

(No Model.)

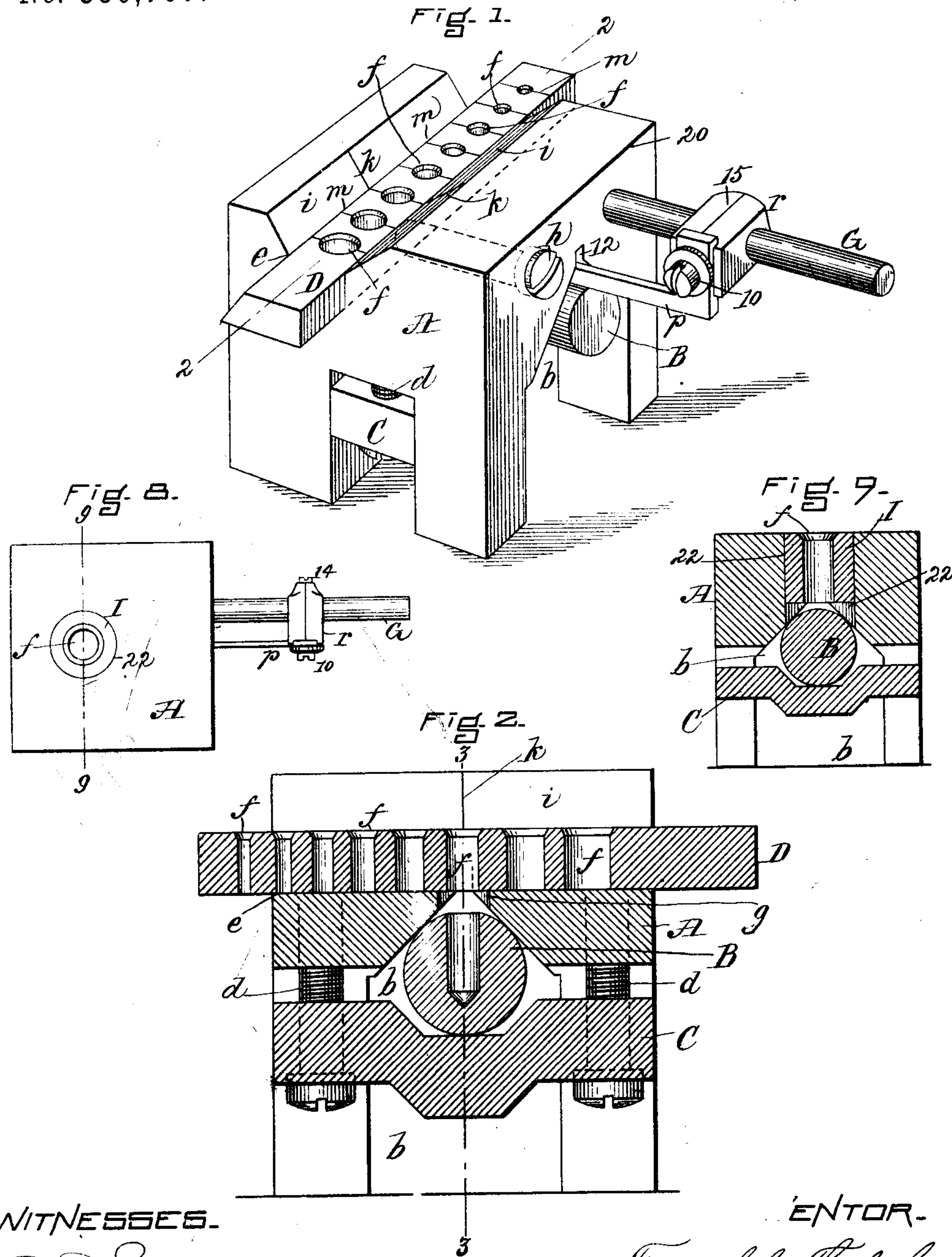
2 Sheets—Sheet 1.

F. C. THIELSCHER.

TOOL FOR CENTERING AND HOLDING SHAFTS, &c.

No. 550,767.

Patented Dec. 3, 1895.



WITNESSES.

A. D. Murr.

P. L. Marden.

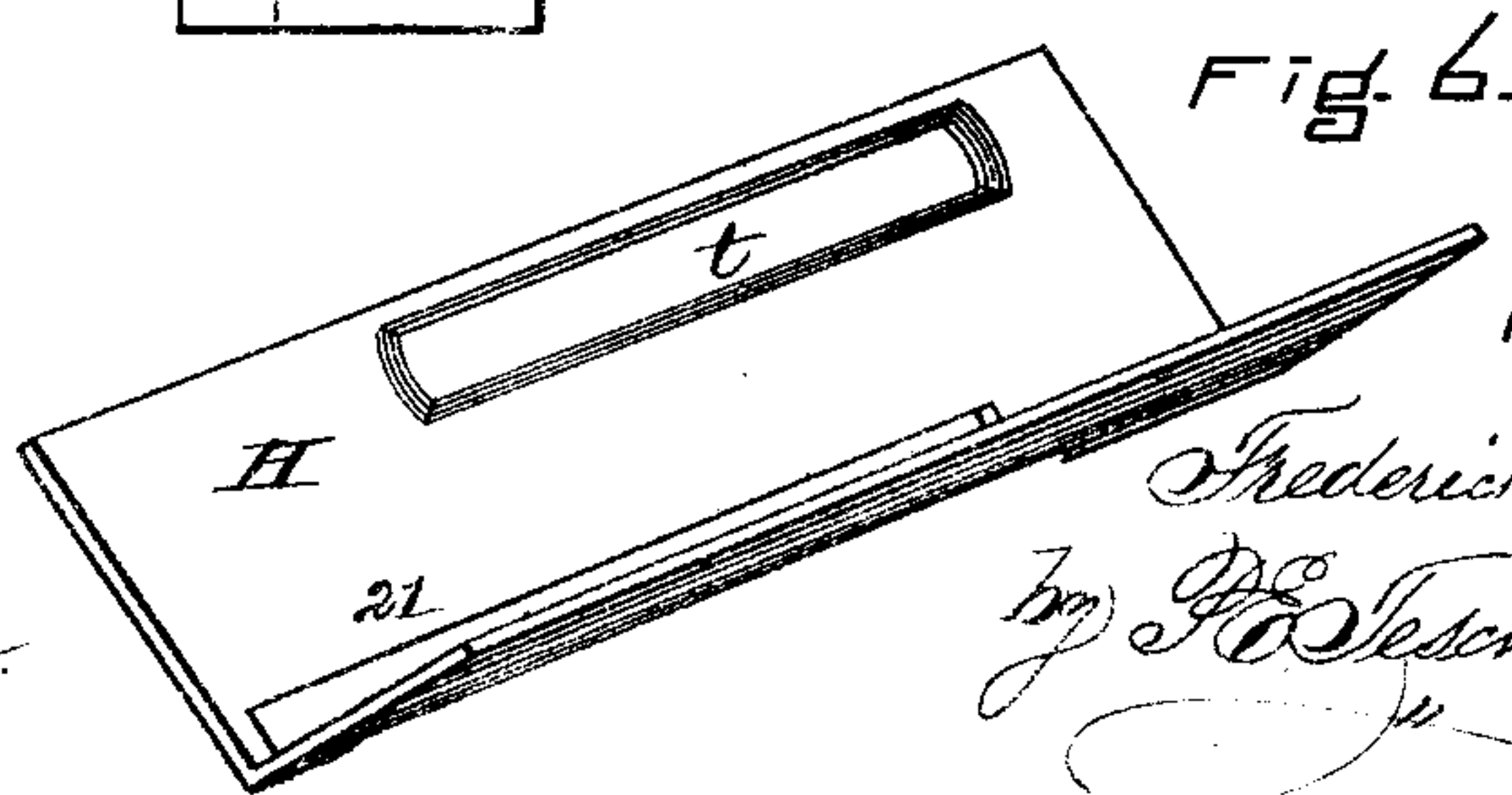
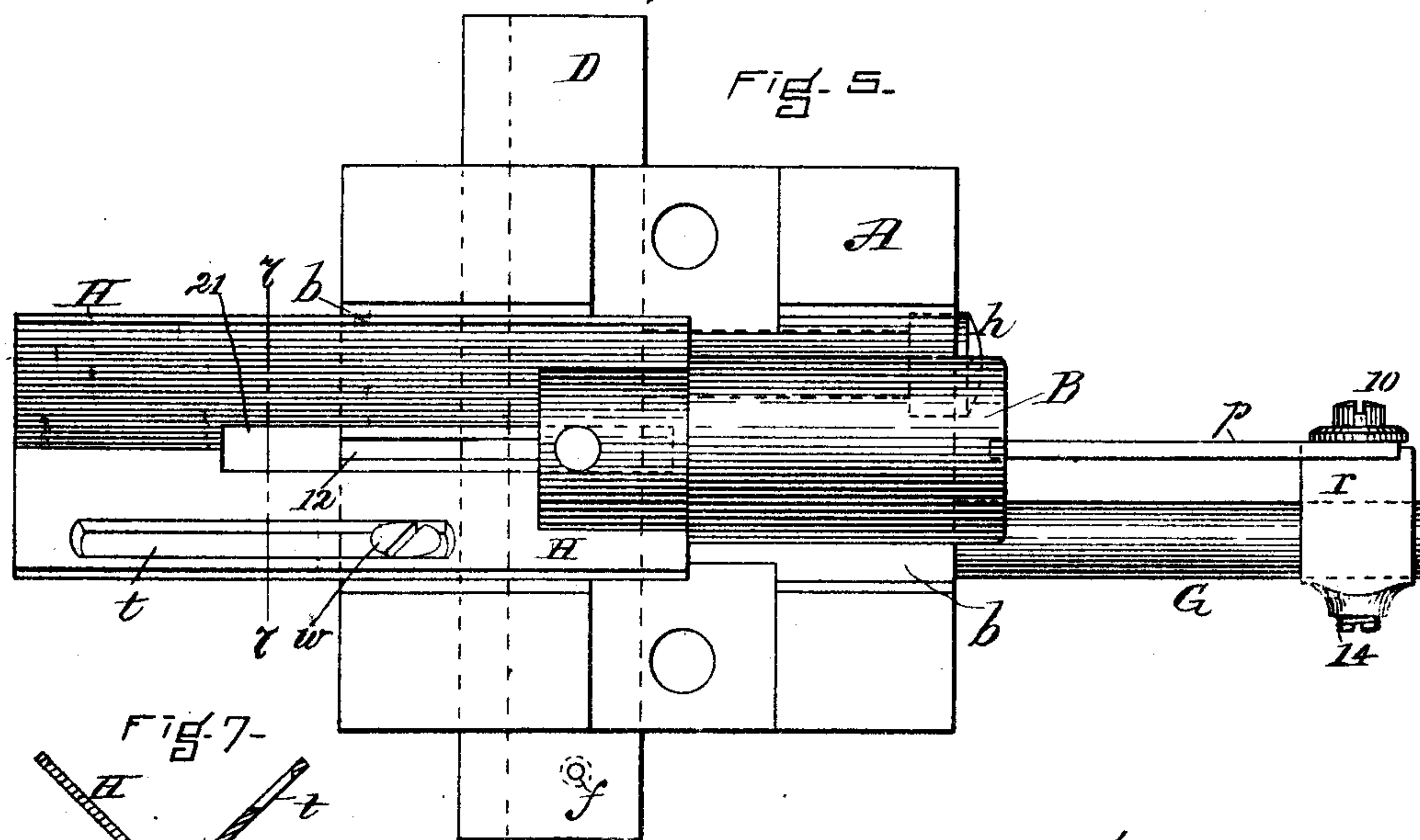
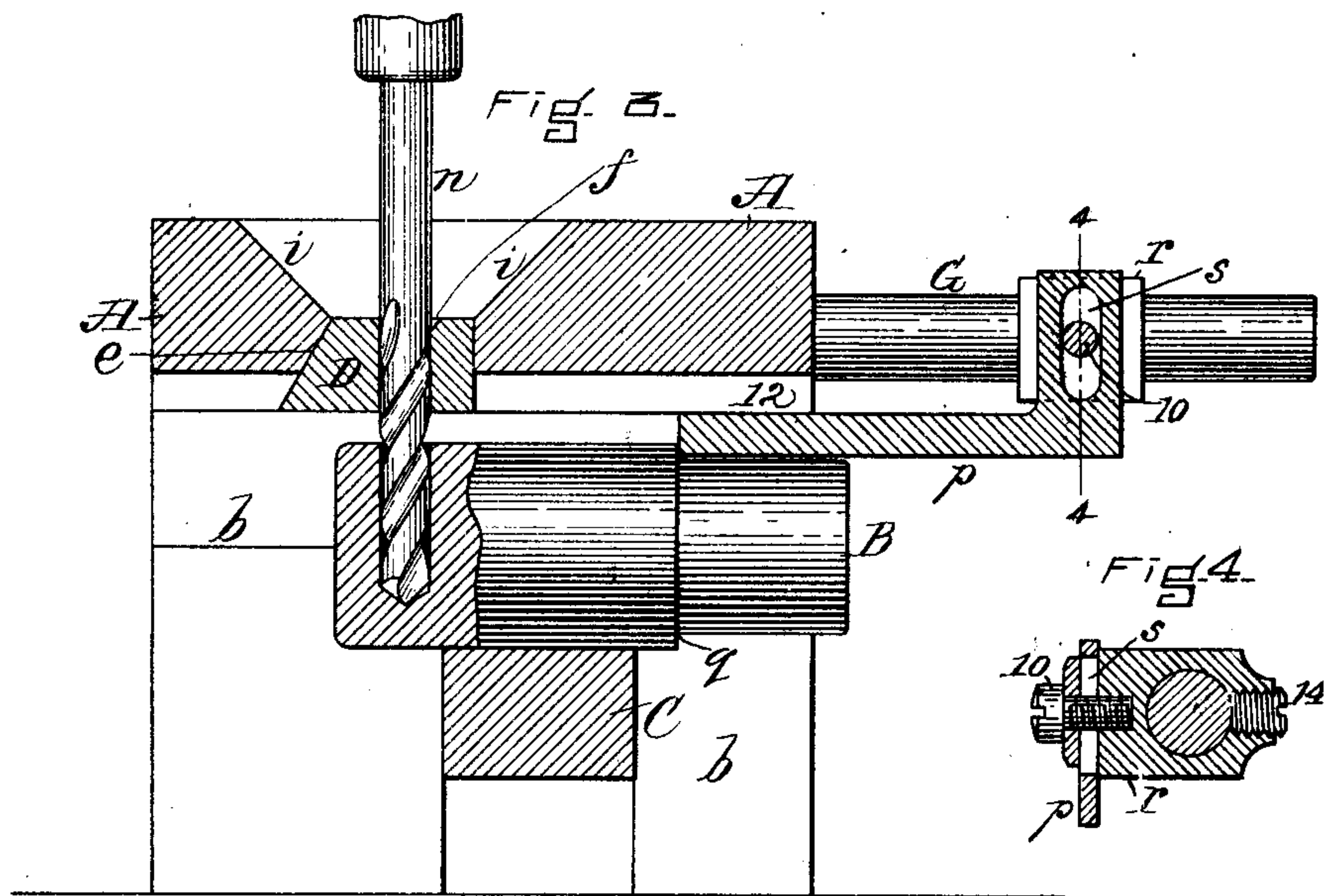
ENTOR.

Frederick C. Thielcher
by J. C. Schenck
Att'y.

(No Model.)

2 Sheets—Sheet 2.

F. C. THIELSCHER.
TOOL FOR CENTERING AND HOLDING SHAFTS, &c.
No. 550,767. Patented Dec. 3, 1895.



WITNESSES.
C. D. Crover
P. L. Manden.

INVENTOR.
Frederick C. Thielcher
by J. E. Teschemacher
Att'y

UNITED STATES PATENT OFFICE.

FREDERICK C. THIELSCHER, OF BOSTON, MASSACHUSETTS.

TOOL FOR CENTERING AND HOLDING SHAFTS, &c.

SPECIFICATION forming part of Letters Patent No. 550,767, dated December 3, 1895.

Application filed September 23, 1895. Serial No. 563,406. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. THIELSCHER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Tool or Implement for Centering and Holding Shafts, Studs, or Similar Articles While Being Drilled, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of my improved tool for centering and holding shafts, studs, &c., while being drilled. Fig. 2 is a vertical section of the same on the line 2 2 of Fig. 1. Fig. 3 is a vertical section on the line 3 3 of Fig. 2, showing the manner in which a stud or similar article is held while being drilled. Fig. 4 is a sectional detail on the line 4 4 of Fig. 3. Fig. 5 is a plan of the tool inverted with the clamping-bar removed, showing the gage used when the smaller end of a stud or shaft is to be drilled. Fig. 6 is a perspective view of the angular gage shown in Fig. 5. Fig. 7 is a section on the line 7 7 of Fig. 5. Figs. 8 and 9 illustrate a modification of my invention, Fig. 8 being a plan of the tool on a reduced scale, and Fig. 9 a vertical section on the line 9 9 of Fig. 8.

My invention has for its object to provide a simple and convenient tool for centering and holding a shaft, stud, or similar article in which a hole is to be drilled at a right angle to its axis in such manner as to insure the accurate drilling of the hole at the exact point desired and without requiring especial care on the part of the operator after the work has been clamped in place, thereby greatly facilitating the operation of drilling holes of this character and effecting a considerable saving in time and labor.

To this end my invention consists in a tool or implement embodying certain novel features of construction and combinations of parts, as hereinafter set forth and claimed.

In the said drawings, A represents the body of the tool, consisting of a rectangular metal block provided on its under side with a straight channel or opening *b*, extending from end to end of the block, for the reception of the shaft, stud, or similar article B, through which it is desired to drill a hole at right

angles to its axis by means of an upright or other suitable drill. The upper portion of the channel *b* is V-shaped in order to center the shaft or stud B therein, which is securely held in place, as shown in Figs. 2 and 3, by a clamping-bar C, adjustable by means of screws *d*, said bar being made reversible to adapt it to clamp and hold shafts or studs of different diameters. Within a slideway *e*, extending across the upper portion of the block A in a direction at right angles to the channel *b*, is fitted a changeable drill-guide D, consisting of a slide, preferably composed of hardened steel, provided with a series of holes *f*, of different diameters, which form guides for different drills of corresponding sizes, said slide D being movable in the direction of its length to bring any desired hole *f* into position to register with a central opening *g*, Fig. 2, leading from the slideway into the V-shaped channel *b* beneath, a set-screw *h*, Fig. 1, being employed to clamp the slide D in place when adjusted to the position desired. Across the beveled surfaces *i* of the block A, above and on each side of the drill-guide D, is a gage line or mark *k*, located directly above and in line with the apex of the V-shaped channel *b*, and across the slide D, opposite to the center of each hole *f*, is a gage line or mark *m*, Fig. 1, which when caused by the adjustment of the slide to register with the gage-mark *k* will indicate that the hole *f*, through which the drill is to pass, is directly over the axis of the shaft or stud to be drilled. The tool, having the shaft or stud B clamped therein, is then placed upon the bed or table of the drill and the drill-spindle brought down, as shown in Fig. 3, to cause the drill *n* to pass through the guide-hole *f* directly beneath it and into contact with the stud B to be drilled.

p is a gage, against which the shoulder *q* of the stud or shaft B is set, as shown in Fig. 3, in order that the hole may be drilled therein at the desired distance from said shoulder. To adapt this gage to fit against the shoulders of shafts and studs of different diameters, it is made adjustable vertically in a block *r* by means of a slot *s* and screw 10, said block *r* being made adjustable horizontally upon a supporting-rod G, projecting from the side of the block A, and being secured

when adjusted by means of a screw 14. At the apex of the V-shaped channel *b* is formed a longitudinal groove 12 for the reception of the gage *p* when the latter is raised, as is necessary when a shaft of smaller diameter is placed within the V-shaped top of the channel *b*. For convenience of setting I preferably provide the sliding block *r* with a gage-mark 15, the distance of which from the edge 20 of the block *A* is equal to the distance of the center of the hole to be drilled from the shoulder *q* of the stud or shaft *B*, by which means the operation of adjusting the gage is greatly facilitated.

When a hole is to be drilled in the portion of a stud or shaft having the largest diameter, I employ the gage *p*, as shown in Fig. 3; but when the smaller portion of a stud or shaft is to be drilled I prefer to employ a removable angular sheet-metal trough-shaped gage *II*, Figs. 5, 6, and 7, which fits the V-shaped top of the channel *b* and is made adjustable longitudinally therein, preferably by means of a slot *t* and screw *u*, which also serve to hold the said gage in place, the gage *p* having been previously drawn back out of the way or removed from the rod *G*. This gage *II*, being interposed between the smaller part of the stud and the V-shaped top of the channel *b*, as shown in Fig. 5, forms a solid bearing for the smaller part of the said stud to be clamped against while being drilled. A long slot 21 is formed at the apex of the gage *II* for the passage of the drill, and the shoulder of the stud *B* rests against the end of the gage, as shown in Fig. 5, thereby determining the distance of the hole to be drilled from said shoulder.

When it is desired to drill a hole on one side of the axis of the stud or shaft *B*, the sliding drill-guide *D* is moved or set over so that the line *m*, passing through the center of the hole *f* to be used, will be on one side of the gage line or mark *k* instead of registering therewith, as previously described, the distance of the line *m* from the gage-line *k* determining the distance of the hole to be drilled on one side or the other of the axis of the stud or shaft.

In Figs. 8 and 9 is represented a modification of my invention. In this case the changeable drill-guide consists of a removable hardened steel cylinder or bushing *I*, snugly fitting a vertical aperture 22, centrally placed with respect to the apex of the V-shaped channel *b* and communicating therewith, as shown in Fig. 9, the central aperture *f* of said bushing forming a guide for a drill of corresponding size in the same manner as one of the holes *f* of the slide *D*, previously described. The tool is to be provided with any desired number of these changeable cylinders or bushings having holes corresponding to the diameters of the different-sized drills to be used, it being merely necessary to remove one cylindrical drill-guide and replace

it by another when a hole of a different size is to be drilled. I prefer, however, to make the changeable drill-guide in the form of a slide, as first described, as the latter can be adjusted to bring the centers of the holes *f* on one side of the gage-line *k* to cause the hole to be drilled on one side of the axis of the shaft or stud, as before described.

The above-described tool or implement is simple and durable and will be found exceedingly convenient for use in machine-shops, as it will insure accurate work and effect a material saving in time and labor.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a tool for centering and holding shafts, studs and similar articles while being drilled, the combination with the block or body having a straight V-shaped channel or opening for the reception of the shaft or article to be drilled and a clamping device for holding the same within said channel, of a sliding drill-guide adjustable longitudinally in a slideway at right angles to the V-shaped channel, said sliding drill-guide being provided with a series of holes of different diameters for guiding drills of different sizes, substantially as set forth.

2. In a tool for centering and holding shafts, studs and similar articles while being drilled, the combination with the block or body having a straight V-shaped channel or opening for the reception of the shaft or article to be drilled and a clamping device for holding the same within said channel, of a sliding drill-guide adjustable longitudinally in a slideway at right angles to the V-shaped channel, said sliding drill-guide being provided with a series of holes of different diameters for guiding drills of different sizes, and having a mark or line opposite the center of each guide-hole adapted to register with a gage-line or mark at the side of the slideway, said gage line being located directly over and in line with the apex of the V-shaped channel, substantially as described.

3. In a tool for centering and holding shafts, studs and similar articles while being drilled, the combination with a block or body having a straight V-shaped channel or opening for the reception of the shaft or article to be drilled and a clamping device for holding the same within said channel, of a changeable drill-guide located above the V-shaped channel and adapted to receive and guide the drill, and an adjustable gage for determining the position of the hole to be drilled, substantially as described.

4. In a tool for centering and holding shafts, studs and similar articles while being drilled, the combination with a block or body *A*, having a straight V-shaped channel or opening *b*, for the reception of the shaft or article to be drilled and a clamping device for holding the same within said channel, of a changeable drill-guide located above the V-

shaped channel and adapted to receive and
guide the drill, and the angular gage H,
adapted to fit the V-shaped channel and made
adjustable longitudinally therein; said gage
5 forming a rest or bearing for the smaller por-
tion of the shouldered shaft or article being
drilled, and being provided with a longitudi-
nal slot at the apex or junction of its two

sides for the passage of the drill, substan-
tially as described.

Witness my hand this 20th day of Septem-
ber, A. D. 1895.

FREDERICK C. THIELSCHER.

In presence of—

P. E. TESCHEMACHER,
E. H. CHILD.