

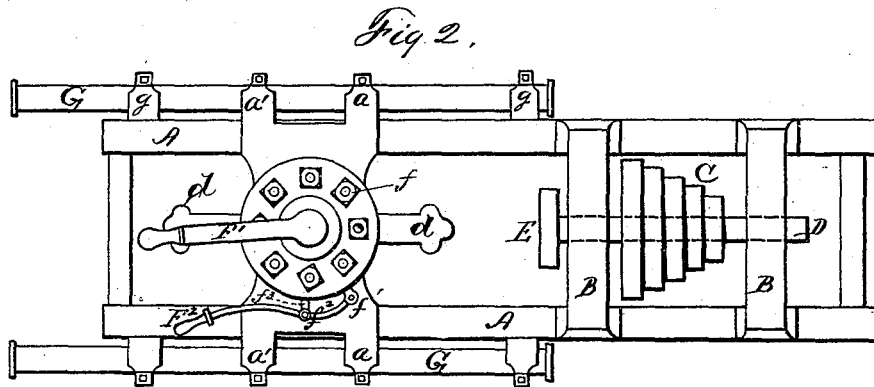
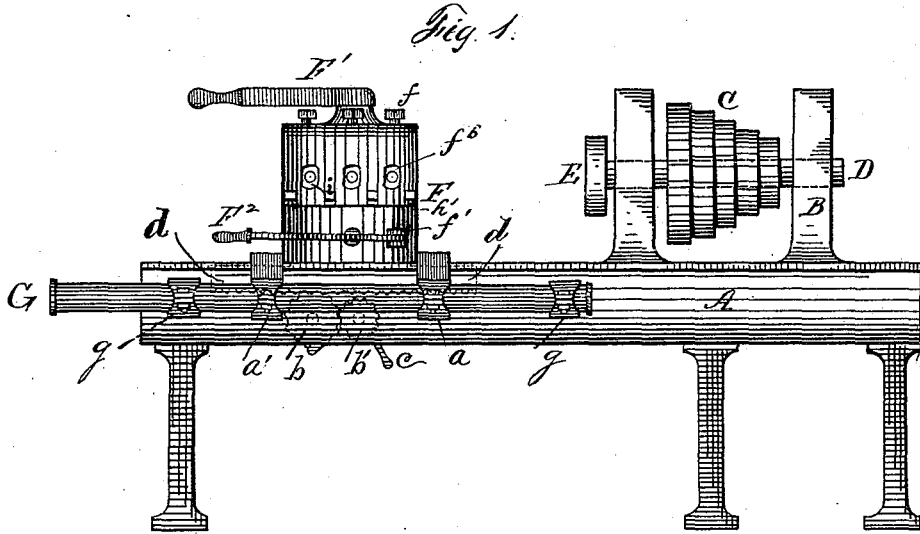
(No Model.)

2 Sheets—Sheet 1

J. FLOWER.
TURRET LATHE.

No. 250,514.

Patented Dec. 6, 1881.



WITNESSES

Samuel C. Thomas
Henry N. Duval

James Flower INVENTOR
By W. W. Leggett
ATTORNEY

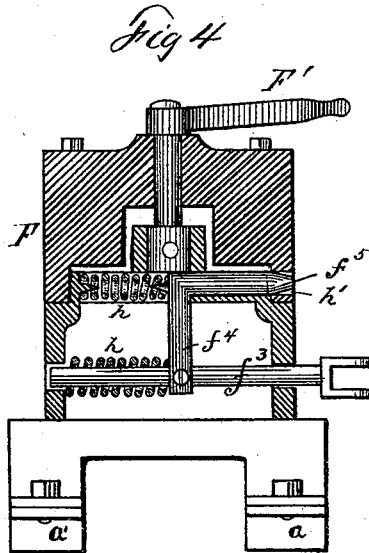
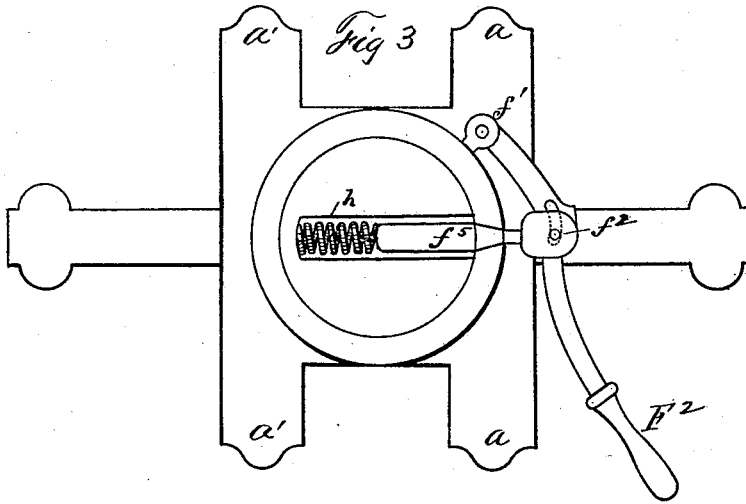
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Fred. D. Paige

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By *W. W. Leggett,*
ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES FLOWER, OF DETROIT, MICHIGAN.

TURRET-LATHE.

SPECIFICATION forming part of Letters Patent No. 250,514, dated December 6, 1881.

Application filed July 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES FLOWER, of Detroit, county of Wayne, State of Michigan, have invented a new and useful Improvement in Monitor-Lathes; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a side elevation of my devices, showing the monitor-head in position. Fig. 2 is a plan view of the same. Fig. 3 is a plan view of the monitor-head with the crown removed. Fig. 4 is a sectional view of the monitor-head, showing the locking device.

The object of my invention is to provide a monitor-lathe head which shall be capable of holding a multiplicity of tools, so that in turning the metal castings the thread is cut or the casting trimmed without removing the tool from its socket.

To this end, A is a lathe-frame. B is the pulley-frame. C are the pulleys, and D the shaft upon which the chuck E is located.

F is the monitor-head, of which F' is the crown-handle, and F² the releasing-lever. *f* are set-screws located upon the top of the crown, and which extend downward to the tool-holes *f*⁶, which receive the reverse ends of the tools, and by means of said set-screws the tools are clamped and held firmly in position. The monitor-head is provided with four depending clamps, *a a'*, &c. These clamps extend downward on the outside of the lathe-frame A, and clasp a rod, G, on each side of the frame. The rod G passes through two eyes, *g*, which are firmly attached to the lathe-frame A, so that when the monitor-head approaches or recedes from the chuck E the rod G moves with it, making a bearing or collar to slide in of the eyes *g*.

The monitor-head may be made to advance or recede by any suitable means; but I prefer to make it do so by means of the pinions *b b'*, which are actuated by a handle, *c*, on the side of the lathe-frame. These pinions are made to mesh into a rack-bar, *d*, located on the under side of the monitor-head.

For the purpose of causing the tool to be brought into use to find its own center, I provide a spring arrangement, which is actuated

by the releasing-lever F², which is attached to the side of the monitor-head and is pivoted at *f'* and *f*². When the lever is pushed in toward the monitor-head it takes its fulcrum from the point *f'*, thereby pushing in the bar *f*³, which is firmly attached to another bar, *f*⁴, which has a cross-piece on its top *f*⁵. This cross-piece is provided with spiral springs *h*, for the purpose of pushing the whole of the releasing mechanism back into place when the pressure on the lever is released. The monitor-head I provide with cavities or slots *h'* for the reception of the end of the cross-piece *f*⁵. These slots I have found in practice are better when placed between the tool-holes *f*⁶, but rather lower down.

The method of working my improved monitor-lathe is as follows: The casting to be trimmed is inserted into the chuck E and the different styles of tools arranged in the tool-holes *f*⁶ in the order in which they may be required. The lathe-head is then brought forward by means of the pinions *b b'* until the tool being used comes into contact with the casting in the chuck. As soon as the tool has accomplished its office the lathe-head is run back and the releasing-lever F² pushed in, and the crown of the monitor may be turned until another tool presents itself in position, when the cross-piece *f*⁵ will spring back into the slot *h'* and hold the tool firmly in position.

It will readily be seen that valves, &c., made by my lathe-head will be uniform in size and the threads cut in the lathe will all be alike, so that the parts will readily fit. Tools of any size may be employed, and the largest castings may be dressed in such a lathe.

A great point of my invention is the simplicity of it. The tools are bound to come to the center, and there is no necessity to plumb the tools, as they are made to fit accurately into the tool-holes, thus doing away with the possibility of their getting out of gear. Another great point is that when the tools are once in position it is not necessary to change them, as in the old lathe, but they are a permanency until they have completed the work of the class to which they are adapted; now supposing in a globe-valve where the thread is of two different sizes, when one thread is cut it is simply necessary to turn the head round until the required tool is in position, and so on.

By supporting the monitor-head upon the

rods G and causing them to slide through eyes *g* at some distance apart upon the frame the device is rendered extremely stable and steady, the wear is reduced to a minimum, and the distortion usually occasioned by wear with V-shaped bearings is avoided. Moreover, the eyes *g* are provided with regular journal-bearings, which can be renewed by babbitting.

The tool-holes in the movable head are made of elongated form in their exterior portions at *i*, so as to receive a corresponding shoulder on the tool, and thus prevent the tool from rotating, and also obviating the necessity of forcing the set-screw very strongly against the shank of the tool to hold it in place, as has heretofore been customary.

What I claim is—

1. In a monitor-lathe, the combination, with the monitor-head provided with means for propelling it toward and from the chuck, and the bed provided with the eyes or bearings at its sides, of the rods G, arranged to slide in said

eyes or bearings, and means for adjustably securing the monitor-head to said rods between the said eyes or bearings, substantially as described, and for the purpose set forth.

2. The combination, with the hollow monitor-base having the annular bearing at its upper edge, and the hollow monitor arranged to rotate on said bearing and provided with the apertures *h'*, of the spring-pressed key arranged within the monitor and base, and having its end arranged to enter said apertures, and the lever *F*², pivoted to the base and connected with said key by rod passing through the wall of the base, said lever lying above the bed of the lathe, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JAMES FLOWER.

Witnesses:

ALBERT M. HENRY,
J. EDWARD WARREN.