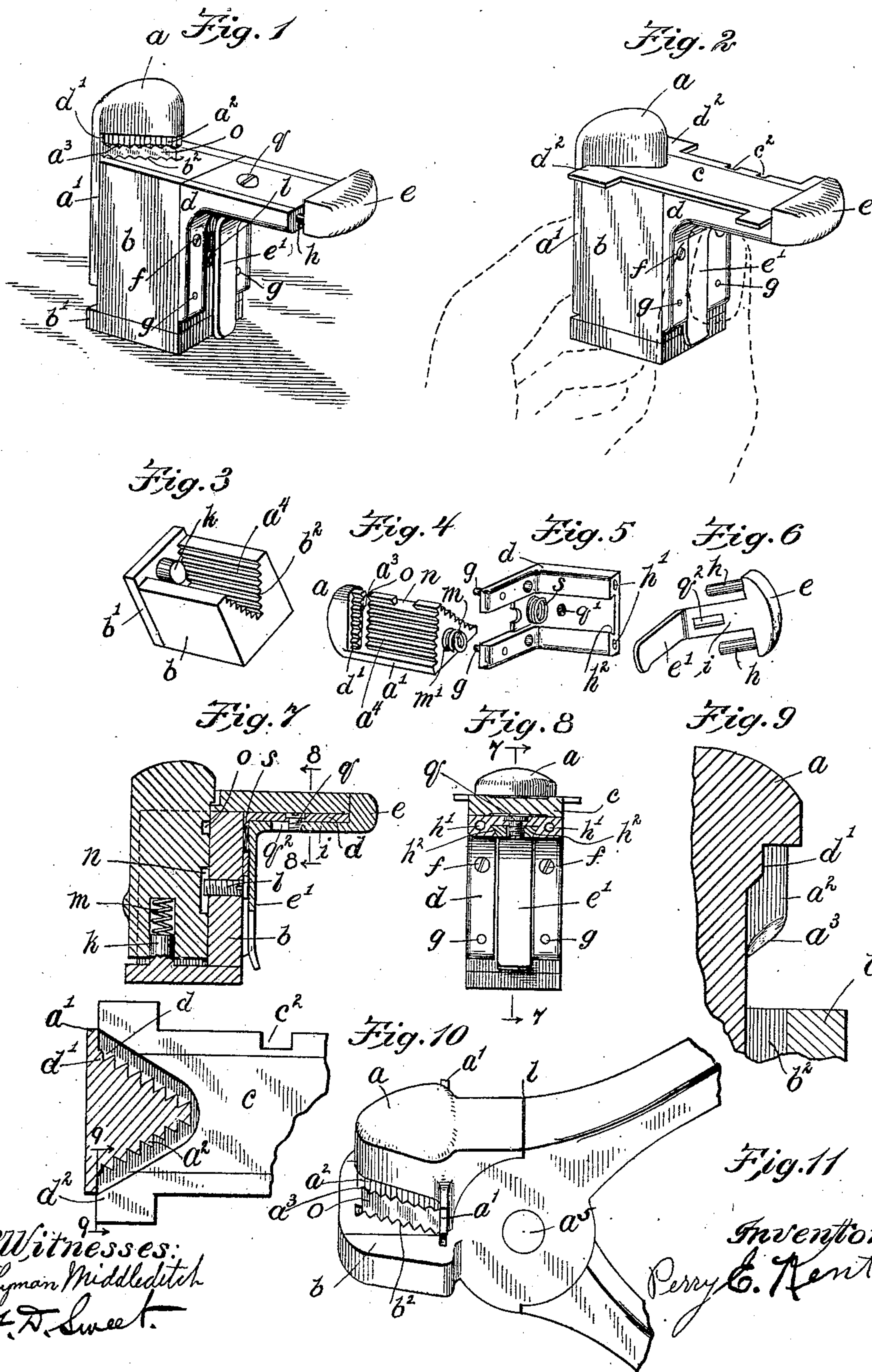


P. E. KENT.
 SWAGE OR RESHAPER FOR DEFORMED OR BATTERED TEETH OF LINOTYPE MATRICES.
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Witnesses:
 Lyman Middleditch
 F. D. Sweet

Inventor
 Perry E. Kent.

UNITED STATES PATENT OFFICE.

PERRY E. KENT, OF NEW YORK, N. Y.

SWAGE OR RESHAPER FOR DEFORMED OR BATTERED TEETH OF LINOTYPE-MATRICES.

No. 923,275.

Specification of Letters Patent.

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Application filed December 21, 1908. Serial No. 468,562.

To all whom it may concern:

Be it known that I, PERRY E. KENT, of New York, county and State of New York, have invented a certain new and useful Improvement in Swages or Reshapers for Deformed or Battered Teeth of Linotype-Matrices, of which the following is a specification.

My invention pertains to the re-shaping or restoring of worn or injured traveling combinations or teeth comprising that portion of a linotype matrix which sustains it in position on the second elevator bar, and which are vital to its correct delivery from the distributor bar into the proper aperture or entrance channel of the magazine thereof.

In the successful operation of the linotype it is absolutely essential to have the various matrices or letters used therein travel smoothly in order to be delivered accurately into their respective channels in the magazine and to drop from the distributor bar at the proper time, that the various teeth or combinations of teeth contained thereon be true and accurately shaped, that they be not too much worn or turned upward from travel or twisted or distorted, else they will drop too soon or too late, or impinge against the partitions of the channel entrances, or drop into the wrong channels, or even be carried to the further extremity of the bar.

In the operation of the machine matrices not only become so loose from wear as to hang crooked while on the distributor bar but also to drop from the second elevator bar or clog in the box while being transferred, and in many cases of abuse as well as from use the teeth become so twisted out of true as to become unserviceable, as no available means has been supplied for accurately and expeditiously restoring them to their proper shape, and they are cast aside as worthless.

The object of my invention is to save this waste and remedy this condition by supplying means whereby it can be easily and quickly accomplished. I have therefore devised a swage or reshaping die comprising a male and a female portion, with appropriate angular projections on the male portion, and corresponding interstices and similar projec-

tions on the female portion, both corresponding to the exact outlines of the teeth or running ways on a linotype matrix running "pi", together with a peculiar V-shaped die cap projecting from the male portion sufficiently to cover the points of said teeth and compel a correct perpendicular "lining up" of the teeth to their original shape when a light blow is struck on the die-cap, while the perpendicular serrations force all deformed or irregular teeth into correct horizontal formations—and this will apply equally as well to all combinations and thickness of matrices.

Another object of my invention is to supply a swage or tool provided with powerful levers or handles, actuated from a hinge or fulcrum, whereby the re-shaping of the teeth may be accomplished by closing the levers with the hands in lieu of a blow—or by both, if desired.

With these and other objects in view my invention embraces the different forms of the tool or swage here described, the parts before mentioned, and the details thereof, and the claims hereinafter cited, all of which are more particularly described by the explanations and drawings hereto attached. This device or swage may also be made in the form of pincers (as shown) with the joint as running ways and the returning spring concealed within, with shallow die-sunk recesses on one portion and corresponding appropriate formations on the other portion suitable for performing the work desired; the stop for limiting the action and the spring for returning to normal position may take other forms and shapes; in producing this swage it may be advisable for various reasons to do away with or add to some of the details shown in construction; to embody the clamping attachment in one piece with the block or body of the swage, or to omit it entirely. I do not however propose to limit myself to these exact modes of construction, but may reverse, rearrange, and change its form more or less without departing from the spirit, design or intent of my invention.

The same letters in different figures represent the same parts of the device.

In the accompanying drawings—Figure 1 is a vertical view of the swage or re-shaper with the male portion raised to normal position by action of spring at base, the clamping attachment open ready to receive the matrix which should be inserted into the V-shaped guide slot *o*, with bottom toward clamp *e*; *a* is the overhanging lip or die cap and comprises the upper portion of swage, and, with back portion of guide *a'* and running ways *a⁴* (Fig. 4) comprise the male member. *o* is the V-shaped guide slot which permit the teeth of matrix to be placed under the angular projections *a²* underneath die cap *a* and constitute both lateral and longitudinal guides; *a³* shows the beveled points of the angular projections which enable them to more readily slip between bent or deformed teeth; *d'* is the small projection directly under rear of die cap to engage and re-shape the top of upper tooth; *b* is the block or lower die, and with running ways *a⁴* (Fig. 3) comprise the female member; *b'* is the base; *b²* are the angular points upon which teeth of matrix are supported (while encompassed by the perpendicular counterparts of the teeth) during process of re-shaping; *d* is the brackets supporting the clamping attachment *e* which is closed upon the matrix by compressing the finger hook *e'* sliding on guide pins *h* and sliding ways *h²* (Fig. 5), the clamp is opened to normal position by spring *s* acting against finger hook *e'*; *q* is the stop pin screw passing down into slot *q²* (Fig. 6) and limits the opening of clamp *e*; *g* are dowel pins and *f* are screws holding clamping attachment to block; *l* is the stop pin screw passing through block *b* into slot *n* (Fig. 4) of male member, and limits the upward motion thereof, bringing slot *o* into correct position for receiving matrix; the two lines on either side of shelf or matrix rest represent indented portions on each side of the shelf to correspond to the raised or planed edges of the matrix which, though slight, permit of an accurate re-forming of teeth.

Fig. 2 represents the swage or re-shaper closed upon a linotype matrix ready for re-shaping. Clamp *e* holds it securely in place by action of the thumb on finger hook *e'* while the male member is held in position by aid of the first finger. A slight tap on *e* forces a horizontal righting of all teeth, while a light blow struck on cap *a* compels a perfect perpendicular alining of the matrix teeth; *c* represents the matrix; *c²* represents location of characters, and *d²* indicates top portion of matrix which abuts against top guide *a'*.

Fig. 3 is an angular view of female member, comprising block *b* base *b'*, top of angular projections or teeth rest *b²* constituting the under surface of the die; running ways *a⁴*, and guide stud *k* which projects slightly into hole *m'* (Fig. 4) in base of male member.

Fig. 4 is an angular view of male member and shows base spring *m* protruding slightly from hole *m'*; shows position of slot *n*, and overhanging lip or die cap *a*, also running ways *a⁴*, and V-shaped guide slot *o*.

Fig. 5 is an angular view of the brackets and matrix shelf *d* which comprise a portion of the clamping attachment; *s* shows the operating spring which returns the clamp *e* to normal position; *q'* indicates threaded hole which contains stop pin screw *q* (Figs. 1–8) which projects into slot *q²* (Fig. 6) and limits the action of clamp *e* *h'* are the holes, in which run the guide pins *h* (Figs. 1–7).

Fig. 6 shows the movable portion of the clamping attachment, comprising clamp *e*, finger hook *e'*, connecting slide *i*, guide pins *h*, and slot *q²* into which projects stop pin screw *q*.

Fig. 7 is a longitudinal vertical section of the swage and clamping attachment closed down upon a thick matrix and shows how the peculiar V-shaped die cap enters into the cavity or pocket of a matrix which is thicker than that portion comprising the teeth or running ways. It also shows stop pin *l* projecting into slot *n*, and spring *m* resting on top of guide stud *k* within the hole *m'* (Fig. 4), also shows stop pin *q* projecting down into slot *q²*.

Fig. 8 is part elevation and part sectional and shows die cap *a* sunk down into the pocket of a thick matrix *c*, and is a cross sectional view of Fig. 7 at lines 8—8 as indicated.

Fig. 9 is an enlarged sectional view of a portion of male member at 9—9 Fig. 10, and shows clearly the projections *d'* and the lower or beveled portion *a³* of the angular projections *a²*, both located directly under die cap *a*. Die cap is raised above the block *b* ready to receive the matrix.

Fig. 10 is a top view, and shows the upper portion of a thick linotype matrix *c* engaged with the male member (shown in section) in position directly under cap *a*; guide *a'* is shown with top of matrix *d²* abutting against it; the hollow portion *d* of upper tooth is shown in contact with projection *d'*, while *a²* illustrates how these angular projections mesh completely with the teeth or running ways of the matrix. It also shows the shape of the pocket or cavity at top of a thick matrix, and the relief at side of each row of teeth.

Fig. 11 shows the swage or re-shaper in a slightly modified form, with hinged jaws, operated by powerful levers or handles to give the necessary compression in lieu of a blow on the die cap, although both can be employed if desired. *a* shows the upper member, *b* is the lower member, *a'* are the matrix back guides, *a²* are the angular projections beneath the upper member which fit between the several teeth to compel accurate

re-shaping, a^3 are the beveled points which materially assist these angular projections to pass between crooked or mis-shaped teeth, a^5 is the fulcrum or hinged joint from which the jaws are operated, o is the V-shaped guide slot to receive the matrix, b^2 are angular projections on the lower member which support the teeth during process of re-shaping, l represents the stop which limits the opening motion of the two members. The handles attached to both members permit them to be forced together in a powerful manner. The spring for opening the two members or returning them to normal position is not here shown but any of the well known forms used with pliers may be employed to perform this function.

It will be readily seen from the foregoing that a linotype matrix can be placed under the die cap and firmly held in place by the clamping attachment and when the die cap is forced downward and a slight blow is struck on clamping attachment it will completely re-shape all bent or deformed teeth, and restore the matrix to its original usefulness. This clamping device will be supplied with the machine when desired, or the swage supplied without the clamping attachment when so ordered.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. A swage or re-shaper for the teeth or running combinations of linotype matrices consisting of a series of angular projections constructed on two sides of a V-shaped body, conforming to the full number of teeth or running ways thereon, comprising the male member of the device, a female member consisting of a block with a V-shaped notch therein, the walls of said notch containing angular projections adapted to interlock with those contained on the male member and reversely identical thereto and corresponding exactly to the male member, a lip or overhanging cap contained on said male member projecting at right angles to said angular projections or running ways sufficiently to cover the points of the projecting teeth or running ways of the female member.

2. A swage or re-shaper for linotype matrix combinations, comprising a V-shaped male member provided with suitable sliding ways longitudinal thereof; a female member consisting of a block with a V-shaped notch therein, with corresponding reverse sliding ways; a lip or overhanging cap on said male member; a stop for limiting the action thereof, for the purpose and object aforesaid.

3. A swage or re-shaper for linotype matrix combinations, comprising a male and a female member with suitable operating means thereto; an overhanging cap or lip for compressing said combinations; means for operating movable member and for return-

ing same to normal position, and a stop for limiting the movement of same.

4. A swage for re-shaping deformed, worn or battered teeth of linotype matrices, comprising a male and a female member, with suitable running ways thereto to retain them in contact; a cap or head projecting from said male member of sufficient width to cover the points of said matrix teeth; a projection on said male member underneath said cap for engaging and compressing longitudinally the top of the upper tooth of aforesaid matrices when the cap is forced into contact with the sides of the matrix combinations; a guide for automatically directing said matrix into proper position; and angular projections corresponding to those on the matrix suitably beveled at point of intersection, for the purpose and essentially as described.

5. In a swage for re-shaping linotype matrices a male and a female member; a suitable guide for automatically directing the matrix into proper position; means for returning said members to normal position, and a securing clamp or slide controllable by the thumb and finger for retaining said matrix in proper position.

6. A swage or re-shaper for linotype matrices, comprising an upper and a lower member, appropriately fashioned, whereby the projecting cap of one member covers one side of the teeth of the matrix, and the surface of the die comprising the other member come in contact with the other side of the matrix teeth, and corresponding angular projections attached to either portion fill the interstices of the angles of the teeth of the matrix.

7. A tool or implement for re-shaping distorted or battered teeth of a linotype matrix, consisting of an upper and a lower member, appropriately shaped, constructed with suitable operating means for closing together to enable the two members to firmly clamp the two sides of the teeth, with appropriate guides for properly placing said matrix in position, essentially as described.

8. A tool or implement for re-shaping distorted or twisted teeth of a linotype matrix consisting of an upper and a lower jaw, suitably shaped, articulated from a hinge or joint, permitting the sides of the matrix teeth to be compressed between the two surfaces, while angular-shaped projections force all untrue teeth into proper shape, essentially as described.

9. A swage or re-shaper for linotype matrix combinations, comprising a V-shaped projection adapted to enter into the pocket or cavity at the upper end of a thick linotype matrix constituting one section; suitably formed surfaces of appropriate dimensions constituting another section, and means for operating the co-acting sections to bring them in contact with each side of the matrix

teeth, for the purpose and essentially as described.

10. A swage or re-shaper for linotype matrices, comprising an upper and a lower
5 member appropriately fashioned, whereby the under surface of one member covers one side of the teeth of the matrix and the upper

surface of the other member support the other side of the teeth, with means for operating the same.

PERRY E. KENT.

Witnesses:

FRED. M. BROWN,
HARRY S. DENNIS.