

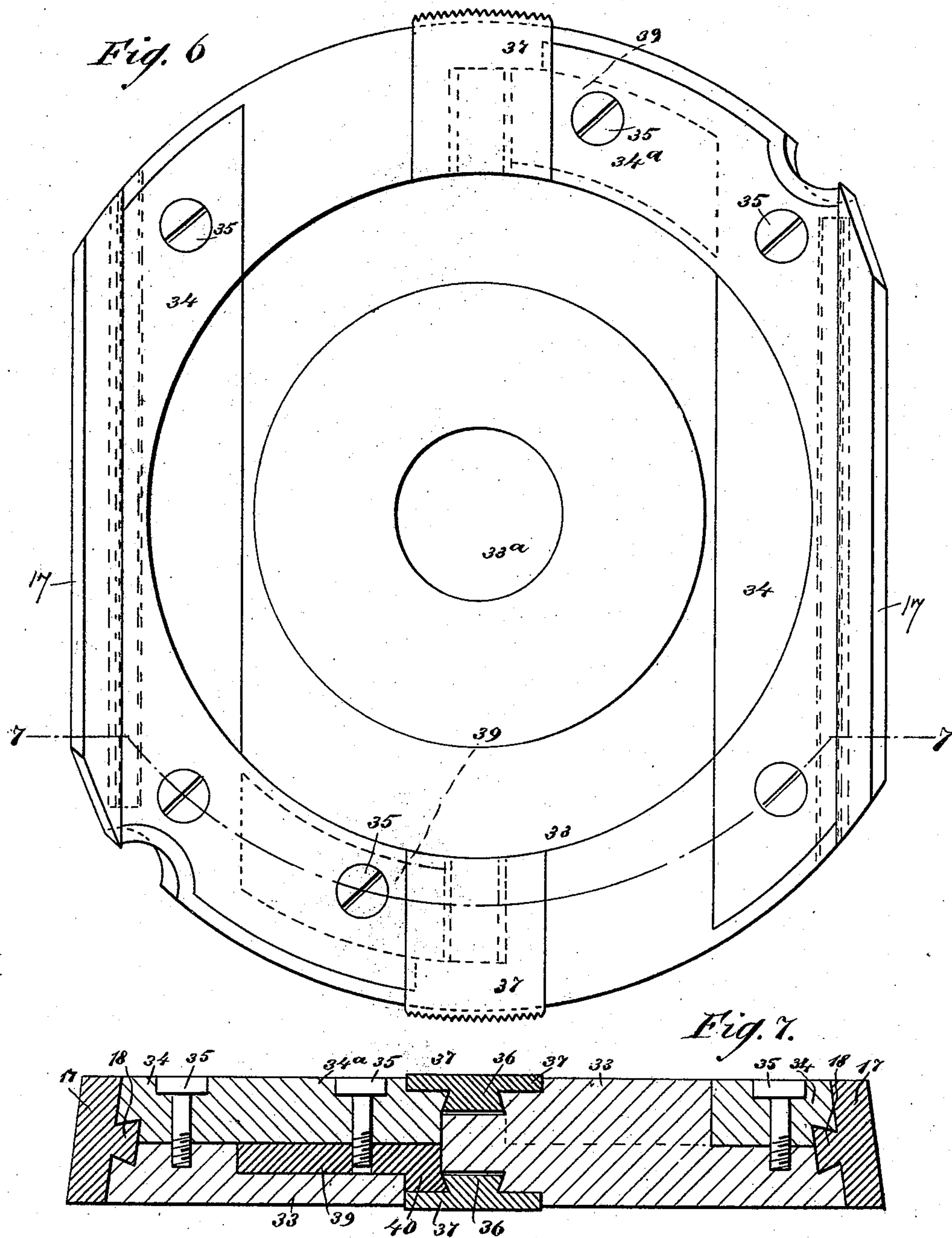
(No Model.)

2 Sheets—Sheet 2.

J. J. QUINN.
SHAPER AND CUTTER HEAD.

No. 485,427.

Patented Nov. 1, 1892.



WITNESSES :

Norm Twitchell
C. Sedgwick

INVENTOR :

J. J. Quinn
BY *Quinn*
ATTORNEYS

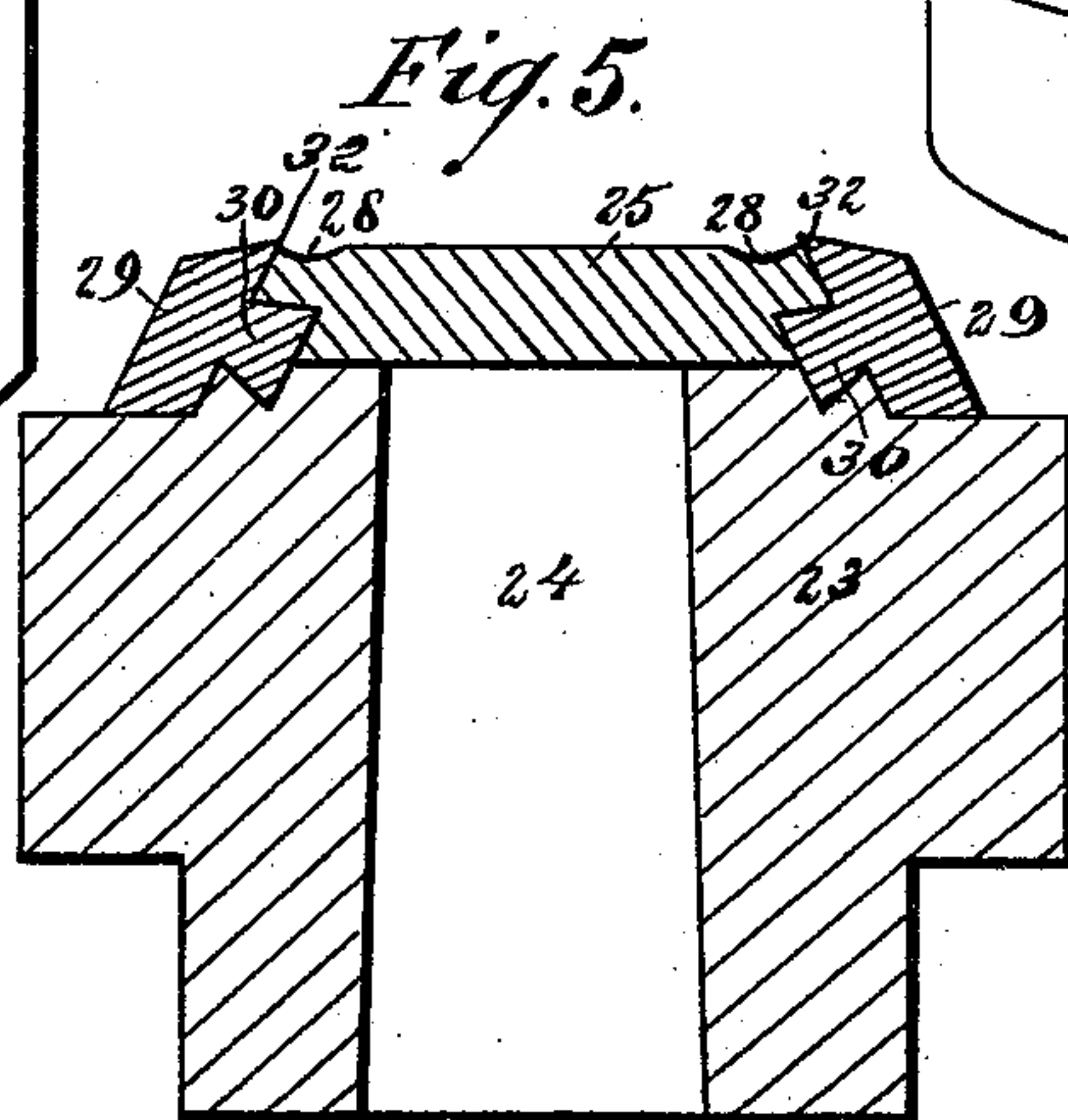
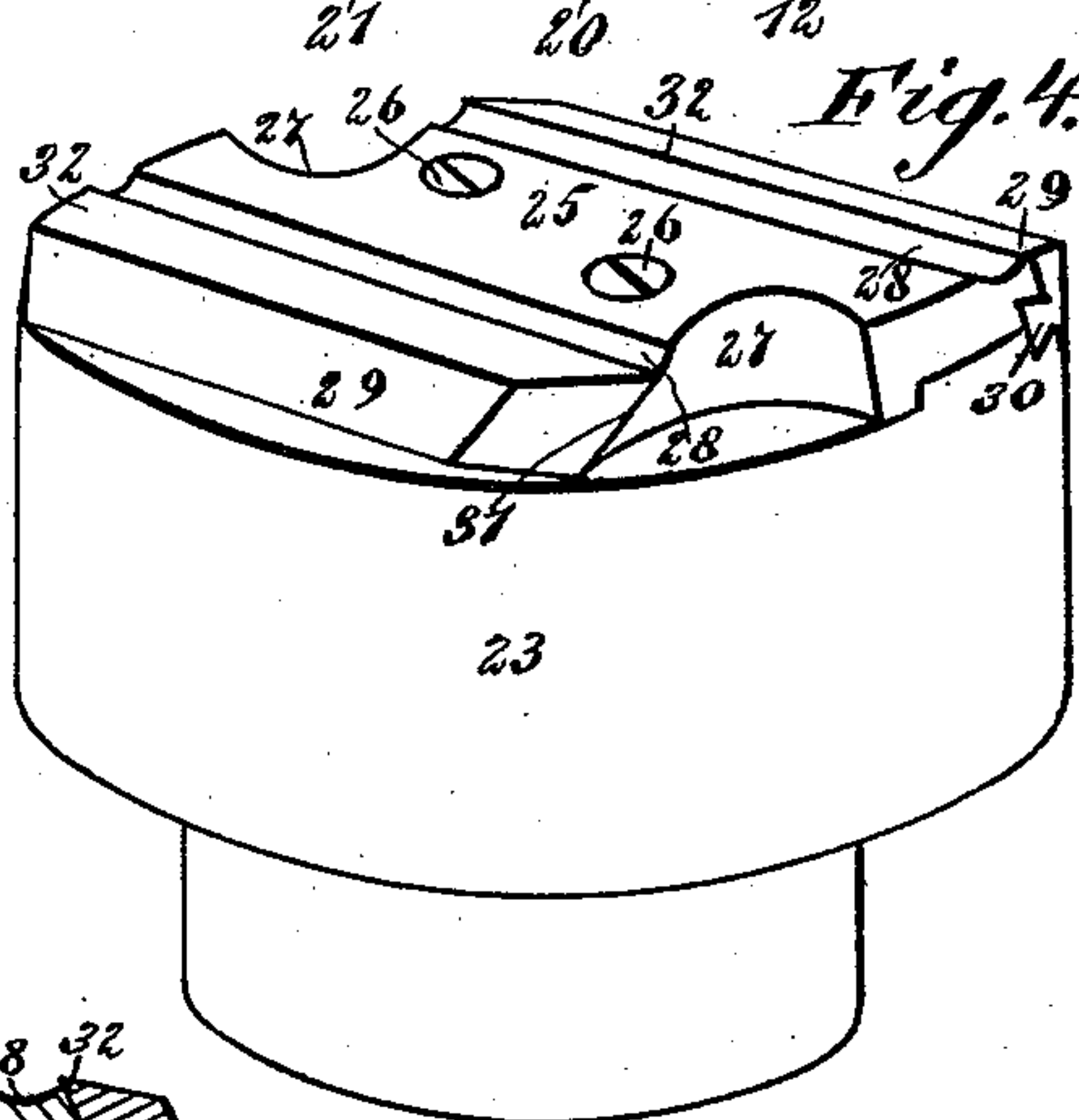
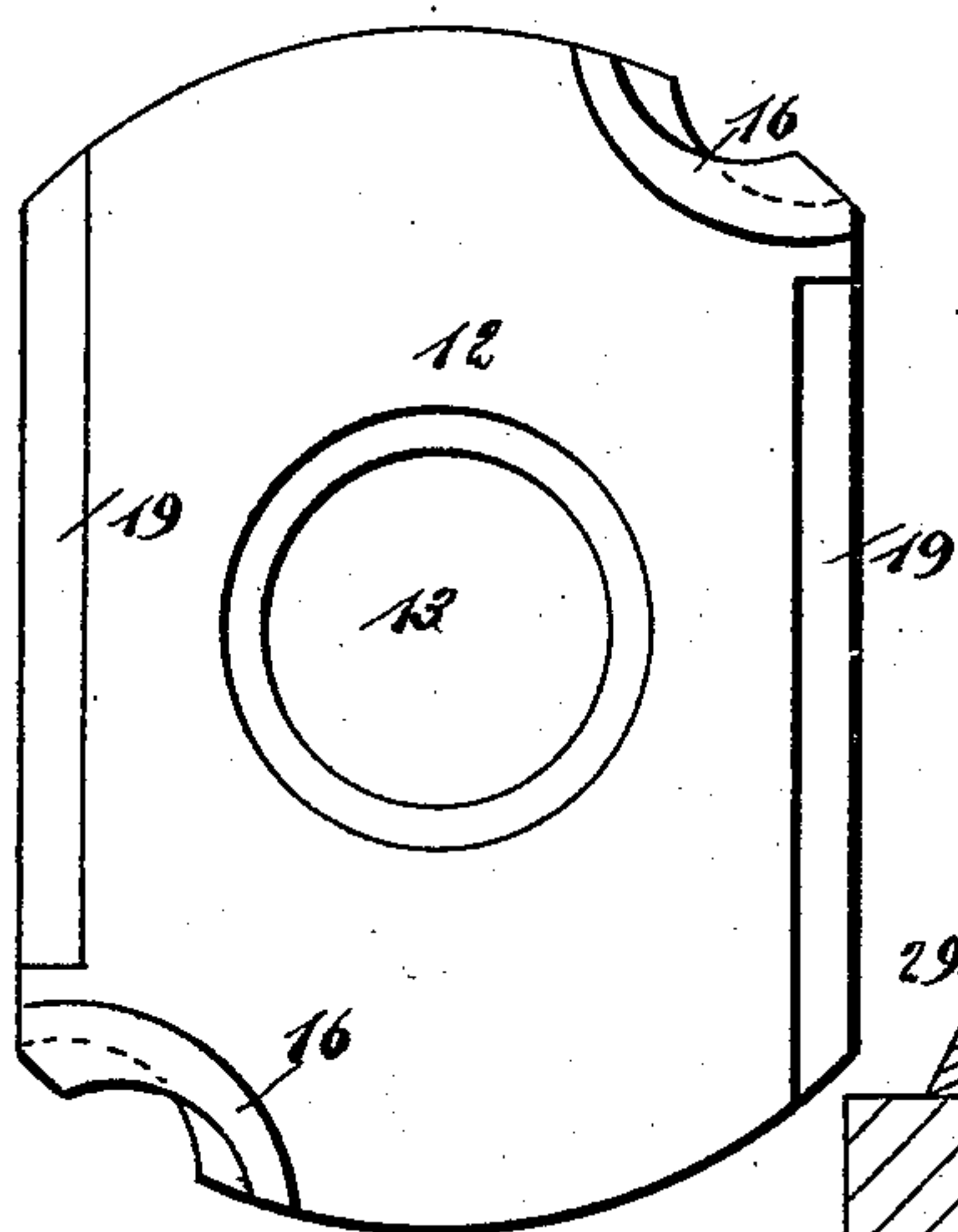
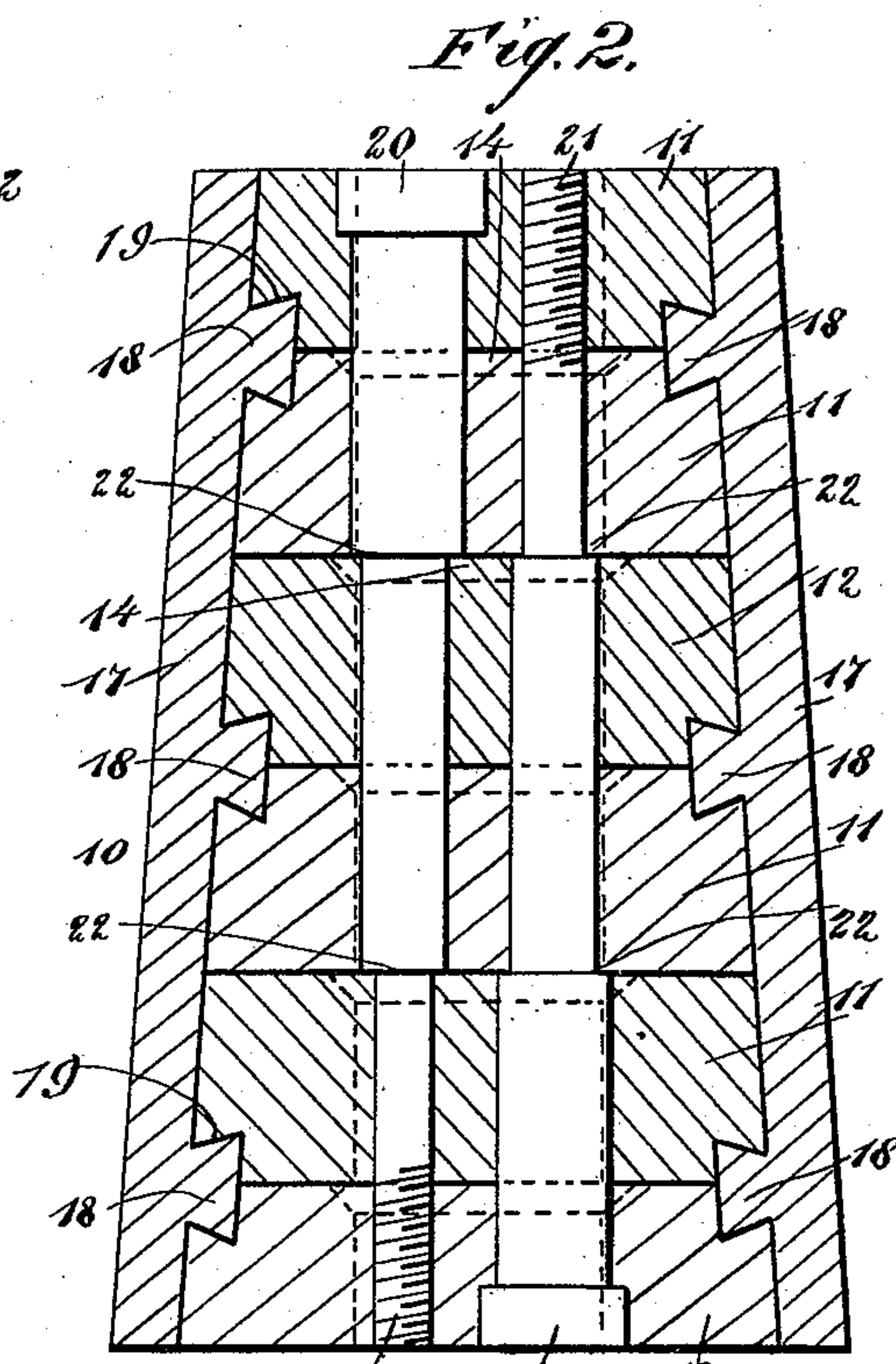
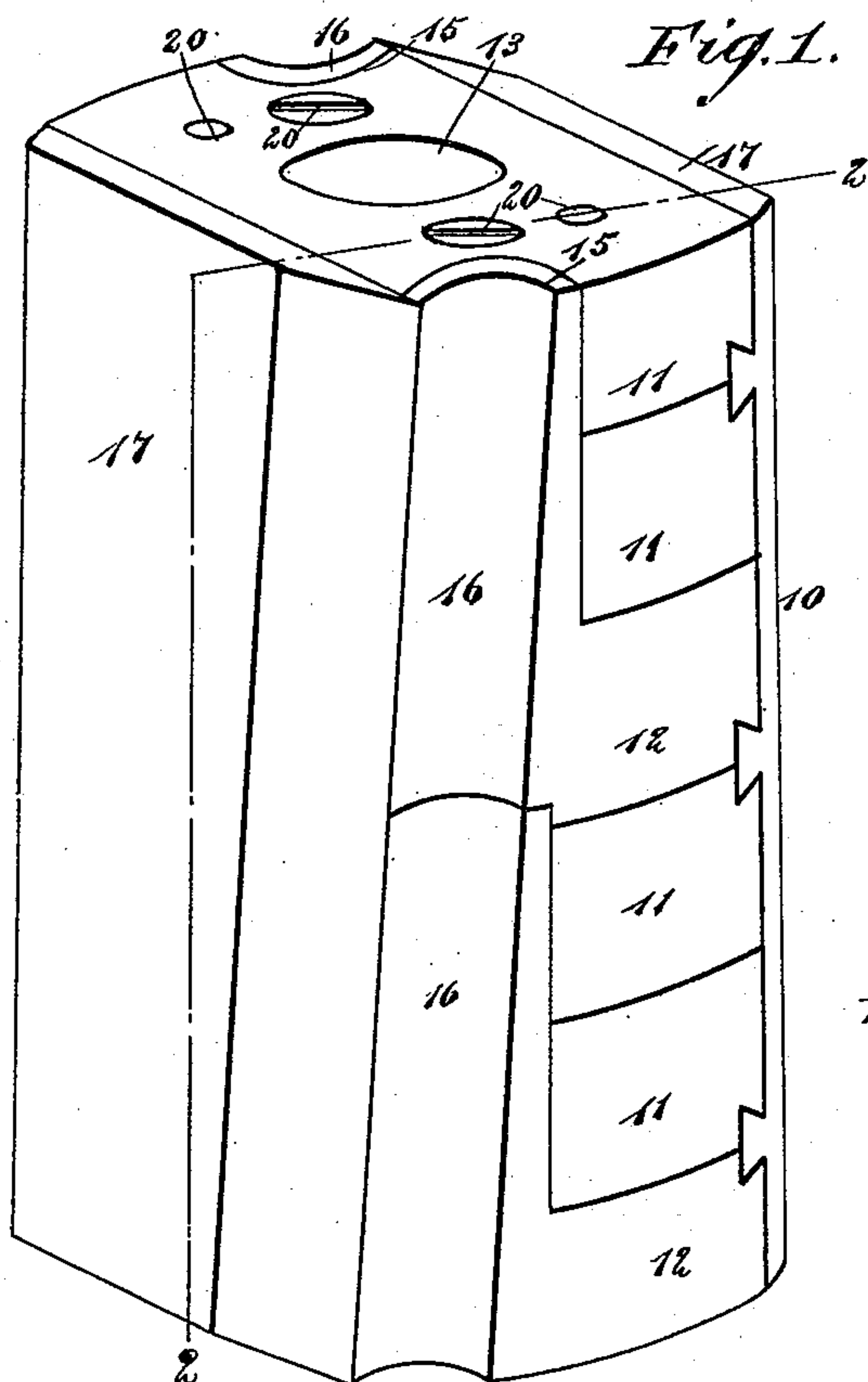
(No Model.)

2 Sheets—Sheet 1.

J. J. QUINN.
SHAPER AND CUTTER HEAD.

No. 485,427.

Patented Nov. 1, 1892.



WITNESSES:

Donn Twitchell
C. Sedgwick

INVENTOR:

J. J. Quinn
BY
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN J. QUINN, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF TO
THOMAS MULCAHY, OF SAME PLACE.

SHAPER AND CUTTER HEAD.

SPECIFICATION forming part of Letters Patent No. 485,427, dated November 1, 1892.

Application filed November 25, 1891. Serial No. 413,032. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. QUINN, of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Shaper and Cutter Head, of which the following is a full, clear, and exact description.

My invention relates to improvements in the construction of shaper and cutter heads; and the object of my invention is to produce a sectional head which may be easily put together or taken apart, which will cut effectively, and which is provided with means for quickly and firmly fastening the cutting-knives in place.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the shaper-head embodying my invention. Fig. 2 is a longitudinal section of the same on the line 2 2 in Fig. 1. Fig. 3 is a plan view of one of the binding-collars. Fig. 4 is a perspective view of a cutter-head constructed in accordance with my invention. Fig. 5 is a longitudinal section of the same. Fig. 6 is a plan view of the device as adapted for a rabbeting-head, and Fig. 7 is a cross-section on the line 7 7 of Fig. 6.

The shaper-head 10 has its body made up of a series of collars 11 and 12, each of which is provided with a central bore 13, which bore enables the head to be secured to a mandrel, so that it may be operated. With the exception of the two end collars, each collar is provided on one side with a projection and on the opposite side with a corresponding depression, so that the collars will fit snugly together, the projection on one collar entering the depression in the other, as shown by dotted lines at 14 in Fig. 2, and while the outer surfaces of the end collars are left smooth and flush the inner side of one collar is provided with a depression and the outer side of the opposite end collar is provided with a projection.

The collars 11 are provided on diametri-

cally-opposite sides with concave grooves 15, as shown in Fig. 1, and the collars 12, one of which is placed at the base of the shaper-head and the other of which is placed centrally in the head, are provided with concave keys 16, formed integral with the collars, and these keys 16 on the collars 12 fit snugly in the grooves of the collars 11, thus serving to bind the collars 11 and 12 together, and the two keys 16 on each side of the head extend the entire length of the head and form clearance-ways to carry off the material cut by the knives 17, which knives have edges that project slightly into the clearance-ways, and the knives are arranged on diametrically-opposite sides of the head and extend, preferably, the entire length of the head.

The knives 17 have dovetail tongues 18, arranged transversely on their inner sides, and the tongues fit snugly in keyways 19, formed in the collars 11 and 12, the keyways being formed at the parts where the collars unite, so that each keyway is partly in the two collars. It will thus be seen that the body portion of the head and the knives are rabbeted together.

Extending longitudinally through the shaper-head are fastening-screws 20, the screws being reduced from one end to the other and having their smaller ends screw-threaded, as shown at 21, so that they will fit in threaded portions of one of the end collars. These fastening screws or bolts are of a length so that when in place their ends will be flush with the ends of the shaper-head, and they are preferably arranged in pairs on opposite sides of the central bore 13 of the head and are arranged butts and points—that is, the butt of one screw will be at one end of the head and the point of the adjacent screw will be seen at the same end of the head. Each screw is formed in three diameters, and shoulders 22 are thus formed at the ends of the middle section and each section is of a length corresponding to the combined thickness of two collars. The heads of the screws will therefore bear on one outer collar, while the two shoulders 22 will bear on the adjacent collars, respectively, of the two succeeding pairs of collars, as clearly shown in Fig. 2. Thus the collars will be held firmly together

with their faces in close contact and forming thereby a practically-solid head. The knives may be adjusted by simply loosening the screws, and when the screws are tightened it
5 will be seen that all parts of the head will be firmly clamped together.

In Figs. 4 and 5 I have shown how this construction may be applied to cutter-heads which have cutting-surfaces at the ends as well
10 as on the sides, and in these figures the head or body portion 23 is provided with the usual mandrel-bore 24 and has at its cutting end a plate 25, which is fastened to the body by screws 26 and which has on opposite sides
15 concave clearance-ways 27, and has also on its top surface and near opposite edges clearance-ways 28. The cutting-knives 29 are placed on opposite sides of the plate 25 and are provided with dovetail tongues 30, similar to the tongues 18 on the knives 17, described above, and these tongues fit corresponding grooves, which are produced in the plate 25 and in the adjacent surface of the body 23. The knives 29 have edges 31, which
20 overlap the clearance-ways 27 and provide for side-cutting, and they have, also, top or end edges 32, which overlap the clearance-ways 28 and provide for surface-cutting.

Heads of this class are adapted for use in
30 cutting raised panels, moldings, and similar work. It will be noticed that the knives 29 may be adjusted in the grooves which hold them and that the knives may be clamped firmly in place by tightening the screws 26, which tightening of the screws causes the
35 plate 25 to impinge on the tongues 30 of the knives.

The rabbetting-head (shown in Figs. 6 and 7) has a main plate 33 with a central mandrel-bore 33^a, and on opposite sides of the head are knives 17, like those already described, except that they are very much narrower. The knives have tongues 18, like those described above, and the tongues are clamped
45 by the top plates 34. The plates 34 are arranged on opposite sides and at one end of the head and are held to the main plate by screws 35. Each plate 34 has one widened end 34^a, which extends nearly a quarter-way
50 around the head, and this extension end is shaped to fit the dovetail tongue 36 of the saw 37, so that the top plates serve to fasten the knives and saws. There are two saws at each end of the head, and the saws project
55 slightly from opposite sides thereof, the up-

per saws being held between the main plate 33 and the top plate, and the lower saws are fastened by keys 39, which have offsets 40 at the ends, which offsets are shaped to fit the tongues of the lower saws, and thus hold them
60 in place. The top-plate screws 35 fasten the keys 39, so that the top plates practically serve to bind all the parts together. The rabbetting-head is used in the same way as any common head—that is, it is revolved and the
65 material to be rabbeted is forced against it.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A shaper-head comprising a body having a central bore and having clearance-ways on opposite sides, the said body being made up of a series of united collars, one of the outer and one of the inner collars being provided with longitudinally-aligned keys 16, which fit in grooves in adjacent collars and provided with clearance-grooves in their outer faces, knives mounted on the sides of the body, said knives having dovetail tongues which fit in corresponding grooves in the
80 body, and clamping-screws adapted to fasten the collars of the body, substantially as described.

2. In a device of the character described, the combination of a series of collars lying
85 face to face having dovetail grooves therein, the grooves being made at the joints of the collars, knives held to the sides of the collars and having dovetail tongues to fit the collar-grooves, and binding-screws extending longitudinally through the collars and arranged
90 butts and points, said screws being each formed in several diameters, thereby forming shoulders 22, abutting, respectively, against one collar of the middle pair of collars and
95 against the inner collar of one outer pair, substantially as described.

3. In a device of the character described, the body portion of the head comprising a series of collars having central bores therein, each collar having a projection adapted to fit in a depression in an adjacent collar, and a portion of the collars having on opposite sides projecting keys which fit grooves in adjacent collars, and a clamping device to hold the collars together, substantially as described.

JOHN J. QUINN.

Witnesses:
JOSEPH QUINN,
BYRON J. MOSS.