

(No Model.)

J. N. SKINNER.  
LATHE CHUCK.

No. 460,601.

Patented Oct. 6, 1891.

Fig. 1.

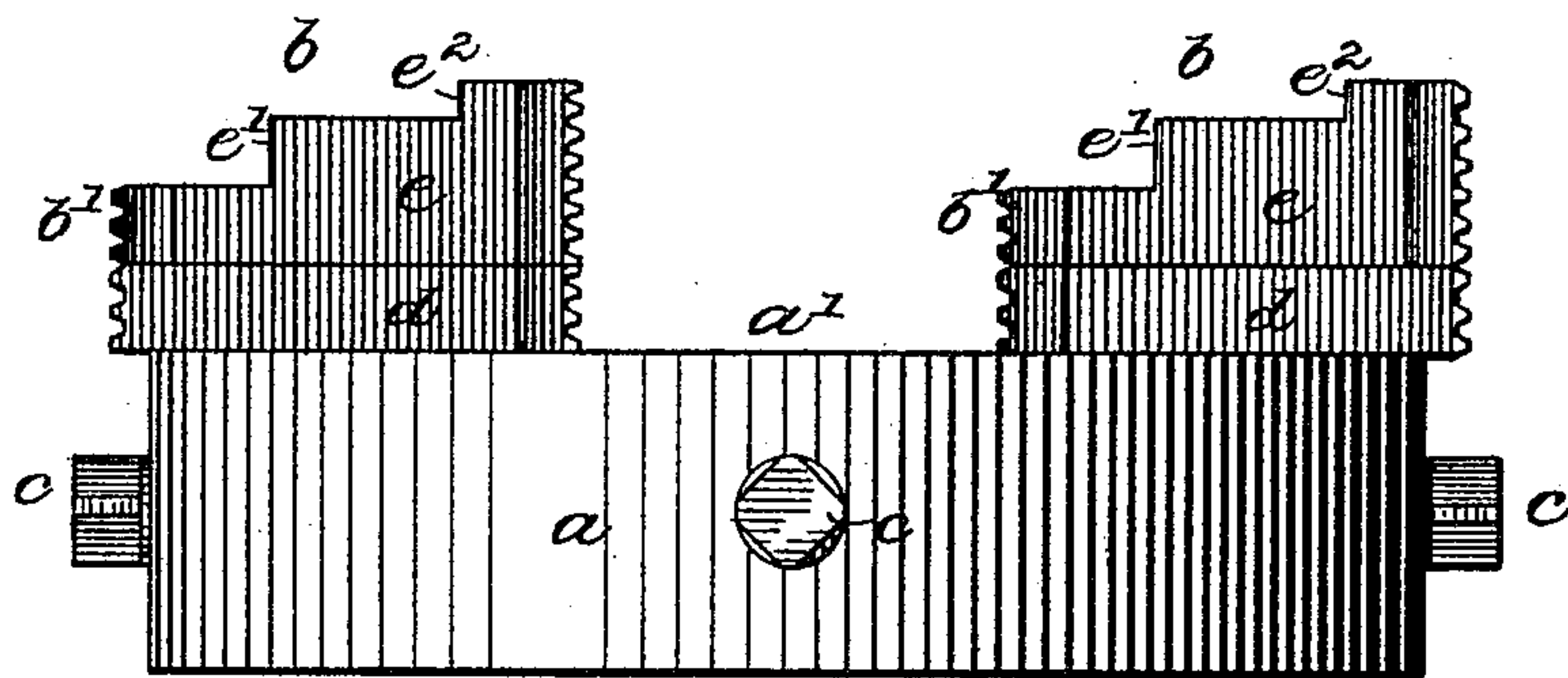


Fig. 2.

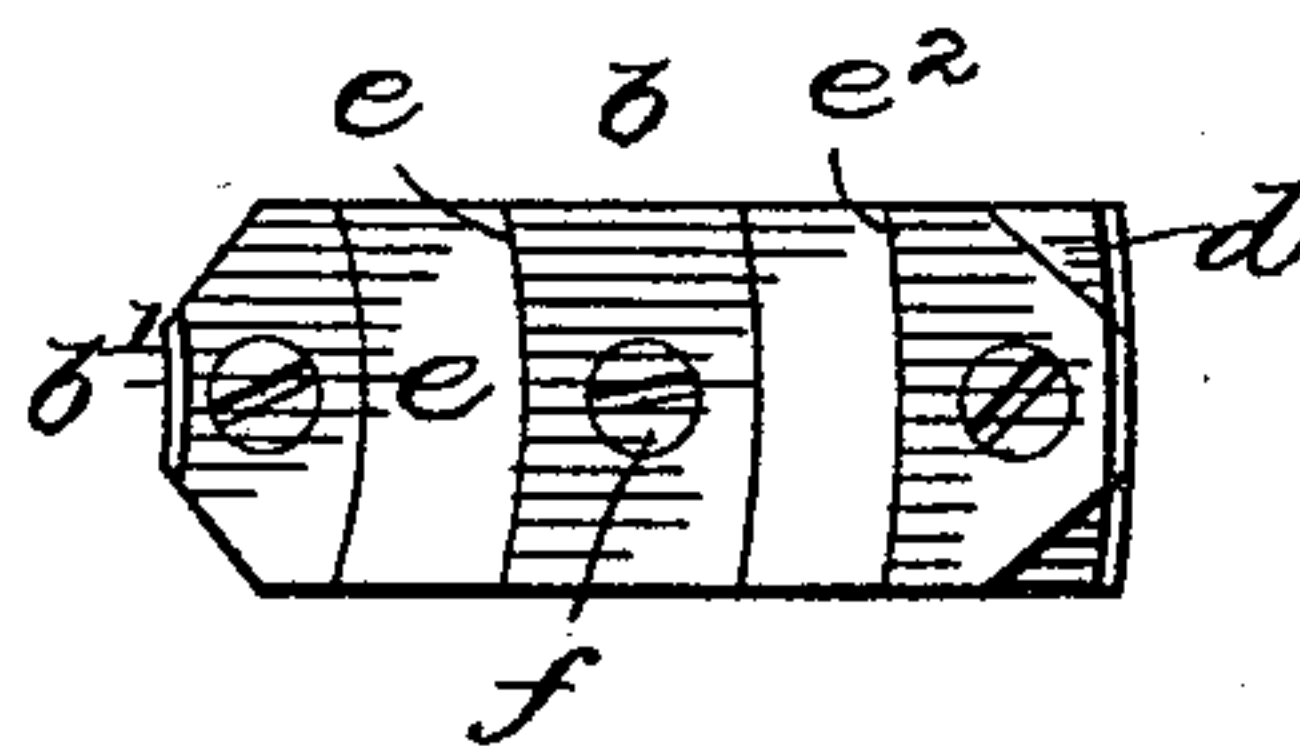
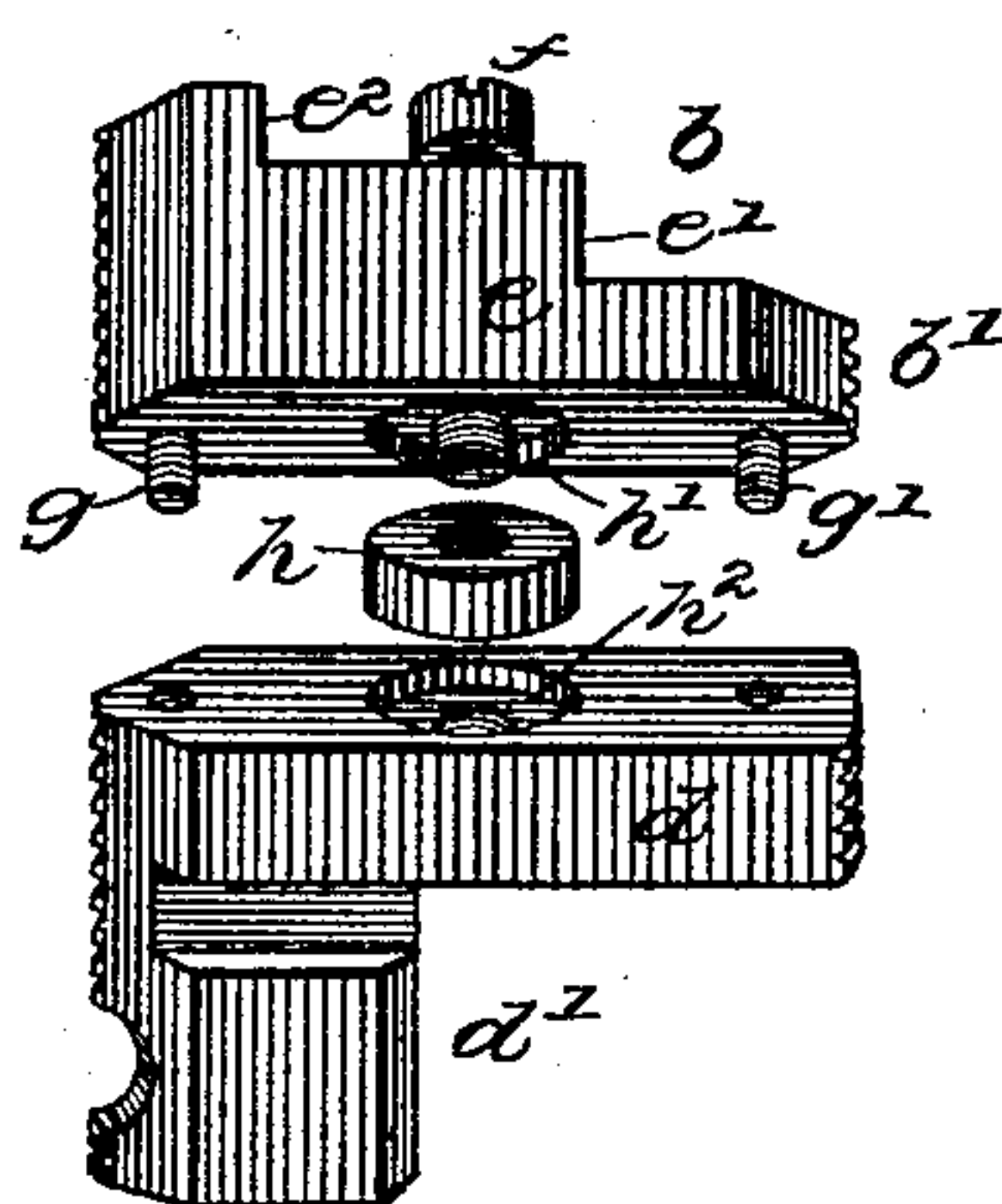


Fig. 3.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## LATHE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 460,601, dated October 6, 1891.

Application filed April 13, 1891. Serial No. 388,710. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES N. SKINNER, of New Britain, in the county of Hartford and State of Connecticut, have invented certain  
5 new and useful Improvements in Lathe-Chucks, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a  
10 lathe-chuck with reversible jaws that shall be of simple construction, strong, and durable; and to this end my invention consists in the details of the several parts making up the device as a whole and in their combination, as  
15 more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a detail side view of the chuck, showing two of the jaws and with two removed. Fig. 2 is a  
20 detail top view of one of the jaws. Fig. 3 is a detail perspective view of the parts composing the sectional jaw.

In the accompanying drawings, the letter *a* denotes the chuck-body as a whole; *b*, the  
25 chuck-jaws that are usually several in number and that are arranged in radial lines, so as to project from the face *a'* of the chuck-body, and are also arranged in opposition to each other, so as to enable them to grasp a  
30 piece of work between their adjacent faces. These jaws are operated by means of radially-arranged jaw-screws *c*, the heads of which project beyond the periphery of the chuck-body, so that a wrench or like tool may be  
35 used to turn the screws and move the jaws, the threaded portion of the screws usually passing through a nut that is formed in an integral projecting part of the jaw that lies within the chuck-body.

40 In order to adapt the lathe-chuck to hold different kinds of work—that is, for use with an outside or an inside grasp upon the work—it is desirable to make the jaws reversible, and several devices have been employed for this  
45 purpose. In each of these prior devices, however, there are disadvantages, all of which are overcome by my within improvement.

Each of the jaws *b* is made up in sections *d* and *e*, the lower section being provided with  
50 the nut *d'*, through which the jaw-screw passes, and both sections have a roughened or ser-

rated biting-edge on the opposite ends. The upper section *e*, in order to provide for holding articles of different diameters without requiring the larger adjustment of the jaw by  
55 means of the jaw-screw, is formed with a series of biting-faces *e' e''*, projecting from the upper faces of the jaw and at a distance from the front edge *b'*. For taking an outside grasp or hold upon the work the faces *b'*, *e'*,  
60 and *e''* are used when the jaw is faced, as shown on the right in Fig. 1 of the drawings. The same faces, so far as the upper section *e* of the chuck-jaw is concerned, may be turned  
65 outward by reversing the upper section in regard to its position and arranging it as shown on the left in Fig. 1, in which case the grasping-faces are adapted to take an inside  
hold upon the piece of work.

In order to enable the tool to be made at a  
70 comparatively small expense, it is desirable that the surfaces to be finished should be plane surfaces, across which straight cuts may be taken, and as the jaw-sections are made of steel and case-hardened it is desirable that  
75 these surfaces shall be such as can be ground to a true fit, as in the hardening the faces of the two sections become more or less distorted in shape. In my improved chuck-jaw the  
80 sections *d* and *e* are formed with flat meeting surfaces, as clearly shown in Fig. 3 of the drawings. A pivot-screw *f* passes through the upper section and into the lower, the threaded  
85 lower end of this screw *f* taking into a threaded socket in the lower section, while the shank of the screw is left plain or does not fit any threaded socket in the upper section, but  
90 passes through it, making a snug fit, so as to enable the upper section *e* to be easily revolved upon the pivot-screw, the head of which is recessed in a counterbored socket, so that its upper surface does not project beyond the outer  
95 face of the jaw when the parts are in position for use. Screws *g g'* pass through sockets in the upper section and extend into threaded sockets in the lower sections, these screws being  
100 arranged at opposite ends of the jaw-section and at equidistance from the axis of the pivot-screw. The function of these screws *g g'* is to hold the upper section from rotating on the pivot-screw, and also to serve to bind the two jaw-sections together.



In addition to these fastening means described there may be employed a detachable annular plug  $h$ , that fits into sockets  $h'$   $h^2$ , formed directly opposite each other in the meeting faces of the two jaw-sections  $d$  and  $e$ , the sockets being in depth substantially equal to one-half the height of the plug  $h$ . These sockets are formed by counterboring after the sockets for the pivot-screw  $f$  have been made. As this cylindrical plug  $h$  fits within corresponding sockets the outer walls of which are concentric with the axis of the pivot-screw  $f$ , it serves as a support and guide in the rotary movement of the upper section when the screws  $g$   $g'$  are removed. It also serves to strengthen the connection between the two jaw-sections, so that the strain of holding the piece of work that results largely in an endwise thrust upon the jaw-sections can be in a large part withstood by the plug that extends into both of the jaw-sections, as described. This plug has another function as an adjusting device to take up any wear that may have come upon the plug or the sockets by reason of this endwise thrust or strain, and this is accomplished by rotating the plug in the sockets and presenting an unworn portion of the plug in the direction of the strain.

The upper section is made preferably to extend the whole length of the lower section and cover it, as shown, as by this means there are no open screw-sockets uncovered in the changed or reversed position of the jaw, and no chance, of course, for clogging such sockets. The meeting faces of the sections being flat and there being no interengaging parts

projecting from the outer edges of the jaw-sections, it is only necessary to withdraw the screws  $g$   $g'$  from the lower section and then simply revolve the upper section on the central pivot-screw and the plug and then drive the screws  $g$   $g'$  into the sockets opposite to which they may be placed. This enables the jaws of a chuck to be quickly reversed and adapted to hold any kind of work.

I claim as my invention—

1. In combination, in a lathe-chuck, a sectional chuck-jaw, the two sections having flat meeting faces, a pivot-screw uniting the two sections, and a removable annular plug fitting corresponding sockets arranged opposite to each other in the meeting faces of the two jaw-sections, and the fastening-screws whereby the sections are held from turning upon the pivot-screw, all substantially as described.

2. In combination, in a lathe-chuck, the chuck-body and the jaw-feeding devices, a chuck-jaw made in two sections and having flat meeting faces, the upper section extending the whole length and overlying the lower section, the pivot-screw uniting the two sections and upon which the upper section revolves, the removable annular plug extending into a socket in each jaw-section surrounding the pivot-screw, and the screws extending through opposite ends of the upper section, whereby it is held against rotary movement on the lower section, all substantially as described.

JAMES N. SKINNER.

Witnesses:

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