

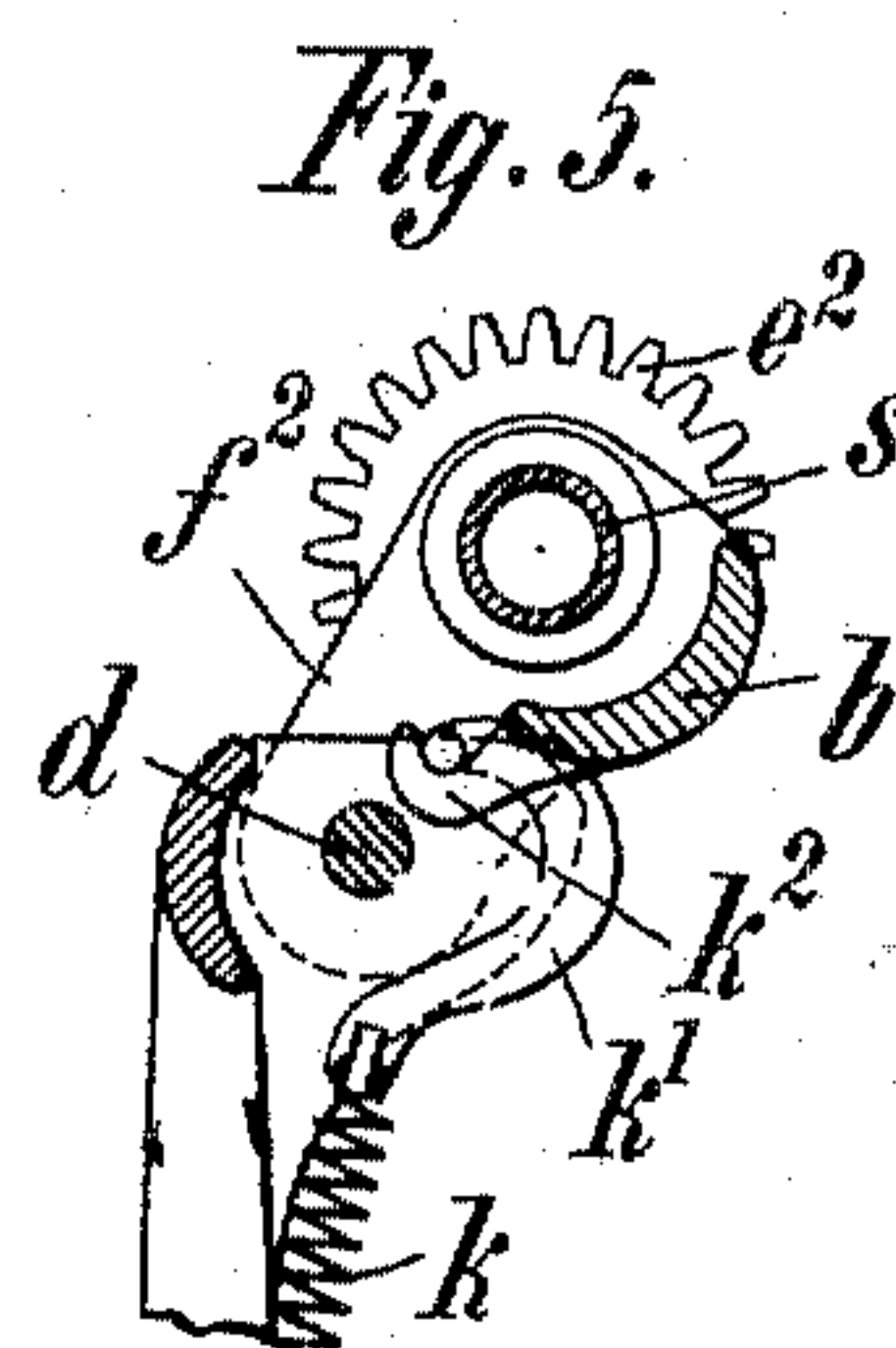
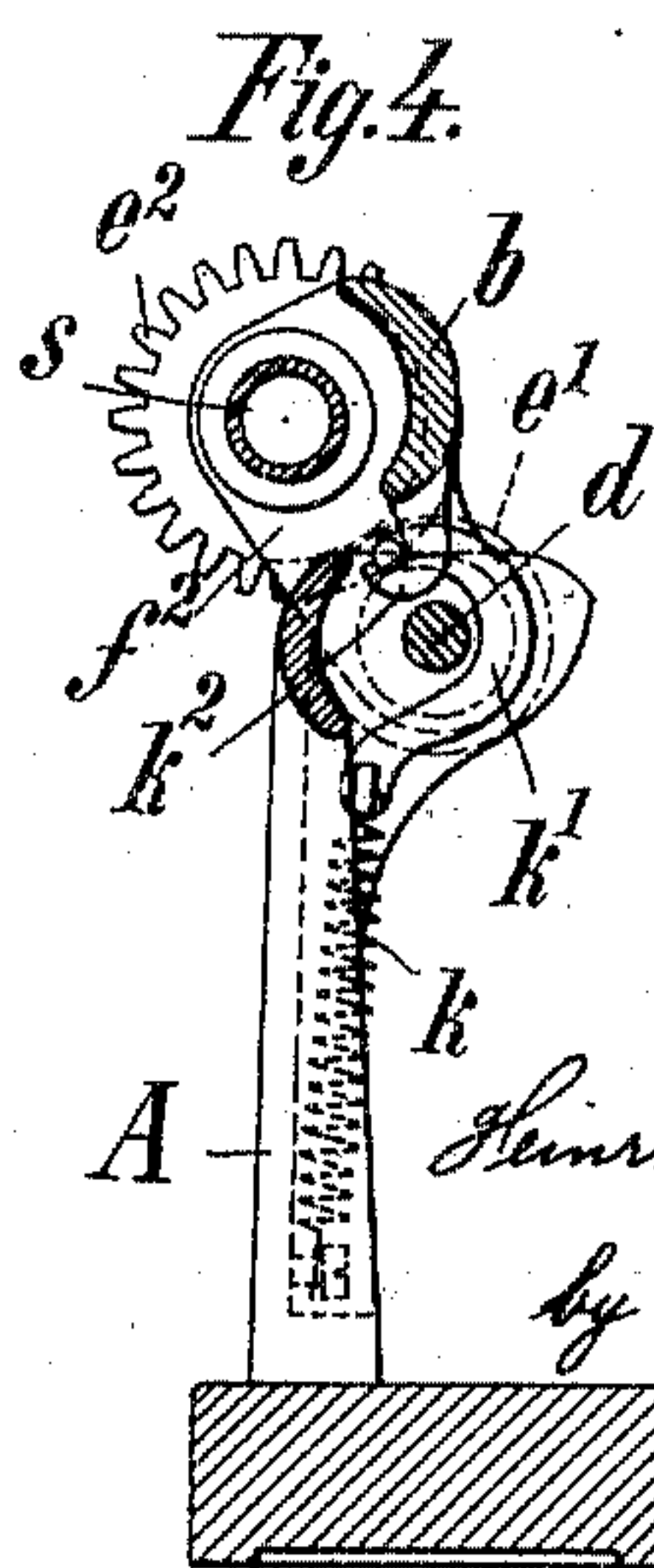
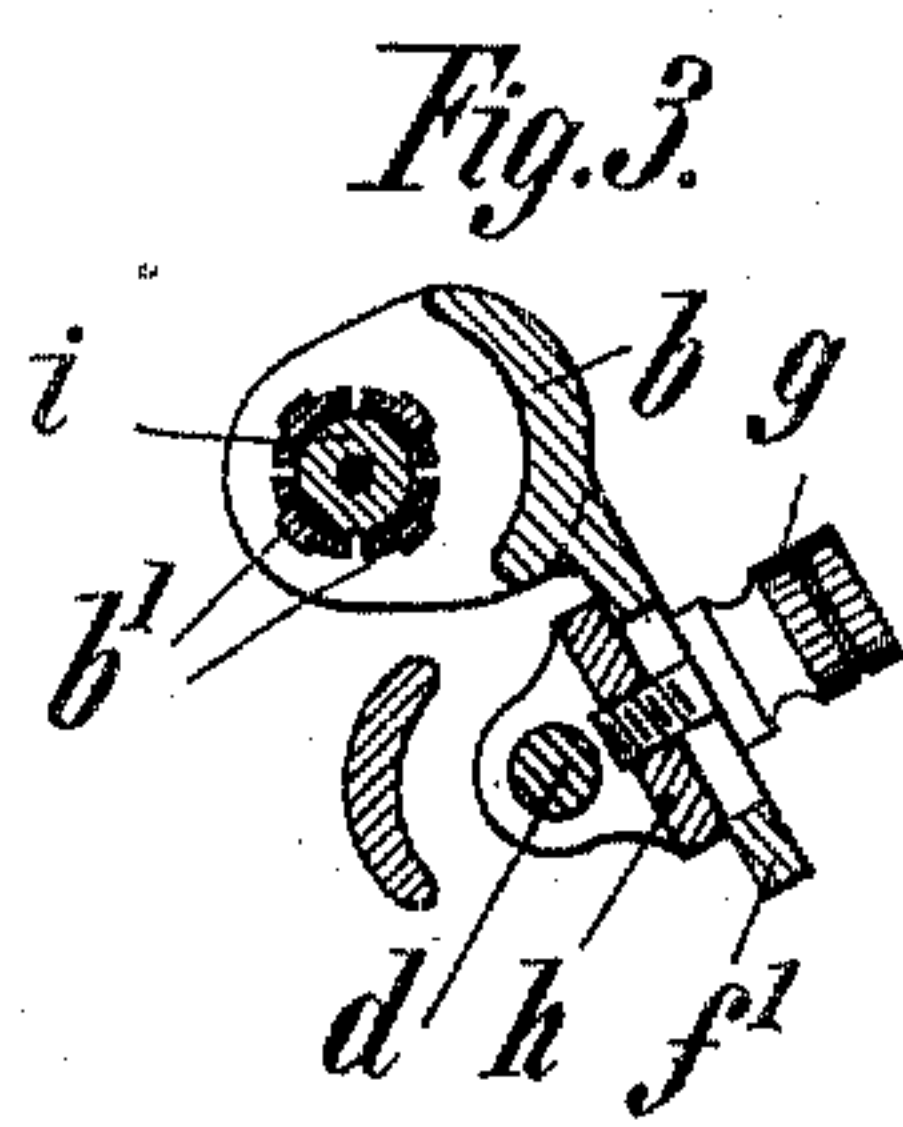
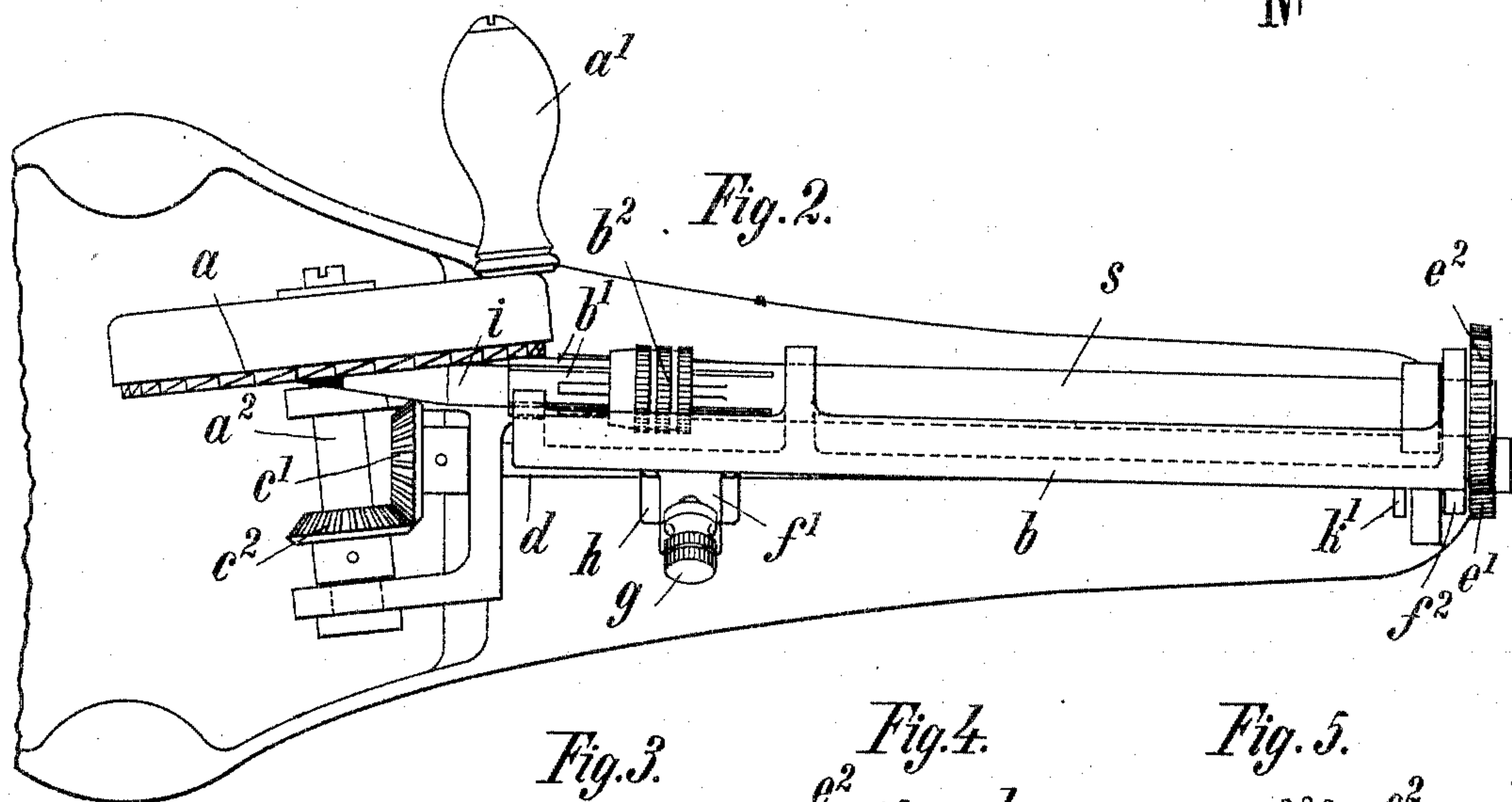
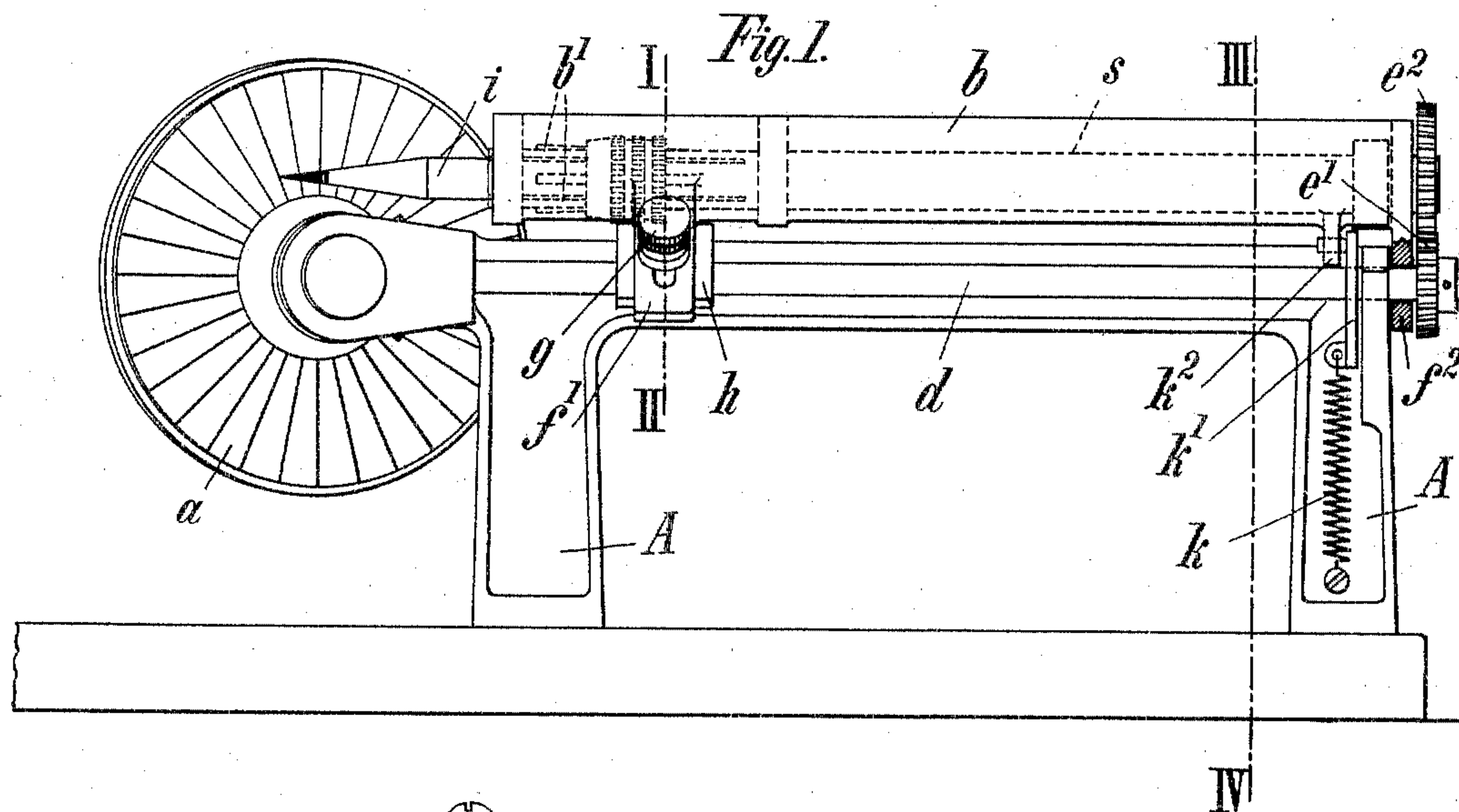
No. 777,202.

PATENTED DEC. 13, 1904.

H. F. HAMBRUCH.
APPARATUS FOR SHARPENING PENCILS OR THE LIKE.

APPLICATION FILED JULY 20, 1904.

NO MODEL.



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UNITED STATES PATENT OFFICE.

HEINRICH FRIEDRICH HAMBRUCH, OF HAMBURG, GERMANY.

APPARATUS FOR SHARPENING PENCILS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 777,202, dated December 13, 1904.

Application filed July 20, 1904. Serial No. 217,383. (No model.)

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, Germany, have
5 invented certain new and useful Improvements in Apparatus for Sharpening Pencils or the Like, of which the following is a specification.

This invention has reference to apparatus for sharpening lead and other writing pencils,
10 and relates to improvements in this kind of apparatus, the object being to produce a pencil-sharpening device which is simple in construction and efficient and reliable in use.

With this end in view my invention consists
15 in certain novel features of construction and combinations of parts, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a lateral elevation, and Fig. 2 a plan or top
20 view, of a pencil-sharpening apparatus constructed in accordance with and embodying my invention. Fig. 3 is a transverse sectional view on the line I II, Fig. 1. Fig. 4 is also a transverse sectional view on the line III IV,
25 Fig. 1; and Fig. 5 is a view similar to Fig. 4, but showing the respective parts in another position.

Similar letters of reference refer to like parts throughout the several figures.

30 The apparatus is provided with a rotary cutter *a* and a support *b*, in which latter is rotatably mounted a holder *s* for the pencil *i* to be sharpened, the cutter and holder being adapted to be rotated relatively to each other
35 in such a manner that the end of the pencil to be sharpened inserted in the holder *s* is rotated upon the rotating cutting-crown of the cutter *a*, and is thereby sharpened. For this purpose the cutter and holder are provided with appropriate driving-gear, which is mounted in a
40 frame *A* and which may consist, for example, of a handle *a'*, attached to the cutter *a*, a bevel-wheel *c*² on the shaft *a*² of the cutter, a bevel-wheel *c'* at the front end of a shaft *d*, a toothed
45 wheel *e'* at the rear end of the said shaft *d*, and a toothed wheel *e*² at the rear end of the holder *s*.

The main novel feature in accordance with this invention consists in the fact that the sup-
50 port *b* is mounted in such a manner as to be

displaceable radially relatively to the cutting-crown of the cutter *a*, so that it is possible to alter the position of the end or point of the pencil to be sharpened along the entire radial
55 length of the cutter-teeth edges, while the angular position of the support relatively to the plane of the cutter-tooth crown remains the same. In this manner it is possible to utilize the whole surface of the cutter-crown, so that
60 the speed of rotation of the cutter remains the same. Each cutting edge passes over the end or point of the pencil, either slower or quicker, according as the end or point of the pencil is caused to approach or recede from the axis of
65 rotation of the cutter *a*. The point of the pencil is nevertheless always cut in the same angular position of the pencil to the plane of the cutter.

The support *b*, which carries the holder *s*, is mounted, by means of arms *f'* and *f*², on
70 a shaft *d*. The front slotted arm *f'* is adjustably fixed upon a saddle-piece *h* by means of a set-screw *g*. This saddle-piece is rotatably mounted upon said shaft *d*, and the rear arm
75 *f* surrounds the said shaft in such a manner that the support *b* may be displaced or rocked laterally of the cutting-crown of the cutter *a*, Figs. 4 and 5, and, further, the front end of
80 the support *b* may be adjusted (raised or lowered) in the radial direction of the cutting-teeth. In this lateral adjustment the movement of the support *b* is vertical, and consequently the angular position of the support
85 relatively to the plane of the cutter-crown remains the same. For allowing of this slight vertical oscillation the wall of the opening or hole with which the arm *f*² fits on the shaft
90 *d* is slightly beveled or rounded off, as this is obvious from Fig. 1 without further explanation. The set-screw *g* when retightened in-
95 sures the maintenance of the radial position or height of the holder relatively to the center of the cutter which has been obtained. The pencil which has been inserted in the holder is maintained applied to the cutters,
100 Fig. 4, or retained therefrom, Fig. 5, by means of a spring *k*, according as it is desired to insert the pencil for sharpening or to withdraw it after this has been effected. To this end the said spring is attached on the one

hand to a suitable place on the lower part of the frame A and on the other hand by means of an arm k' , suspended from a hook k^2 of the support b above the aforesaid shaft d . When the point of suspension of the arm k' in the hook k^2 lies behind or at the right side of the axis of the shaft, Fig. 5, the support b bears upon the frame A, and the spring cannot pull the support forward to the other side of the shaft. A pencil may then be readily inserted in the holder s or removed therefrom without its coming into contact with the cutter-teeth. When the support b is over toward the cutter, so as to be at the left side of the shaft d , Fig. 4, the spring k' draws the pencil end or point against the cutting-crown of the cutter, Figs. 1 and 2, and owing to its rotation sharpens the likewise rotating pencil.

It is not essential that the pencil should be exactly centered in the holder s , as a pencil arranged eccentrically in the holder acts in its rotation in the manner of a circular eccentric, displacing the support to and fro to such an extent that the pencil is sharpened by the cutter concentrically to its own axis of rotation. During this operation the pencil is not fed forward axially in proportion to its sharpening, but merely brought laterally nearer to the cutter in this proportion. Its attachment in the holder s may therefore be effected merely by means of a clip or clamp b' caused to seize the pencil by a sliding collar b^2 , or the pencil may be fixed, if desired, by means of a set-screw. (Not shown.)

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

1. In a pencil-sharpener, the combination with a plurality of radial cutters, of a pencil-support, and means to adjust the support to move the pencil in a direction longitudinally of the cutters without changing the angular

position of the pencil relatively to the plane of the cutters.

2. In a pencil-sharpener, the combination with a supporting-frame, and a rotary cutter mounted thereon, of a shaft journaled in the frame in gear with the cutter, a pencil-support pivoted on the shaft, and a holder rotatably mounted in the support in gear with the shaft.

3. In a pencil-sharpener, the combination with a supporting-frame, and a rotary cutter mounted thereon, of a shaft journaled in the frame in gear with the cutter, a pencil-support, an arm on the rear end of the support having a beveled bearing-surface resting on the shaft, an adjustable arm on the forward end of the support pivotally connected with the shaft, and a holder mounted in the support in gear with the shaft.

4. In a pencil-sharpener, the combination with a supporting-frame, and a rotary cutter mounted thereon, of a shaft journaled in the frame in gear with the cutter, a pencil-support pivoted on the shaft and adapted to rock thereon to and from the cutter, and means to resiliently hold the support in an operative position, for the purpose specified.

5. In a pencil-sharpener, the combination with a supporting-frame, and a rotary cutter vertically mounted thereon, of a shaft journaled in the frame in gear with the cutter, a pencil-support pivoted on the shaft, means for vertically adjusting one end of the support, a holder mounted in the support in gear with the shaft, and a spring connected to the frame and pencil-support for holding the latter in or out of operative position.

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