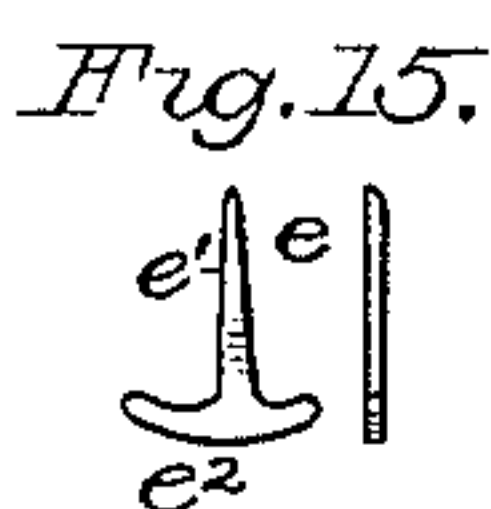
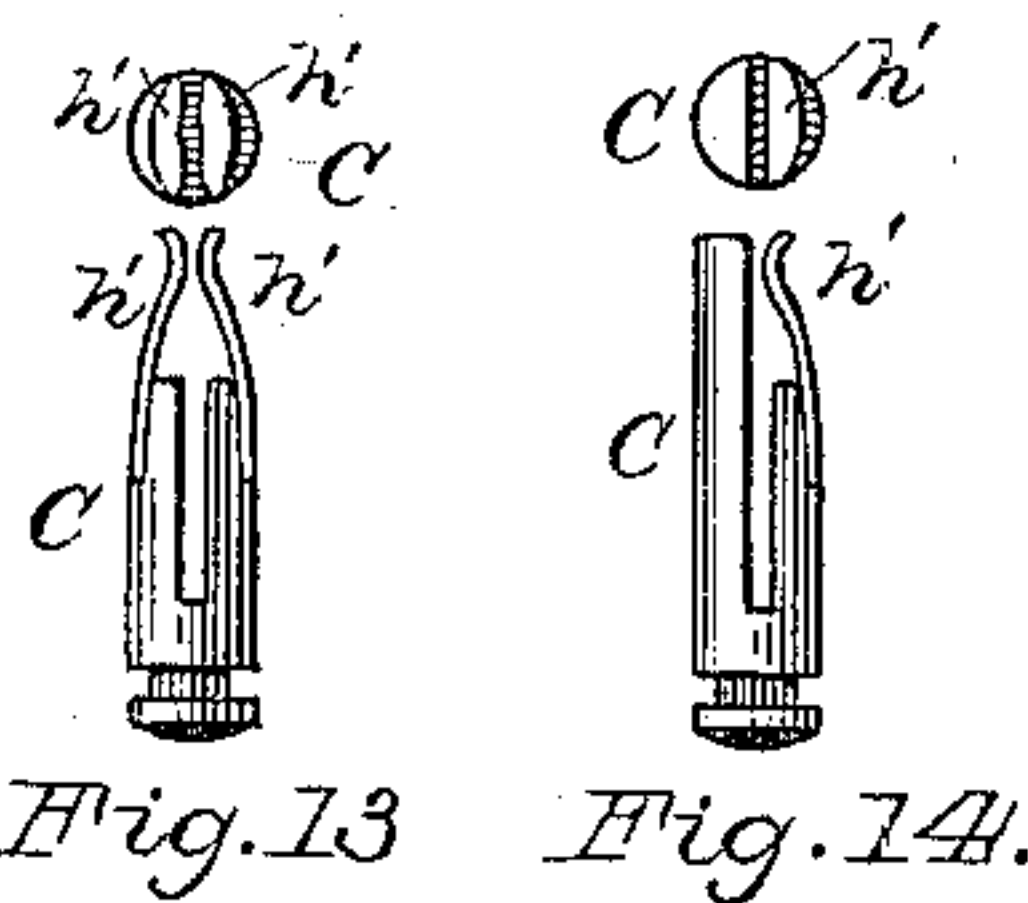
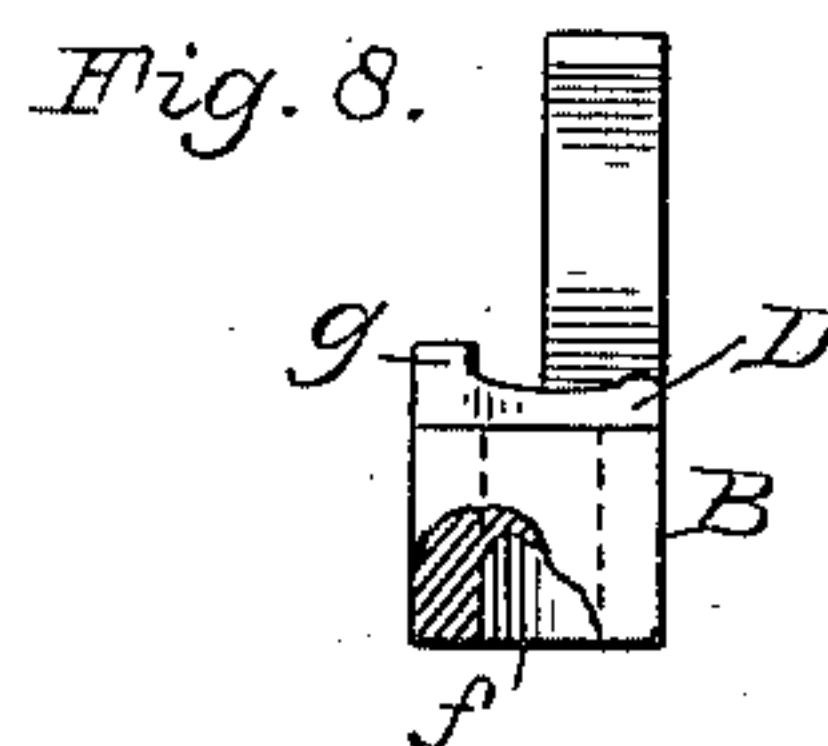
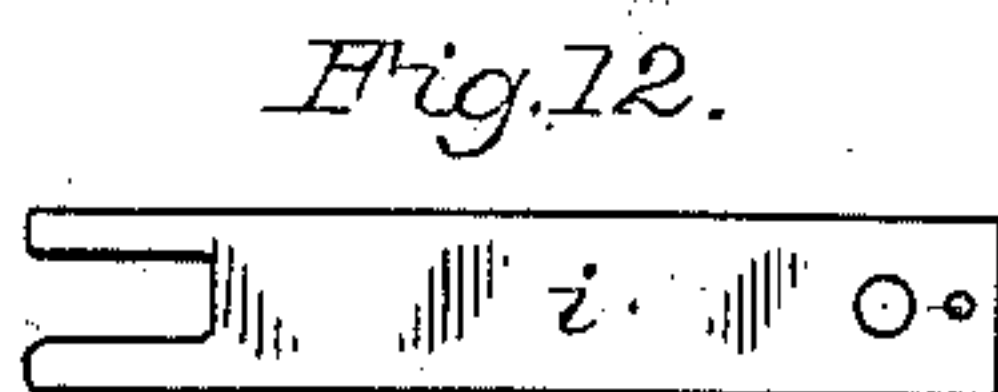
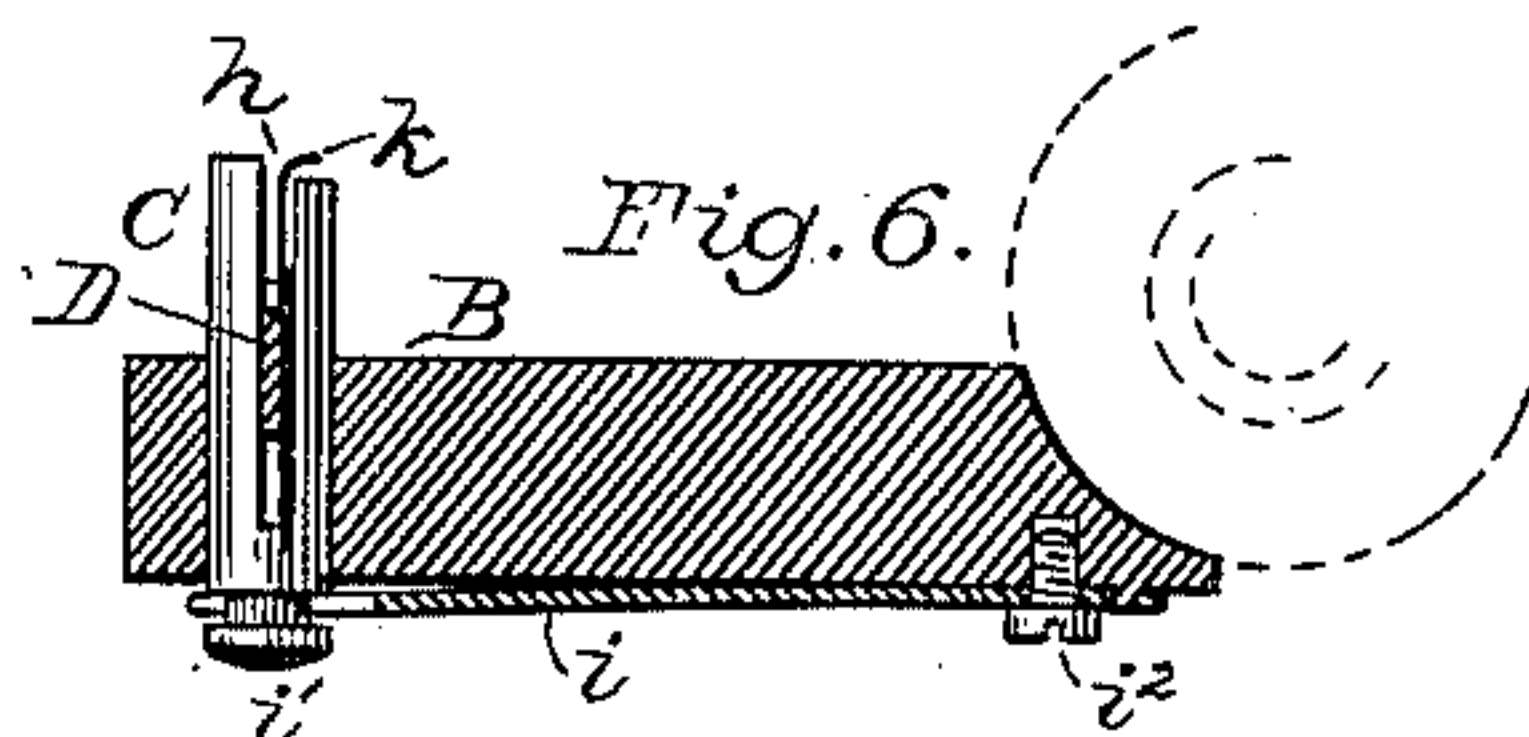
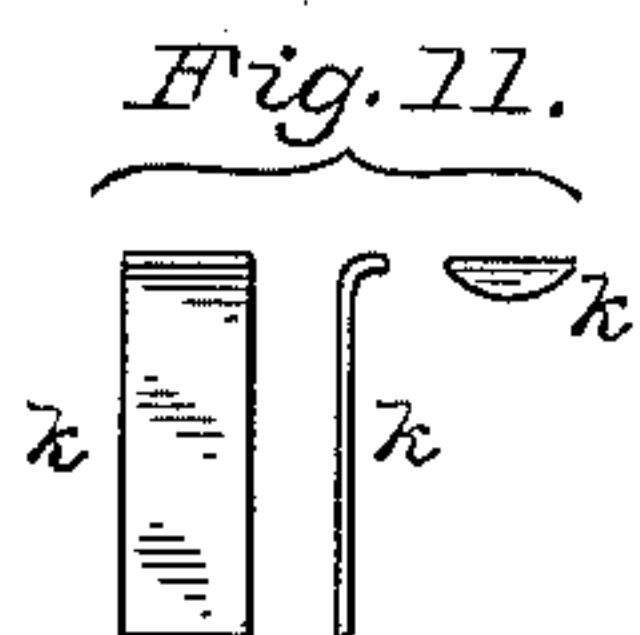
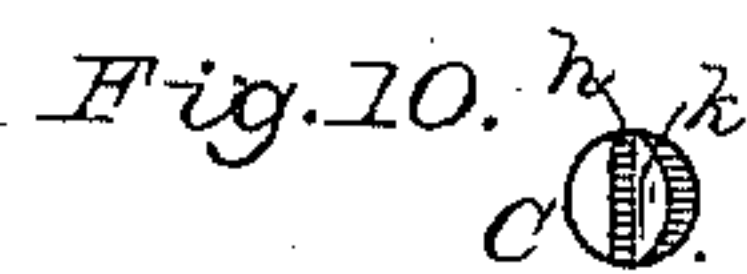
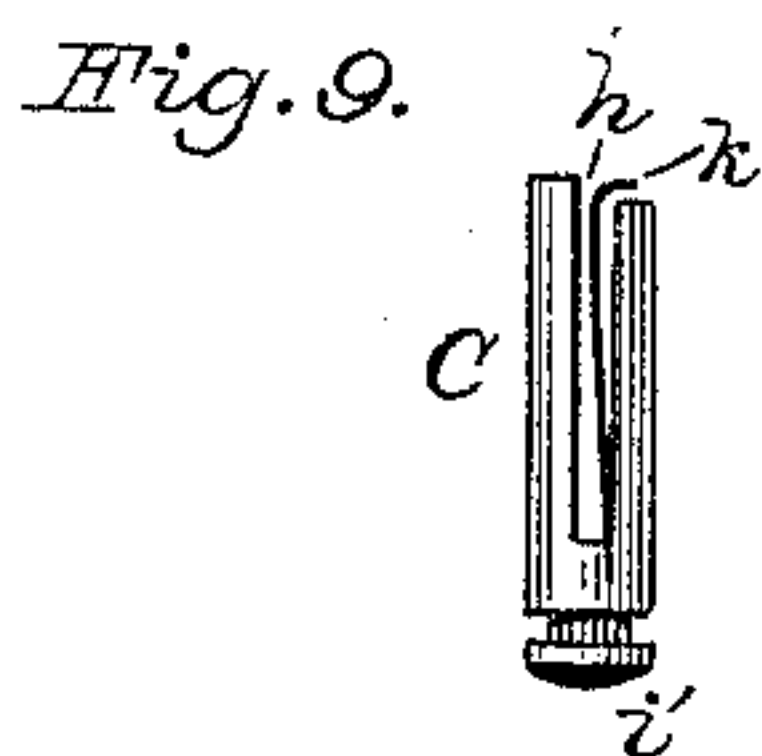
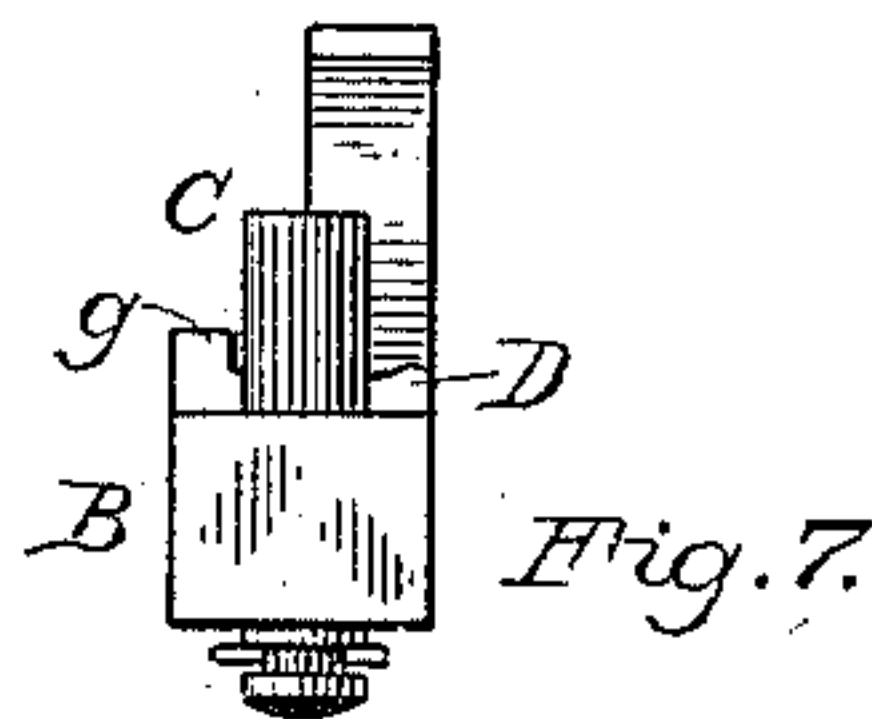
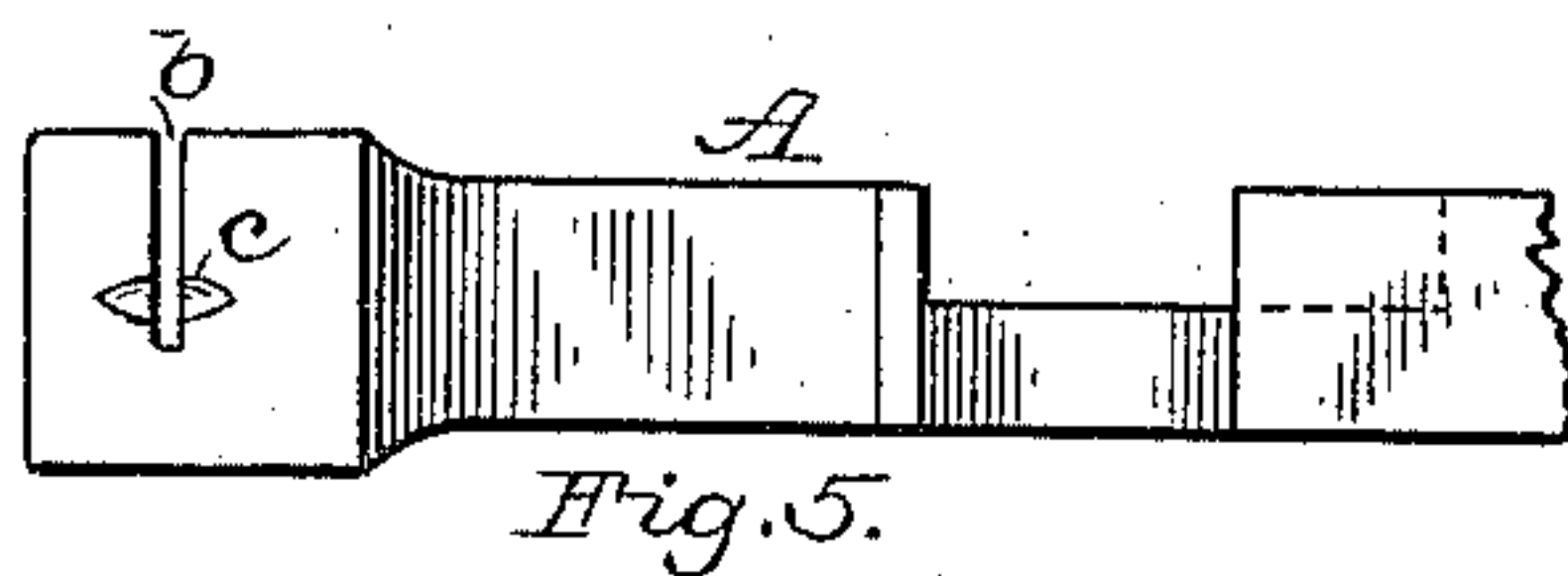
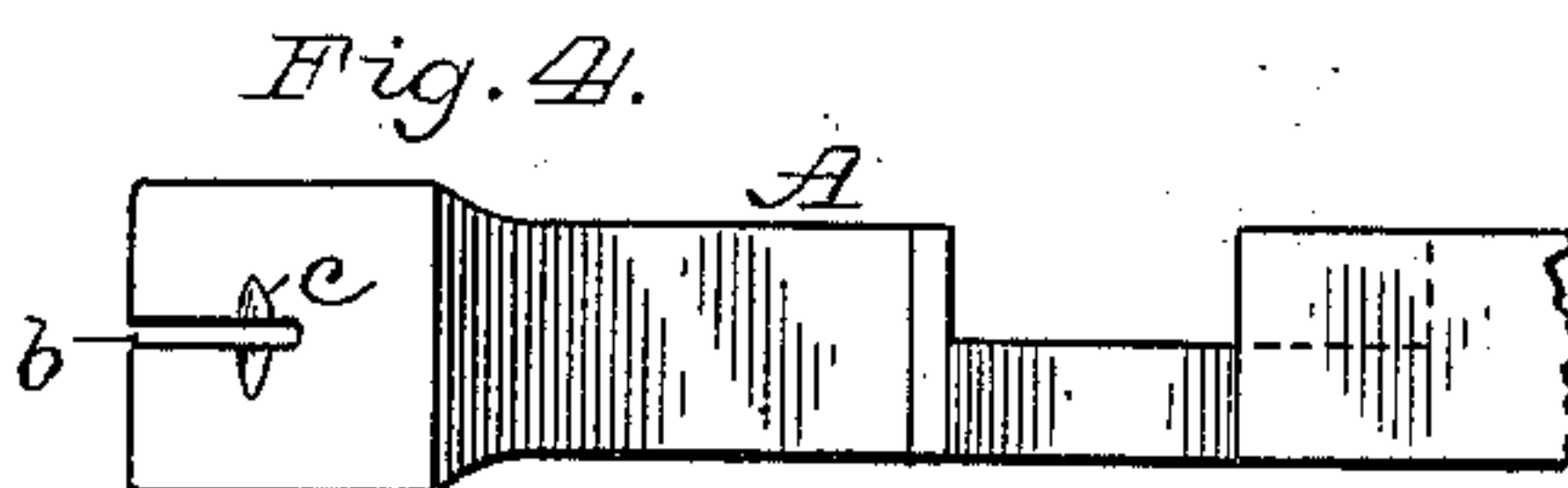
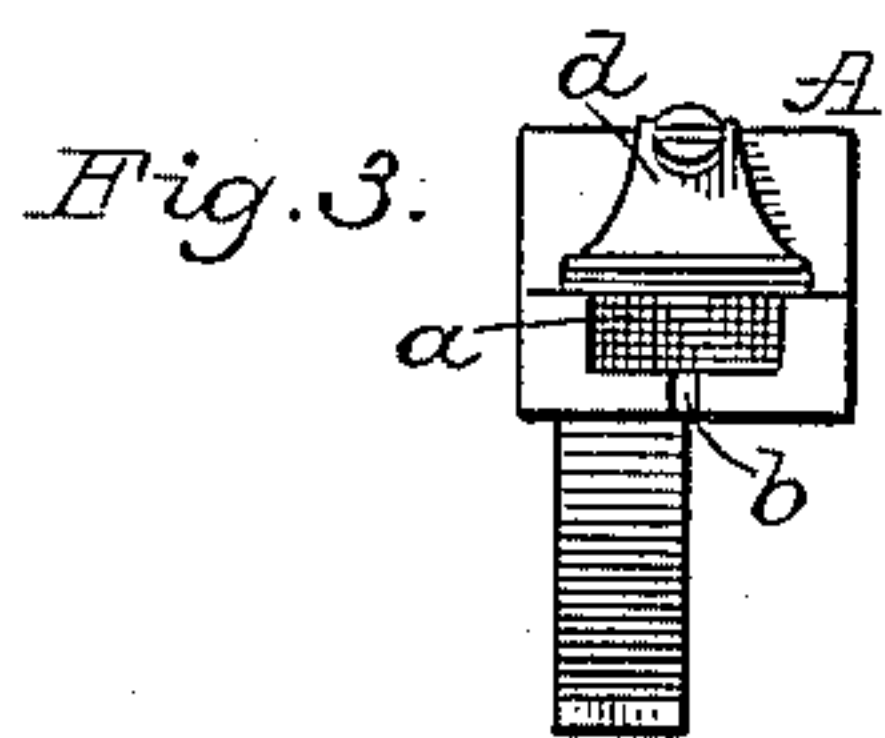
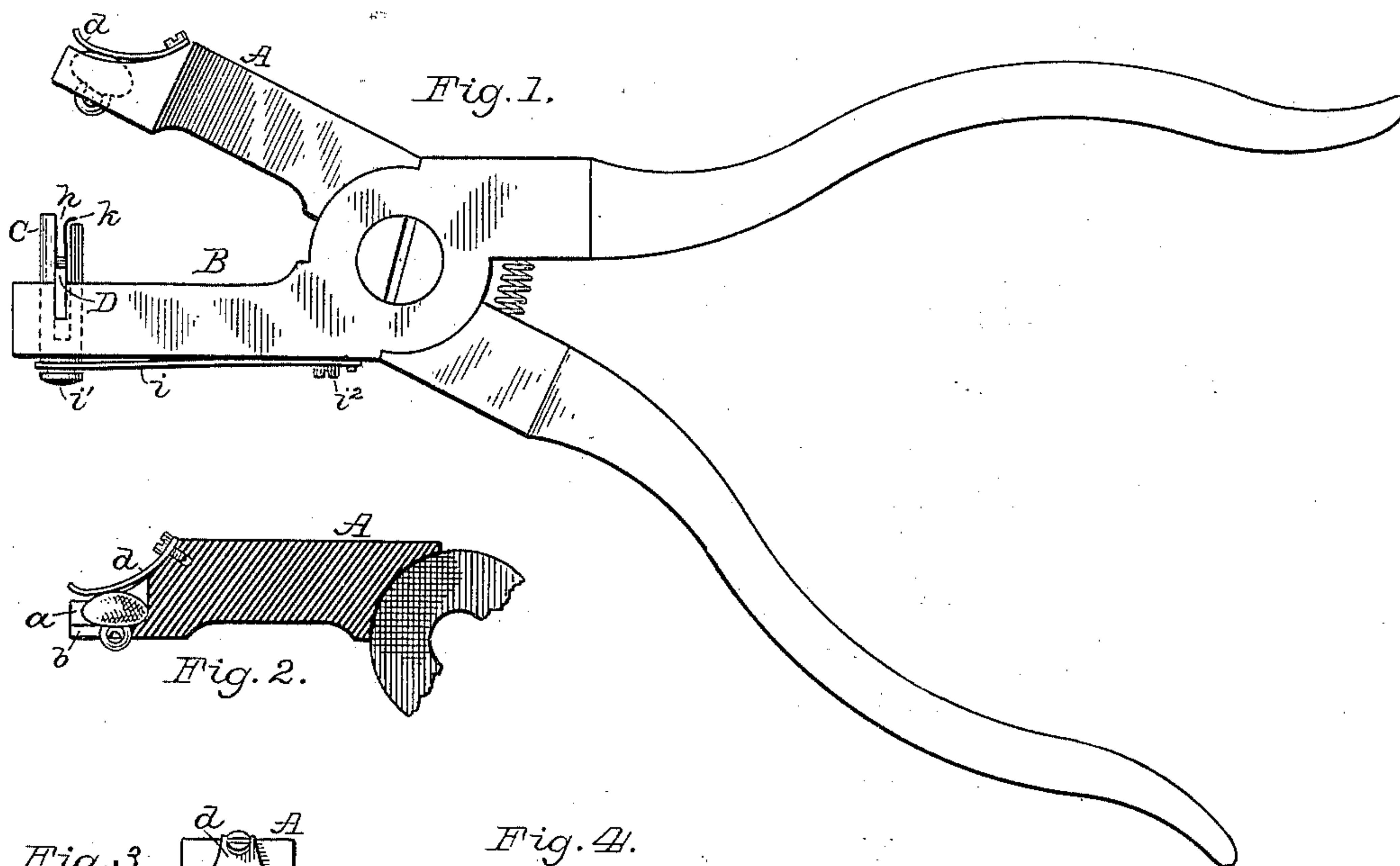


(No Model.)

E. KEMPSHALL.
BUTTON SETTING INSTRUMENT.

No. 298,984.

Patented May 20, 1884.



Attest:
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UNITED STATES PATENT OFFICE.

ELEAZER KEMPSHALL, OF NEW BRITAIN, CONNECTICUT.

BUTTON-SETTING INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 298,984, dated May 20, 1884.

Application filed January 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER KEMPSHALL, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Button-Setting Instruments; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part thereof, is a clear, true, and complete description of the several features of my invention.

My improved "button-setter" has been specially devised by me for securing shank-eye buttons to shoes, &c., by the use of sheet-metal T-shaped button-fasteners heretofore devised by me, and having a head-bar and an integral puncturing-shank projecting therefrom, either centrally or at a point a little to the one side of the middle of the head-bar; and I provide for turning and bending said shanks into the form of a hook through the eye of a button, whether the hook so formed occupies a plane parallel with the head-bar or a plane at right angles thereto.

I employ in my button-setter a bending and compressing die, which is similar to those heretofore employed in bending and clinching tools used for various purposes, as well as for button-setters, and I generally use therewith the usual means for holding a button with its shank-eye crosswise of the bending-die, so that as the shank of the fastener is bent by said die its point will pass through the eye of the button in a manner well known.

For properly holding my T-shaped button-fastener during the operation of puncturing leather or other material, I have devised a guide-block, which is novel in certain respects, as follows: It is laterally and longitudinally slotted for the ready edgewise reception of a fastener. It is provided with a spring for compressing the shank of the fastener flatwise in the slot, and said spring as a separate feature may also be concaved at its contact-point for more thoroughly bracing the shank against displacement. Said guide-block is, as heretofore, mounted upon a spring, so that it may yield during the puncturing and setting operations, and it is employed in connection with an anvil; but my combination of yielding guide-block and anvil differs from prior combinations thereof in that said anvil in no man-

ner serves as a guide for the guide-block; and I employ as a novel feature a stop or gage on or near one end of said anvil, against which one end of the head-bar of the fastener abuts for accurately locating said head-bar within the guide-block, and the consequent central location of the shank of the fastener. My guide-block is provided with a longitudinal slide bearing within a suitable base, which, in hand instruments, is one of a pair of jaws arranged to be closed and opened after the manner of spring-pliers. The spring for supporting said guide-block is applied to its base, and is so connected thereto as to confine said block longitudinally within its bearings as against any movement away from said spring.

To more particularly describe my invention I will refer to the accompanying drawings, in which Figure 1 represents in side view a button-setter embodying all the features of my invention. Fig. 2 is a longitudinal central section of the upper jaw of the same. Fig. 3 is a front view of the upper jaw. Figs. 4 and 5 are plan views of the working-face of said upper jaw, provided, respectively, with a bending-die, which bends a fastener-shank in a line parallel with its head-bar, and a die for bending said shank at right angles to said head-bar. Fig. 6 is a longitudinal central section of the lower jaw. Figs. 7 and 8 are front views of the lower jaw respectively with and without the guide-block. Figs. 9 and 10 are respectively side and top views of the guide-block detached. Fig. 11 illustrates in several views the shank-compressing spring detached from the slot in the guide-block. Fig. 12 is a flatwise view of the spring which supports the guide-block. Figs. 13 and 14 are side and top views of guide-blocks modified in construction, but within my invention. Figs. 15 and 16 represent, respectively, two of my button-fasteners in side and edge view. Figs. 17 and 18 represent my fasteners as applied to buttons in two different ways.

It is to be understood that although I have shown and described my improvements as employed by me in a hand-tool, I am aware that without substantial change they can be adapted to use in machines for automatically performing more or less of the operations incident to button-setting.

The upper jaw, A, of the hand-tool is pro-

vided with the usual button-receiving recess, *a*, the slot *b* for the shank-eye of a button, and a shank-bending die, *c*, in the form of a suitably-shaped recess in the working-face of said jaw, and I employ therewith, as heretofore, a spring, *d*, for bearing upon the top of a button when in position for setting. As shown in Fig. 4, the button-eye slot *b* enters from the end of the jaw, and in Fig. 5 it enters from the side of the jaw; but in each case the center of the eye will be in line with the line of the shank-bending die or recess *c*, and although the latter in Fig. 4 is crosswise of the face of the jaw, and in the latter it is longitudinal, in each case said die *c* is at right angles to the button-eye slot *b*.

The difference in the operation of tools thus variably constructed will be readily understood on reference to Fig. 17, in which the shank *e'* of the fastener *e*, when bent through the eye of a button into the form of a hook, stands parallel with the head-bar *e''*, as when set by the die, Fig. 4; but the die, Fig. 5, causes the shank to be bent sidewise or at right angles to said head-bar, as clearly shown in Fig. 18. The lower jaw, *B*, is vertically bored through its outer end, as at *f*, to afford a guide-bearing within which the guide-block *C* can freely slide, but by which said block is truly guided longitudinally or vertically in its reciprocating movements. The anvil *D* is mounted upon the face of the lower jaw, or preferably in a slot therein, and diametrically crosses the hole or guide-bearing *f*. Said anvil is a thin plate of steel, a little thicker than the sheet-metal stock from which my fasteners are made, and it has a longitudinal contour on its bearing-surface or top corresponding to the form of the outer edge of the head-bar *e''* of the fastener. Near one end of said anvil there is a shoulder, *g*, which serves as a gage, against which one end of a fastener head-bar is abutted, for enabling the fastener to be properly located on the anvil. The lower jaw is slotted transversely on its upper surface for the reception of the anvil; or said anvil may be otherwise secured upon the upper face of the jaw. The guide-block *C* is slotted longitudinally and laterally, or from side to side, for a considerable portion of its length, as at *h*, so that it is wholly free from contact with the anvil, (the central portion of which occupies said slot,) even when said block is fully lifted by its spring *i*, which is connected thereto by means of a head, *i'*, on the end of the block, which freely occupies a longitudinal slot in the end of said spring.

As thus far described, it will be readily seen that a T-shaped fastener, when inserted edgewise into the slot *h*, and with its head-bar resting on the anvil, and with one end of said head-bar abutting against the gage *g*, will have its puncturing-shank maintained in a vertical position and projecting centrally above the top of the head-block, and in proper line with the bending or clinching die in the

upper jaw. For firmly holding said shank in its proper position, it is confined flatwise by spring compression.

As shown in Figs. 1, 6, 9, and 10, inclusive, the guide-block slot *h* has at one side thereof a vertical spring, *k*, which compresses the shank of the fastener flatwise near the top of the block, and thus holds the shank in a vertical position; but for still greater security said spring may be slightly concaved at its bearing-surface, so as to afford sufficient edge bearing for the shank to more thoroughly prevent its tilting to and fro edgewise in the slot.

A yielding guide-block having a spring-slot for flatly compressing the shank of a button-fastener I believe to be broadly new in a button-setter, and said spring-slot may obviously be variably constructed without departure from this portion of my invention—as, for instance, the spring-slot will be afforded if two oppositely-located springs, *h'* *h'*, be employed to form the slotted portion of the guide-block, as shown in Fig. 13, or said block may have one side thereof in the form of a non-flexible post faced by a spring, *h'*, as shown in Fig. 14; but however said spring-slot may be constructed, the guide-block should have its base below the anvil well fitted to slide in the guide-bearing *f*, provided therefor in the lower jaw, it being obvious that said bearing may be circular or otherwise shaped in cross-section, as may be desired. It is also obvious that this feature of providing the guide-block with a spring-slot, wherein a button-fastener shank is compressed flatwise, is applicable to a guide-block having a slot open only on top, or one open at the top and also at one side, instead of at both sides, as shown.

It will be seen that in the event of repairs my anvil can readily be removed without displacing the guide-block, and that the latter can be as readily withdrawn from its bearings without disturbing the anvil, it being only necessary for removing the block to withdraw the screw *i''* at the base of the spring *i*.

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

1. The combination, with a shank-bending die, of a yielding guide-block slotted laterally and longitudinally, and an anvil within said slot, substantially as described, whereby a single T-shaped button-fastener can be inserted edgewise into said block, and the shank of the fastener bent by said die into the form of a hook, as set forth.

2. The combination, with a shank-bending die and a button-holding clamp for presenting the shank-eye of a button in line with said bending-die, of a yielding guide-block laterally and longitudinally slotted, for the edgewise reception of a T-shaped button-fastener and an anvil in said slot, substantially as described.

3. In a button-setting instrument, the combination of the slotted guide-block adapted to receive the head of a T-shaped fastener slid-

ing in and through a guide-bearing, and a spring at the base of said block and outside of its bearing, substantially as described, whereby said block can yield under pressure
5 and be longitudinally guided, as set forth.

4. The guide-block slotted to receive the head of a T-shaped fastener fitted to slide longitudinally in a guide-bearing, in combination with a spring connected to the base of
10 said block, substantially as described, whereby said block is not only enabled to yield to pressure, but is also limited in its longitudinal movements, as set forth.

5. In a button-setting instrument, a yielding guide-block provided with a longitudinal
15 slot having at one or both sides thereof a spring

for compressing the shank of a button-fastener, and preventing it from tilting edgewise in said slot, substantially as described.

6. The combination, with a slotted yielding
20 guide-block, of an anvil occupying said slot, and a shoulder near one end of said anvil, to serve as a gage for contact with one end of the head-bar of a single-shanked fastener, substantially as described, whereby the shank
25 of the fastener can be readily located centrally and vertically in the slot of the guide-block, as set forth.

ELEAZER KEMPSHALL.

Witnesses:

L. S. BUN,

JOHN P. BARTLETT.