

(No Model.)

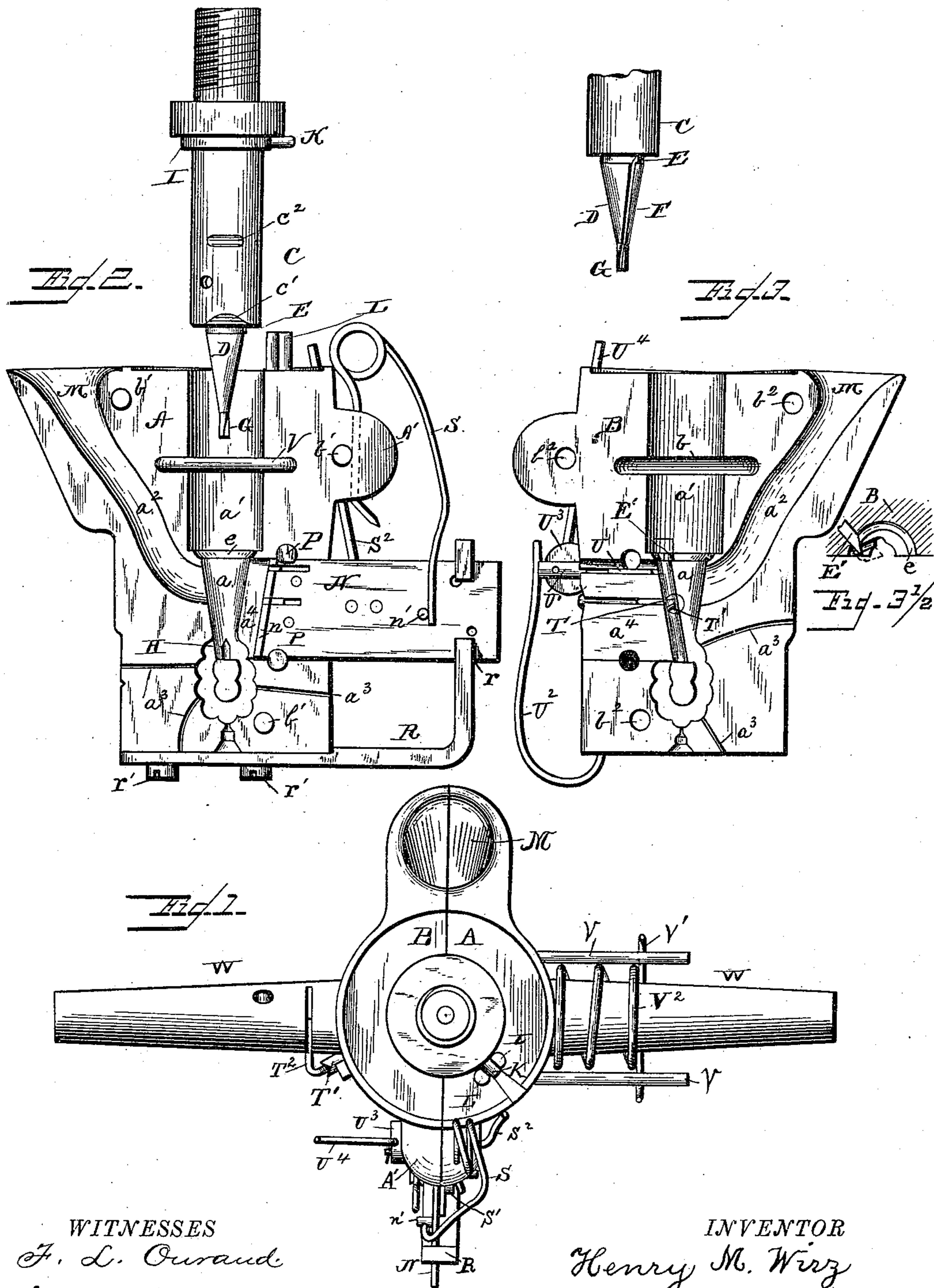
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H. M. WIRZ.

MOLD FOR CASTING PENCIL SHARPENERS.

No. 435,959.

Patented Sept. 9, 1890.



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F. L. Ouraud
Nathan C. Stone

INVENTOR
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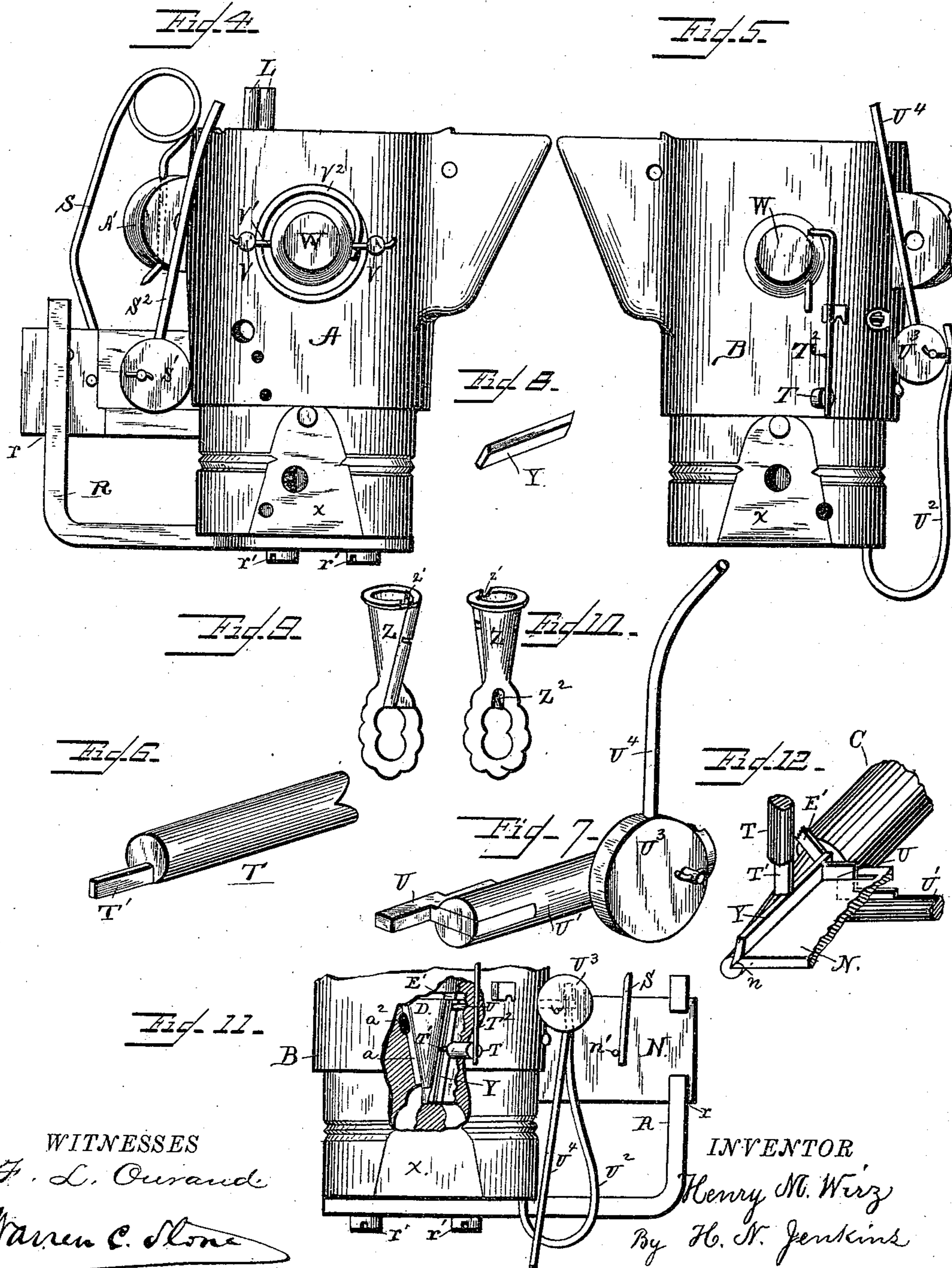
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UNITED STATES PATENT OFFICE.

HENRY M. WIRZ, OF MEDIA, PENNSYLVANIA, ASSIGNOR TO WESLEY N. WHELESS, OF AUGUSTA, GEORGIA; SUSAN I. WHELESS ADMINISTRATRIX OF SAID WESLEY N. WHELESS, DECEASED.

MOLD FOR CASTING PENCIL-SHARPENERS.

SPECIFICATION forming part of Letters Patent No. 435,959, dated September 9, 1890.

Application filed June 26, 1888. Serial No. 278,222. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. WIRZ, a citizen of the United State, and a resident of Media, county of Delaware, State of Pennsylvania, have invented new and useful Improvements in Molds for Casting Pencil-Sharpener, of which the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to that class of molds which are employed for the production of castings having other metallic parts connected therewith, and is especially designed for casting pencil-sharpener, wherein a knife is held upon one side of a chip-throat in the conically-recessed body.

The objects of my invention are, mainly, to provide mold-sections of novel construction which may be easily handled and held while in use to hold the core-mandrel and core in proper position in the mold-section; to form the core in a novel manner; to securely hold the blade in position while the casting is effected, and to provide a suitable vent for the chips at the end of the sharpener, and permit the point of the lead and end of the knife to cross the apex of the conical core; to provide means for holding the blade in the mold; to hold and operate the chip-throat slide and knife-holding pins in a novel and effective manner; to provide the mold with means for forming an opening at the mouth of the sharpener and at the outer end of the chip-throat, and also to provide means for forming an opening at the apex of the sharpener, through which the point of the pencil may be observed.

In the accompanying drawings, Figure 1 represents a plan of the mold complete. Figs. 2 and 3 are face views of the two half-sections thereof separated, with the core and core-mandrel shown above Fig. 2, and with a portion of the mandrel and the core in Fig. 3 turned partly round to show the seat for the knife; Fig. 3½, a detail section of part of one of the mold-sections near the mouth of the sharpener-cavity. Figs. 4 and 5 are outside elevations of the aforesaid mold-sections.

Figs. 6 and 7 are enlarged details of the knife-holding pins; Fig. 8, a perspective of the knife. Figs. 9 and 10 are perspectives of the opposite sides of the pencil-sharpener; Fig. 11, an elevation of the lower part of the mold partly broken away to show the means for holding the knife therein; Fig. 12, a perspective of the knife, the conical core, and the parts for holding the knife in the groove of the conical core during the casting process.

The half-sections A and B of the mold are each formed with mortises *a* in their adjoining faces of a configuration corresponding with that of the outside of the sharpener, and also formed with mortises *a'* to receive the core-mandrel C, to the lower end of which is secured the conical core D. The conical core D, when in place in the mold, fits within the matrices *a*, with a sufficient space between them to form the wall of the sharpener, and recesses *a*² to form the gate, and *a*³ to provide air-vent passages in the molds which communicate with the matrix.

At the lower end of the core D, adjacent to the mandrel, is a lug or projection E, from the edge of which a groove F extends to the apex of the core and continues along a cylindrical extension G of the core to the end thereof, in which groove the edge of the knife is placed preparatory to casting the body of the sharpener upon the same.

The lug E rests within the annular recess *e* at the mouth of the matrix *a* and forms a depression in the mouth of the sharpener on a line with the chip-throat thereof, as shown at Z' in Fig. 9, thus leaving exposed for action that part of the knife-blade which would otherwise be buried in the cast metal.

An abutment E', located within the recess *e* and either secured separately to or forming a part of the mold-section B, serves, together with the spring-actuated pin U, hereinafter described, to hold the upper end of the knife in the mold-section. The abutment E' is preferably formed of a separate plate of wrought metal passed through a hole in the mold-section B and projecting at its inner end into or across the recess *e* in the upper end of the matrix. The knife is thus held between the abut-

ment E' upon the mold-section and the spring-actuated pin U to rest securely in the groove of the mold at the proper cutting-angle.

A projection H at the bottom of the conical part of the matrix in the mold-section A and opposite the cylindrical extension G of the core, when the latter is in its place in the mold, will provide an aperture Z² in the sharpener, through which the point of the pencil may be observed while being sharpened.

The mandrel C has a shoulder I, which rests against the top of the mold when the plunger is in place, and a pin K, projecting radially from the said shoulder, passes between guide-pins L, projecting upwardly from the top of the mold, to properly locate the core in the mold when inserted therein.

A throat-slide N, fitted in recesses a⁴ in the mold-sections A and B, has a beveled and inclined edge n, which fits the groove F in the cone-shaped core and is held firmly in said groove when the core is in place by a spring S, secured to a lug A', projecting from the mold-section A and pressing at its free end against a pin n', projecting from the face of said throat-slide. The throat-slide is guided at its inner end between notched pins P, projecting from the mold-section A, and is guided at its outer end in a seat r in the upturned end of a guide-bar R, secured by screws r' to the bottom of the mold-section A. A cam-disk S', pivoted to the throat-slide N, bears against the outer side of the mold-section A, and is operated by a lever S² to push the throat-slide open when the casting is to be removed from the mold. The knife-blade Y is placed in the groove F of the core D, to rest at its upper end upon the lug E, projecting from the shoulder of the mandrel, and at its lower end to bear in the groove upon the cylindrical extension of the core, thus crossing the apex of the cone to form the point of the pencil. The knife is held securely in the groove F by a pin T, secured to the end of the bar T', which slides within a hole bored through the mold-section B in position to allow the said pin T to press against the back of the knife and be held therein with a yielding pressure by means of a spring T², passing through a portion of the mold-section B and bearing upon the outer end of the bar T'. The knife-blade is further held securely in the groove F, to bear against the lug E by a pin U, secured to a spring-actuated arm U', which passes through a hole bored in the mold-section B near the enlarged end of the matrix a, the said arm U' being pressed inwardly by a spring U², secured to the mold-section B, and withdrawn from contact with the knife-blade by a disk U³, having an arm U⁴, supported upon the said mold-section. The ends of a yoke V pass through holes in the mold-section A upon opposite sides of the recess a', and a cross-bar V', secured in perforations made in the ends of the said yoke, operates in a slot in the arm W of the mold-section A and is acted upon by a spiral spring V²,

surrounding said arm to hold the neck of the yoke closely against the mandrel C when the said mandrel is passed into the recess a' of the mold-section A. The mandrel C has a beveled face c' at its lower edge, and a transverse recess c² midway of its length, the inclined face serving to push the yoke outwardly against the pressure of the spring to ride over the mandrel, and the recess c² serving to receive the yoke when the mandrel and core have been properly seated in the mold-section A, and hold them securely in proper relation to each other while the section B is placed in position upon the section A. The section B is recessed at b to receive the neck of the yoke when the mold-sections are fitted together, and will thus serve, together with matching pins b' in one of the mold-sections and corresponding holes b² in the other section, to hold said sections in proper relation to each other to receive the metal. The outer sides of the mold-sections are flattened at x to receive the jaws of a vice or other suitable clamping device for holding the molds together, and each of the mold-sections has a tapering laterally-extending arm W, by means of which the molds may be conveniently handled.

The operation of the device is as follows: The cam-disk S' having been first thrown back by the lever S² to allow the spring-actuated throat-plate to assume its position in the matrix, the mandrel and core are inserted between the yoke V and the mold-section A and pressed downward, the beveled face c' of the mandrel serving to push the yoke outward against the pressure of its spring and hold the mandrel against the semi-cylindrical recess a' at the upper end of the mold. When the shoulder I of the mandrel descends, it is guided by the pins K and L to bring the knife-recess in proper position in the mold, and when the said shoulder is arrested and abuts against the upper end of the mold-section A the cylindrical core-extension G will be opposite the mold projection H, and the neck of the yoke V will drop into the recess c² and hold the said mold-section A securely upon the mandrel. The knife is now dropped into position with its beveled edge resting on the beveled edge of the slide N and its upper end on the lug E, now in position and forming a prolongation of the edge of said slide. The mold-section B is then placed upon the section A, and said sections are brought accurately together by the steady-pins. The cam-disk U³ is now moved out of the way by the arm U⁴, and the spring U² forces the pin U against the side of the upper end of the knife to hold it firmly in its groove in the core. The pin T presses against the back of the knife, and together with the pin U holds the said knife firmly in groove F with a gentle pressure, while the throat-slide N fits closely against the edge of the knife and prevents the molten metal from coming in contact with the cylindrical core projection extending be-

yond the apex of the core, and provides an extended support for the lower end of the knife, which is required to cross the apex of the core. The mold-sections are then securely
 5 clamped between the jaws of a vice and held while the metal is poured therein and allowed to cool, after which the throat-slide N and pin U are withdrawn by means of the cam-disks. The mold-sections are then removed from the
 10 vice and separated from each other, being easily handled by the arms W, after which the finished article may be easily picked out of the mold by a pointed rod or other suitable means.

15 I claim as my invention and desire to secure by Letters Patent—

1. In a two-part mold, the combination, with one of the mold-sections, of a spring-actuated yoke supported thereon, and a core-mandrel
 20 adapted to fit between the said yoke and its mold-section, substantially as described.

2. In a two-part mold, the combination, with one of the mold-sections, of the spring-actuated yoke supported thereon, and a core-
 25 mandrel having a beveled lower edge and a transverse recess to receive said yoke, substantially as described.

3. The combination, with the sections, of a mold for casting metallic articles having
 30 laterally-projecting arms, a U-shaped yoke whose ends pass through one of the mold-sections, a cross-bar connecting the yoke ends, as described, a spiral spring surrounding the lateral arm of said section and acting against
 35 the cross-bar at the outer ends of the yoke, and a core-mandrel adapted to be held between the yoke and its mold-section, substantially as described.

4. The combination, with the mold-sections,
 40 of a vertically-movable core-mandrel, a U-shaped spring-actuated yoke fitted upon one of said sections, and a lateral recess formed in the other of said sections to receive the neck of the yoke, substantially as described.

45 5. The combination, with the mold-sections, of the spring-actuated yoke supported upon one of said sections, a movable core-mandrel, and guide-pins projecting laterally from the said mandrel and projecting up from said
 50 mold-sections, substantially as described.

6. In a mold for casting pencil-sharpeners, the combination, with the mold-sections, of

the core-mandrel, the conical core having a cylindrical projection at the apex thereof, and a knife-slot extending in both the conical and
 55 the cylindrical part of said core to pass beyond the apex of said conical portion and provide a support for the lower end of the knife, substantially as described.

7. The combination, with the molds for pen-
 60 cil-sharpeners, of the conical core supported therein having a groove to receive the knife, a spring-actuated pin to bear against the knife, and a cam-disk to withdraw said pin, substantially as described. 65

8. The combination, with the molds for pen-
 cil-sharpeners, of the grooved conical core, the spring-actuated throat-slide, the cam-disk for holding the throat-slide in inward or outward
 70 position, and the spring-actuated holding-pin U, supported upon the mold at the upper end of said throat-slide, substantially as described.

9. The combination, with the mold for pen-
 cil-sharpeners, of the grooved conical core, the spring-actuated throat-slide having a beveled
 75 and inclined edge the spring-actuated holding-pin-U, and the spring-actuated pin T to bear, respectively, upon the edge, side, and back of the knife, substantially as described.

10. The combination, with the mold for pen-
 80 cil-sharpeners, of the grooved conical core, a projection E' upon the mold of the upper end of the core, and the spring-actuated holding-pin U, substantially as described.

11. In a pencil-sharpener mold, the combi-
 85 nation, with the mold A and throat-slide N, of the bar R, secured to said mold and having guideways to carry the outer end of the throat-slide, substantially as described.

12. The combination, with the mold for pen-
 90 cil-sharpeners, of the grooved conical core, the spring-actuated throat-slide, the cam-disk for holding the throat-slide in inward or outward positions, the projection E', and the spring-actuated holding-pin U, supported upon the
 95 mold at the upper end of said throat-slide, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY M. WIRZ.

Witnesses:

H. N. JENKINS,
 ELLWOOD BONSALL.