E. F. BARBER.

SLUG CUTTER.

APPLICATION FILED DEC. 5, 1911.

1,106,026.

Patented Aug. 4, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

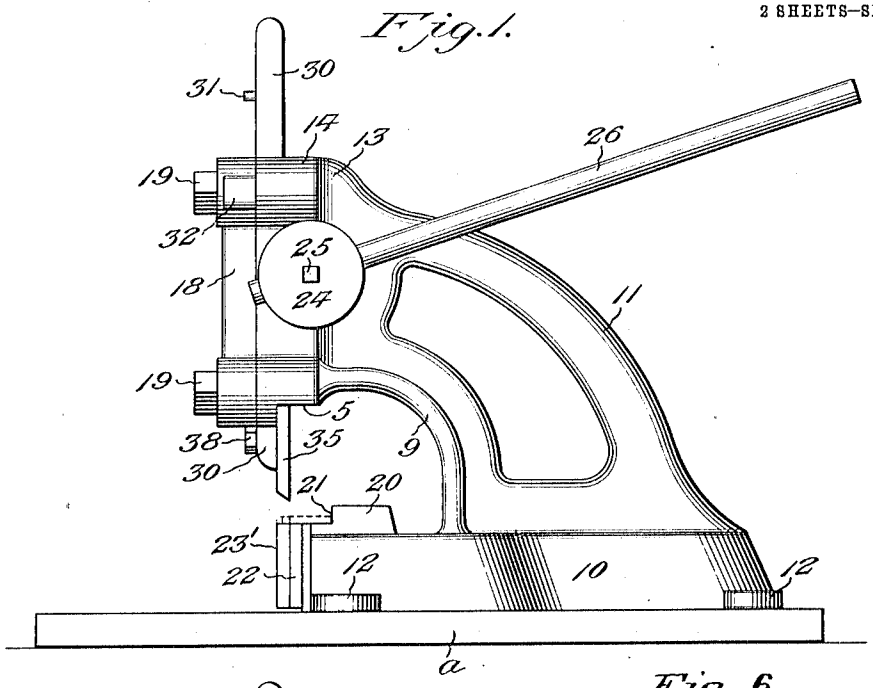


Fig. 2.

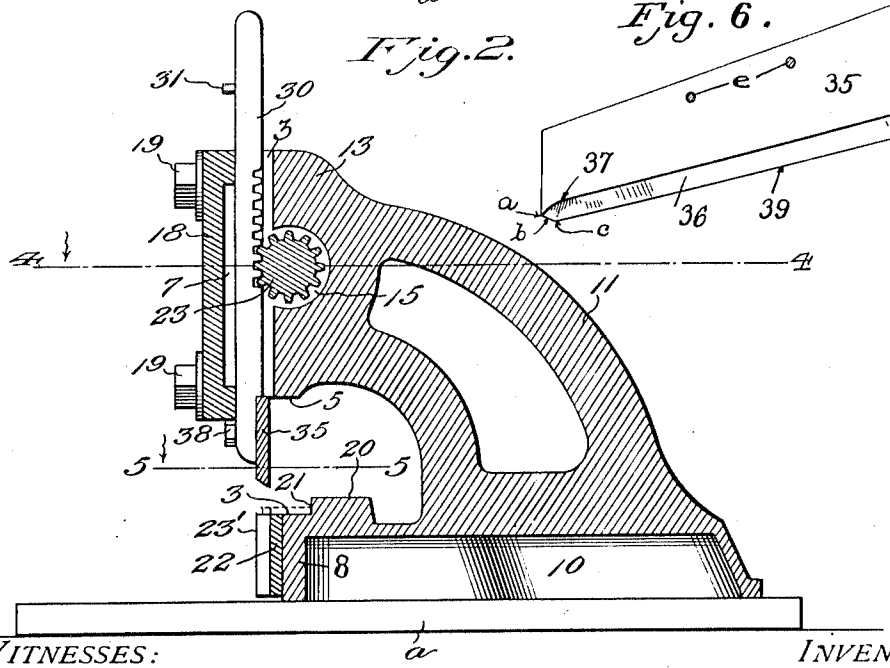


Fig. 6.

WITNESSES:

Edwin F. McKee

Alfred L. Seiler

INVENTOR

Edgar F. Barber

BY

Geo. W. Sues.

Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

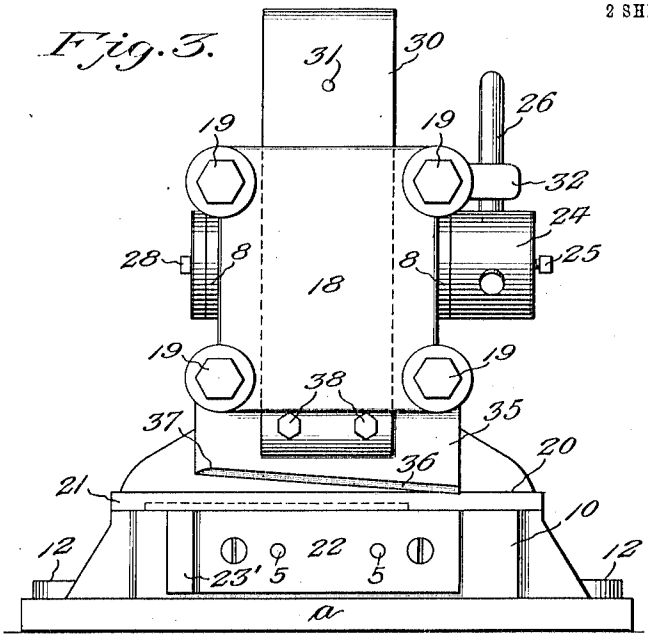


Fig. 4.

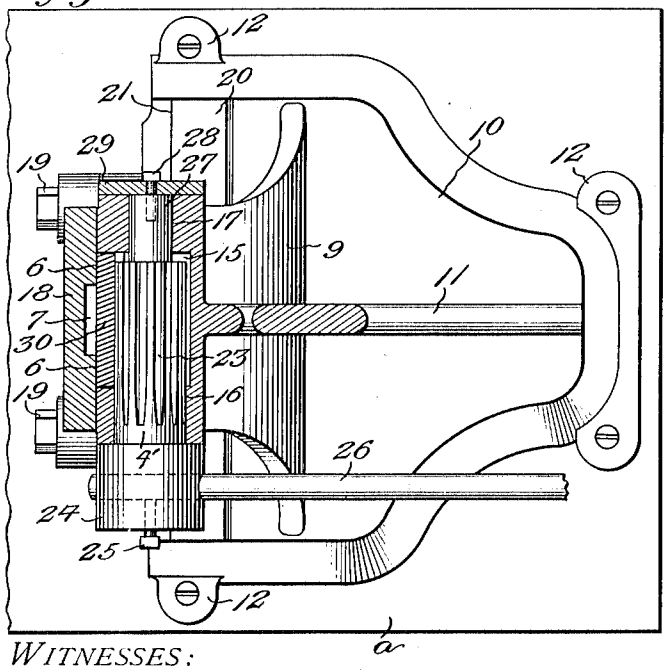
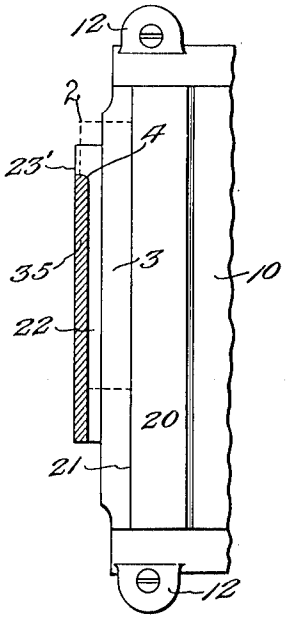


Fig. 5.



WITNESSES:

Edwin F. Mecke

Alfred L. Seiler

INVENTOR

Edgar F. Barber

BY

Chas. W. Shea

Attorney

UNITED STATES PATENT OFFICE.

EDGAR F. BARBER, OF WINSTON-SALEM, NORTH CAROLINA.

SLUG-CUTTER.

1,106,026. Specification of Letters Patent. Patented Aug. 4, 1914.

Application filed December 5, 1911. Serial No. 664,015.

To all whom it may concern:

Be it known that I, EDGAR F. BARBER, a citizen of the United States, and a resident of Winston-Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Slug-Cutters, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to certain new and useful improvements in cutters employed in trimming the slugs cast by a linotype machine; and the object of my invention is to provide a slug cutter of a compact and durable construction which can be easily operated and includes a bed upon which a slug of any length can be easily, accurately and conveniently placed, in such a manner that the blank part of the slug can be instantly trimmed down to the height of a standard type foundry slug, the cut edge being smooth and well defined and free of any objectionable bur.

With these and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and finally pointed out in the appended claims, it being further understood that changes in the specific structure shown and described may be made within the scope of the claims, without departing from the spirit of the invention.

In the accompanying drawings forming a part of this specification and in which like numerals of reference indicate similar parts in the several views: Figure 1, is a side elevational view of a slug cutter embodying my invention. Fig. 2, is a vertical central sectional view. Fig. 3, is a front view. Fig. 4, is a section on line 4, 4, of Fig. 2. Fig. 5, is a section on line 5, 5, of Fig. 2. Fig. 6 shows a detail in perspective of the drop knife.

Where the last word of a paragraph occurs at or near the beginning of a slug cast by a linotype machine, the upper blank part of the slug is almost as high as the printing surface of the type part. Under these conditions unless the pressman is very careful the blank part of the slug will smut the printed sheet. In order to obviate the smutting of the printed page, the blank part of the slug is usually filed down or chiseled off. This is a time consuming and metal wasting operation and in order to obviate this annoyance and waste, I provide a slug cutter which at one stroke of a knife instantly and accurately trims the slug without any waste of material.

In carrying out the aim of my invention, I employ a standard including the flat topped base 10, this base preferably being hollow, as shown in Fig. 2, and extending centrally from this base is the forwardly curved apertured web 11, ending in the head 13, having the apertured ears 14, shown more clearly in Fig. 1. The web 11 is strengthened below by means of the flat curved flange 9, this flange being clearly shown in Fig. 4. As disclosed in Fig. 1, this flange ends at and forms part of the lower portion of the head. The base 10 has the securing ears 12, by means of which the standard may be screwed or bolted to a base *a*.

The forward edge 8 of the base, as shown in Fig. 2, is flat and spaced from this face 8 is the stop ledge 21 while secured to this flat face is the base knife 22. This knife has the enlargements 23′ at one end to provide the outwardly curved cutting edge 4 and is provided with the steady pins 5, which fit into suitable openings within the base 10. In Fig. 3, I have shown the location of these pins. This base knife 22 is made of tempered steel and is held in position by means of suitable screws, these being also shown in Fig. 3. As disclosed in Fig. 2, the upper edge of the base knife 22 coincides with the upper edge 3 of the base, from which extends upward the stop ledge 21, the upper surface of the knife 22 and edge 8 forming a bed upon which the slug to be cut is placed. The head 13 has a lengthwise running recess of a depth to snugly receive the rack plunger 30. A cap plate 18 secured by means of the bolts 19 holds the plunger slidably within the head recess. The bolts 19 thread into the ears 14. Communicating with the plunger recess upon the rear is an oil channel 3, shown in Fig. 2. Centrally and communicating with the plunger recess is a bore 15, shown in Figs. 2 and 4, and entering this bore from one direction is the bearing opening 16, while opposite is the bearing opening 17 of a diameter less than that of the bearing 16, this construction being clearly shown in Fig. 4.

As shown in Fig. 4, the bearing 16 is of a diameter less than the bore 15, while the bearing 17 in turn is of a diameter less than the bearing 16. The uncut end 4′ of the gear spindle 23 has its bearing within the opening 16. Revolubly held within the bear-

ings 16 and 17 is the gear spindle 23 in mesh with the teeth of the sliding rack bar 30. The gear spindle 23 has the hub 27 forming a bearing end arranged for co-action with the bearing 17, while the opposite end 4′ of this gear spindle finds the bearing within the opening 16. The bearing end 27 is provided with an opening arranged to hold the screw 28 carrying the washer 29 holding the gear spindle 23 against displacement in one direction. The gear spindle has the enlarged head 24, the under surface of which serves as a stop, as shown in Fig. 4, in working against the outer flat edge of the head, preventing displacement of the gear spindle in an opposite direction to that of the plate 29. By this means the gear spindle 23 is revolubly but securely held in position.

The rack bar 30 at its lower end, as shown in Fig. 3, carries two screws 38, which are employed and pass through openings *e*, within the drop knife, one of these openings being shown in Fig. 6 to hold the drop knife 35 to the bar. The lower end of the bar is chamfered, as shown in Fig. 2, so that the knife 35 will seat within the chamfer and thus be securely held. As shown in Fig. 1, the upper edge of the knife 35 is stopped against the under edge 5 of the head when the knife is in its normal position. The drop knife 35 is of a length greater than the width of the rack bar 30, and is normally stopped against the lower edge of the head, as shown in the drawings. The lower cutting edge 36 of the drop knife 35 is beveled, as shown in Fig. 1, and slants in a downward direction from one end to the other with relation to the bed surface 3, as shown in Fig. 3, the higher end being rounded toward the back as shown at 37. It is from this point that the edge is rounded toward the back to provide a true cutting edge for co-action with the outwardly curved cutting edge 4. The cutting edge 39 of the drop knife 35 is continued in the round cutting edge *c*, as shown in Fig. 6 continued in the straight edge *b*, extending at right angles to the edge 39. The cutting edges *b*, *c*, and 39 all lie in a common plane, as does the point *a*, shown in Fig. 3 from which the beveled edge curves away as shown at 37 in Fig. 6. The point *a* and the cutting edge portions *b* and *c* are arranged to coöperate with the cutting portion 4 of the base knife 22.

From the foregoing it will be seen that the outstanding enlargement forms a round inner corner. Held within an opening of the head 24 is the operating lever 26 secured in an adjusted position by means of the screw 25. In order to prevent the rack bar 30 from dropping down when the gear 23 is removed, I provide the pin 31. To limit the downward stroke of the rack bar 30, the stop lug 32, shown in Fig. 3, is positioned in the path of the lever 26, thus serving as a stop to the lever. This stop 32 forms an integral part of the face plate 18. The bar 30 is provided with a pin 31, made to do service in stopping the downward movement of the knife 35.

The operation of my device is very simple. The slug to be trimmed is placed upon the face or bed 3 with its base against the stop ledge 31, with the end of the last word upon the slug in alinement with the rounded corner 4 of the base knife 22. The type end will then be beyond the curve 4 of the base knife. In Fig. 5 a slug 2 is shown in dotted lines upon the base. The slug having been placed in proper position, as the knife 35 descends its outer lowermost edge will engage the slug which is held in position by the operator. As the lever is carried forward, the knife cuts the slug with a shearing movement, leaving a smooth, clean cut. In practice, both blades are so formed and positioned that about one-eighth of an inch of the top of the slug is cut out from the end to the desired point. The inner end of the cut is round, owing to the rounded edges of the knives.

From the foregoing it will be understood that the curved upper end of the knife 35 cuts against the curved surface of the outstanding enlargements 23′ of the base knife 22. The outstanding enlargement as described, forms a round inner corner 4, while the beveled cutting edge of the drop knife ends in a point at its highest end, as shown in Fig. 3, the side of the knife at the pointed end being rounded to fit into the round inner corner formed by the enlargement 3′.

The cutters can be made in various sizes. The tool is further simple and comparatively inexpensive in construction and both durable and efficient in operation, and the slugs can be adjusted upon the bed and accurately trimmed with ease and despatch.

Having thus described my said invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A cutter comprising a base having a flat top and a forward straight edge with a stop ledge spaced from said edge, of a knife fixed to said edge having an upper cutting edge one end of which is outwardly curved, said cutting edge along its entire length lying in the same plane as said flat top, a drop knife movably mounted on said base, and means for actuating said drop knife, the cutting edge of said drop knife being beveled and higher at one end said higher beveled end being rounded toward the back, for co-action with said outwardly curved cutting edge.

2. A cutter comprising a base having a flat top and a forward straight edge of a knife fixed to said edge having an upper cutting edge one end of which is outwardly curved, said cutting edge along its entire length lying in the same plane as said flat

top, a drop knife movably mounted on said base, and means for actuating said drop knife, the cutting edge of said drop knife being beveled and higher at one end said higher beveled end being rounded toward the back, for co-action with said outwardly curved cutting edge.

3. A cutter comprising a base having a flat top and a forward straight edge, a knife fixed to said edge having an upper cutting edge one end of which is outwardly curved, said cutting edge along its entire length lying in the same plane as said flat top, a drop knife movably mounted on said base, means for actuating said drop knife, the cutting edge of said drop knife being beveled and higher at one end, said bevel ending in a point at the higher end from which the edge is rounded toward the back, for co-action with said outwardly curved cutting edge.

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

EDGAR F. BARBER.

Witnesses:
R. W. SHEPHERD,
L. M. THARPE.