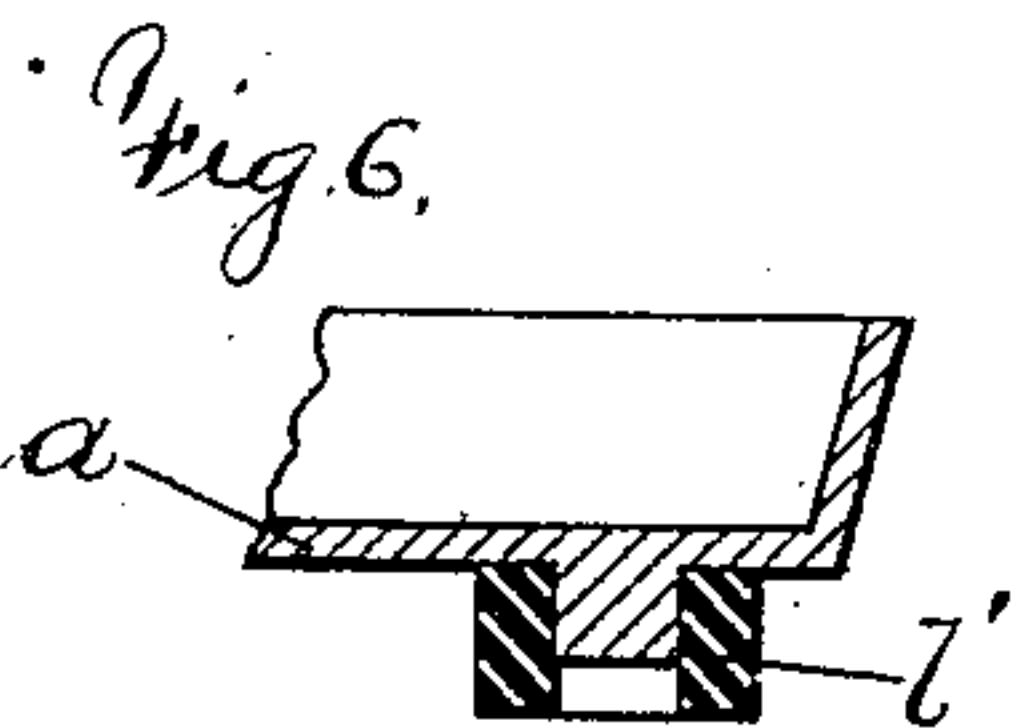
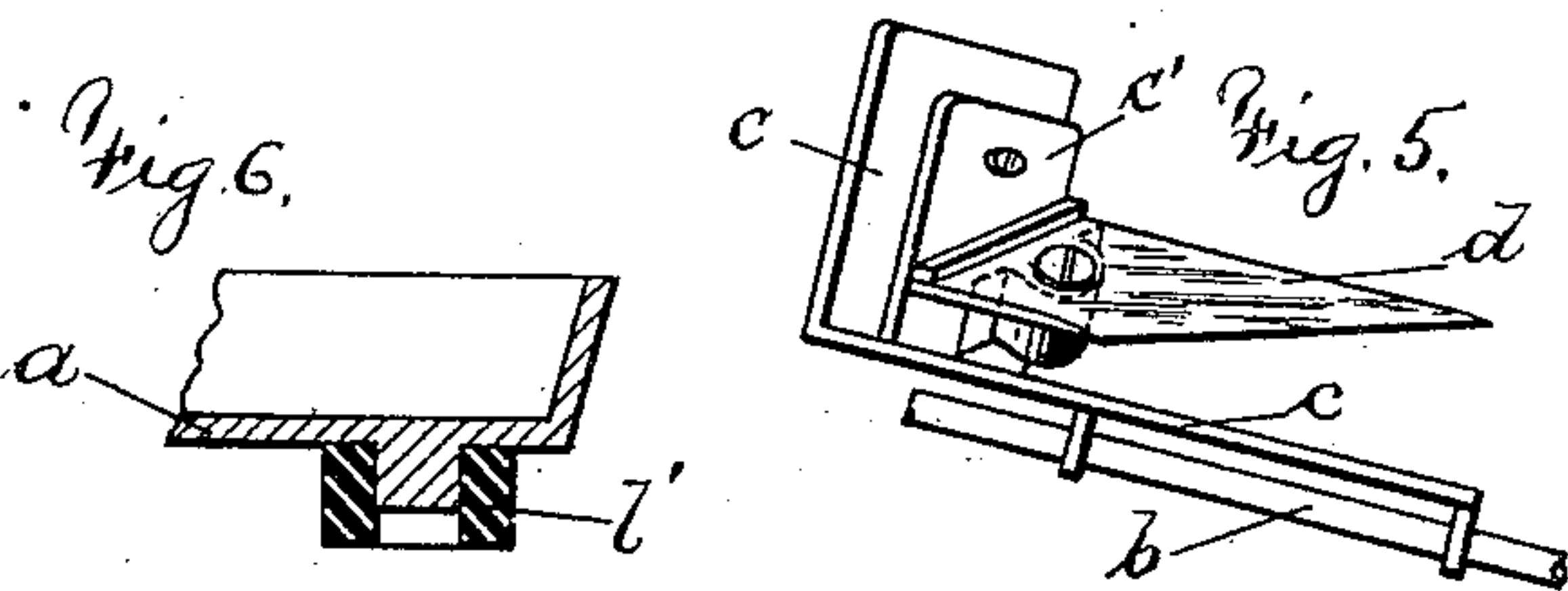
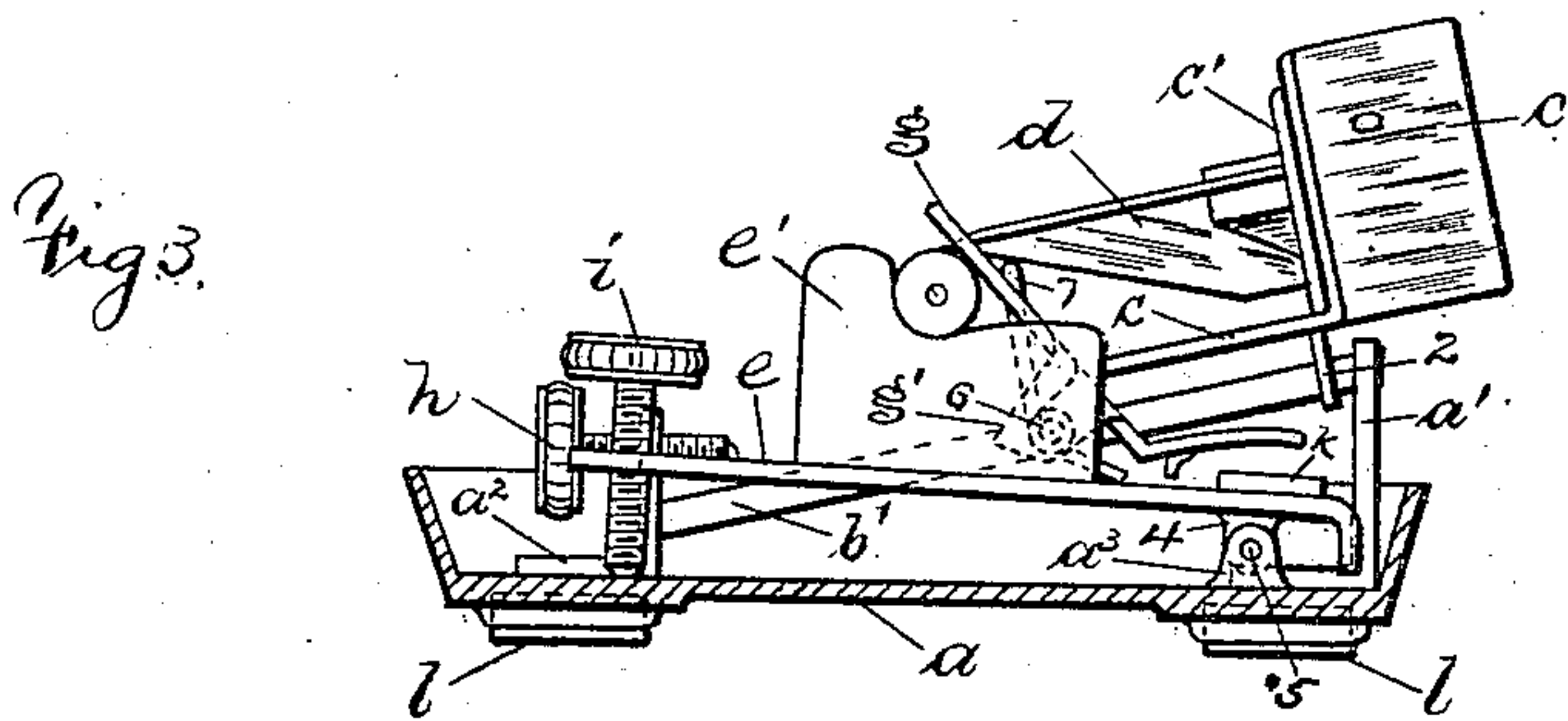
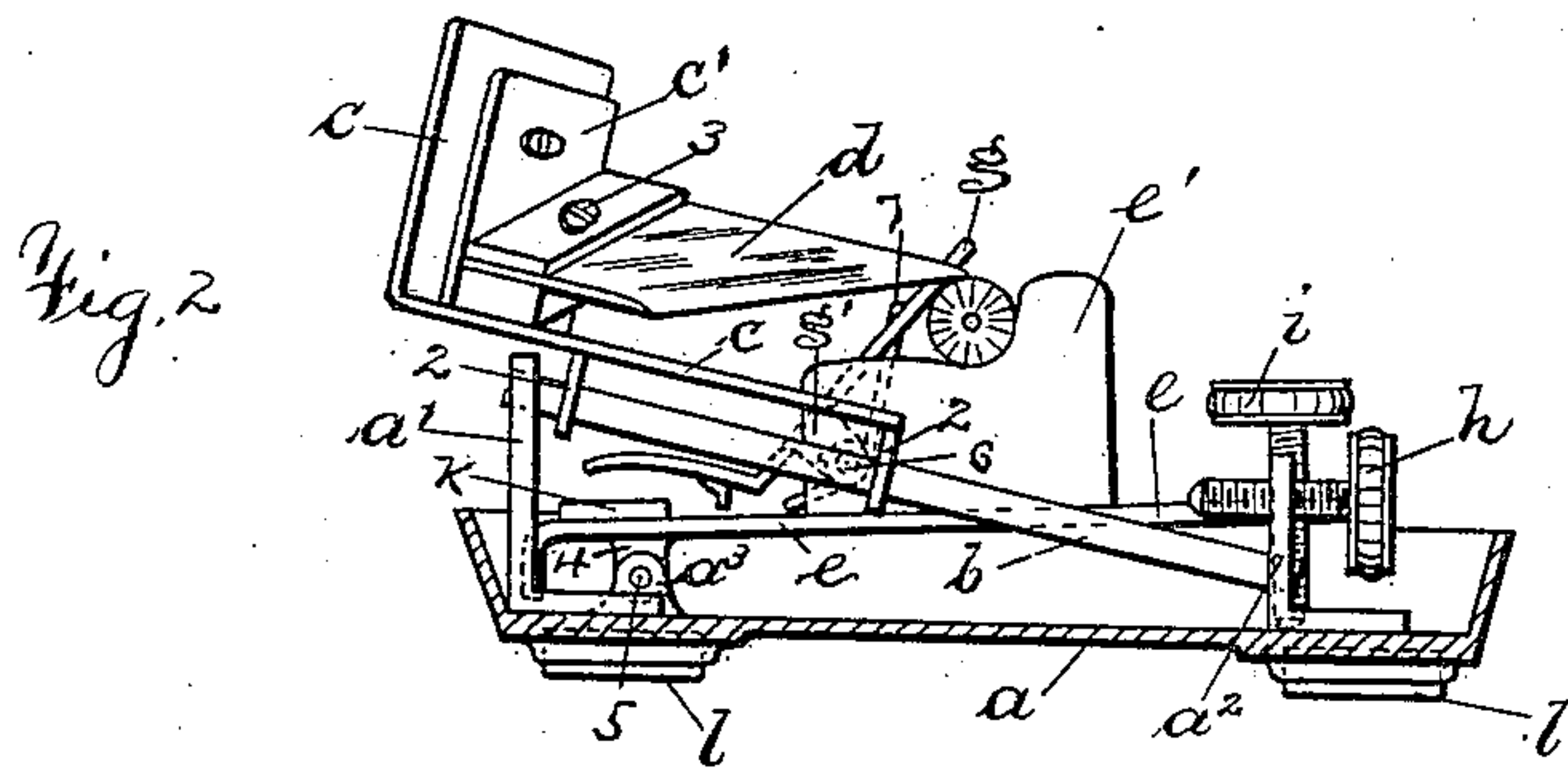
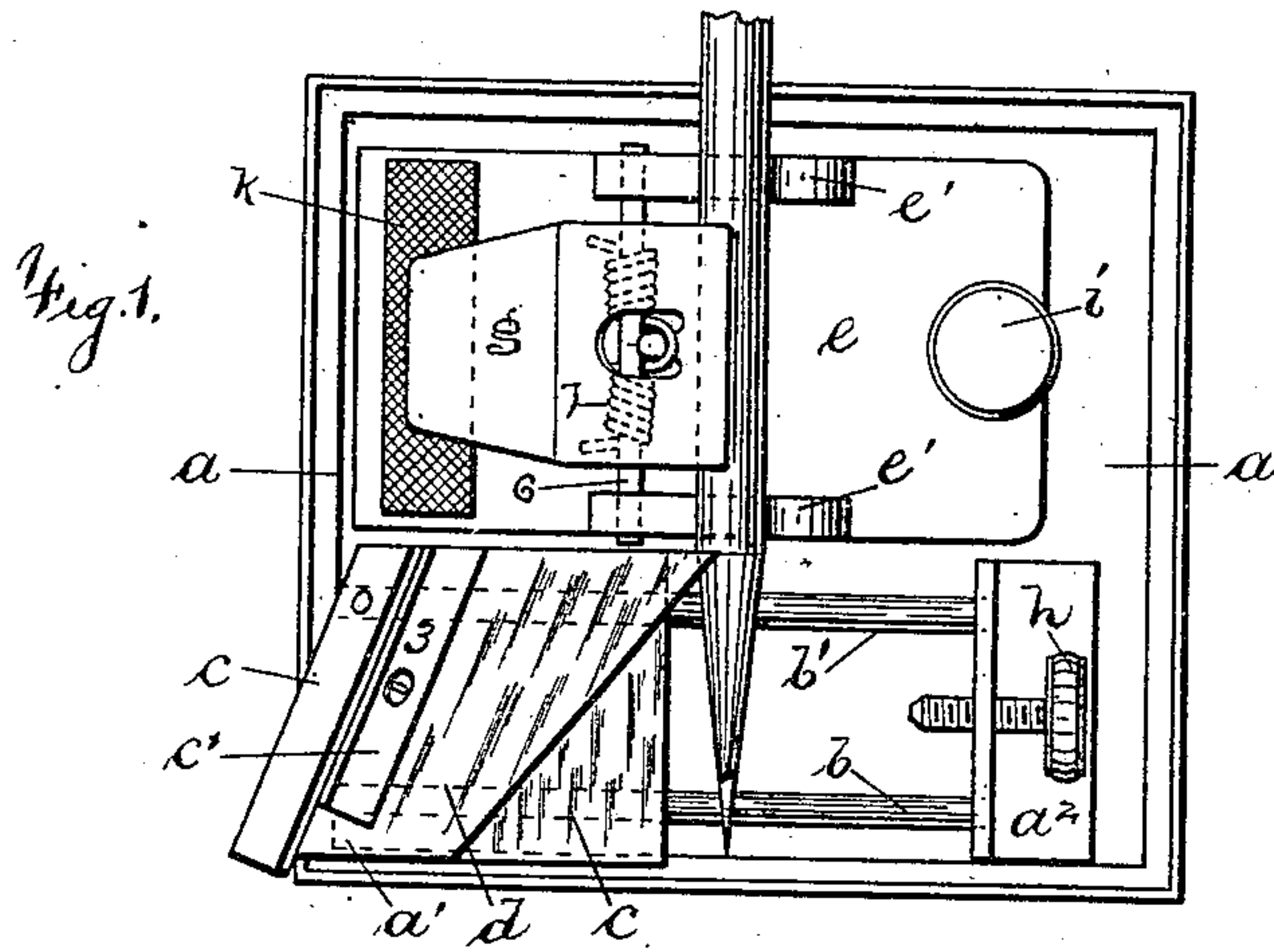


No. 870,204.

PATENTED NOV. 5, 1907.

N. STAFFORD.
PENCIL SHARPENER.
APPLICATION FILED DEC. 23, 1906.



WITNESSES
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PENCIL-SHARPENER.

No. 870,204.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed December 23, 1905. Serial No. 293,076.

To all whom it may concern:

Be it known that I, NELSON STAFFORD, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings, city and State of New York, have invented a new and useful Improvement in Pencil-Sharpener, of which the following is a specification.

To obviate the more or less tedious operation of sharpening a lead pencil with a penknife various devices have been employed which are adapted to expedite and make more accurate the sharpening. In some of these devices a movement of the cutter blade has been in line with the pencil as held, with the result that the pencil frequently slipped or was dragged along by the cutter and an appreciable effort was required to operate the cutting blade.

In the device of my invention the cutting blade is made sliding with an edge at an angle to its line of movement and the sliding movement at right angles to the axial line of the pencil as held, and an adjustable stop is provided for determining the extent or length of the cut. The pencil is held in a suitable support by a spring actuated clamp and the support is adjustable to provide the desired height for the pencil according to its size or diameter. I prefer to make the cutting blade removable for sharpening or replacement and to provide a file for sharpening the point, and to support the entire structure on rubber stops or blocks attached to the dish-shaped base so as to prevent the pencil sharpener slipping or moving about on a desk top or other support.

In the drawing Figure 1 is a plan representing the device of my improvement. Fig. 2 is an elevation from one side and a section of the dish-shaped base. Fig. 3 is an elevation from the opposite side and section of the L-shaped base. Fig. 4 is a vertical section showing a modification in a height adjusting screw. Fig. 5 is a perspective view illustrating a modified form of sliding support for the cutter blade, and Fig. 6 a vertical section showing a modified form of buffer or yielding support for the pencil sharpener.

A rectangular dish-shaped base *a* is preferably of cast metal, and the same is advantageously provided in the cast structure with bracket, lugs *a*¹, *a*², and hinge lugs *a*³.

In the form of my invention shown in Figs. 1, 2 and 3 I prefer to form recesses in the under surface of the base along the opposite ends and to cement in said recesses strips of rubber *l* forming yielding supports for the pencil sharpener upon a desk or other support, so as to prevent the same from slipping in use. Attached to the bracket lugs *a*¹, *a*², by passing through the same, are rods *b*, *b*¹ set at an inclination and forming slide-ways, the rods at their higher ends passing freely through the bracket lugs *a*¹ and at their lower ends

through interiorly threaded holes in the bracket lugs *a*²; said rods being thus firmly secured to the base. I provide a movable frame *c* advantageously of cast metal with lugs 2 extending downwardly from the under surface with perforations to receive the rods *b*, *b*¹ so that said frame is adapted to be moved and to slide upon said rods. I further provide a bracket *c*¹ adapted to rest upon and be supported by the movable frame *c*, said bracket being adapted to receive and have connected to it the cutting blade *d*. In Figs. 1, 2 and 3 I have shown this cutting blade as secured in a slot formed in said bracket *c*¹ by an attaching screw 3.

The pencil sharpener of my invention as shown in Fig. 1 is divided into two portions, at one side a sharpening and at the other side a holding structure. *e* represents a plate and *e*¹ standards thereon preferably of cast metal in one piece having lugs 4 on the under surface and a pin 5 connects this plate and standards by the lugs 4 to the lugs *a*³ of the base. A pin 6 passes across the plate *e* through the standards *e*¹ and a clamp blade *g* provided with side lugs *g*¹ perforated to receive the pin 6 is thus pivotally connected for support to the pin. A spring 7 surrounding the pin 6 between the lugs *g*¹ has a central prolongation bearing against the end surface of the blade *g* and end prolongations also bearing against the plate *e*; the effect of the spring being to move the blade *g* towards a parallel relation with the plate *e*. This clamp blade *g* is of bent form, the narrow portion coming nearest to the plate *e* forming a finger portion by which the pressure of the finger swings the blade *g* against the tension of the spring so as to engage a pencil placed between the under surface of the blade *g* and the curved upper faces of the standards *e*¹ made to receive said pencil as shown in Figs. 1 to 3. From the illustration and the foregoing description it will be apparent that the sliding cutter blade and its support move in a downward direction being set at an angle of about 10 to 15 degrees to the horizontal line of the dish-shaped base, and also that the cutter blade moves in a direction at right angles to the axial line of the pencil as held, and that the edge of the cutter blade is set at an angle of about 45 degrees to its line of movement so that the action of said cutter blade is progressive and shearing and very fine shavings may be cut from the pencil in the act of being sharpened, whereby the cut has a finished appearance.

I provide passing through the bracket lug *a*² an adjustable stop or screw *h*, the function of which is to control the length of the cut, the end of the screw coming as a stop against which the lower edge of the frame *c* strikes in its downward movement. By the adjustment of this stop *h* the cutter may be interrupted as it finishes cutting the wood and without cutting the lead, or the cutter may move further and sharpen the lead.

If only the wood is cut the lead is preferably sharpened on a file *k* secured to the hinge plate *e*, almost above the lugs and pin hinging the same to the base.

In connection with the hinge plate *e* I have shown and employ an adjusting screw *i* for determining the height of the pencil support above the base and the consequent relation of the pencil to the cutting blade because some pencils are of greater diameter than others and with a pencil of small diameter it is necessary to raise the plate so as to bring the same into proper relation with the cutting blade, and where the pencil is of greater diameter it is necessary to lower the plate to obtain the right relation.

In the modified form of my invention shown in Fig. 4 and as an equivalent of the adjusting screw *i*, I have shown an adjusting screw and nut *m*, the screw passing through both the base and the plate *e* with the nut of the screw above the plate *e*, and a helical spring *m*¹ between the base and the plate. This provides for raising and lowering the free end of the hinge plate *e* for the adjustment hereinbefore described and also provides for holding the plate so as to prevent any accidental movement of the same that might arise by pressing the fingers upon the lower narrow end of the blade *g* for securing the pencil in place.

In the modified form of my invention shown in Fig. 5 I have illustrated a slightly different support for the cutter blade *d* in which the screw holding the same passes directly through the blade into the support of the blade with the object of removing the blade for sharpening or for replacement by another and sharp blade.

In the modified form shown in Fig. 6 I have illustrated that the cast base *a* may be provided with depending lugs preferably of circular form, in connection with which buffer springs *V* are employed formed from series of rubber tubing of a proper length slipped upon said lugs in lieu of the rubber strips *l* shown in Figs. 2 and 3.

From Figs. 1, 2 and 3 it will be apparent that in the operation of this device the movement of the cutter blade tends to force the pencil more firmly to its seat and that there is no tendency of the cutter blade to move the pencil along in its length. With this device the pencil should be grasped in the hand at its free end while resting in the standards *e*¹ and that it should be turned gradually as sharpened by the cutting blade, and if desired should be moved along perceptibly so as to insure the cutting blade removing the wood of the pencil for the entire length of the cut, that is, from the periphery of the pencil to the lead.

I claim as my invention:

1. In a pencil sharpener the combination with a base and a support for the pencil to be sharpened, of a cutting blade and a sliding support therefor, moving at right angles to the axial line of the pencil as held, and in a downward direction at an angle of about 10 to 15 degrees to the base.

2. In a pencil sharpener the combination with a base and a support for the pencil to be sharpened, of a cutting blade and a sliding support therefor, moving at right angles to the axial line of the pencil as held, and in a downward direction at an angle of about 10 to 15 degrees to the base, the said cutting blade being set in its support at an angle of about 45 degrees to its line of movement.

3. In a pencil sharpener the combination with a base and a support for the pencil to be sharpened, of rods forming slideways and supports therefor, a frame and

means connecting the said frame to said rods whereby said frame is slidable on said rods, a cutting blade and a bracket device supporting the blade above the frame and also connecting the same to and supporting the same upon said movable frame.

4. In a pencil sharpener the combination with a base and a support for the pencil to be sharpened, of rods forming slideways and supports therefor, a frame and means connecting the said frame to said rods whereby said frame is slidable on said rods, a cutting blade, a bracket device connecting the same to and supporting the same upon and above said movable frame, and an adjustable stop against which the movable frame contacts and by which its extent of movement and the length of cut on the pencil is controlled.

5. In a pencil sharpener the combination with a base and a pencil support secured to said base, and lugs upon said base rising therefrom, of rods passing through said lugs at an inclination to said base and forming slideways, a frame having lugs through which said rods pass, and which frame is movable upon said rods, a bracket device secured to said frame, a cutting blade, and means for securing the same to said bracket with the plane of the cutting blade at an inclination to the plane of the movable frame, and the cutting edge at an inclination to the line of movement of the said frame.

6. In a pencil sharpener the combination with a base and a pencil support secured to said base, and lugs upon said base rising therefrom, of rods passing through said lugs at an inclination to said base and forming slideways, a frame having lugs through which the rods pass, and which frame is movable upon said rods, a bracket device secured to said frame, a cutting blade, means for securing the same to said bracket with the plane of the cutting blade at an inclination to the plane of the movable frame, and the cutting edge at an inclination to the line of movement of the said frame, and a screw passing through one of said lugs and adjustable and forming a stop against which the forward end of said movable frame contacts for limiting the movement of said frame.

7. In a pencil sharpener, the combination with a base and a movable cutting blade and supports therefor upon said base, of an adjustable plate and means for pivotally connecting the same to said base, a support for the pencil to be sharpened upon said plate and means for holding the pencil in place on said support.

8. In a pencil sharpener the combination with a base and a movable cutting blade and supports therefor upon said base, of a plate, standards upon said plate having curved seats to receive the pencil to be sharpened, a hinge structure for pivotally connecting said plate to the base, an adjusting screw at the free end of said plate for regulating the height of the pencil supports according to the size of the pencil, and a spring actuated clamp device for holding the pencil in place.

9. In a pencil sharpener the combination with a base and a movable cutting blade and supports therefor upon said base, of a plate, standards upon said plate having curved sides to receive the pencil to be sharpened, a hinge structure for pivotally connecting said plate to the base, an adjusting screw at the free end of said plate for regulating the height of the pencil supports according to the size of the pencil, a clamp plate and means for pivotally connecting the same to and between the pencil supports, and a spring acting upon the said clamp plate to cause the same to bear upon the pencil with force.

10. In a pencil sharpener, the combination with a base, of an adjustable plate and means for pivotally connecting the same to said base, a support for the pencil to be sharpened upon said plate, means for holding the pencil in place, a movable cutting blade, a movable support for the cutting blade and supports therefor upon said base, the cutting blade being set at an angle of about 45 degrees to the line of movement of its support and the support moving at right angles to the line of the pencil.

11. In a pencil sharpener, the combination with a base, of an adjustable plate and means for pivotally connecting the same to said base, a support for the pencil to be sharpened upon said plate, means for holding the pencil in place, a sliding support for the cutting blade moving at right angles to the axial line of the pencil as held and

in a downward direction at an angle of about 10 to 15 degrees to the base, supports for said sliding support upon said base, the said cutting blade being set in its support at an angle of about 45 degrees to its line of movement.

- 5 12. In a pencil sharpener, the combination with a horizontally disposed base and a support thereon for the pencil to be sharpened, of inclined devices forming slideways and supports therefor upon said base, a frame and means connecting the frame to said devices whereby said frame is

slidable and downwardly movable on said devices, a cut- 10
ting blade and a bracket device secured to said frame and supporting the blade upon the frame.

Signed by me this 14th day of December 1905.

N. STAFFORD.

Witnesses:

GEO. T. PINCKNEY,
E. ZACHARIASEN.