

No. 607,709.

S. J. SHIMER.
CUTTER HEAD.

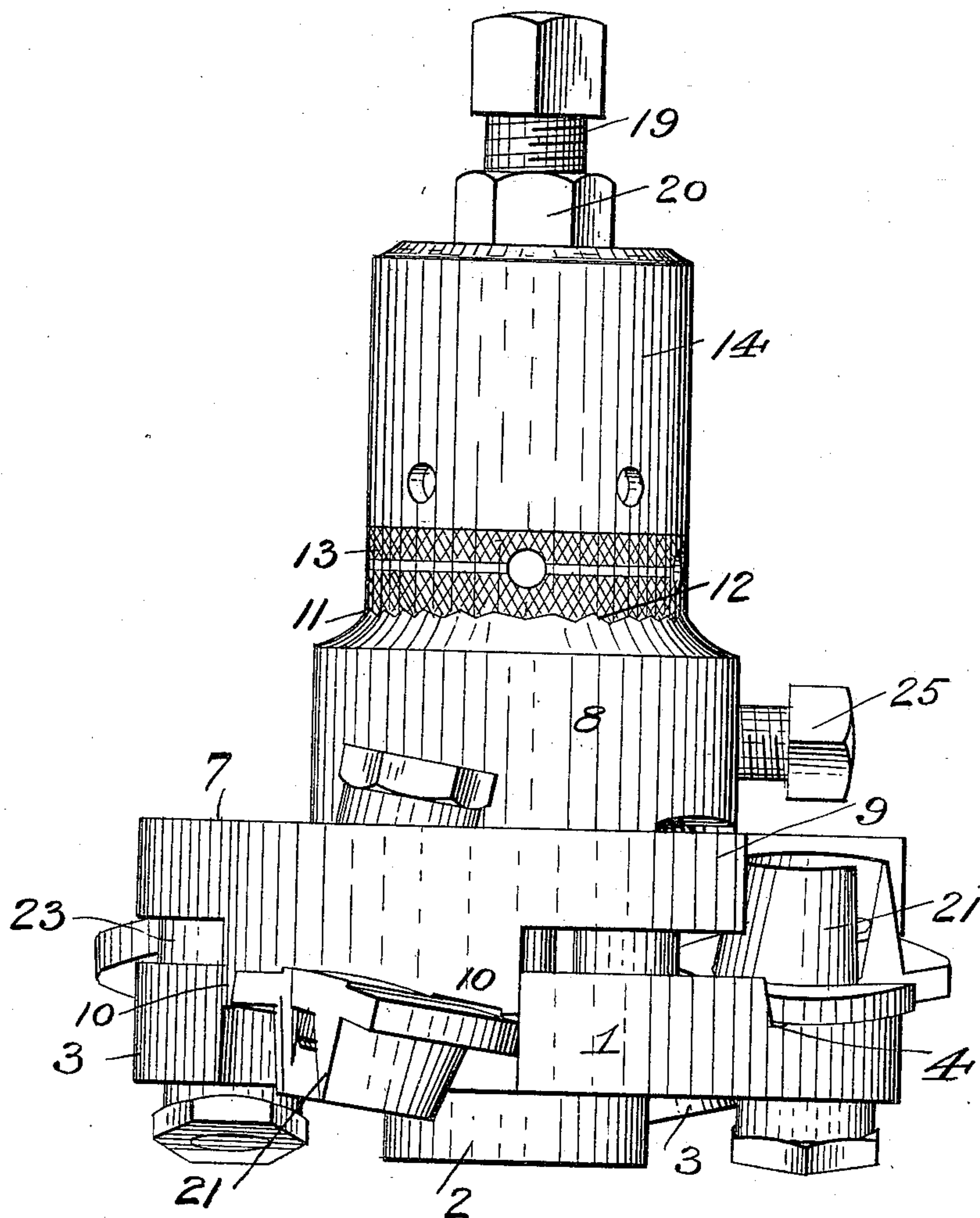
Patented July 19, 1898.

(Application filed Jan. 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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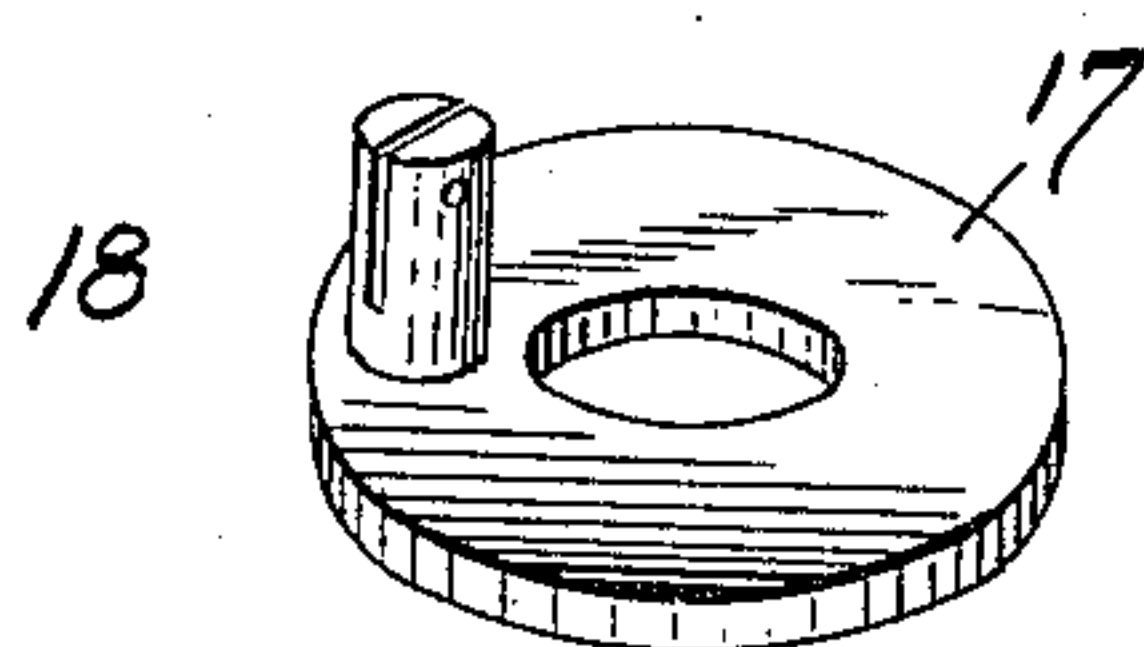
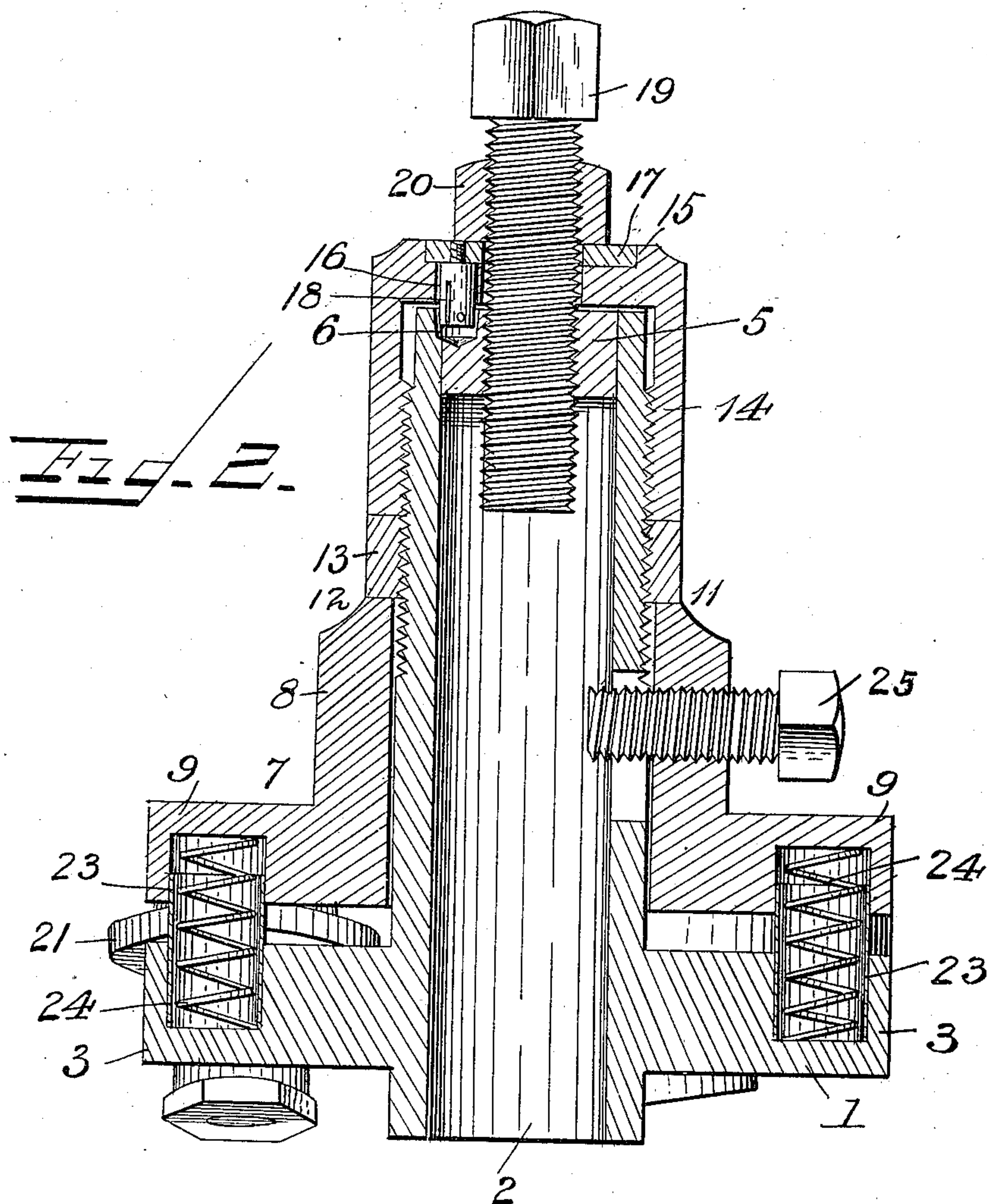
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

SAMUEL JOHNSTON SHIMER, OF MILTON, PENNSYLVANIA.

CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 607,709, dated July 19, 1898.

Application filed January 21, 1898. Serial No. 667,477. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL JOHNSTON SHIMER, a citizen of the United States, residing at Milton, in the county of Northumberland and State of Pennsylvania, have invented new and useful Improvements in Cutter-Heads, of which the following is a specification.

My invention relates to improvements in cutter-heads for matching and grooving the edges of lumber of that class or description in which the cutter-head is mounted upon a vertical rotatable arbor or spindle and is composed of upper and lower flanged sections carrying circular cutters and provided with hubs and expansion-springs.

The object of the present invention is to provide an improved construction of cutter-head which shall possess superior advantages with respect to economy in manufacture and efficiency in use.

In the accompanying drawings, Figure 1 is an elevation of a cutter-head constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a detail view of the locking-key.

In the said drawings the reference-numeral 1 designates the lower section of the cutter-head, comprising the hollow shaft or tube 2, formed at the lower end with a number of radial flanges 3, two being shown in the present instance, formed in their upper sides with a bit-seat 4. The upper end of this shaft is closed by a bushing 5, formed with a central screw-threaded opening. This bushing may be formed integral with the shaft or may be made separate therefrom and secured thereto, and in its upper side is formed a recess 6, for a purpose hereinafter described.

The numeral 7 designates the upper section of the cutter-head, comprising the hub 8, through which said shaft or tube passes, and formed with radial flanges 9, corresponding with the flanges of the lower section. These flanges 9 are formed with depending bosses 10, in which the lower bit-seats are formed, which engage between the flanges of the lower section and thus interlock therewith. The upper end of the hub 8 is formed with corrugations 11, with which engage the correspondingly-formed corrugations 12 of the adjusting-ring 13, which works on the

screw-threaded portion of the said shaft or tube. Engaging with said screw-threaded portion of the tube or shaft section is a screw-threaded cylinder or cap 14, provided with an eccentric opening 16 and an opening central with the cap from the top side through which the top or carrying screw 19 passes to engage with the screw-threads in the top of the shaft-section. This top screw 19, with its nut 20, is of primary use in every cutter-head for adjusting it to the proper level to locate the cut in alinement with the work done by the cylinder-head belonging to the same planer or matcher.

The top screw, with its lower end in touch with the top of the spindle or shaft upon which the head revolves, may be screwed in or out to adjust the head, with its bits, into their proper line of cut, and when such adjustment is complete the nut 20 is brought down in touch with the top of the cutter-head and becomes a jam-nut to hold the top screw fixedly into its position.

The top of the cap, either flat or recessed, may become a seat for a key or ring 17, provided with a downwardly-depending pin 18, which is adapted to pass through the eccentric opening in the top of the cap 14 and engage with a hole 6 in the upper end of the tube or shaft section and thus prevent the cap from turning or changing position, the function of the cap being to limit the space occupied by the adjusting-ring, so that the upper series of bits may not be set out of cutting-line with the lower series of bits to interfere with the clearance of either series in the cut.

It is evident that the function of the top screw and nut is not interfered with by the interposition of the screw-threaded cap and its locking combination. It is also evident that a locking device for the screw-threaded cap is provided by the interposition of the key or ring between the cap to the cutter-head and the jam-nut on the top screw.

The numeral 21 designates the bits or cutters, which may be of any ordinary or suitable construction, and 23 designates spring barrels or sleeves engaging in recesses in the flanges of said sections and provided with coiled springs 24. These features, however, constitute no part of my present invention.

The numeral 25 designates a set-screw passing through the hub of the upper section and engaging with a vertical slot in the tube or shaft 2.

5 From the above it will be seen that the depending bosses of the upper section will interlock with the flanges of the lower section and that the dividing-line of the cut will be below and out of line with the division-space
10 between the flanges, thereby preventing such space from being packed with pitch and resinous matter contained in the wood. The cutter-head sections will also be much stronger than when said sections interlock centrally
15 with the dividing-line of cut.

By reason of the key or locking device and its improved construction the cap can be securely held to the shaft or tube of the lower section, yet will allow of the ready detach-
20 ment or disconnection of the parts when desired. While I have shown the said sections formed with two flanges and bits, three or more may be employed, if desired.

Having thus fully described my invention,
25 what I claim is—

1. In a rotary cutter-head of the character described, the combination with the lower section comprising the tubular shaft provided with radial flanges formed with bit-seats coun-
30 tersunk below the upper face of said flanges, of the upper section comprising the hub with flanges corresponding with the flanges of the lower section and formed with depending bosses interlocking with the flanges of the
35 lower section and provided with bit-seats, the construction being such that the bit-seats are always below the dividing-space of said sections, substantially as described.

2. In a rotary head of the character de-
scribed, the combination with the upper sec- 40
tion, the lower section, comprising the tubular shaft provided with radial flanges and bit-seats, the said tubular shaft formed in its top with a central screw-threaded opening and with a recess eccentric thereto, the top screw 45
passing through said opening and provided with a nut, the screw-threaded cap having a central opening through which said top screw also passes and an opening registering with
50 said eccentric recess, and the key-ring interposed between said cap and the nut of the top screw, provided with a depending pin extending into the eccentric opening and recess to lock said cap in position upon the said tu-
55 bular shaft, substantially as specified.

3. In a rotary head of the character de-
scribed, the combination with the upper sec-
tion comprising the hub corrugated at the up-
per end and the radial flanges, of the lower section comprising the tubular screw-thread- 60
ed shaft formed with a central screw-threaded opening in the upper end and a recess eccentric thereto, the screw-cap provided with a central opening and an eccentric opening reg-
65 istering with said recess, and the key-ring provided with a depending pin engaging with said eccentric opening and recess, and means for holding said key-ring in place, substan-
tially as specified.

In testimony whereof I have hereunto set
70 my hand in presence of two subscribing witnesses.

SAMUEL JOHNSTON SHIMER.

Witnesses:

W. H. BECK,
H. A. KERR.