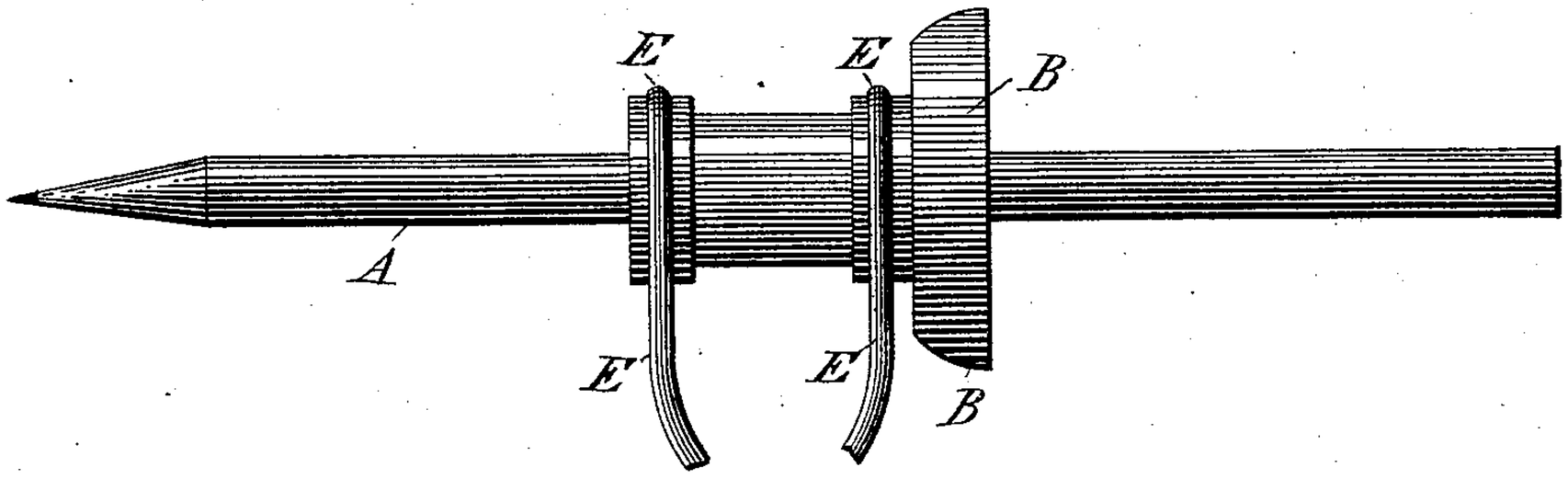
(No Model.)

J. I. GORTON & J. BEDELL.

PENCIL SHARPENER.

No. 444,431. Patented Jan. 13, 1891.

Fig. 1.



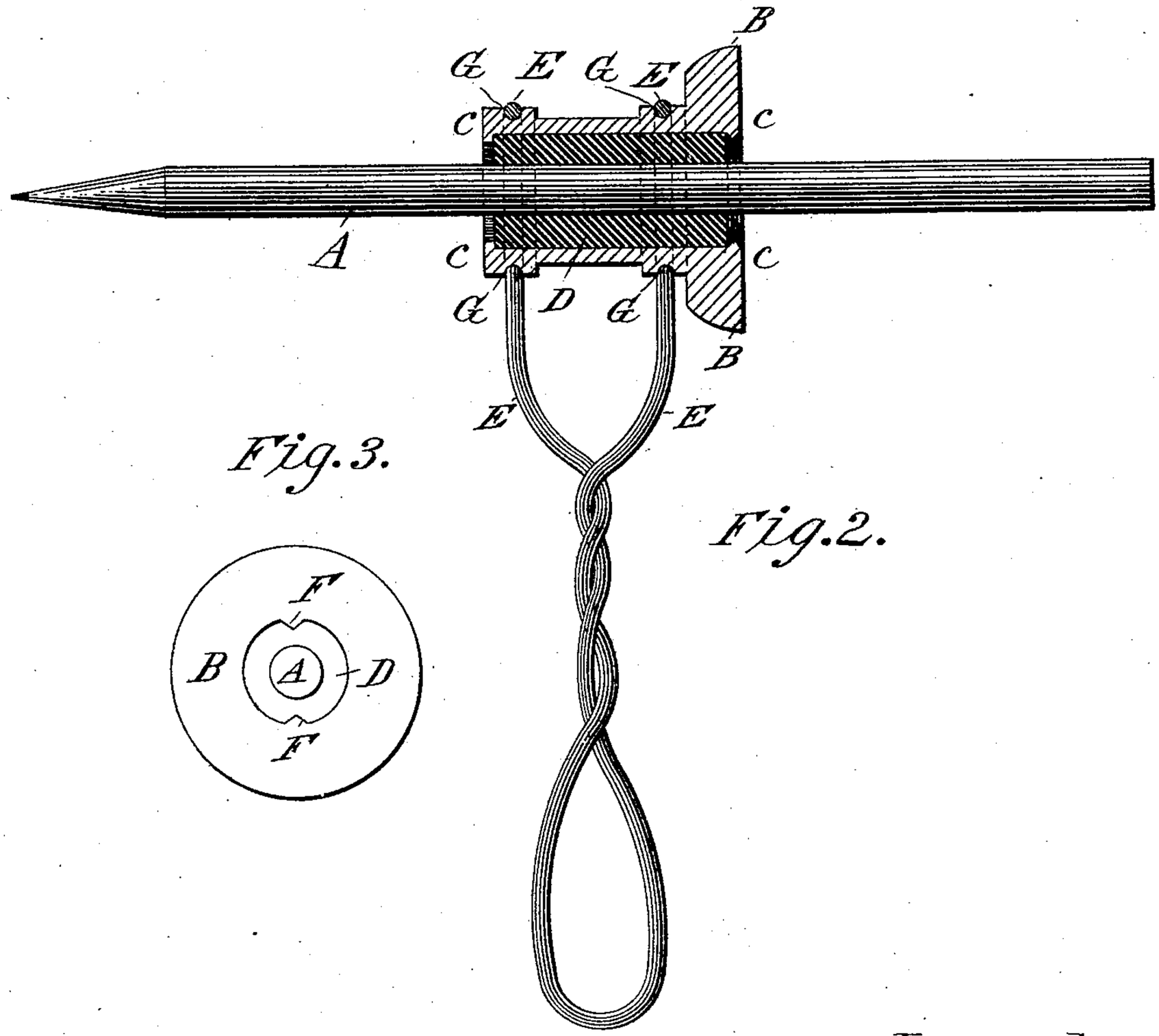


Fig. 3.

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES IRVING GORTON AND JAMES BEDELL, OF SING SING, NEW YORK.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 444,431, dated January 13, 1891.

Application filed January 31, 1890. Serial No. 338,833. (No model.)

To all whom it may concern:

Be it known that we, JAMES IRVING GORTON and JAMES BEDELL, citizens of the United States, residing at Sing Sing, in the county of Westchester and State of New York, have invented a new and useful Pencil-Sharpener, of which the following is a specification.

Our invention relates to improvements in slate and lead pencil sharpening machines, in which the pencil is sharpened by being brought in contact with and rubbed over a stationary cutting-surface; and the objects of our improvement are, first, to cause the pencil to be brought to a point by partly rolling and partly sliding over a stationary cutting-surface; second, to cause the pencil to be kept at a proper angle with respect to said cutting-surface, so as to bring it to a suitable point; third, to hold the pencil properly in the machine, so as to cause it to revolve while sliding, and thus bring all sides of the pencil in turn into contact with said cutting-surface, and, fourth, by suitable mechanism to retain the pencil-holder in its place when in use and also to permit it to be withdrawn from the machine when necessary. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal top view of the entire machine. Fig. 2 is a horizontal sectional top view of the entire machine; and Fig. 3 is a view of the right-hand end of the machine, showing the flanges or projections designed to keep the india-rubber pencil-holder in place.

Similar letters refer to similar parts of the machine.

The part marked A is the pencil to be sharpened, placed in the drawings merely to assist in understanding the operation of the machine.

B is the largest or bearing part of the wheel, which comes in contact with the flat surface of the desk, floor, or other substance over which it is rubbed back and forth, and so caused to revolve, together with the pencil within it.

C C C C are the ends of its hollow axis or shaft, through which the pencil passes and in which it is held while being sharpened, said hollow axis being a part of the wheel, solidly attached to it and turning with it, thus turning the pencil by means of the revolution of the wheel and at the same rate of speed—that is, once for each revolution of the wheel.

D D is the hollow piece of india-rubber or pencil-holder for holding the pencil firmly in the wheel.

E E E E is the handle to be grasped in the hand, and G G G G show the hollowed parts of the axis or shaft for receiving the handle where it passes around the axis.

In Fig. 3, F F are the flanges or projections for holding the india-rubber pencil-holder in place.

The bearing of the handle being entirely on one side of the part B of the wheel, which is the only part of the machine coming in contact with the surface over which it is rubbed back and forth, pressure downward on the handle brings the end of the pencil downward against the cutting-surface, which said cutting-surface is laid flat, or nearly so, upon the same surface over which the wheel is rubbed back and forth.

Now upon placing the pencil in the machine, as shown, and rubbing it back and forth over the cutting-surface by means of the handle E, the friction of the part B of the wheel upon the desk or other flat surface causes the wheel and pencil to revolve; but since the circumference of the wheel is greater than that of the pencil, the pencil is forced to partly roll and partly slide over the cutting-surface, the rolling motion bringing all sides in turn into contact with the cutting-surface and thus securing a uniform grinding on all sides, and the sliding motion in contact with the cutting-surface grinding or cutting away the material of the pencil, and thus bringing it to a point.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A pencil-sharpener having a wheel B with a diameter greater than that of the pencil, in which the pencil is placed, and which said wheel is adapted to be rotated by being rubbed back and forth on a desk, floor, or other stationary surface by means of the handle E, for the purpose mentioned.

2. In a pencil-sharpener, a revolving wheel in which the pencil is placed, with the opening to contain the pencil made sufficiently large to receive a hollow piece of india-rub-

ber, in which the pencil is placed in the wheel, said wheel having at each end of said opening flanges or projections solidly attached to the wheel and extending inward toward the pencil and partly over the ends of said piece of india-rubber, which flanges or projections are large enough to retain the india-rubber in its place when it has been slipped in, and yet small enough to permit the india-rubber to be drawn out of the wheel when it is necessary to change it for another piece, all for the purposes mentioned, substantially as specified.

3. A pencil-sharpener having a single wheel B, with a diameter greater than that of the pencil, in which the pencil is placed, and which said wheel is adapted to be rotated by being rubbed back and forth on a desk, floor, or other stationary surface by means of a handle E and by reason of the difference in diameter of the wheel and pencil to partly roll the pencil and partly slide it over a stationary cutting-surface, so as to grind it to a point.

4. The combination, as described, of a single wheel B, a hollow piece of rubber or other material D for firmly holding the pencil in the wheel, fixed flanges or projections F at the ends for holding the rubber or pencil-holder in place, and a suitable handle E with bearings for the shaft, substantially as described.

5. In a pencil-sharpener, fixed flanges or projections firmly attached to the wheel and extending inward toward the pencil and partly over the ends of the rubber or other material for holding the pencil for the purpose of holding the rubber in place in the wheel, said flanges or projections being of such a size as to permit the said rubber to be put in place in the wheel or withdrawn from it by slipping it past the said projections without moving them, substantially as specified.

6. A handle E, with its chief bearing between the wheel and the point of the pencil, so that pressure upon the handle shall operate upon both the wheel and the pencil to produce friction of the wheel upon the surface on which it is rubbed, and thus cause it to revolve and at the same time to produce friction of the pencil upon the cutting-surface on which it is rubbed, and thus grind it to a point.

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