

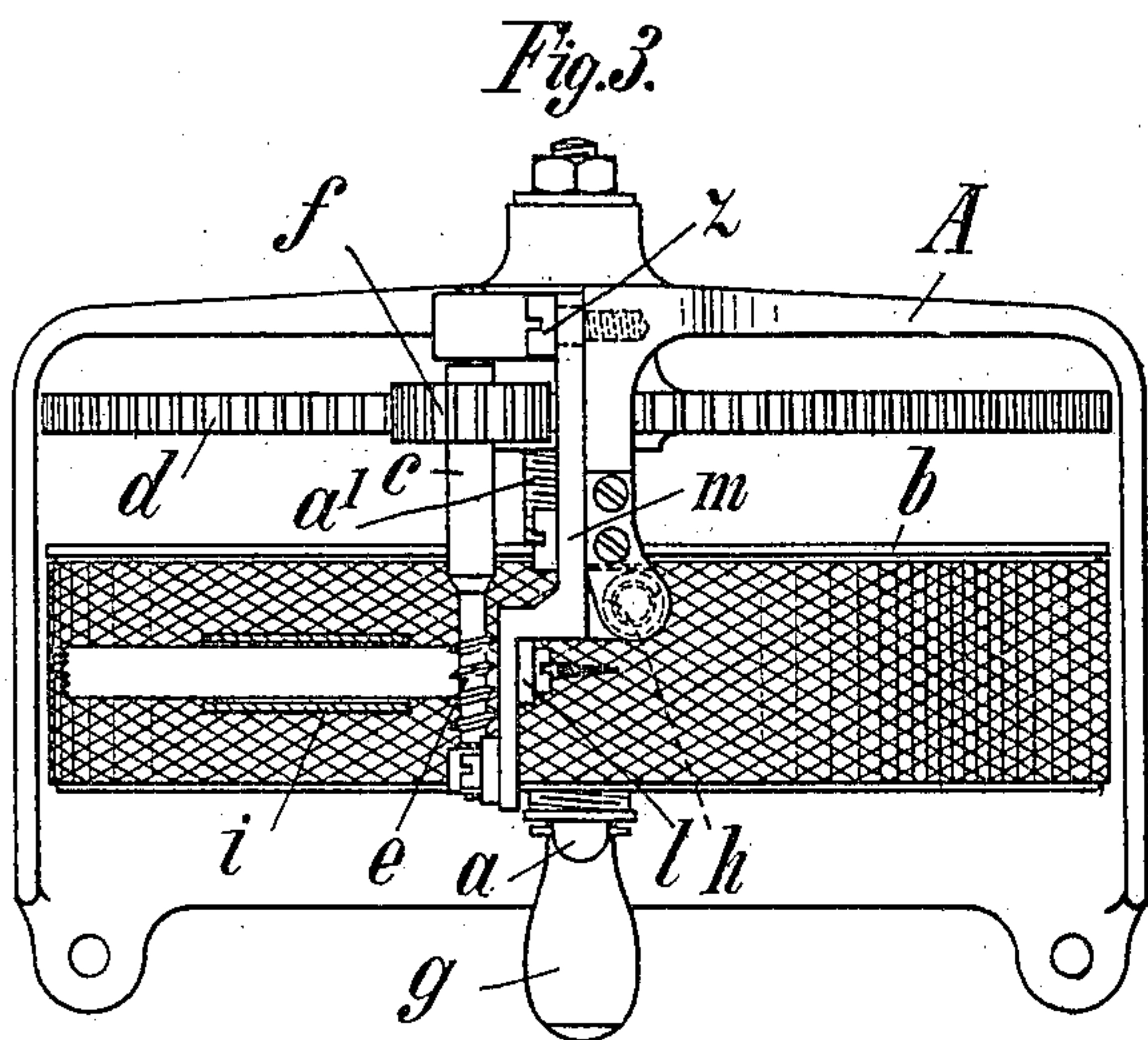
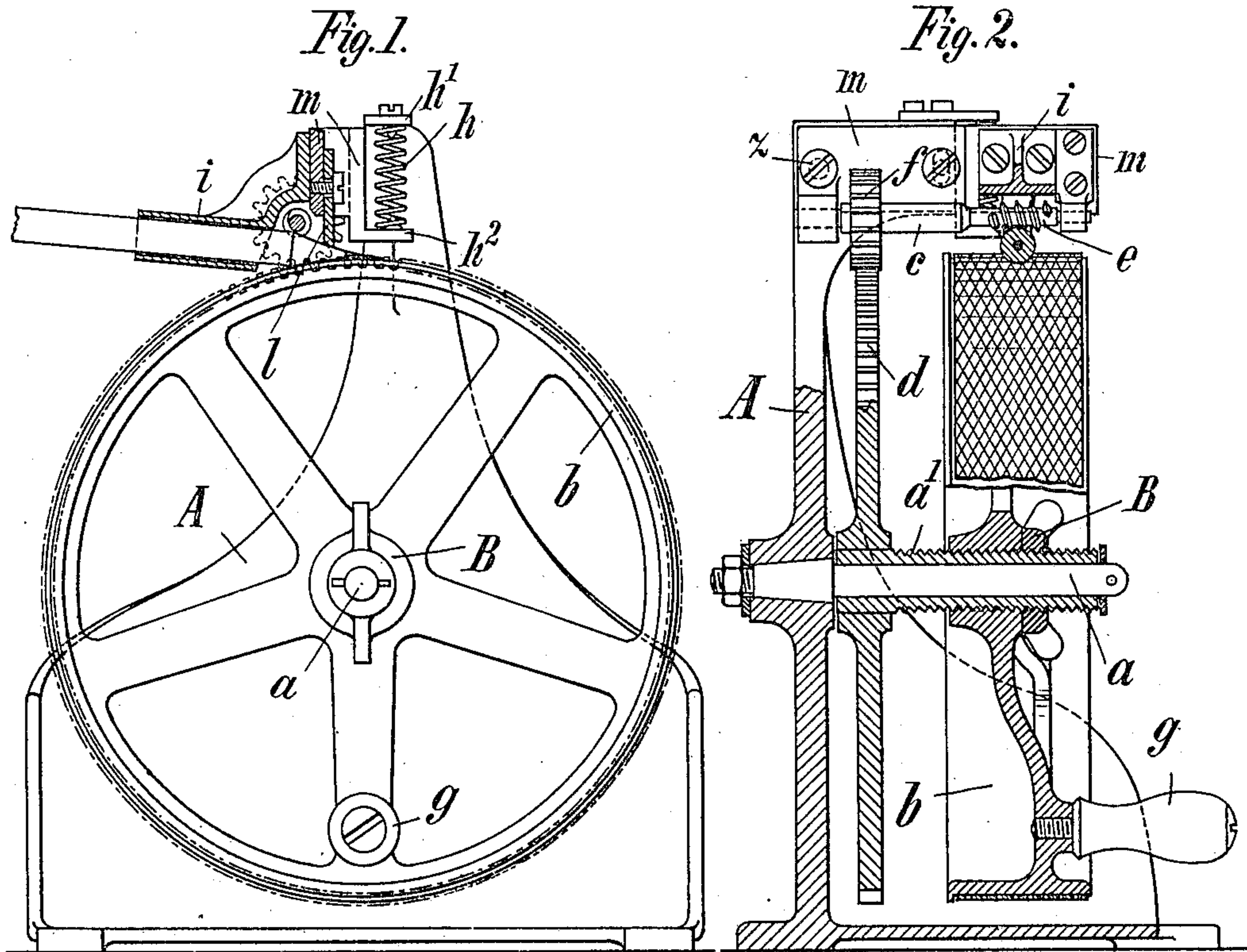
No. 831,861.

PATENTED SEPT. 25, 1906.

H. F. HAMBRUCH.  
PENCIL SHARPENER.

APPLICATION FILED JAN. 16, 1906.

2 SHEETS—SHEET 1.



Witnesses:

H. L. Amer.

C. Sommers

Inventor:

Heinrich Friedrich Hambruch.

by Henry Orth atty.

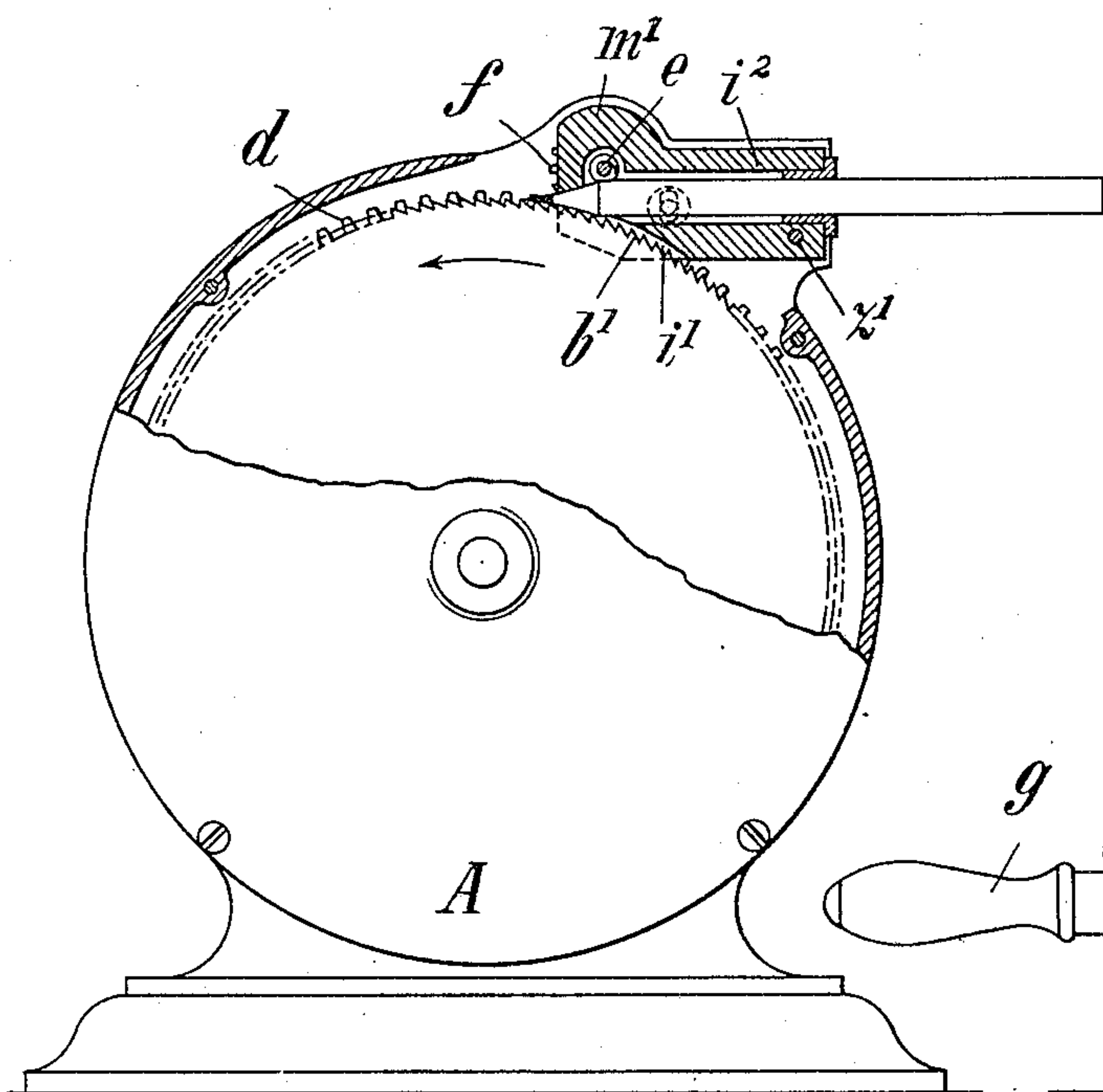
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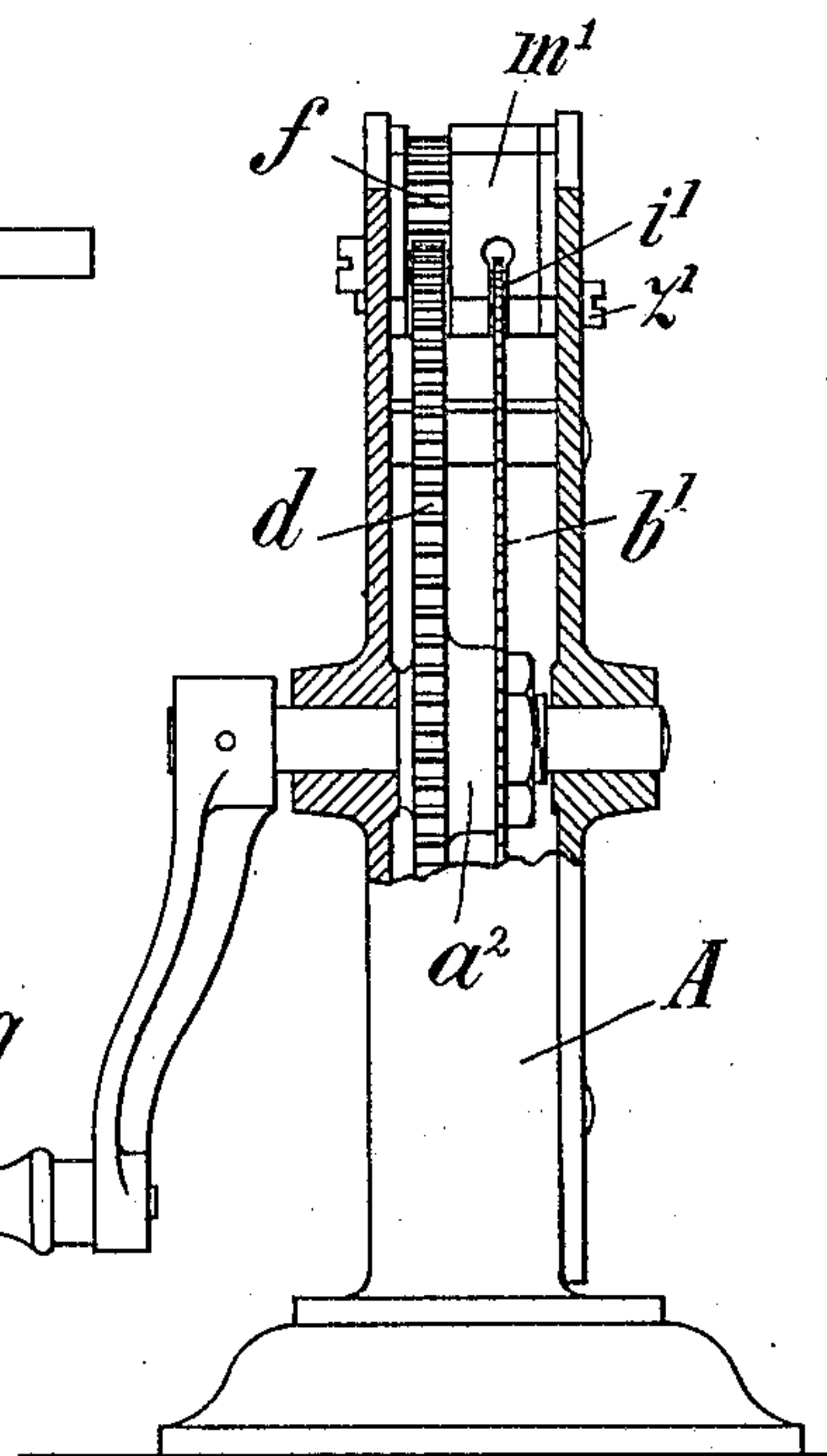
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2 SHEETS—SHEET 2.

*Fig. 4.*



*Fig. 5.*



Witnesses.

H. L. Amer.

B. Rommers

Inventor.

Heinrich Friedrich Hambruch.

by *Henry Orth* atty.



# UNITED STATES PATENT OFFICE.

HEINRICH FRIEDRICH HAMBRUCH, OF HAMBURG, GERMANY, ASSIGNOR  
OF ONE-HALF TO FRANZ WILHELM GEORGE HARRY FISCHER, OF  
HAMBURG, GERMANY.

## PENCIL-SHARPENER.

No. 831,861.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed January 16, 1906. Serial No. 296,301.

*To all whom it may concern:*

Be it known that I, HEINRICH FRIEDRICH HAMBRUCH, a subject of the German Emperor, and a resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Pencil-Sharpeners, of which the following is a specification.

This invention relates to improvements in machines for sharpening pencils and the like; and the object is to construct a machine which will speedily and economically sharpen a pencil.

The invention consists in means for rotating and gradually feeding the pencil against a rotating drum or disk which is provided on its periphery with cutting means, and, further, in constructing this disk so as to allow for easily redressing its cutting means—that is, for sharpening the same.

In the drawings, in which two modifications are shown, similar letters refer to similar parts.

In Figure 1 a side view of the machine is shown, partly in section. Fig. 2 shows an end view, partly in section, and Fig. 3 a top view. In Fig. 4 a side view, and in Fig. 5 an end view, of a modification is shown, partly in section.

The machine is supported in a frame A, to which a pivot-pin *a* is horizontally attached. This pin is surrounded by a sleeve *a'*, carrying a cutting disk or drum *b* and a tooth-wheel *d*, gearing with a pinion *f*, the shaft *c* of which is journaled in a small movable frame *m*. This frame *m* is pivotally attached to the main frame A by a pin *z* and is provided with a socket *i*, into which the pencil to be sharpened is placed. A spiral spring *h* bears with one end against a lug *h'* on the main frame A and with its other end against a lug *h<sup>2</sup>* on the movable frame *m*, thus tending to force the latter downward and the point of the pencil against the cutting-surface of the disk or drum *b*. This cutting-surface may be obtained by covering the periphery of the disk with any cutting material, such as emery, glass, flint, sandpaper, perforated sheet metal, (steel,) knife-blades, &c. To the shaft *c* a worm *e* is fixed, the helical thread of which has a gripping edge contacting with the pencil, so as to rotate and at the same time feed the pencil forward when the worm is turning. This is done by means of a

handle *g*, attached to the disk *b*, the rotation of which is transported to the shaft *c* of the worm *e* by the gearings *d* and *f*. In contacting with the pencil the sharp or gripping edge of the worm-thread partly enters the material of the pencil, thus securing a good grip on the same.

To prevent the point of the pencil from breaking, a plate *l* is attached adjustably to the frame *m*. If the disk is of the shape of a drum, provision may be made to shift it axially on the sleeve *a'*, so as to bring a new part of the surface opposite the pencil when the part in use is worn out or has become blunt. This adjusting may be done by providing the sleeve *a'* with an outer and the boss of the disk *b* with an inner thread and by arranging a lock-nut B on the sleeve *a'* for rigidly locking the disk *b* to the sleeve *a* when the adjusting is carried out. Should it be desired to operate upon several pencils or the like at the same time, one beside the other, the worm is to be made of a suitable length, and a corresponding number of sockets *i* would have to be fastened to the frame *m*.

In the modification shown in Fig. 4 the disk *b'* is of the shape of a circular cutter or saw, which easily can be sharpened similar to an ordinary saw. This cutter-disk may be made of steel plate and is preferably rigidly attached to the sleeve *a'*. It is about of such small breadth as may correspond with the contact-surface of the pencil. The socket *i<sup>2</sup>* has a thicker wall than in the first-shown construction and is provided with a slot *i'*, into which the cutter *b'* projects, thus forming a guide for the same. In this modification the frame *m'* may be rigidly attached or, if desired, adjustably attached to the main frame A, in the latter instance for permitting an adjustment of the position of the pencil when the teeth of the cutter are worn out and shortened by sharpening. The teeth are so directed that the cutter may rotate in the direction of the arrow.

The frame *m'*, forming the pencil-holder, is attached to the main frame by means of a screw *z'*.

I claim—

1. A pencil-sharpener comprising a worm for rotating and feeding the pencil, the thread of which worm having a sharp edge for partly entering the material of the pencil



and thus securing a decided grip on the same, in combination with a rotatable cutter against the periphery of which the pencil bears.

5 2. A pencil-sharpener comprising a worm directly engaging the pencil for rotating and feeding the same and a frame on which the shaft carrying such worm is journaled and which is provided with a socket for carrying  
10 and guiding the pencil in combination with a rotatable cutter against the periphery of which the pencil bears.

3. A pencil-sharpener comprising a worm directly engaging the pencil for rotating and  
15 feeding the same and a movable frame on which the shaft carrying the worm is journaled and which is provided with a socket for carrying and guiding the pencil in combination with a rotatable cutter and a spring  
20 tending to force the movable frame in such direction as to press the pencil against the periphery of the cutting-disk.

4. A pencil-sharpener comprising a worm

for rotating and feeding the pencil and a rotatable cutting-disk of small breadth having 25 teeth on its periphery for operating upon the point of the pencil, when the latter is fed and rotated.

5. In a pencil-sharpener, the combination of a rotatable member having a peripheral 30 abrading-surface, a worm adapted to rotate and feed the pencil and means for preventing lateral displacement of the latter.

6. In a pencil-sharpener the combination with a main frame and a rotatable member 35 mounted thereon provided with a peripheral abrading-surface, of a frame having a support for the pencil adapted to prevent lateral displacement thereof, and a worm mounted in the last-named frame directly engaging 40 the pencil.

HEINRICH FRIEDRICH HAMBRUCH.

Witnesses:

MAX KAEMPFF,

OTTO W. HELLMRICH.