(No Model.) 2 Sheets—Sheet 1.

J. FLOWER.

SIZING TOOL FOR LATHES.

No. 258,907. Patented June 6, 1882.

Fig. 1.

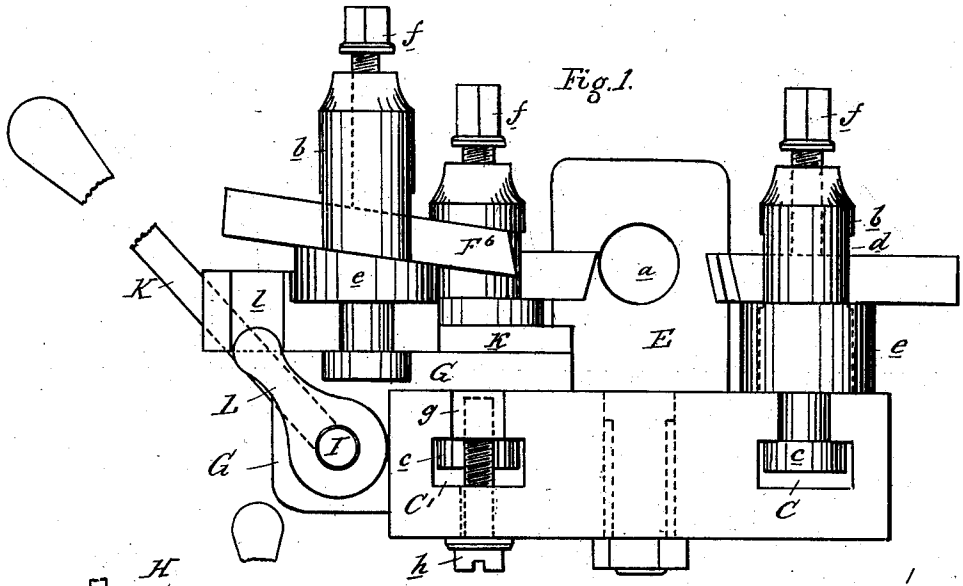
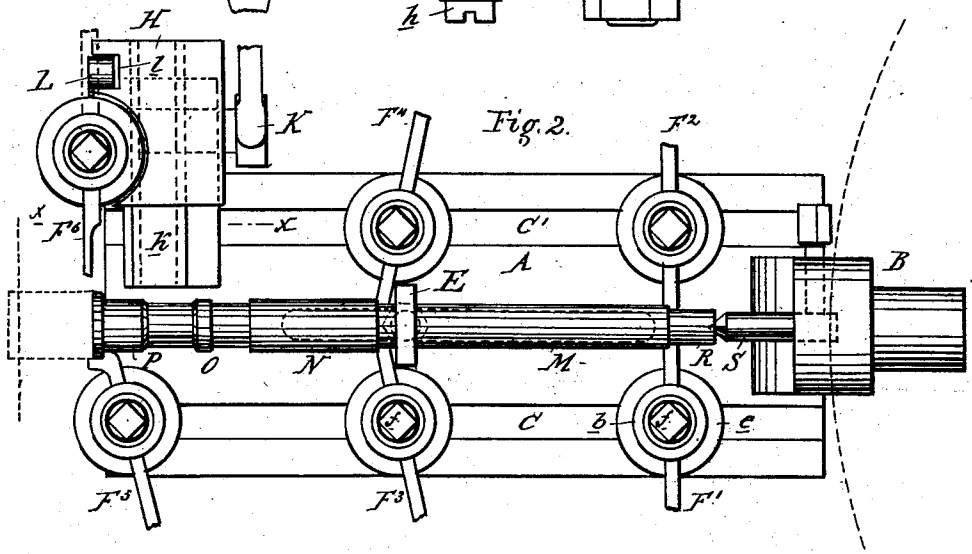


Fig. 2.



Attest,
C. J. Shipley
James Wilson

Inventor.
James Flower

N. PETERS. Photo-Lithographer, Washington, D. C.

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Fig. 3

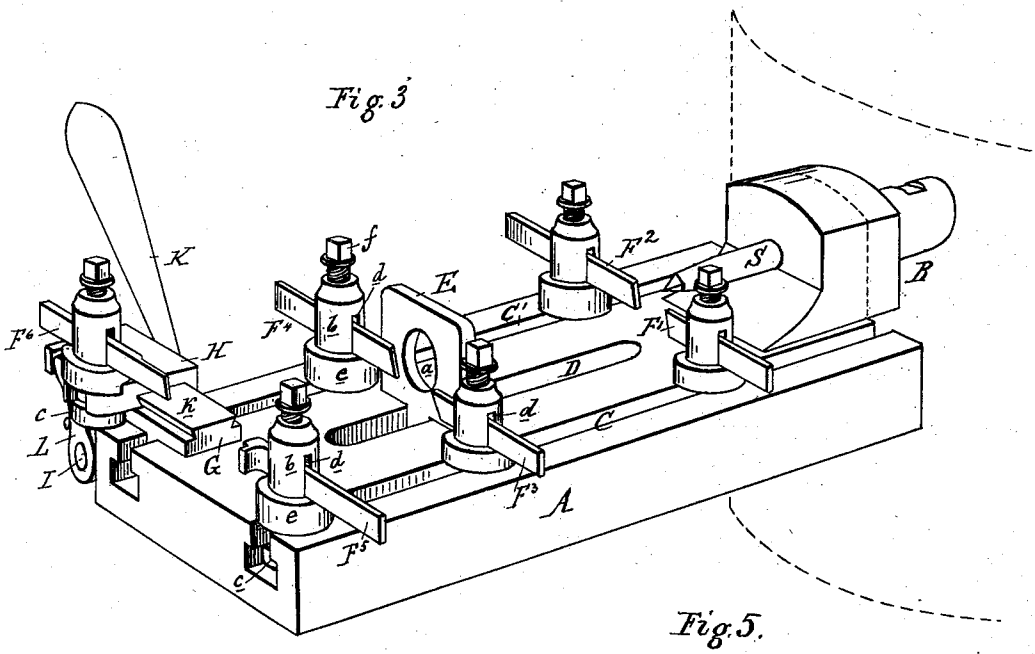


Fig. 5.

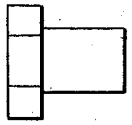


Fig. 4

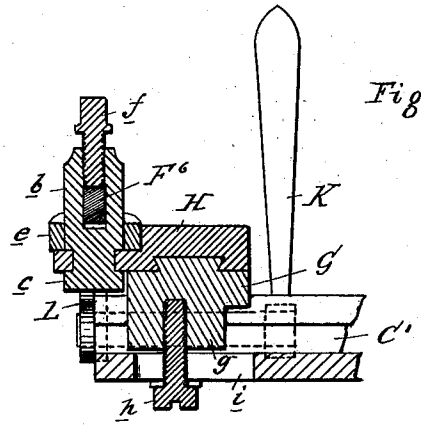
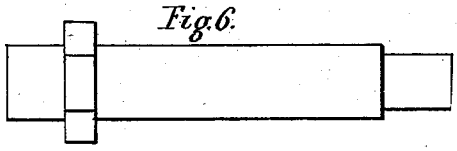


Fig. 6.



Attest:
C. J. Shipley
James Nelson

Inventor:
James Flower

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES FLOWER, OF DETROIT, MICHIGAN.

SIZING-TOOL FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 258,907, dated June 6, 1882.

Application filed February 10, 1882. (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 Sizing-Tools for Lathes; and I declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is an end elevation of my improved tool. Fig. 2 is a top view thereof, showing the parts in the action of sizing a valve-stem casting. Fig. 3 is a perspective view of my tool. Fig. 4 is a vertical section on line *x x*. Figs. 5 and 6 show two different castings for the purpose of illustrating the various uses of my tool.

In a patent granted to me December 6, 1881, and numbered 250,514, I have described a turret-lathe provided with a monitor lathe-head capable of receiving a number of different tools required to size, trim, cut the thread, &c., upon metal castings destined to form different parts of valves, hydrants, or other articles manufactured in large numbers and with their corresponding parts interchangeable.

The object of my invention described in this specification is to provide a tool for my lathe that shall do the sizing of the rough casting in a very expeditious way, and when adjusted to one particular work shall do it in a perfectly-uniform manner.

In the drawings, A represents the bed-plate, provided with the projecting shank or lug B, by means of which the tool is secured to the lathe-head.

C C′ are two parallel mortises, extending the entire length of the bed, and being wider at the bottom than at the top.

D is a slot between and parallel to the mortises C C′.

E is a post provided with the circular hole *a* and adapted to be secured within the slot D in any desired position.

F′ to F⁶ are a number of cutting-tools secured to tool-holders whose construction is as follows:

C is a cylindrical post, provided upon its lower end with the head *c*, adapted to enter and slide in the enlarged part of the mortise.

d is a slot in the post for the reception of the cutting-tool.

e is a ring interposed between the bed-plate and cutting-tool.

f is a set-screw, which, when screwed in, will press upon the cutting-tool and the latter in turn bear upon the loose ring *e*, thereby holding both the tool and tool-holder at once in place. By loosening the set-screw *f* either the tool or tool-holder may be adjusted at will, the latter being also adjustable around its axis.

G is a bracket provided on the under side with the tenon or lug *g*, by means of which and the set-screw *h* it can be firmly secured within the mortise C′, the slot *i* allowing a certain range of adjustment. On the upper side this bracket is provided with a tenon, *k*, which forms a guide for the sliding plate H.

F⁶ is a cutting-tool secured to a tool-holder similar to the one before described, and secured to the sliding plate H in the same manner as the other tools are secured to the bed A.

I is a rock-shaft journaled through the bracket and provided at one end with the hand-lever K, on the other with the arm L, whose free end engages in a notch, *l*, cut into the sliding plate H.

In practice the lever K, when properly actuated, will advance or retract the plate H and tool F⁶, connected therewith upon the bracket G, in a direction across the bed A, and for purposes hereinafter described. The section shown in Fig. 4 is taken with the plate H projected upon the bed A.

To illustrate the working of my device I have shown in Fig. 2 my tool adjusted to do the sizing of a valve-stem, the operation having just been finished. The dotted lines represent a lathe-head, into which the shank B is secured, while the casting is secured to a chuck on the live-spindle. The lathe-head being now advanced, the cutting-tools F³ and F⁴ size the portion M and the cutting-tool F⁵ sizes the portions N, O, and P and finally the valve-disk. The cutting-tools F′ and F² have come later in operation, and have been sizing the portion R. If a center-bit, S, is secured in the shank B, as shown, a center may also be cut in the end of the valve-stem. Now, if my tool is secured to a monitor lathe-head the same is

retracted and the valve-stem operated upon by the screw-cutting tool and other tools, if necessary, until, when it is finished, the sizing-tool is once more presented to the valve-stem, so as to be operated upon by the cutting-tool F^6, which is advanced by means of the lever K, so as to cut the stem off at the proper length.

It will be observed that the post E is in a position close to the cutting-tools F^3 and F^4. Therefore the portion M will soon be projected through the hole *a* in the post E, and if this hole is made of proper size the valve-stem will be steadied thereby during the entire operation. This is of great importance for obtaining true work, especially when long and slender objects have to be turned, and, if necessary, I may use several steadying-posts. The use of two cutting-tools upon opposite sides also tends to steady the work.

From the above description it will be seen that, the casting being secured to and rotating with the lathe chuck, and the lathe-head being advanced toward the chuck, the steadying-post will receive the reduced end of the casting and support the same while the cutters F^3 F^4 cut the surface M. The steadying-post E supports the casting firmly while being acted on by the knives, and the knives being arranged to cut from both sides enables a supporting-center at the small end of the casting to be entirely dispensed with. The cutter F^5 is shaped differently from the other cutters in order to form the valve-disk.

While I have shown in the drawings a certain number of cutting-tools, I do not specify any fixed number, as it is obvious that the number of cutting-tools necessary depends entirely upon the kind of work to be operated upon. The plug shown in Fig. 5, for example, would only require the use of two cutting-tools, and the stem shown in Fig. 6 could be sized with four.

Although I get the full benefit of my tool in combination with a monitor lathe-head, as described in my above-mentioned patent, still, for certain kind of work, my tool may be used with equal advantage in an ordinary lathe-head.

What I claim as my invention is—

1. In a sizing-tool for lathes, the bed A, provided at one end with a shank, B, and having two parallel mortises, C C′, running from end to end, in combination with a series of cutter-holders secured in said mortises on both sides of the center of the bed, substantially as described.

2. The combination, with a sizing-tool for lathes, of one or more steadying-posts, E, provided with round holes *a* and adjustably secured in a slot, D, of the bed, said post or posts being adapted to support the work at different points as the work is fed to the cutters, substantially as and for the purpose specified.

3. In a sizing-tool for lathes, the bed A, provided at one end with a shank, B, and having a central longitudinal slot, D, and two parallel mortises, C C′, one on each side of said slot, in combination with one or more apertured steadying-posts, E, adjustably secured in the slot, and a series of cutter-holders secured in the mortises on both sides of the steadying-posts, substantially as described.

JAMES FLOWER.

Witnesses:
C. J. SHIPLEY,
JAMES WILSON.