

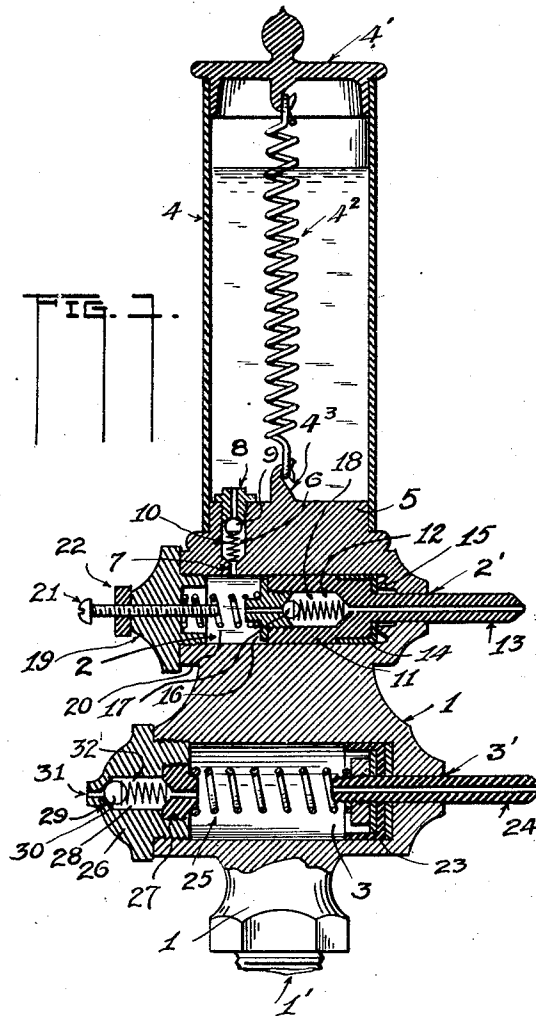
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DEVICE FOR OILING MANDREL CENTERS

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DEVICE FOR OILING MANDREL CENTERS.

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This invention relates to a device for expediting lathe-work, pertaining particularly to a device for cleaning the centers of shafts, mandrels and the like, before being hung in the lathe, by the use of compressed air for removing adhering metal chips and dust, and for oiling said centers.

The whole object of the invention is to provide a device that may be suitably mounted at a lathe so as to be swung into a convenient position for use, or that may be lifted from a bench and applied to the work, and which will provide for a blast of air for clearing the shaft or mandrel center, and that will also contain a lubricant by which the center may be oiled after such cleaning.

To the end that the invention may be fully understood, the accompanying drawing is provided wherein the single figure shows a longitudinal section of my device in elevation.

In lathe work it is required to thoroughly clean the centers of shafts, mandrels and the like and properly oil them before mounting in the lathe, and it has been the custom for the lathe worker to blow out the dust and metal cuttings and chips from the center and then apply the nozzle of an oil can to provide the necessary lubrication.

Due to the crude manner of attempting to meet the need described said centers quite often are not properly treated and in consequence the member to be swung between the lathe centers "runs out of true" and hence difficulties arise in the matter of improper results being produced, or the operator is required to dismount the work and repeat the operation described. It is my purpose, therefore, to provide means by which to properly clear the centers and lubricate them, and with the saving of much time and annoyance.

In the drawing, 1 designates a casting provided with a pair of bores 2 and 3, and surmounted by an open-end cylinder 4 soldered or otherwise attached in a leak proof manner to a neck 5 of such casting; said neck forming the bottom for said cylinder. The said bores 2 and 3 open each at one end through

one side of the casting 1 and at their other ends are bores 2' and 3' respectively which communicate therewith and open through the opposite side of said casting but are of much smaller diameter than the main bores described. The bore 2 is nearest the cylinder 4 and that part of the casting separating the said bore from the cavity of the cylinder has a large bore 6 and a smaller bore 7 which connects said bore 2 with the said cavity of said cylinder. In the said large bore 6 is screwed a tubular valve-seat 8, and a ball-valve 9 is closed upon the passage of said tubular valve-seat by a spring 10 interposed between said ball-valve and the casting 1 at the bottom of said bore 6.

In the bore 2 is a piston 11 having a cavity 12, said piston including a tubular stem 13 slidable through the bore 2', the bore of the stem communicating with said cavity 12. The piston carries a cupped leather packing 14 adapted to rest upon a seat 15 for preventing leakage of lubricant through the bore 2' when the device is not in use. A tubular valve-seat 16 is screwed into the cavity 12 and a ball-valve 17 normally closes the bore thereof through a spring 18.

A cap 19 closes the open end of the bore 2 and a compression spring 20 is interposed between said cap and the piston 11 for holding the latter against said seat 15. A screw 21 extends through the cap 19 into the bore 2 and serves to limit the action of the piston 11 in one direction, a lock-nut 22 serving to secure the screw in any position of adjustment.

In the bore 3 is a piston 23 including a tubular stem 24 whose bore communicates with the said cavity, there being a compression spring 25 interposed between said piston and a closure for the open end of the cavity comprising a threaded cap 26 and a tubular valve-seat 27 screwed into its inner side, said spring holding the piston 23 in the far end of said cavity 3 as shown. Said cap 26 has a cavity 28 and a valve-seat 29 at its outer end to receive a ball-valve 30 for closing a bore 31 of said cap, while a spring 32 holds said ball-valve upon said seat.

The cylinder 4 contains a lubricant which may be supplied through the top thereof on removal of a cap 4' held in place by a spring 4² connected to the latter and a hook 4³, for example, of the casting 1.

The device may be mounted on a swinging bracket, not shown, part of which is indicated at 1', which bracket may be mounted on the lathe, not shown, or some other convenient support by which said device may be brought to the work. Or, said device may be portable and may merely rest upon the lathe bed, but in either event when it is required to clear the centers of the member to be swung in the lathe the stem 24 is placed in the cavity of such member the body 1 being forced toward such member. The air in the cavity 3 is compressed by the piston 23, and issues sharply from said stem directly into the cavity being cleaned, thoroughly removing all adhering matter. As the pressure is removed the spring 25 returns the piston to its normal position, the air entering through the bore 31 as well as through the said stem 24 ready for a succeeding operation. In order that the blast or air may be powerful the bore of the stem is made of small diameter, and in order that air shall be supplied fast enough I prefer to provide the ball-valve 30 which is drawn from its seat in the return of the piston, the spring 32 being a very light one in order that the valve will be quite sensitive. However, I may not use the inlet passage 31 but tightly close the bore 3 and depend upon the passage of the stem 24 to supply the air to said bore, the piston 23 returning to its normal position more or less slowly according to the diameter of the bore of said stem.

Having cleared the cavity of obstructions the stem 13 is placed in said cavity followed by pressure of the hand as before, the piston 11, in consequence, being moved along the bore 2 against any oil that may lie in such bore with the result that the liquid is forced into the cavity 12 beneath the ball-valve 17 and forced out through the said stem 13 to lubricate the cavity under treatment. In the return movement of the piston due to the spring 20 the ball-valve 9 is unseated permitting a charge of lubricant to enter said bore 2 ready for the next operation of the piston. The springs 10 and 18 are of sufficient strength, only, to seat the ball-valves which they control so that but slight pressure unseats them although said springs are not weak enough to permit the opening of said valves by mere weight of oil against them.

By slight changes in the cylinder arrangement air from an outside source of pressure may be used in lieu of the method herein described.

My device since built in a unit admirably serves the purpose for which it is designed and obviates blowing upon the work or

otherwise removing obstructions and then applying a separate member, such as an oil can, to provide lubrication. In other words practically but one operation only is required at a saving of much time, and the device provides a convenience in that but a single article need be handled in performing the required service.

I claim:

1. In a device for the purposes named, the combination of a body including a bore, a reservoir for oil carried by said body communicating with said bore, a valve elastically closing communication between the reservoir and bore, a piston movable in the bore including a tubular stem communicating with the bore and extending outside the body for delivery of oil, and adjustable means in the path of the piston for limiting the movement thereof whereby the amounts of oil ejected from the said stem may be varied.

2. A device for the purposes named including a body having a main bore extending part way through it, there being a bore of smaller diameter communicating with said main bore substantially in line therewith, a closure for the said main bore at one side of the body, said smaller bore opening through the opposite side of the body, an adjustable stop extending through the said closure and terminating at one end within the main bore and at its outer end lying outside the body, a piston within the main bore, the same having a passage extending longitudinally therethrough, a spring interposed between one end of the piston and the said closure, the other end of the piston having a reduced stem lying within the small bore, that part of the piston at the base of the stem adapted to seat upon the body at the juncture of the two bores, a spring controlled valve in the passage of the piston adapted to open in the direction of the stem, there being a passage communicating with the main bore for movement of oil into the latter, and a spring controlled valve in said last named passage preventing movement of oil out of said bore.

3. A device for the purposes named including a body having a main bore extending part way through it, there being a bore of smaller diameter communicating with the said main bore substantially in line therewith, a closure for the said main bore at one side of the body, said smaller bore opening through the opposite side of the body, an adjustable stop extending through the said closure and terminating at one end within the main bore and at its other end lying outside the body, means to secure the stop in fixed positions, a piston within the main bore, the same having a passage extending longitudinally therethrough, a spring interposed between one end of the piston and the

said closure, the other end of the piston having a reduced stem lying within the small bore, that part of the piston at the base of the stem adapted to seat upon the 5 body at the juncture of the bores, a spring controlled valve in the passage of the piston adapted to open in the direction of the stem, there being a passage communicating with the main bore for movement of oil into the latter, and a spring controlled valve in said 10 last named passage preventing movement of oil out of said bore.

In testimony whereof I affix my signature.

CARL M. SEIPT.