device of this character in which the work may be inserted and tightened by hand and which by its engagement in the machine maintains the work in adjusted position.

A further object of the invention is to provide a device of this character which may be very cheaply produced and which will be durable and efficient in service.

A further object of the invention it to provide in a device of this character a releasable latch holding the work in adjusted position until the same is engaged in the machine.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a front elevation showing a universal lathe dog constructed in accordance with my invention applied to the face plate of a lathe, the face plate being indicated in dotted lines;

Figure 2 is an enlarged sectional view therethrough;

Figure 3 is a sectional view of the cup or slotted plate;

Figure 4 is a detail view partially in section showing the locking device;

Figure 5 is a front elevation of the cam plate detached;

Figure 6 is a side elevation of the cam plate detached; and

Figure 7 is a rear elevation of the cup plate.

Referring now more particularly to the drawings, the numeral 10 indicates a cam plate proper, comprising a disk having an extension 11 at one side thereof provided at its end with an angular member 12 for en-

gagement in the slot 13 of the face plate 14 of the lathe. The disk 10 is provided with a central threaded aperture 15.

Extending outwardly from the disk are spacing lugs 16 upon the outer ends of which is mounted a plate 17 having a central opening 18 concentric with the opening 15 of the disk 10. This plate, which is of slightly less diameter than the disk 10, has formed therein a plurality of similarly curved angularly disposed slots 19 formed therein for a purpose presently to appear. In conjunction with the structure hereinbefore set forth I provide a cap member 20 comprising a carrier disk 21 having a central opening 22 and having upstanding flanges formed at one side thereof at the edge of the opening 22, as indicated at 23, and at the periphery thereof, as indicated at 24, the flange 23 being of greater length than the flange 24 and having its inner end externally screw threaded, as indicated at 25. The edge of the flange 24 slidably abuts the surface of the plate 10 about the edges thereof, the internal diameter of this flange is such that it slidably engages against the edge of the plate 17. The flange 23 extends through the openings 18 and 15 of the plates 17 and 10 and serves to maintain the cap in proper position upon the cam plate 10. The opening or bore 15 of the dogging plate is counterbored, as at 15^a, at the inner end thereof to form a seat for a locking ring 26 which is threaded for engagement with the inner end of the flange 25. The plate 21 of the cup is provided in its inner face with radially directed channels 27 corresponding in number and arrangement to the slots 19 of the plate 17, the inner ends of these slots aligning with openings 28 formed in the flange 23 of the cup. In these channels are slidably disposed gripping members 29, the inner ends of which are provided with angular extensions 30 disposed at an angle to the body of the locking member 29 corresponding to the angle of the slots 19 of the plate 17.

The flange 24 of the cup is provided with a notch 31, one wall of which is formed by an abrupt shoulder 32 and the other wall of which is in the form of a shallow incline gradually merging with the inner edge of the flange. The plate 10 and the extension 11 thereof are provided in their outer face

with a radially directed slot 34 in which is slidably mounted a key member 35 which tapers from its inner end to its outer end and which has its outer face inclined transversely to correspond to the inclination of the wall 33 of the notch 31. This locking member is normally urged outwardly in the slot by means of a spring 36 mounted upon a post 37 carried by the plate 10 and having one end thereof engaged in the locking member, the outer end of the locking member is provided with a finger piece 38 by means of which the locking member may be forced inwardly.

In assembling the device the members 29 are arranged in their respective channels and the plate 10 is applied to the cup 20, the angular ends 30 of the locking members 29 entering the slots 19 of the plate 17. The locking ring 26 is then placed in position and tightened. The disk 10 and cup 20 are now relatively rotatable and it will be obvious that upon such rotation the engagement of the annular ends 30 of the locking members 29 in the slots 19 of the plates 17 will cause the locking members 29 to be projected into or withdrawn from the opening 22 of the cup member, depending upon the direction of rotation. It will be obvious that by relatively rotating the cam plate and cup these locking members can be shifted to bring their ends into engagement with a piece of metal M to be held in position in the machine. When the metal is properly gripped the latch member 35, which is held depressed through its finger piece 38 during the operation of engaging the metal in the dog, is released, springing upwardly and engaging the wall 33 of the slot to prevent relative rotation of the cam plate and cup. It will be obvious that metal thus gripped is held positioned by a means stationary with regards to the cup. It will be noted that the slots 19 of the plate 17 are so formed that upon counterclockwise movement of the cam plate with relation to the cup, the locking members 29 are forced into the bore 22 of the cup. To those familiar with the art it is well known that the movement of a lathe, as regards the face plate thereof, is counterclockwise and since the power applied by the tool will have the tendency to maintain the work and, accordingly, the cup 20 stationary, there will constantly be a tendency toward relative counterclockwise movement of the cam plate 10, with the result that at all times during the operation of the machine, when a cut is being made, the operation of the machine itself tends to tighten the dog upon the work. Accordingly, it will be unnecessary for the operator to do any more than making a casual tightening of the work in the machine, it being sufficient if this tightening is merely to an extent where it causes the locking members 29 to

exercise a dragging effect upon the cup, permitting such tightening movement of the cam plate with relation thereto. It will furthermore be obvious that the construction of the device as hereinbefore set forth is capable of some change and modification without materially departing from the spirit of my invention and I accordingly do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. A universal lathe dog including an apertured cam plate, a slotted plate carried by the cam plate and having an aperture aligning with the aperture thereof, a carrier plate opposing the last named plate and provided in its face with radially extending channels, said carrier plate having tubular means engaging through the apertures of the first named plates permitting relative rotation thereof with relation to the first named plates for preventing separation of the plates, and locking members slidably mounted in the channels of said carrier plate and having angular portions engaging in corresponding slots of said slotted plate.

2. A universal lathe dog including an apertured cam plate, a slotted plate carried by the cam plate and having an aperture aligning with the aperture thereof, a carrier plate opposing the last named plate and provided in its face with radially extending channels, said carrier plate having tubular means engaging through the apertures of the first named plates permitting relative rotation thereof with relation to the first named plates for preventing separation of the plates, and locking members slidably mounted in the channels of said carrier plate and having angular portions engaging in corresponding slots of said slotted plate, and a latch member carried by the cam plate and engageable with the carrier plate when in one position to prevent rotation thereof with relation to the cam plate.

3. A universal lathe dog including an apertured cam plate, a slotted plate carried by the cam plate and having an aperture aligning with the aperture thereof, a carrier plate opposing the last named plate and provided in its face with radially extending channels, said carrier plate having tubular means engaging through the apertures of the first named plates permitting relative rotation thereof with relation to the first named plates for preventing separation of the plates, and locking members slidably mounted in the channels of said carrier plate and having angular portions engaging in corresponding slots of said slotted plate, and a latch member carried by the cam plate and engageable with the carrier plate when in one position to prevent rotation thereof with relation to the cam plate, and means con-

necting said latch member and cam plate yieldably urging the latch member to said position.

4. A universal lathe dog including an
5 apertured cam plate, a slotted plate carried by the cam plate and having an aperture aligning with the aperture thereof, a carrier plate opposing the last named plate and provided in its face with radially extending
10 channels, said carrier plate having tubular means engaging through the apertures of the first named plates permitting relative rotation thereof with relation to the first
15 named plates for preventing separation of the plates, and locking members slidably mounted in the channels of said carrier plate and having angular portions engaging in corresponding slots of said slotted plate, and a latch member carried by the cam plate
20 and engageable with the carrier plate when in one position to prevent rotation thereof with relation to the cam plate, and means connecting said latch member and cam plate yieldably urging the latch member to said
25 position, said carrier plate being provided with a peripheral flange abutting with its inner end the adjacent face of the cam plate, the internal diameter of said flange being such that it slidably engages the periphery of said slotted plate.
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5. A universal lathe dog including an apertured cam plate, a slotted plate carried by the cam plate and having an aperture aligning with the aperture thereof, a carrier
35 plate opposing the last named plate and provided in its face with radially extending channels, said carrier plate having tubular means engaging through the apertures of the first named plates permitting relative rota-

tion thereof with relation to the first named
40 plates for preventing separation of the plates, locking members slidably mounted in the channels of said carrier plate and having angular portions engaging in corresponding
45 slots of said slotted plate, and means for locking the carrier plate to prevent rotation thereof with relation to the cam plate.

6. A universal lathe dog including an apertured cam plate, an apertured slotted
50 plate carried by the cam plate, a carrier plate opposing the last named plate and provided in its face with radially extending channels and having means extending through the apertures of the first named
55 plates permitting rotation thereof with relation to the first named plates but preventing separation of the plates, and locking members mounted in the channels of said carrier plate and having portions engaging in corresponding slots of the slotted plate.
60

7. A universal lathe dog including an apertured cam plate, an apertured slotted
65 plate carried by the cam plate, a carrier plate opposing the last named plate and provided in its face with radially extending channels and having means extending through the apertures of the first named plates permitting rotation thereof with relation to the
70 first named plates but preventing separation of the plates, locking members mounted in the channels of said carrier plate and having portions engaging in corresponding slots of the slotted plate, and means for
75 latching the carrier plate against rotation with relation to the cam plate.

In testimony whereof I hereunto affix my signature.

ANTON VALTMAN.