

(No Model.)

2 Sheets—Sheet 1.

C. H. SAMPSON & P. J. WRIGHT.
VALVE DRESSING MACHINE.

No. 464,617.

Patented Dec. 8, 1891.

Fig. 1.

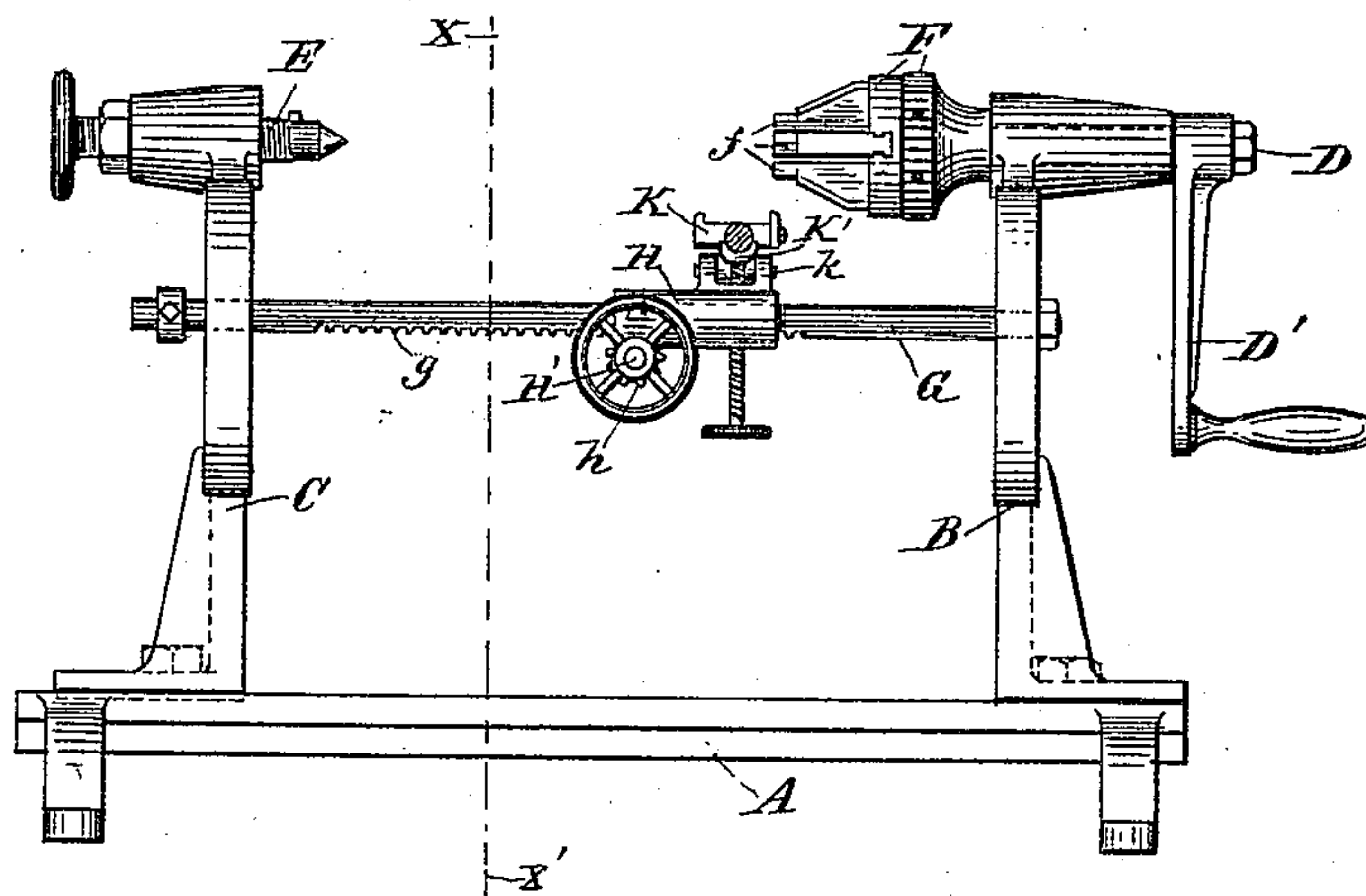
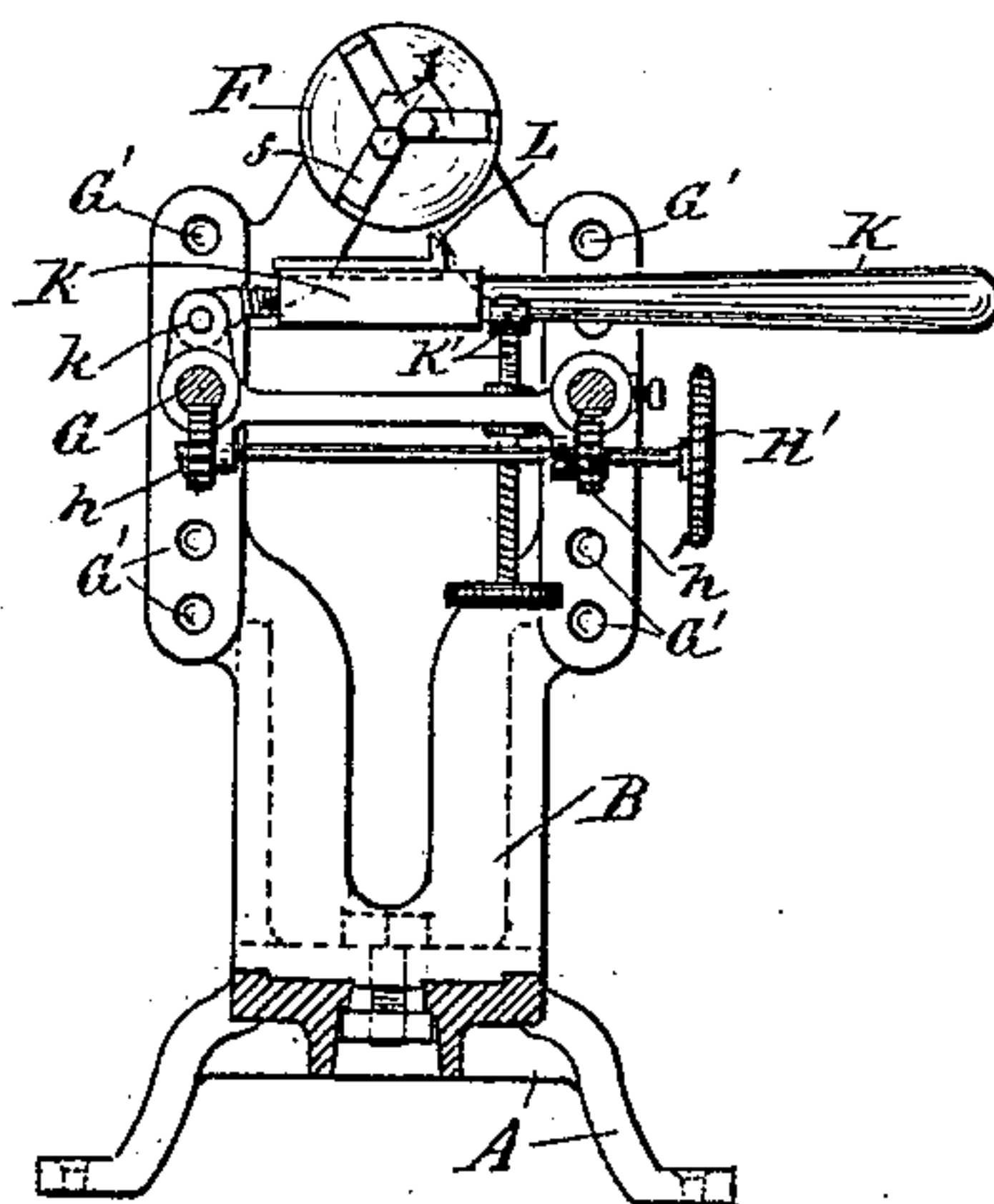


Fig. 2.



Witnesses.

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Geo. A. Gordon

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By the Attorney.
Jas. F. Williamson

(No Model.)

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Fig. 3.

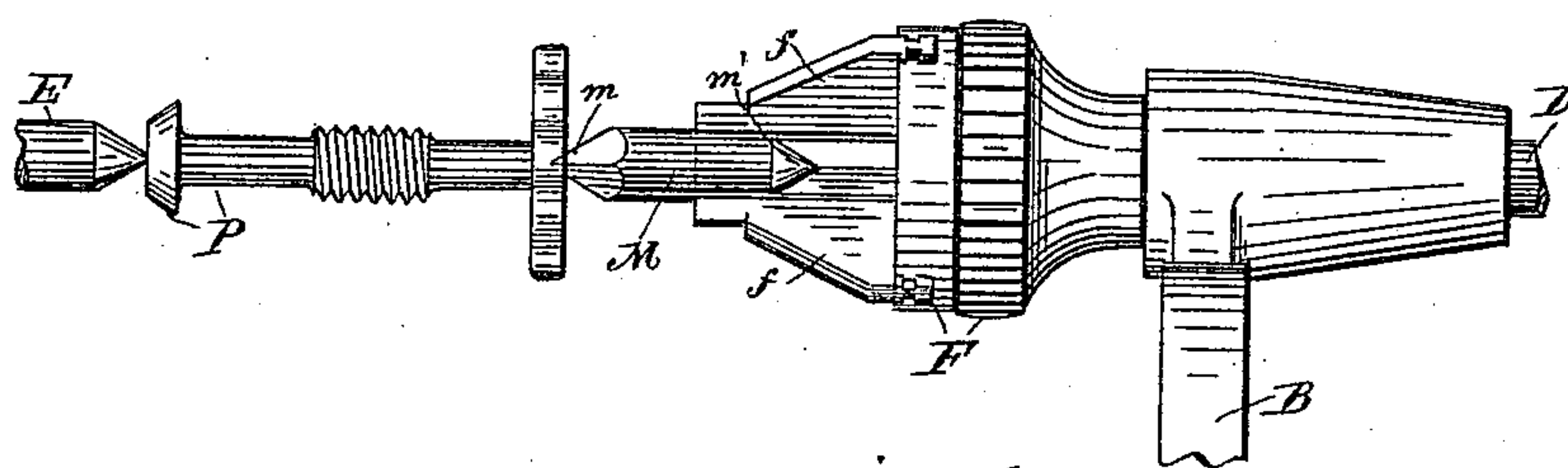


Fig. 4.

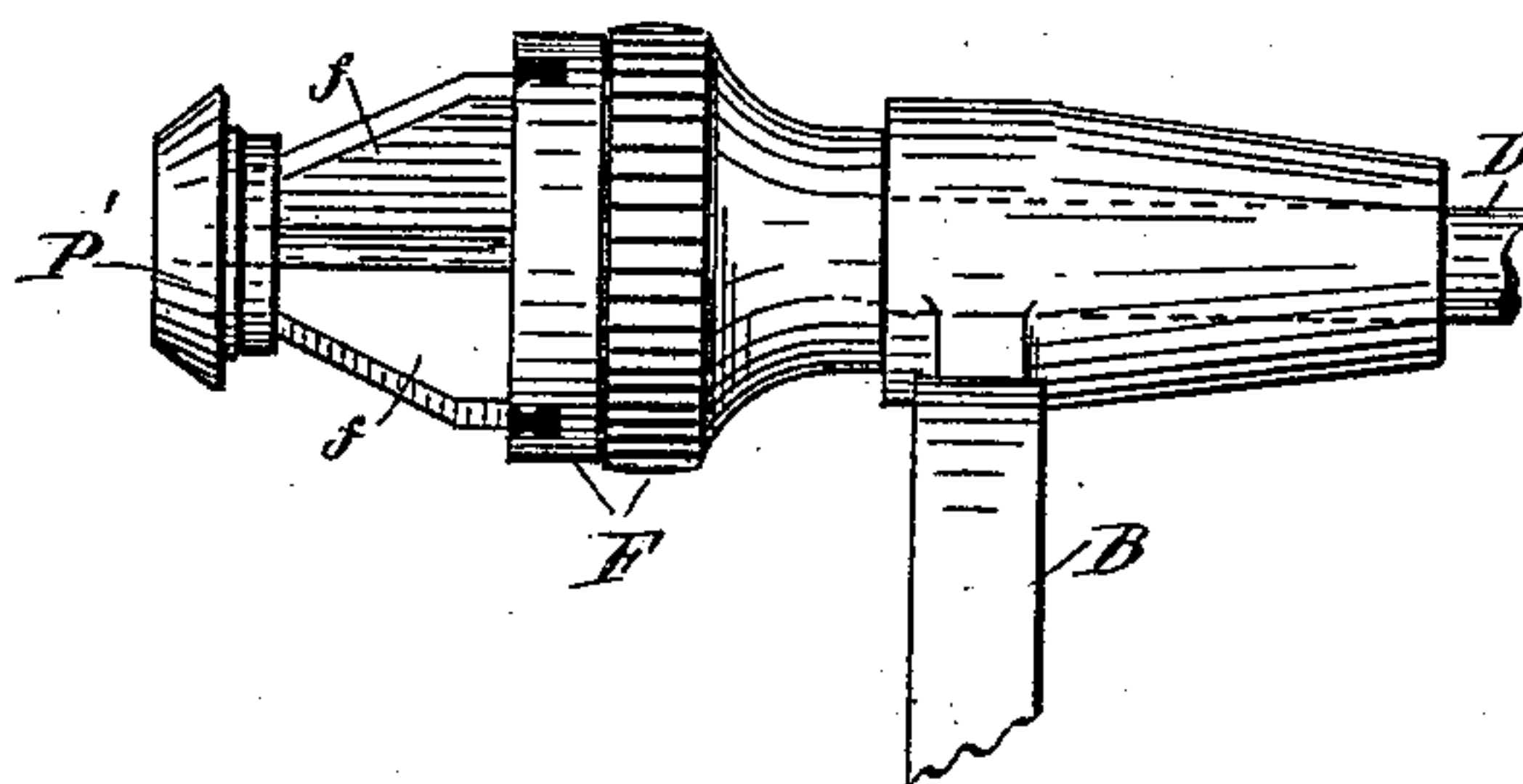
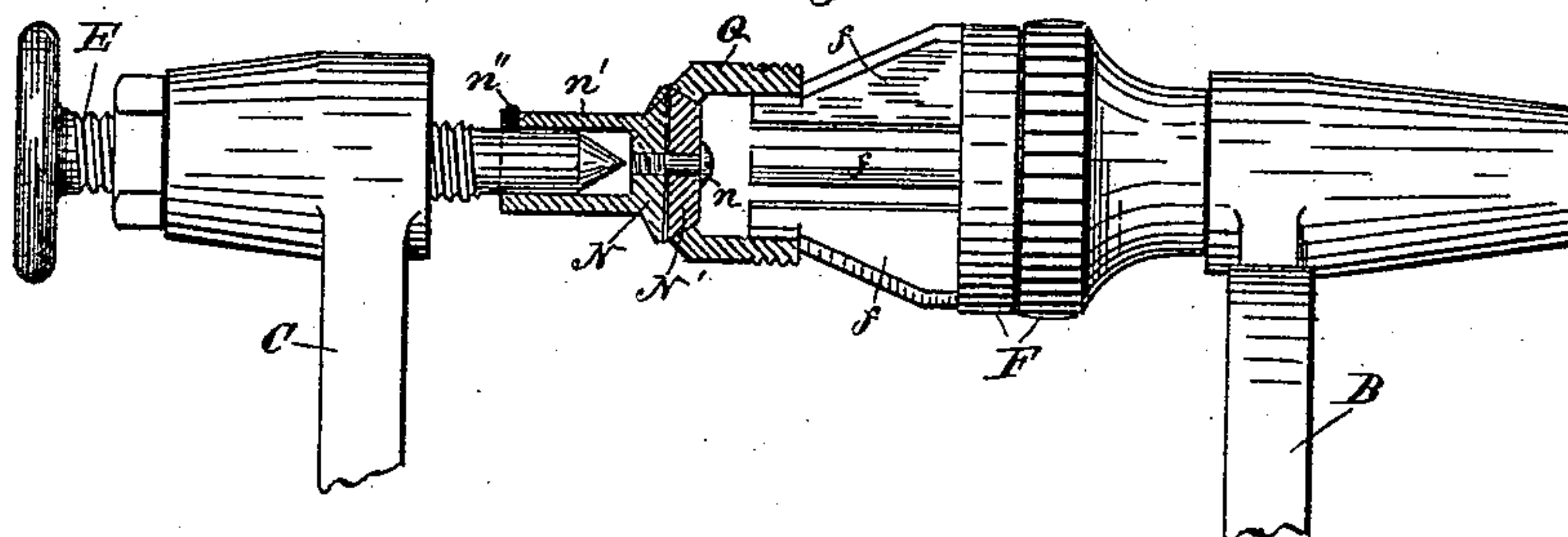


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES H. SAMPSON AND PLINY J. WRIGHT, OF MINNEAPOLIS, MINNESOTA

VALVE-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,617, dated December 8, 1891.

Application filed March 28, 1891. Serial No. 386,847. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. SAMPSON and PLINY J. WRIGHT, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Valve-Dressing Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to valve-dressing machines. It has in view the same objects as the two prior patents of the United States granted to us, one of which was issued of date April 9, 1889, under No. 400,989, entitled "valve-reseating tool," and the other of which was issued to us of date September 2, 1890, under No. 435,904, and entitled "machine for dressing valves." One of the said prior machines was especially designed for dressing valve-seats and the other was especially designed for dressing valves. The present machine was designed for both purposes and is capable of universal application to all kinds of valves, and of general application to valve-seats which are removable.

The machine is illustrated in the accompanying drawings, wherein like letters refer to like parts throughout.

Figure 1 is a side elevation, and Fig. 2 a central cross-section, of the machine, the section being on the line X X' of Fig. 1. Figs. 3, 4, and 5 are detail views on an enlarged scale, illustrating the applications of the device.

A is the bed-plate. B and C are standards mounted thereon and adjustable lengthwise of the same toward and from each other.

D is a chuck-spindle mounted on the head standard B.

E is a center piece mounted on the tail standard C.

F is a chuck having radially-adjustable jaws *f*, each of which is angular in cross-section.

D' is a hand-crank on the chuck-spindle D.

G are tool-carriage guides adjustably mounted in the standards. These guides may be conveniently made of rods secured in holes

in the standard. For effecting the adjustment the standards are each provided with a double series of holes G'.

H is the tool-carriage mounted on the guides G and adjustable lengthwise of the same. For effecting its movement the guides are provided with rack-surfaces *g*, and the carriage with a hand-shaft H', having pinions *h* engaging with the racks.

K is a swiveled tool-holder fulcrumed, as shown at *k*, to the rear end of the carriage, and K' is an adjustable tool-rest mounted on the front end of the carriage.

L is a valve-dressing tool or cutter carried by the holder K. The cutter is preferably provided with a file-surface on its body and an upturned chisel-edge at right angles to the file-surface.

M is a driving center piece having an angular face, as shown at *m*, on one end and a conical face on the other, as shown at *m'*, for co-operation with the chuck and tail center piece on certain kinds of work.

N is a cutter head or holder carrying a cutter N', adapted to dress valve-seats. The cutter is of the kind shown in our former patent, No. 400,989, having a flat file-surface on one side of a size to cover at one time only a part of the surface to be dressed and having inclined file-surfaces on its ends.

n is a set-screw for securing the cutter to the holder.

The cutter-holder N is formed with a socket *n'*, adapted to fit over a centering piece and be held to turn therewith by a stud-and-slot connection, as shown at *n''*.

P and P' are different kinds of valves shown in position to be dressed, and Q is a removable valve-seat similarly shown.

The application and advantages of the machine are obvious. Any kind of a valve may be held either by the chuck directly or with the addition of the driving center piece M, and by turning the chuck-spindle the tool L may be adjusted and applied to dress the valve, as required. The chuck has jaws which are adapted to grasp the hollow object, either by pressure from within or without the same, and in virtue of the fact that the jaws are angular in cross-section will hold the ob-

ject with such a bite on their angular surfaces as to prevent the same from slipping. This is a material advantage, both for securely holding the object and avoiding injury to the threads of such as are screw-threaded. For dressing valve-seats the application is substantially the same, so far as the chuck is concerned; but the tool-carriage and tool used for dressing the valve is left idle and the cutter-holder N, with its cutter N', is applied to the tail centering piece E. The valve-seat may then be revolved over the cutter N', as shown in Fig. 5, and dressed as required.

The entire machine is compactly arranged, is capable of being knocked down and packed in small compass, and is adapted to a wide range of work.

What we claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A chuck having jaws angular in cross-section, substantially as and for the purpose set forth.

2. The combination, with the revoluble chuck and centering device, of the universally-adjustable tool-holder, substantially as described.

3. The combination, with the revoluble spindle and centering device, of the chuck having jaws angular in cross-section and the universally-adjustable tool-holder, substantially as described.

4. The combination, with the bed-plate, of the chuck-spindle and centering device and the standards for supporting the spindle and centering device adjustable lengthwise of said bed, substantially as described.

5. The combination, with the standards for holding the chuck-spindle and centering device, of tool-carriage guides adjustably mounted on said standards, substantially as described.

6. The combination, with the standards for holding the chuck-spindle and centering device, of the tool-carriage guides adjustably mounted in said standards and the tool-car-

riage mounted on the guides and adjustable lengthwise of the same.

7. The combination, with the standards for holding the chuck-spindle and centering device, each having a double series of holes, of the tool-carriage guides fitting said holes, substantially as described.

8. The combination, with the standards for the chuck-spindle and centering device, of the tool-carriage guides provided with racks on one surface, the tool-carriage mounted on the guide, and the hand-shaft and pinion on the carriage engaging with said racks, substantially as described.

9. The combination, with the standards for holding the chuck-spindle and centering device, of the tool-carriage guide, the tool-carriage on said guides, the swiveled tool-holder fulcrumed to one end of said carriage and the adjustable tool-rest on the other end of the carriage, substantially as described.

10. The combination, with the chuck-spindle and chuck, of a conical-faced tail center piece, and an angular-faced driving or head center piece, substantially as described.

11. The combination, with the chuck-spindle and chuck, of a center piece and a cutter and cutter-holder for dressing valve-seats.

12. The combination, with the chuck-spindle and chuck, of the tail center piece, the cutter-holder having a socket fitting said center piece, a cutter adapted to dress valve-seats secured to said holder, and means for securing the holder to the center piece, substantially as described.

In testimony whereof we have hereunto affixed our signatures each in the presence of two witnesses.

CHARLES H. SAMPSON.
PLINY J. WRIGHT.

In presence of—

JAS. F. WILLIAMSON,
EMMA F. ELMORE,
J. W. LATHROP,
WM. W. SECOR.