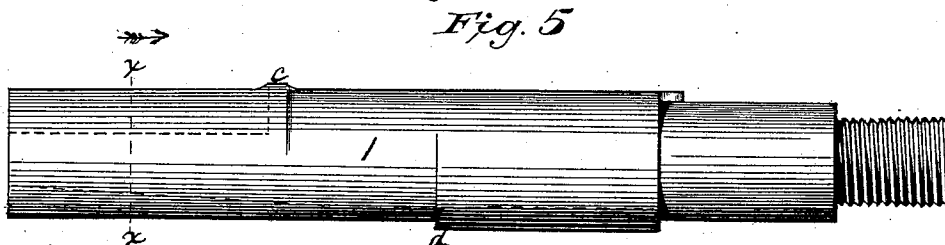
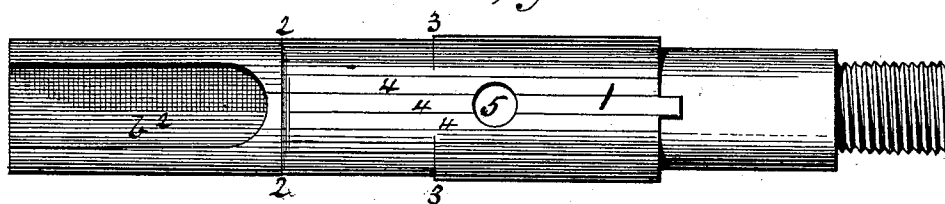
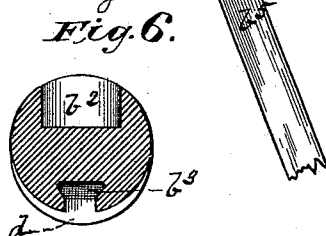
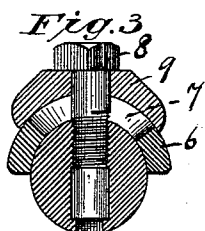
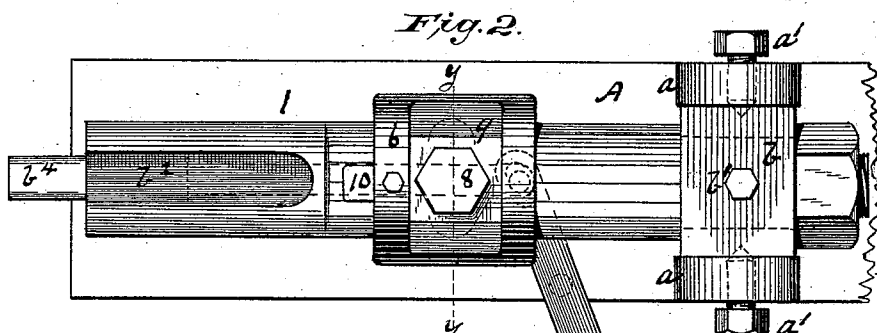
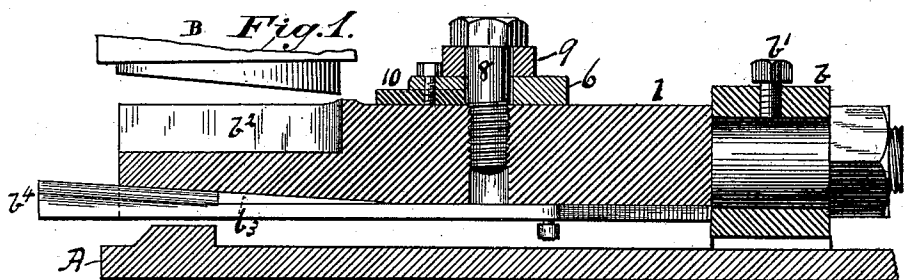


(No Model.)

H. B. ROBISCHUNG.
SLOTING MACHINE.

No. 464,307.

Patented Dec. 1, 1891.



Witnesses:

J. R. Formwall.
E. B. Leigh.

Inventor.

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Att'y

UNITED STATES PATENT OFFICE.

HENRY B. ROBISCHUNG, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO THE
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SLOTTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,307, dated December 1, 1891.

Application filed June 8, 1891. Serial No. 395,427. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. ROBISCHUNG, a citizen of the United States, residing at Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Slotting-Machines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal central section of the mandrel having the female die, the gage, a portion of the bed-block, and the rocking block, and also a portion of the male die of a slotting-machine embodying my invention. Fig. 2 is a plan view of so much of the machine as is shown in section in Fig. 1, the portion of the male die being omitted. Fig. 3 is a cross-section of the mandrel and gage on the line *yy* of Fig. 2. Fig. 4 is an enlarged view of the mandrel detached, showing the gage-lines thereon. Fig. 5 is a side elevation of the same; and Fig. 6 is a cross-section of the mandrel on the line *xx*, Fig. 5, looking in the direction of the arrow.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of slotting-machines intended for use in slotting tubes or cylinders, wherein are combined a mandrel containing the female die and a plunger or male die which coacts therewith, and has for its object, first, such a construction of the mandrel as will enable the cutting-edge of the female-die slot to be renewed with little labor and without the necessity of grinding the entire circumference of the mandrel to maintain a true circle, and, second, the simplification of the construction of the gage and the rendering of the same more durable and efficient.

To this end the main feature of the invention embraces a die-mandrel dressed on two or more centers, so that that portion of the mandrel which contains the female-die-cavity (or cutting-edge) shall be eccentric to the rear or supporting portion of said mandrel, and a secondary feature embraces the combination, with the mandrel, of a concave transversely-slotted gage mounted directly on the mandrel, together with a binding-screw or its equivalent

for adjusting the gage on and securing it to the mandrel. There are also other minor features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

The machine as a whole may be of any approved pattern, or of the general character of the one described in Letters Patent No. 452,482, granted May 19, 1891, to which reference is made for any details of construction not fully set forth herein.

In the drawings, A indicates a suitable bed-block, on which are erected pillow-blocks *a a*, through which pass the pivot-screws *a' a'*, whose points support a rocking block *b*, having a central opening to receive the rear end of a mandrel 1, and provided with a binding-screw *b'*, to secure the mandrel when it has been properly adjusted. The mandrel has at or adjacent to its free end the female-die cavity *b²*, which coacts with the usual plunger or male die (a portion thereof shown at B, Fig. 1) common to this class of machines. It has also in its under surface a longitudinal inclined slot or way *b³*, for the reception of a correspondingly-inclined slide or movable wedge *b⁴*, said wedge provided with a pivoted lever *b⁵*, for operating it to expand or increase the diameter of the mandrel; but as the foregoing devices constitute no part of the present invention, they may be omitted or changed at will.

The main feature of the present invention lies in the mandrel itself, and consists in a mandrel dressed on at least two different centers, or having its die portion eccentric to its opposite or supported portion, and one form thereof is shown in the drawings—that is to say, the mandrel 1 is first turned true on one center. It is then turned smaller on the same center from the points 2 2 (see Fig. 4) toward the rear end of the mandrel which produces the shoulder *c*, after which the mandrel is set on a different center somewhat nearer the top edge of the mandrel and is turned on said second center from the points 3 3 toward the opposite or front end of the mandrel, thus leaving the shoulder *d* and producing a mandrel

wherein the front or die end of the mandrel is eccentric to rear end thereof. As a result of such form of mandrel the cutting-edges of the die cavity b^2 can be ground to sharpen the same without destroying the true circular form of the mandrel.

4 4, &c., (see Fig. 4,) indicate gage-lines which may be formed longitudinally on the upper surface of the mandrel 1, and 5 indicates a threaded hole for the reception of the binding or set screw of the gage.

6 indicates a concave gage adapted to rest on the upper surface of and be supported by the mandrel 1, said gage provided with an elongated transverse slot 7, (see dotted lines, Fig. 2,) for the passage of the set-screw 8, and also with a saddle-block 9, through which the binding or set screw 8 passes. If desired, or required by the work to be done, a lug or projection 10 may be either formed on or connected to the edge of the gage 6, as shown in Figs. 1 and 2.

The elongated transverse slot 7 in the concave gage permits the gage to be shifted upon the upper surface of the mandrel, and the longitudinal gage-lines upon the upper surface of the mandrel enables the operator to set the gage with relation to the die-cavity, so that the slots made by the machine will bear a definite position with relation to a slot or slots previously made in the tube operated on, all of which is required in certain classes of work for which this machine is especially intended.

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

1. In a slotting-machine, the combination, with a suitable plunger or male die, of a mandrel formed on two centers and provided with a suitable die-cavity, substantially as and for the purpose specified.

2. A mandrel for slotting-machines, said mandrel having a die-cavity in its forward portion and said forward portion of the mandrel eccentric to its rear portion, substantially as and for the purposes specified.

3. In a slotting-machine, the combination, with a mandrel having a suitable die-cavity, of a concave gage mounted thereon and provided with an elongated transverse slot for the reception of a binding-screw, and a binding-screw, substantially as and for the purposes specified.

4. In a slotting-machine, the combination, with a mandrel having a suitable die-cavity, of a concave gage mounted thereon and provided with an elongated transverse slot, a saddle-block, and a binding-screw which passes through the saddle-block and gage, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 6th day of June, 1891.

HENRY B. ROBISCHUNG.

Witnesses:

E. B. LEIGH,

E. T. WALKER.