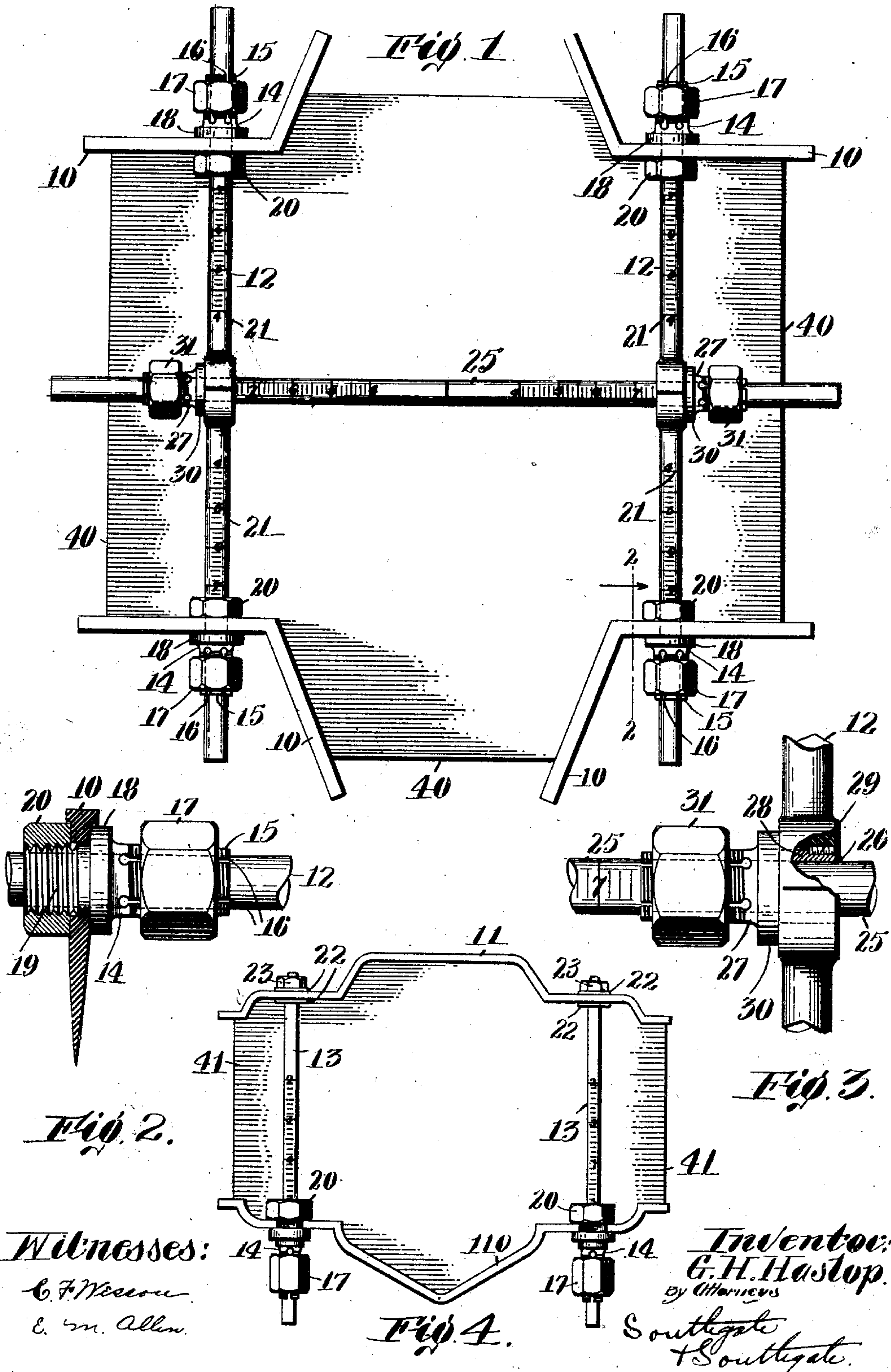


G. H. HASLOP.
ADJUSTING DEVICE FOR CUTTING DIES.
APPLICATION FILED MAY 12, 1908.

924,778.

Patented June 15, 1909.



UNITED STATES PATENT OFFICE.

GEORGE H. HASLOP, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO UNITED STATES ENVELOPE COMPANY, OF SPRINGFIELD, MASSACHUSETTS, A CORPORATION OF MAINE.

ADJUSTING DEVICE FOR CUTTING-DIES.

No. 924,778.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed May 12, 1908. Serial No. 432,396.

To all whom it may concern:

Be it known that I, GEORGE H. HASLOP, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Adjusting Device for Cutting-Dies, of which the following is a specification.

This invention relates to machines for cutting or dying blanks of sheet material. While capable of general use for this purpose it is especially adapted for machines for cutting envelop blanks and the like and it will be described with special reference thereto, although it is to be understood that the invention is not limited to that particular use of the same.

The principal objects of the invention are to provide means whereby the cutting knives or cutters can be rapidly and efficiently adjusted toward and from each other through long adjustments without necessitating the screwing up of the adjusting devices throughout the length of the adjustment which is to be made, and at the same time to provide long bearings for the knives or cutters of such a nature that the latter can be kept in perfect alinement and that they will have little or no tendency to get awry when the device is used or the dies adjusted.

The invention also involves improved means for clamping the knives to the guide-rods, improvements in the rods themselves and the arrangement thereof whereby the perfect alinement of the parts may be maintained, the adjustment quickened and simplified and the distance apart of the cutters measured directly on the guide-rods without employing additional measuring devices.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which,

Figure 1 is a plan of one form in which the invention may be carried out. Fig. 2 is a sectional view on the line 2—2 of Fig. 1 on an enlarged scale. Fig. 3 is a plan of another part of the device, and Fig. 4 is a plan of another form in which the invention may be embodied.

The invention is illustrated as applied to a form of die for an envelop machine in which a set of knives or cutters 10 is employed consisting of two or four or any other convenient number. In the form shown in Fig. 1 the knives or cutters are made adjustable

toward and from each other and in the form shown in Fig. 4 there is what may be called a stationary knife or cutter 11 and a movable one 110. In this case the knife or cutter 110 is moved toward and from the other along the adjusting device, the die 11 being stationary with respect to the latter. In Fig. 1 all the cutters are intended to be moved although this form of the invention can be used in the other way by keeping one set of cutters fixed on the adjusting device and moving the other whenever it is desired to provide an adjustment. In either event a guide-rod 12 or 13, as the case may be, is employed having preferably a smooth cylindrical surface along which one or more quills 14 are adapted to freely slide so as to assume any desired position thereon. Each of these quills is made to fit the rod and is provided with a long bearing so that when the cutting knives or cutters are fixed thereon they will not have any wobbling motion but will be caused to assume the proper alinement simply by being tightened on the rod.

It has usually been necessary heretofore to provide a screw-thread on the guide rod and when an adjustment was desired, the knife had to be moved along the rod by turning a nut along the same which necessitated the loss of considerable time. In order to avoid this and at the same time provide the above mentioned long and firm bearing on the rod the quill 14 is provided with a projection 15 on one end which is of considerable length and which is provided with longitudinal slits 16 therethrough. This part of the quill is provided with means for clamping the same to the rod. In the form indicated in the drawings, this means consists of a nut 17 adapted to screw up along a screw-thread on the quill and hold the split end of the quill firmly against the rod so as to clamp it thereon in any desired position. It will be seen that this is a very simple adjustment and that the only thing necessary is to loosen the nut, move the quill and knife along the rod in either direction and then tighten it, thus doing away with the necessity of screwing the clamping device the whole length of the adjustment. At another point on the quill the latter is provided with an integral collar 18 beyond which is shown a screw-threaded end 19 having a nut 20 thereon for holding the knife. The knife is secured to the quill by

placing it thereon as indicated in Fig. 2 and clamping it against the collar 18 by means of the nut 20. Then the whole device is adjusted in the manner above described in a very simple and efficient way.

It will be observed that the rods are provided with scales 21 which preferably are double and having their zero points at the center but they may be arranged in any other desired manner along the rods.

The description above given applies to all forms of the invention shown and it will be understood that all of the knives may be adjustable as shown in Fig. 1 or that one of them may be adjustable and the other secured in fixed position on the guide rod, as indicated in Fig. 4, by means of a set of collars or washers 22 and clamping nuts 23.

In the form of the invention shown in Fig. 1, the two knives of each set are connected with the two knives of the other set by a pair of parallel guide rods 12 and in order to properly position these two rods, an additional adjusting device is provided in the form of a third guide-rod 25 formed substantially like the others and passing through openings 26 therein. The guide rods 12 are adjustable along, and held on, the third guide rod 25 by means of quills 27 similar to those above described but having a cylindrical portion 28 extending into the perforation 26 and held therein by a screw 29 or in any other convenient manner. The rod 25 preferably has a scale similar to the scale 21. It will be seen from this construction that the quill is held firmly with respect to the guide rod 12 and can be adjusted along the guide rod 25 as required. The quill 27 has a collar 30 similar to the collar 18, and the split end is provided with an adjusting device shown as in the form of a nut 31 as in the other case. This quill provides a long bearing like the other one so as to hold the parts properly in position. The part of the device which has just been described is used when four or more separate knives or cutters are employed but is not necessary in the form shown in Fig. 4 in which only two knives or cutters are used to form the entire blank. In both these figures the device is shown as having just cut out a blank 40 or 41.

While I have illustrated and described certain forms of the invention, I am aware that many modifications may be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction, but

What I claim and desire to secure by Letters-Patent is:—

1. In a cutting die for envelop machines, the combination with two knives or cutters, of a smooth surfaced guide-rod along which said knives or cutters freely slide toward and

from each other, and means for clamping them to the guide-rod at any point thereon.

2. In a cutting die for envelop machines, the combination with a set of knives or cutters, of a guide-rod therefor having a uniform surface along which one of them is freely movable toward and from the other, and means for frictionally clamping said movable knife with respect to the rod at any point thereon.

3. In a cutting die for envelop machines, the combination with a set of knives or cutters, of a guide-rod therefor having a uniform smooth surface, means whereby the distance of said knives from each other along said rod may be adjusted, and means for frictionally clamping one of said knives with respect to said rod, said rod having a scale thereon whereby the distance of said knives from each other can be read directly upon the rod.

4. In a cutting die for envelop machines, the combination with a set of knives or cutters, of a guide rod therefor having a uniform smooth surface, a quill connected with one of said knives and freely slidable along said guide-rod whereby a long bearing is furnished for holding the knife with respect to said rod, means for frictionally clamping said quill to the rod to hold the same at any point thereon, and means for clamping a knife or cutter to the guide at right angles thereto.

5. In a cutting die for envelop machines, the combination with a smooth cylindrical guide-rod, of a slit quill thereon having a long bearing on the rod, means for securing a knife or cutter to said quill at right angles to the axis thereof, and means for clamping said quill against the rod at any point thereon to securely fix the knife or cutter in adjusted position.

6. In a cutting die for envelop machines, the combination with a smooth cylindrical guide rod, of a slit quill thereon having a long bearing on the rod, means for securing a knife or cutter to said quill at right angles to the axis thereof, means for clamping said quill against the rod at any point thereon to securely fix the knife or cutter in adjusted position, said last named means comprising screw-threads on the slit quill, and a nut threaded on said screw-threads and adapted to tighten the quill when screwed upon said threads.

7. In a cutting die for envelop machines, the combination of a smooth - surfaced straight guide-rod, a quill mounted to slide freely thereon having longitudinal slits extending inwardly from one end thereof and provided with a screw-thread extending along said slits, said quill also having a fixed collar near the end of said slits and a screw-thread on the opposite side thereof, a nut on the last named screw-thread adapted to clamp a knife or cutter against the collar at

right angles to the axis thereof without binding the same on the rod, and a second nut on the slit end of the quill for clamping the quill in any adjusted position to the rod.

5 8. In a cutting die for envelop machines, the combination of two sets of knives or cutters, a pair of parallel guide-rods connecting said knives or cutters, means mounted to
10 freely slide on each rod for holding said knives or cutters thereon, said means comprising a slit quill having a long bearing on the rod, and means for tightening each of said quills against its rod, whereby said quill may be fixed in adjusted position at any
15 point along the rod, and whereby said knives may be fixed at right angles to the axis of the quills.

9. In a cutting die for envelop machines, the combination of two sets of knives or cutters, a pair of parallel guide-rods connecting
20 said knives or cutters, means mounted to freely slide on each rod for holding said knives or cutters thereon, said means comprising a slit quill having a long bearing on the rod, means for tightening each of said
25 quills against its rod, means for securing a knife thereto, and means for adjustably connecting said rods.

10. In a device, of the character described,
30 the combination of two sets of knives or cutters, a pair of parallel guide-rods connecting them, means mounted to freely slide on each rod for holding said knives or cutters thereon, means for tightening each of said
35 holding means against its rod whereby said knives or cutters may be fixed in adjusted position at any point along the rod, and means for adjustably connecting said rods, said last named means comprising a third
40 guide-rod and means thereon for engaging each of the first two guide-rods and frictionally clamping them to the third guide rod at any point thereon.

11. In a device of the character described,
45 the combination of two sets of knives or cutters, a pair of parallel guide-rods therefor, means for tightening each of said knives or cutters against its rod whereby said knives or cutters may be fixed in adjusted position
50 at any point along the rod, and means for adjustably connecting said rods, said means comprising a third guide-rod passing through the other two guide-rods at right angles thereto, a pair of quills each fixed to one of
55 the first named guide rods and forming a long bearing on the third guide rod to keep the parts in alinement, and means for clamping the quill against the third guide-rod to securely hold it in position.

60 12. In a device of the character described,

the combination of two sets of knives or cutters, a pair of parallel guide-rods connecting said cutters, means for tightening each of said knives or cutters against its rod whereby said knives or cutters may be fixed
65 in adjusted position at any point along the rod, a third guide-rod passing through the other two guide-rods at right angles thereto, a pair of quills each fixed to one of the first named guide rods and forming a long bearing
70 on the third guide rod to keep the parts in alinement, and means for clamping the slit quill against the third guide-rod to securely hold it in position.

13. In a device of the character described,
75 the combination of a pair of guide rods each having a perforation therethrough near the center thereof, a third guide-rod passing through said perforations at right angles to the first two guide rods, means for adjustably
80 mounting cutters or knives upon the first two guide-rods on opposite sides of the third guide-rod, and means for adjustably connecting both of said guide-rods with the third guide-rod.
85

14. In a device of the character described, the combination of a pair of guide-rods each having two quills slidably mounted thereon and furnishing long bearings, cutters or knives adapted to be secured to said quills,
90 means for clamping the quills frictionally on the rods, a third guide-rod located transversely to the other two, a pair of quills mounted on the first named guide-rods and freely slidable on the last one, and means for
95 clamping the last named quills to the third guide-rod.

15. In a device of the character described, the combination of a pair of guide rods each having a perforation therethrough near the
100 center thereof, a third guide-rod passing through said perforations at right angles to the first two guide rods, means for adjustably mounting cutters or knives upon the first two guide-rods on opposite sides of the
105 third guide-rod, and means for adjustably connecting both of said guide-rods with the third guide-rod, each of said guide-rods having a scale on each end thereof with the zero point at the center, whereby the distance of
110 the two rods from each other and of the cutters or knives from each other may be measured directly on said rods.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing
115 witnesses.

GEORGE H. HASLOP.

Witnesses:

A. E. FAY,
C. FORREST WESSON.