

G. BRAUN.

Improvement in Machines for Polishing Pencils.

No. 132,519.

Patented Oct. 29, 1872.

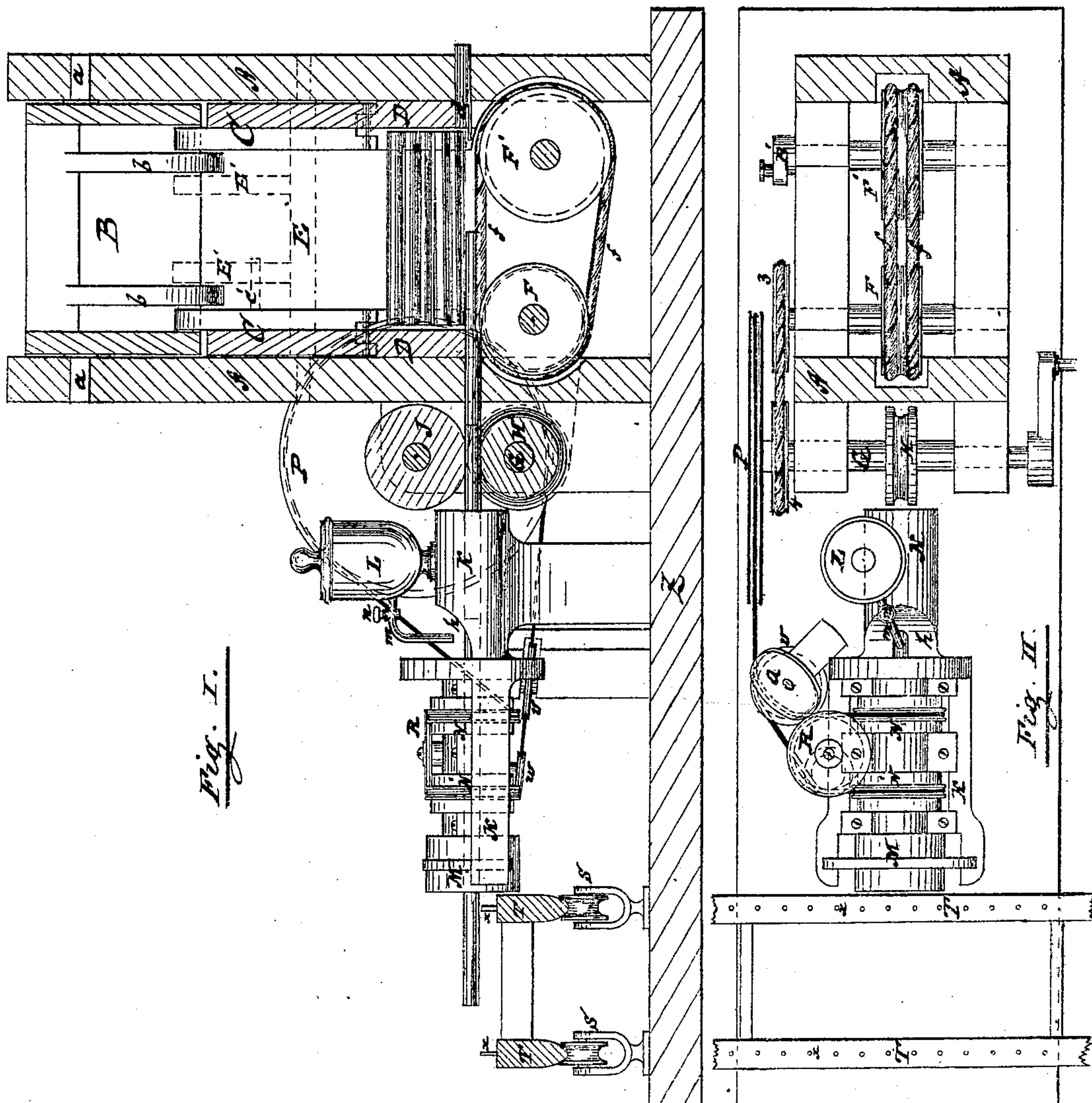


Fig. I.

Fig. II.

Witnesses

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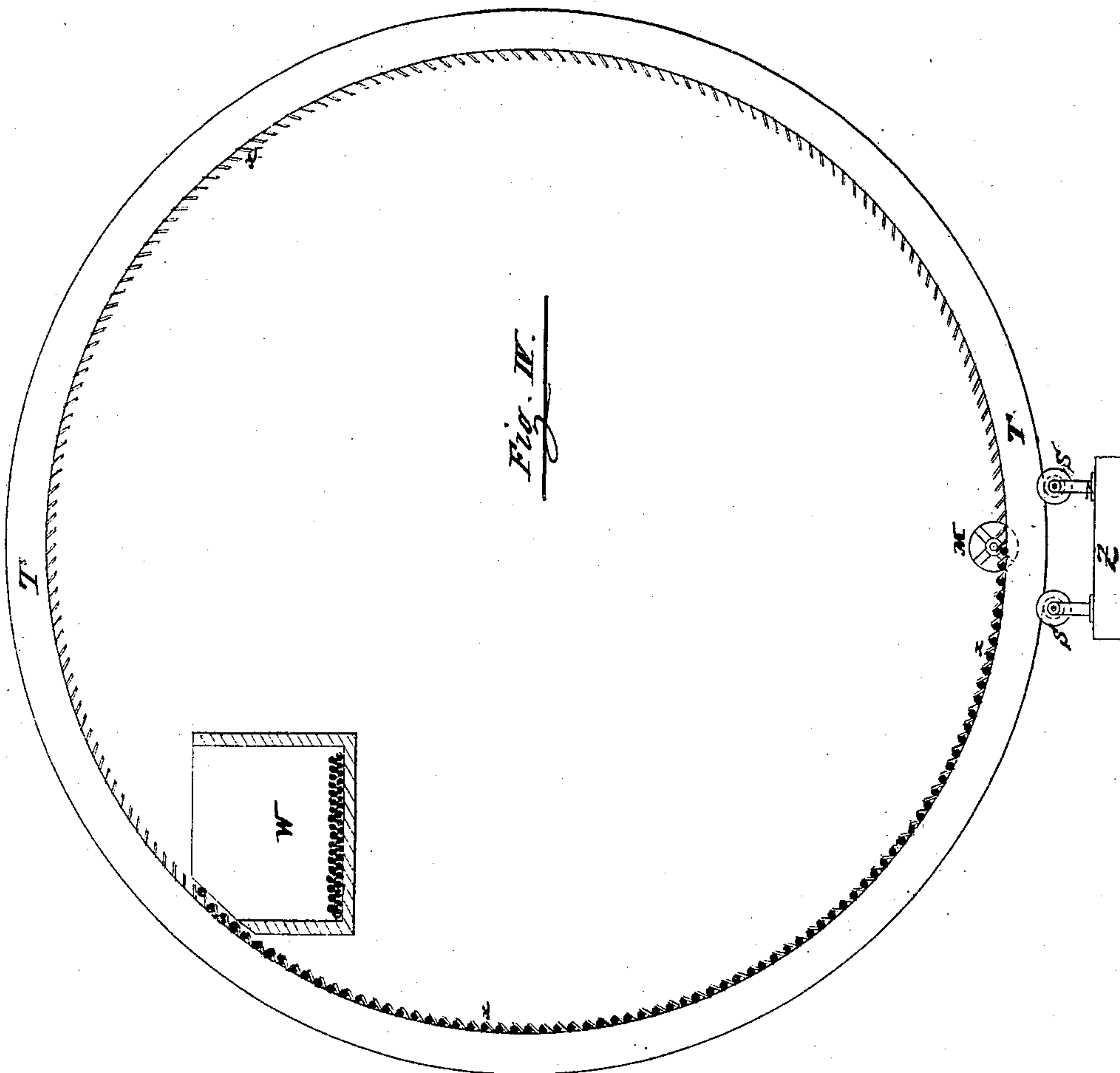
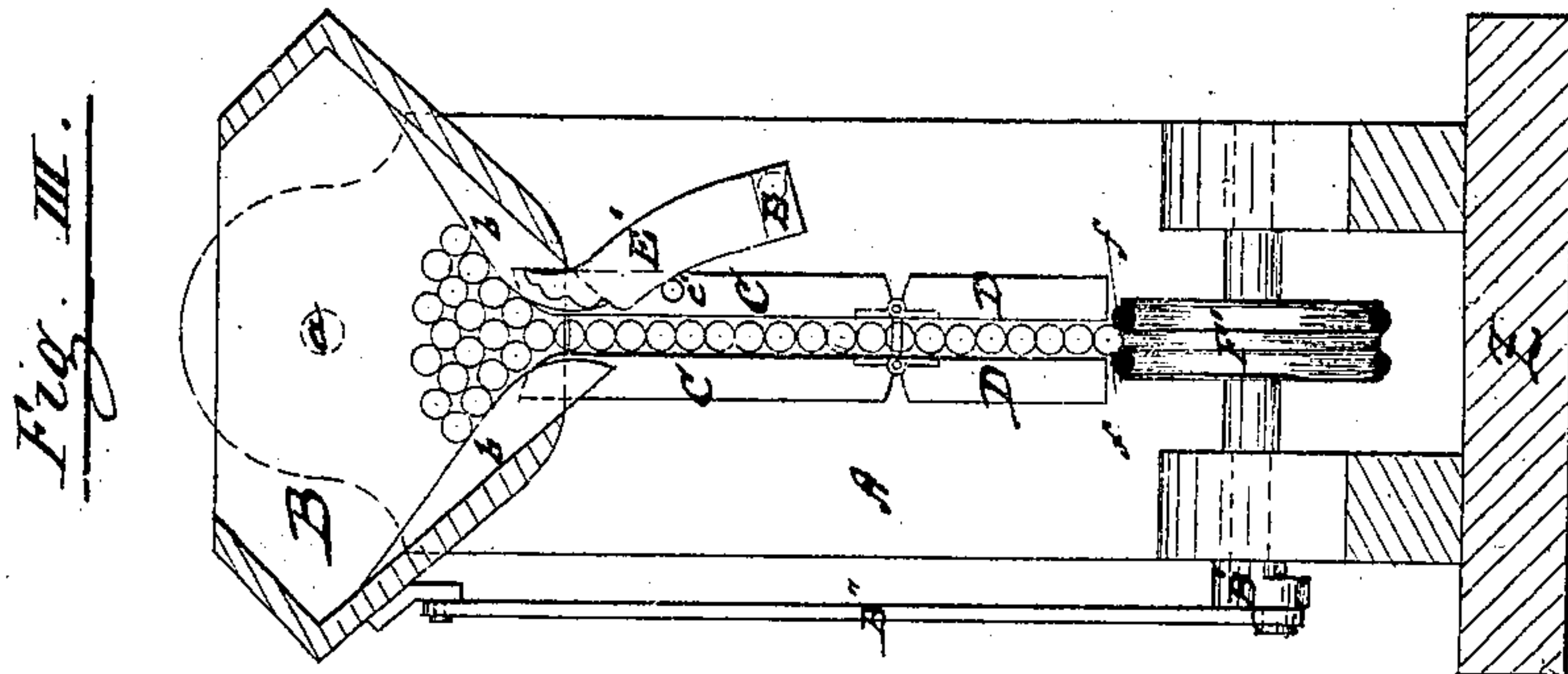
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UNITED STATES PATENT OFFICE.

GEORG BRAUN, OF HOBOKEN, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR POLISHING PENCILS.

Specification forming part of Letters Patent No. **132,519**, dated October 29, 1872.

To all whom it may concern:

Be it known that I, GEORG BRAUN, of Hoboken, Hudson county, in the State of New Jersey, have invented an Improvement in Machines for Polishing Pencils, of which the following is a specification:

The nature of my invention consists in the arrangement of a vibrating hopper in combination with vibrating sides, by which the pencils to be polished are automatically fed down. Below this hopper two round belts or straps upon suitable drums, are situated, which take hold of the pencils and move the same, one after the other, between feed-rollers, from which they are forced through two or more heads, made to revolve in contrary directions to each other, and containing rags or pads to distribute the polish uniformly over the surface, and at the same time polish the pencil, and then through a stationary head similarly constructed and provided with polishing-pads, whereby all surplus polish is removed and the polishing operation completed. The polished pencils are then dropped upon a large revolving wheel, on which they are allowed to dry, and are then delivered into a suitable box.

In the accompanying drawing, Figure I represents a longitudinal elevation, partly in section, embodying my invention. Fig. II is a top view of the same with the hopper removed. Fig. III is a transverse vertical section of the hopper. Fig. IV is a front view of the wheel which takes the polished pencils from the machine, represented on a reduced scale.

Similar letters indicate corresponding parts in all the figures.

A A are frames, in the upper part of which a hopper, B, is arranged, turning on suitable journals *a*. To the lower part of these frames below the center of the hopper, guides D are fastened, on the top of which corresponding guides C are hinged, projecting into the hopper B, and receiving a vibrating motion from the motion of said hopper. To the inside of the hopper B guide-flanges *b* are attached to guide the pencils over the ends of the guides C and into the same. (See Fig. III.) The guides C and D form channels just wide enough to allow of the passage of one pencil, which arrange themselves therein one on the top of the other, as shown in Fig. III. Some little distance below the hopper a bar, E, is fitted

to the frame A, capable of turning, and provided with two arms, E E', projecting through the bottom into the hopper B, forming agitators against the pencils to cause the same to pass freely from the hopper into the channels C. This agitator E is operated by a projecting-pin, *c'*, fast to the guide C. Below the end of the guides or channel D rollers or drums F F' are arranged, over which two round belts or straps, *f f*, pass. These drums F F' receive a slow motion through the pulley 3 fast on the shaft of the drum F and connected with the pulley 4 fast on the driving-shaft G. The lower pencil in the channel D falling between these round belts *f f* is moved through an opening in the forward frame A between the feed-rollers H and J, and forced by the same into the polishing-frame K. The feed-roller H is fast on the driving-shaft G, and is provided with a groove, into which the pencil fits. The roller J is made either of India rubber or any other elastic substance, or the same may be covered with a similar substance, and receives its motion by friction from the side surfaces of the roller H, and on account of its elastic surface takes firmly hold and secures the pencil between its surface and in the groove of the roller H so as to force the same into the polishing-machine.

To prevent the after end of the pencils falling upon or between the round belts *f f* before the pencil resting between the same has passed, the forward end of the pencil situated above it in the channel D, a spring, *d*, (see Fig. I,) is arranged in the after frame A, which supports the after ends of the pencils until the forward end is taken hold of by said round belts *f f*, and is by their forward motion drawn away from said spring *d*. Upon the after end of the frame K a reservoir, L, is supported, containing the polishing material, which is fed upon the surface of the pencil through a pipe, *m*, provided with a cock, *n*, to regulate the quantity required, part of the frame K being cut away, as shown at *h*, Figs. I and II, to expose the surface of the pencil while passing, and allow the polishing material to drop upon the same. The pencil passes then through the heads N, N', and M supported in the frame K. The heads N and N' turn in suitable bearings in said frame K while the head M is fixed stationary on the forward end of said frame. The

heads N, N', and M are provided with polishing-pads fastened in radiating guides, so that the same can be made to bear uniformly on the surface of the pencil passing between them for the purpose of distributing the polish evenly over its surface and to give the desired polish to the same. It is essentially necessary that the polishing material should be evenly distributed over the surface of the pencil, and likewise that the marks or streaks made by a set of pads should be destroyed, for which purpose the heads N and N' are made to revolve in opposite directions, while the head M being stationary gives the parallel rubbing or finishing to the pencil.

Instead of two revolving heads, as here represented, four or six heads may be used, care being taken that each succeeding head shall receive a motion in a contrary direction to the preceding head. The desired rapid revolving motions are imparted to the heads N N' by a belt passing over a pulley, P, fast on the shaft of the feed-roller J, over the guide-pulley Q, the head N, guide-pulley R, head N', and guide-pulleys *w v*, returning to the pulley P. (See Figs. I and II.) Forward of the frame K and the stationary head M, a large wheel, T, is arranged supported on suitable guide-rollers S S. The internal surface of this wheel is provided with projecting pins *x*, forming divisions, between which the pencils fall when passing out of the head M, and by which they are kept separated from each other, and are then carried upward, supported by said pins or projections *x* until discharged into the receiving-box W. The shape and inclination given to these pins or projections *x* regulate the height the pencils shall be carried upward on the inner surface of the wheel T before they are discharged, and as the motion of this wheel T is very slow and the same is made of a very large diameter, the pencils will be sufficiently dry when they discharge themselves into the box W.

The wheel T, as here represented, is intended

to be moved by hand after a pencil has fallen between the pins *x*; but it will readily be understood that the desired motion can be communicated to the same by suitable gearing, and whereby the operation of polishing pencils can be performed entirely automatically.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The vibrating hopper B and vibrating end guides or channels C C, in combination with the agitating arms E' E', substantially as and for the purpose set forth.

2. The arrangement of two round belts or straps, *ff*, passing over suitable pulleys F F', in the manner and for the purpose substantially as herein described.

3. The grooved roller H, in combination with the elastic friction-roller J, substantially as and for the purpose set forth.

4. I claim two or more heads, N N', provided with polishing-pads and revolving in opposite direction to each other, substantially in the manner and for the purpose described.

5. I claim, in combination with the revolving and stationary polishing-heads N, N', and M, the wheel T provided with projections or pins *x* on its inner surface, and arranged close to the end of the frame K supporting the above-mentioned polishing-heads, substantially as described, and for the purposes set forth.

6. I claim the mechanism for polishing pencils, substantially as herein described, consisting of a vibrating hopper, B, vibrating side channels C C, two round belts, *ff*, to move the pencil forward, feed-rollers H and J, two or more revolving heads, N N', and a stationary head, M, containing polishing-pads, and the revolving wheel T, the whole being constructed and combined as set forth.

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Witnesses:

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