is a patented design, and is variable and automatic with a range of .008 in. to .200 ins., obtainable while the machine is in operation. It is supplied with graduations and pointer either side of zero, reading from 1 to 25 notches, each notch representing .008 in. feed.

For lubricating the ram slides are provided with felt wipers at both the front and centre of the column. An oil pocket is cast integral with the pocket in the rear.

The cross rail is of box form, and is longer than is usual, giving the table an extra length of horizontal travel.

Another feature of the machine is the telescopic elevating screw, with ball bearing thrust.

This machine is sold in Canada by the A. R. Williams Machinery Co., Toronto.

Making an Ordinary Lathe into a Collet Lathe

By A. Read.

It quite frequently happens in the average toolroom or machine shop that there is a scarcity of collet lathes to meet the requirements. This is perhaps more often the case in the toolroom. In the building of jigs, fixtures, dies, gages, etc., the collet lathe is certainly an indispensable tool, and in the shop where there happens to be only one, it is a case of wait, most of the time. Now any ordinary hollow spindle lathe can be quickly and cheaply converted into a first-class collet lathe by making a fixture similar to the one shown in Fig. 1.

A represents the lathe spindle which in our case carried a center about 1¼ inches diameter at the small end. To this center we fitted the hardened and ground taper sleeve E. This sleeve was ground to fit collets we used on other lathes. As this rig admits of much larger size collets than the ordinary draw-in collet lathe, we made up

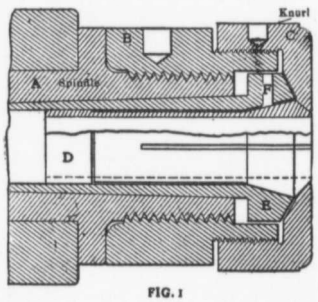


FIG. 1

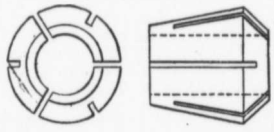


Fig. 2

The Collet and Closer.

some extra sizes. The machinery stub sleeve B was next fitted to the spindle, and by means of a spanner wrench screwed up tight to the shoulder. This sleeve has a fine thread on front end to which a cap C was fitted having a taper to match the front end of the collet. The working of this rig must be apparent at sight. Both tapers of the collet being used and as the cap C is made with a fine thread (20 per in.) a very powerful grip is obtained. A spanner wrench is fitted to the cap C also. We have used this chuck quite extensively in our shop, and most of our men prefer it to the ordinary draw-in collet. It is nearly as rapid in manipulation, is very stiff and rigid, and for holding power it has the collet lathe beat a mile.

Where the use of long bars is not required, an ordinary small centre lathe with no hollow spindle can be used by extending the sleeve B and fitting it to a short collet as shown in Fig. 2. The sleeves B and C should be made of machinery steel, case-hardened; a pin F forms a key to prevent the collet D from turning.—American Machinist.

Repairing Air Pumps.

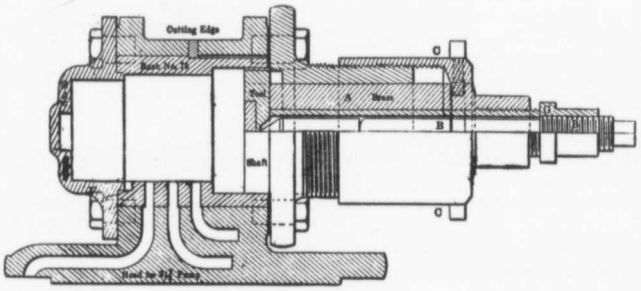
By C. E. McLaughlin.

In making repairs to air pumps the most important repair is in the top head; in fact the top head is the whole works. The parts most subject to wear are main bush No. 75, packing rings Nos. 78 and 80, and left main-valve cylinder-head.

On all pumps that come to the shops for repairs the main bush is more or less worn, and on account of the valve seat in center of bush, it is impossible to ream or file this bush out true. The only way it can be machined is to bolt the top head to angle plate, or remove bush from head and chuck it in lathe. Either is an expensive practice. The common shop practice is to scrape and file until shoulder is removed. This makes a poor job at the best, and it takes from one to three hours. With the use of this reamer the job can be done in from 10 to 20 minutes in a mechanical manner. By changing tool in end of shaft the reamer can be bolted to left main-valve cylinder-head No. 85 and cylinder portion of this trued out.

Main shaft A is the size of cylinder portion of main bush No. 75. In the end of this shaft are inserted tools F, then apply part G, which acts as tool-post screw, as it holds tool in place. Parts B are then applied. Shaft is then placed in part D, bonnet C screws down over D, set-screws in C are set in to engage shaft A. Reamer is now ready for service. Bolt reamer on head with screw bolts which holds cylinder-head No. 84. As reamer is applied shaft and tools just enter bush and hold reamer central while being made fast. The shaft is then fed in by turning bonnet C until the tools reach center of cylinder which is worn largest. Tools are then set out by screwing down on part B until it is felt that tools are touching all around. Now clamp tools by screw G, which also acts as drive for reamer. By using ratchet wrench on G and turning bonnet C, reamer is fed in as far as it will go, then feed back to outside of bush and the job is done.

This tool is no experiment, as I have been using it for about two years, and it gives perfect satisfaction.—American Machinist.



Reamer for Main Bushing Cylinder Head Cap 9½-inch Air Pump.

TO MAKE A VENETIAN BLIND.

While building a house, Senator Platt, of Connecticut, had occasion to employ a carpenter. One of the applicants was a plain Connecticut Yankee, without any frills.

"You thoroughly understand carpentry?" asked the senator.

"Yes, sir."

"You can make doors, windows, and blinds?"

"Oh, yes, sir!"

"How would you make a Venetian blind?"

The man scratched his head and thought deeply for a few seconds. "I should think, sir," he said finally, "about the best way would be to punch him in the eye."

ALUMINUM CASTINGS.

Very favorable results have been received in service from castings manufactured from the alloy of Aluminum and Magnesium.

The Aluminum-Magnesium alloy castings (containing eight or ten per cent pure Magnesium) are about fifteen (15) per cent. lighter than the alloy of Aluminum and Copper, and the Aluminum-Magnesium alloy is also about thirty-three (33) per cent. stronger.

Recent experiments made in the machining of castings made of Aluminum and Magnesium showed that the castings machined 75 per cent. faster than those which are made of the alloy of Aluminum and Copper.

Personal Mention

Mr. G. B. Blanchard, recently elected vice-president of the Dominion Power & Transmission Co., Hamilton, has resigned.