(No Model.) 2 Sheets—Sheet 1.

N. W. SPAULDING.

DEVICE FOR GRINDING SAW BITS.

No. 351,666. Patented Oct. 26, 1886.

FIG. 1.

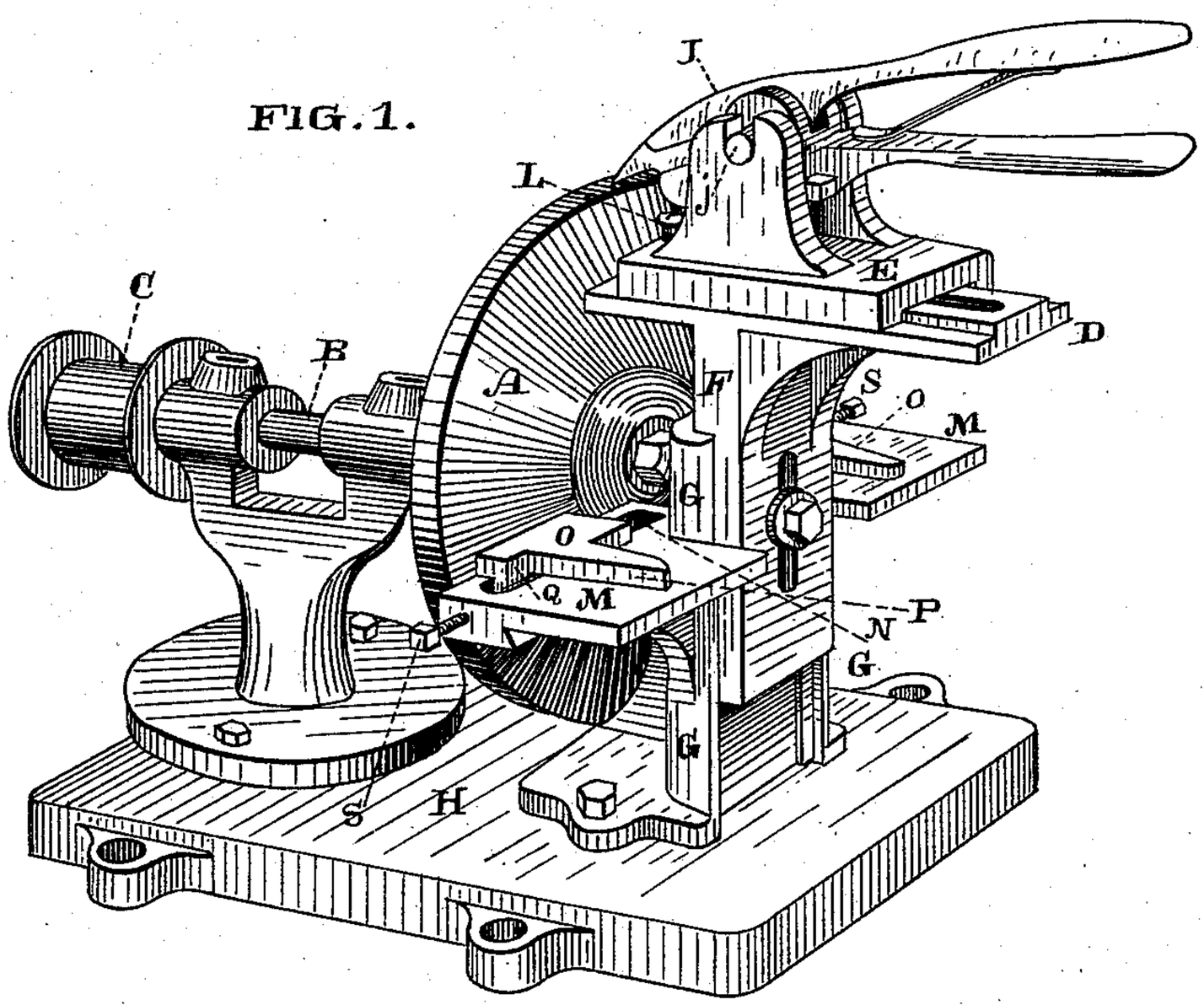
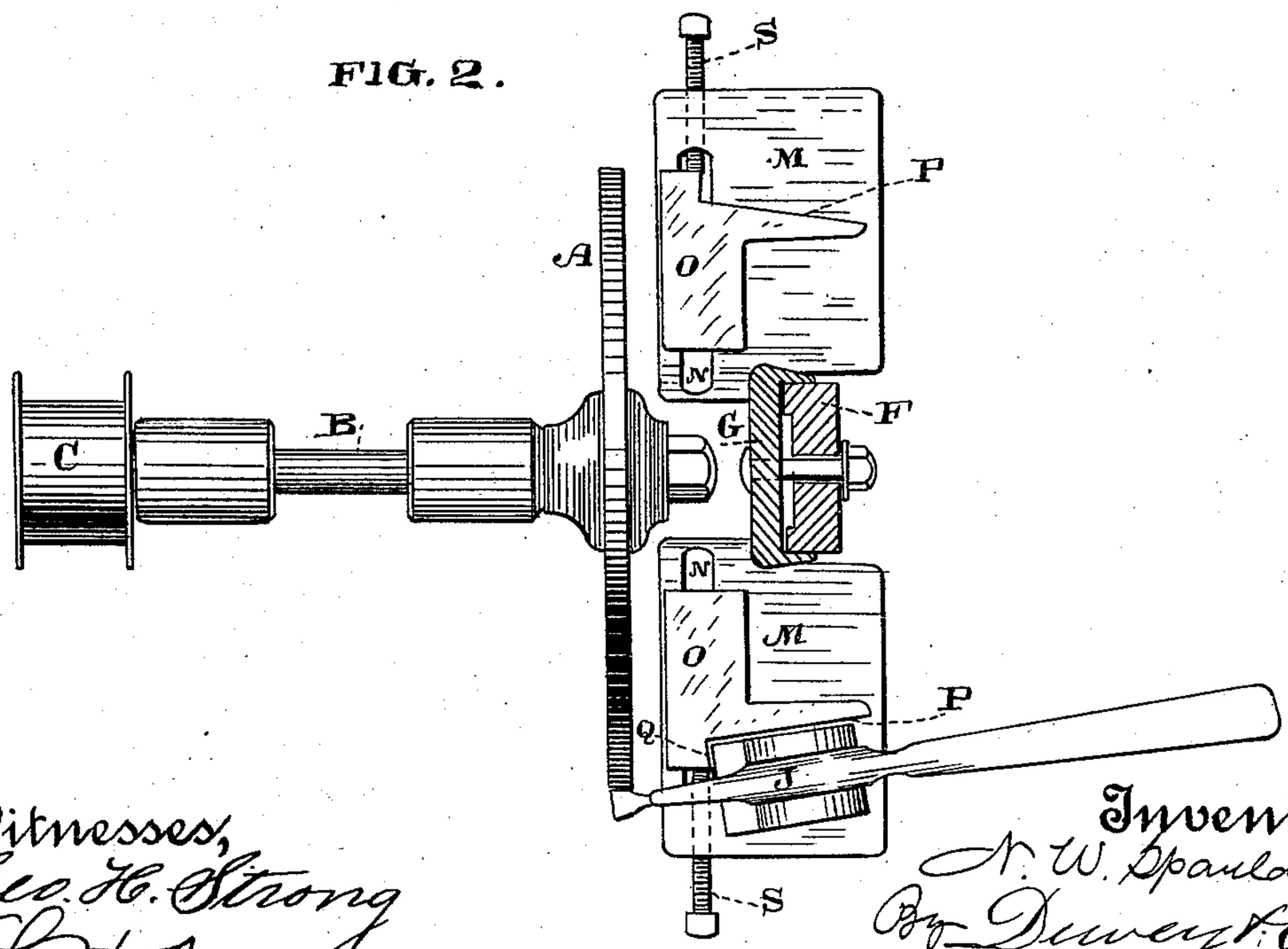


FIG. 2.



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(No Model.) 2 Sheets—Sheet 2.

N. W. SPAULDING.

DEVICE FOR GRINDING SAW BITS.

No. 351,666. Patented Oct. 26, 1886.

FIG. 3.

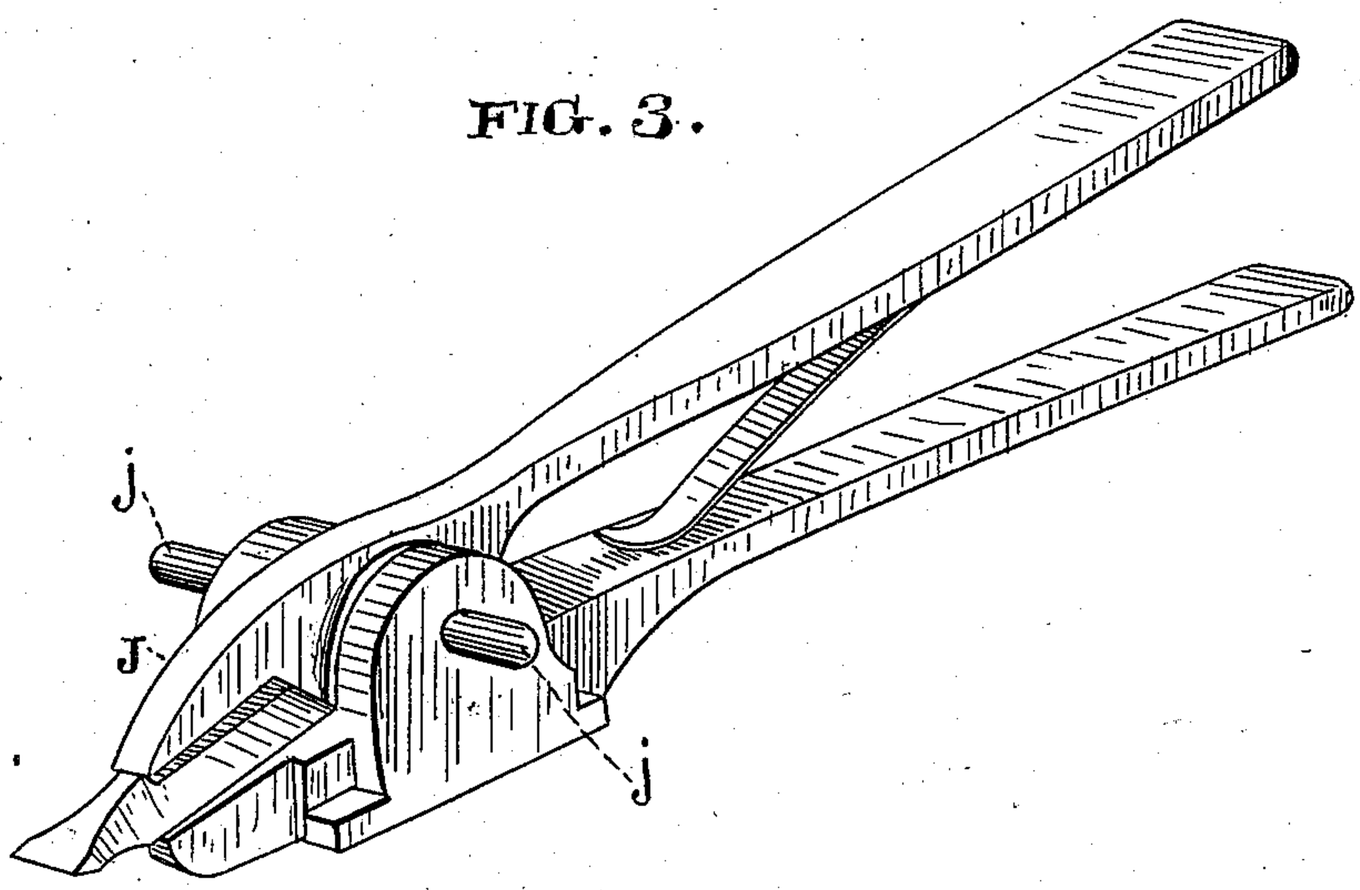
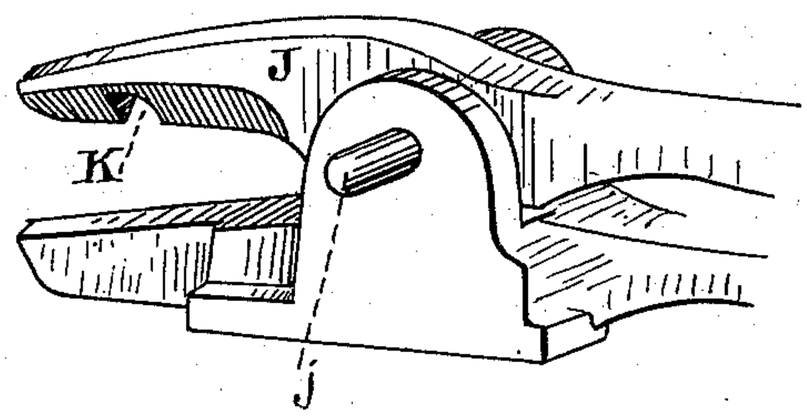


FIG. 4.



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UNITED STATES PATENT OFFICE.

NATHAN W. SPAULDING, OF SAN FRANCISCO, CALIFORNIA.

DEVICE FOR GRINDING SAW-BITS.

SPECIFICATION forming part of Letters Patent No. 351,666, dated October 26, 1886.

Application filed June 18, 1885. Serial No. 169,108. (No model.)

To all whom it may concern:

Be it known that I, NATHAN W. SPAULDING, of the city and county of San Francisco, State of California, have invented an Improvement in Devices for Grinding Saw-Bits; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for accurately sizing and sharpening bits which are to be used in saws.

It consists of a series of tables having gages to receive a holder in which the bit is inserted, so that the bit may be advanced transversely across the edge of a rotating emery-wheel or grinder and the bit sharpened, a concave formed upon its edge and under surface, and the edges ground to the proper width.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of my apparatus, showing the manner of grinding a concave on the edge. Fig. 2 is a plan view showing the device for grinding and gaging the edges of the bit. Fig. 3 is a view of the holder. Fig. 4 is a view of the holder, showing the notch K.

A is an emery or grinding wheel, mounted upon a shaft or arbor, B, which is driven at a high rate of speed by a belt passing around a pulley, C.

D is a horizontal table, having its upper surface and edges accurately planed to serve as a guide and support for the movable standard or support E of the bit-holder. The table D has a plate or shank, F, extending downward at right angles from it, and moving in guides G, which are bolted to a base-plate, H. The plate and guides are slotted or perforated to receive a locking-bolt, which passes through the slot in the plate and screws into the back guide, so that the plate and the table D may be adjusted up or down, as may be desired.

The upwardly-extending sides of the standard E have bearings slotted in from the top to receive the journal-pins or trunnions *j* of the bit-holder J. This bit-holder consists of a lower jaw, from which the trunnions or journal-pins project on each side, and having the front portion flattened to receive the lower and straight part of the bit. The upper jaw is made V-shaped to fit into the groove which is formed on the back of the bit, and it has a notch, K, made transversely in it, to receive the transverse bar or key which extends across the groove in the back of the bit.

Upon the front part of the movable support E is an adjusting-screw, L, which may be fixed at any desired point, so that the front portion of the lower bit-holding jaw will rest upon it, and when this is done the edge of the bit will be brought into such a position that by moving the slide E forward upon its guide and support D the lower front edge will be moved transversely across the edge of the grinding-wheel A, which rotates at right angles with it. By this construction the bits are always moved across the face of the grinding-wheel at exactly the same angle, and they will be concaved with an arc which corresponds with the exterior diameter of the grinder.

Upon each side of the standard or guide G a horizontal table, M, projects, and each table has a slotted guide, N, made in it so as to stand parallel with the side of the grinding-wheel. A gage-block, O, is fitted into each of these slots, and the side P of each of these blocks is beveled or inclined, so that when the side of the bit-holder J is placed against the incline and the front corner of it fits against the shoulder at Q the side of the bit will be brought in contact with the edge of the grinding-wheel, and any surplus material upon that side will be taken off. By placing the bit-holder against the similar gage upon the opposite side, the other edge of the bit will be also ground. These gage-blocks are adjusted by screws S, so that when the bit-holder is placed against each of them the sides of the bit will be cut away so as to leave exactly the same width upon each side of a central line. It will be manifest that all these tables and gages may be adjusted to fit larger or smaller grinding-wheels, as may be desired.

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

1. The forceps or holder for saw-bits, consisting of the lower plain jaw and the upper V-shaped jaw, having a transverse groove and the closing-spring, substantially as herein described.

2. A bit-holder consisting of the spring-actuated jaws, and having the journal or trunnion pins projecting from each side, in combination with a horizontal sliding standard

having bearings for the journal-pins, and a grinding-wheel revolving in a plane at right angles with the movement of the standard, substantially as herein described.

3. A bit-holding forceps with journal-pins and supporting-standard, in which said pins may rest, and an adjusting screw or gage, upon which the front forceps may rest, in combination with a revolving grinding-wheel, substantially as herein described.

4. A device for gaging and centering saw-bits, consisting of horizontal tables extending to a point near the face of a revolving grinding-wheel, and having adjustable gages attached to them, in combination with a bit-holder fitted to rest against said gages, so as to bring the opposite edges of the bit alternately in contact with the edge of the revolving grinding-disk, substantially as herein described.

In witness whereof I have hereunto set my hand.

NATHAN W. SPAULDING.

Witnesses:

SAML. S. MURFEY,

C. HARTMANN.