

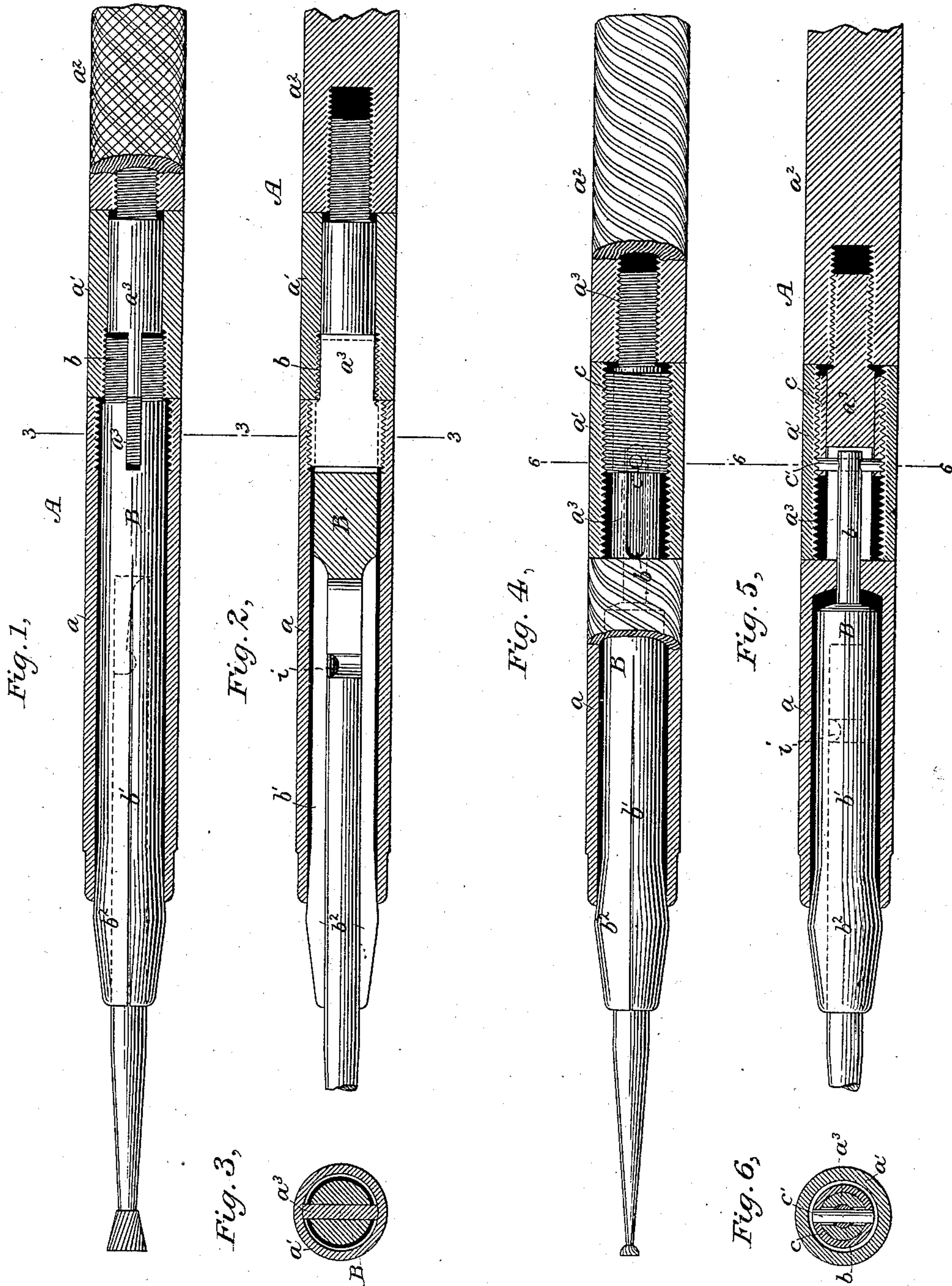
(No Model.)

2 Sheets—Sheet 1.

G. KAEBER.
DENTAL TOOL HOLDER.

No. 257,225.

Patented May 2, 1882.



WITNESSES

Wm. A. Skink
Jos. S. Latimer

By his Attorneys

Baldwin, Hopkins & Payton.

INVENTOR

George Kaerber,

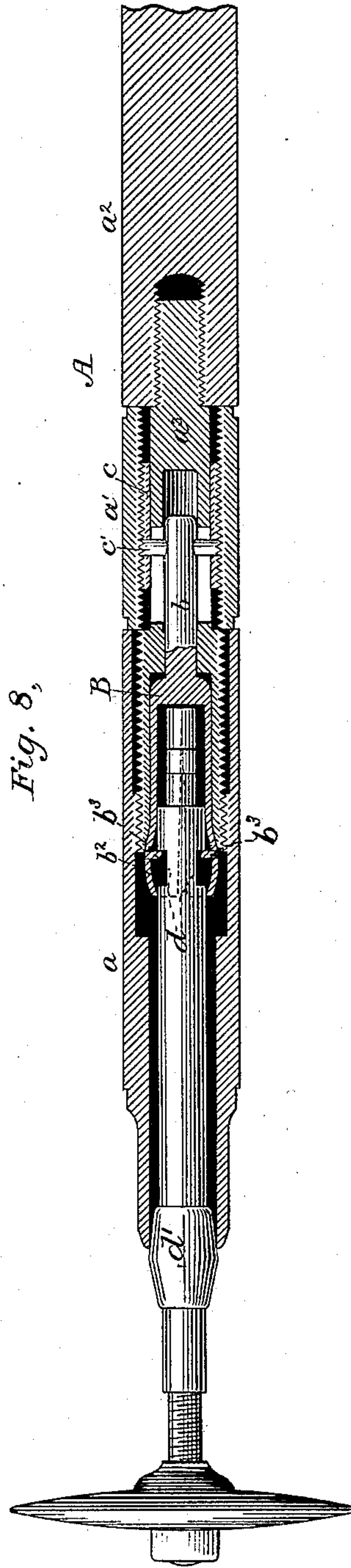
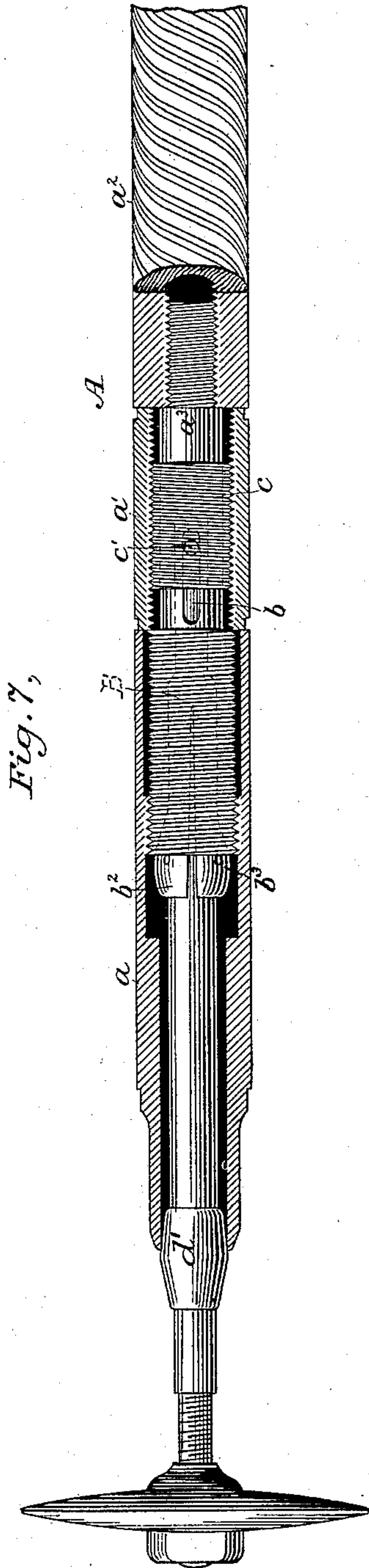
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UNITED STATES PATENT OFFICE.

GEORGE KAEBER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
S. S. WHITE DENTAL MANUFACTURING COMPANY, OF SAME PLACE.

DENTAL TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 257,225, dated May 2, 1882.

Application filed March 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KAEBER, of city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Bit or Tool Holders, of which the following is a specification.

My invention relates to a bit or tool holder having a chuck, the front end of which is socketed and split or divided so as to form spring clamping-jaws compressible upon a bit or tool shank inserted in the socket, and the rear end of which is screw-threaded or connected with a screw-threaded sleeve or portion, so that a screw-nut working upon said screw-threads or threaded sleeve may be turned to draw an inclined surface of the chuck within the mouth of a tubular portion or socket of the handle, and thereby compress the jaws or members of said chuck, said screw-nut being also capable of being turned or adjusted to permit said inclined surface of the chuck to project beyond the socket or mouth of the handle to enable its jaws to spring apart.

The object of my invention more particularly is to provide a neat, durable, effective, and convenient bit or tool holder or handle for dentists' use, in which the operating bits or tools used by dentists may be readily and interchangeably inserted in the holder or handle and firmly fastened or clamped therein when in operation as against independent turning or endwise movements.

The subject-matter claimed is particularly recited at the close of the specification.

In the accompanying drawings, which show my improvements embodied in the best way now known to me, Figure 1 is a longitudinal section through a portion of the handle or holder, showing the manner of connecting and manipulating the split-jawed chuck or tool-locking device; and Fig. 2 is a similar section taken on a plane at right angles to that of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Figs. 1 and 2. Fig. 4 is a partial longitudinal section of a modified form of holder; and Fig. 5 is a similar section taken on a plane at right angles to that of Fig. 4. Fig. 6 is a transverse section on the line 6 6 of Figs. 4 and 5. Fig. 7 is a longitudinal section of still another modified form of holder; and Fig. 8 is a longitudinal section there-

through, taken on a plane at right angles to that of Fig. 7.

The handle proper, A, is preferably cylindrical, and by choice is constructed of metal, roughened on its surface to enable a firm grasp to be taken by the hand when holding the handle or holder for operation between the fingers and thumb, somewhat in the manner of holding a pen or pencil, as is customary by dentists when using hand-excavators, hand plugging-tools, &c. Said handle, when adapted for dental purposes, will preferably be of the ordinary size of excavators, hand-plug-gers, &c., and is preferably composed of three sections, a a' a^2 , which, when joined or connected for use, present the appearance, except upon close inspection, of a handle made of a single piece.

In Figs. 1, 2, and 3, I have shown one form of holder embodying my invention. The front section, a , of the handle is tubular, and in the rear end of this tubular section is firmly fitted the flattened front end of a connecting-piece, a^3 . Said connecting-piece a^3 back of its flattened front end is cylindrical preferably for a portion of its length, while the extreme rear end of said connecting-piece is reduced in diameter, and is screw-threaded to enable said rear end to be firmly screwed into the screw-threaded socket in the front end of the third or main section, a^2 , of the handle. The second or intermediate section, a' , of the handle is tubular, and is fitted at its rear end upon the cylindrical portion of the connecting-piece a^3 , while the front end of said section a' is internally threaded to work upon the male threaded rear end, b , of the chuck B, so that said section a' is virtually a turning screw-nut. Said rear end, b , of the chuck B is slotted or divided longitudinally to fit upon the flattened front end of the connecting-piece a^3 , and extends along both sides thereof to a point past the rear end of the front handle-section, a , in order to enable the handle-section or nut a' to engage the said screw-threaded end of the chuck and work thereon. The chuck B is preferably cylindrical and extends through the tubular front section, a , of the handle. Its front end, b' , is socketed, and is also split or divided longitudinally to form clamping jaws or members, the tendency of which, when free,

is to spring apart a short distance to widen the socket, so as to permit the tool-shank to be readily inserted in the socket or removed therefrom, the bit or tool shank being of such a size that when inserted in the chuck-socket the jaws or members of the chuck may be compressed to firmly grasp it and lock it in the chuck against independent movement. The chuck at its front end is provided with a tapering external surface or head, b^2 , as is usual with this class of split or spring jawed chucks, so that when drawn inward within the mouth of the socket in the front handle-section, a , the jaws or members of the chuck will be compressed or brought together. Endwise movement of the chuck B to draw its jaws into the mouth of the handle-socket to compress them is accomplished by turning or rotating the screw-nut or handle-section a' around the connecting-piece a^3 .

It will be obvious that inasmuch as the chuck cannot turn in the handle, owing to its connection with the sides of the stationary connecting-piece a^3 , the turning or rotation of the section or nut a' , with its front end abutting against the rear end of the front handle-section, a , will cause the chuck, owing to the screw-connection between it and said section a' , to be moved or drawn inward; and that the incline b^2 thereof, upon its entrance into the mouth of the handle-socket, will compress the jaws or members of the chuck. At the end of the movement of the section or nut a' , which compresses the chuck-jaws, the handle-section a^2 is screwed up tightly upon the connecting-piece a^3 , against said section or nut, whereby the handle presents the appearance of being made of a single piece of metal.

To release the jaws or members of the chuck to permit them to spring apart, the section a^2 of the handle is first partially unscrewed from the connecting-piece a^3 or loosened, and the nut or section a' is then rotated or turned in a direction the reverse of that to compress the jaws. This forces the chuck forward or away from the mouth of the handle-socket, as will be obvious, and permits its jaws to spring apart. It will thus be seen that the handle or holder may be a common one for many different bits or tools, and that their interchange may be effected with ease and rapidity, while a neat, convenient, durable, and firm holder is obtained.

In Figs. 4, 5, and 6 I have shown another embodiment of my improvements. In this example, instead of a direct screw-connection between the intermediate handle-section or screw-nut, a' , and the rear end of the split-jawed chuck B, as in the form first described, the rear end of the chuck is considerably reduced to fit a socket in the stationary cylindrical connecting-piece a^3 , which is firmly connected to or forms a part of the rear end of the front handle-section, a , and has a screw-threaded end to enter a corresponding socket in the front end of the rear handle-section, a^2 , as in

the form before described. Longitudinal slots are formed in the connecting-piece a^3 on opposite sides, and these slots intersect the bore of said connecting-piece, as clearly shown in Fig. 5. An externally-threaded sleeve or thimble, c , is fitted upon the cylindrical portion of said connecting-piece a^3 , and is fastened to the reduced end of the chuck by a transverse pin or rivet, c' , which pin or rivet, while connecting the screw-threaded thimble firmly with the chuck, prevents the chuck and thimble from turning, while it permits the chuck and thimble to move endwise to compress or release the jaws of the chuck under the action of the screw-nut or casing-section a' , which works upon said thimble.

The operation of this form of holder will readily be understood from what has been said as to the form shown in Figs. 1, 2, and 3. If desired, the sockets of the chucks or tool-locking devices shown in Figs. 1 to 6 may be provided with a lug or pin, i , projecting into the socket to engage a notch or groove in the tool-shank. A plain socket, however, will securely fasten and clamp in the chuck plain-shank tools.

In Figs. 7 and 8 I have shown still another form of holder embodying my improvements. This form nearly resembles that form of tool-holder shown in Figs. 4, 5, and 6. Instead, however, of the spring members of the chuck B being compressed or released at the mouth of the handle-section a , they are compressed and released at the mouth of the tubular connecting-piece a^3 , which unites the handle-sections a and a^2 together, with the turning section or screw-nut a' between them.

The shanks of the tools to be used with the form of holder shown in Figs. 7 and 8 are preferably provided with cross-notches d , so as to be engaged by pins or projections b^3 in the socket of the chuck B, as clearly shown in Fig. 8, while the tool-shank, near its front end, is provided with a cone or tapered surface, d' , to fit a corresponding seat in the mouth of the front handle-section, a . By this organization the shank of the operating-tool, when inserted in the chuck-socket and said chuck is manipulated by the screw-section a' , will not only be securely clamped in the handle or holder, but will have its tapered surface drawn firmly into the corresponding seat in the mouth of the handle-section a , and this will be due to the engagement of the projections b^3 in the chuck-socket with the shoulders or notches in the tool-shank and by the backward movement of the chuck which is to compress its locking members or jaws.

The operating-tools shown in the several forms of holders described are cutting-burrs in Figs. 1 and 4, and a grinding or cutting wheel in Figs. 7 and 8.

I claim as my invention—

1. The combination, substantially as herebefore set forth, of a sectional handle, a tool-holding chuck carried by said handle and mov-

able endwise therein, and a connection between
said tool-holding chuck and a movable section
of said handle, whereby said tool-holding chuck
is operated to clamp or release a tool by being
5 moved endwise in said handle.

2. The combination, substantially as here-
inbefore set forth, of the handle composed of
a tubular or socketed front section to receive
a split or spring jawed chuck, an intermediate
10 tubular section having an operating-connection
with the rear end of said chuck, and a third

section connected with the front section by a
connecting-piece around which the intermedi-
ate section turns to manipulate said chuck.

In testimony whereof I have hereunto sub- 15
scribed my name this 10th day of March, A.
D. 1882.

GEORGE KAEHER.

Witnesses:

GEORGE B. MORGAN,
ELI T. STARR.