

Fig. 1.

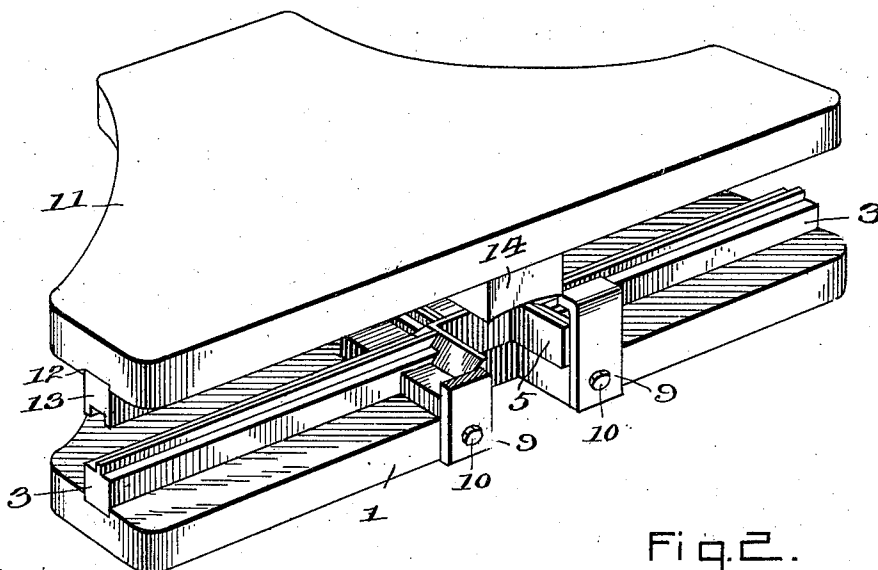


Fig. 10.

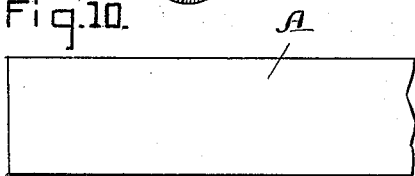


Fig. 11.

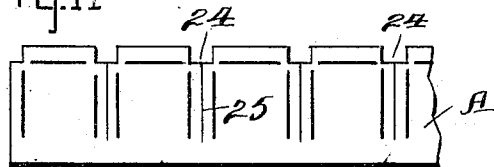


Fig. 12.

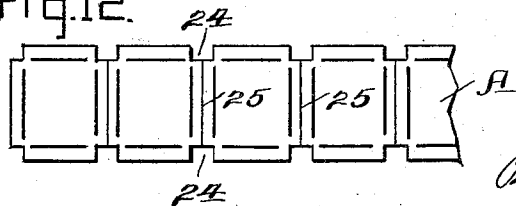
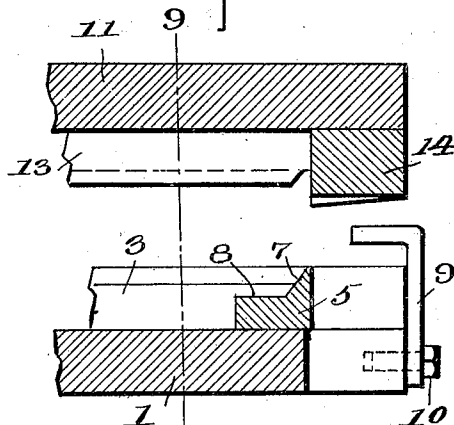


Fig. 2.

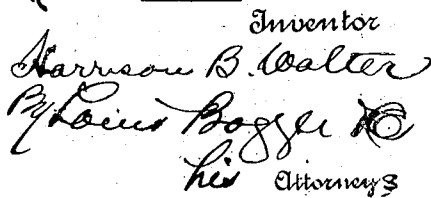
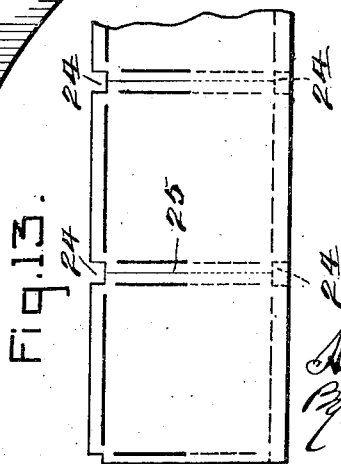


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COMBINATION DIES FOR PUNCHING, CREASING, AND FINISHING THE HEADS OF SOLID
END PAPER BOXES.

Patented June 1, 1920.

3 SHEETS--SHEET 2.



H. B. WALTER.
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APPLICATION FILED DEC. 20, 1917.

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3 SHEETS—SHEET 3.

1,342,239.

Fig. 5.

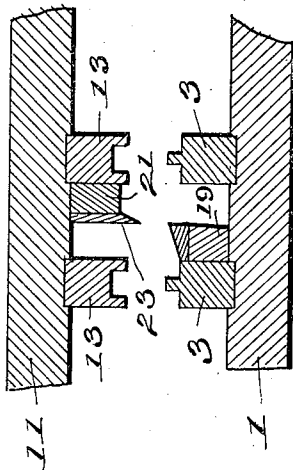


Fig. 6.

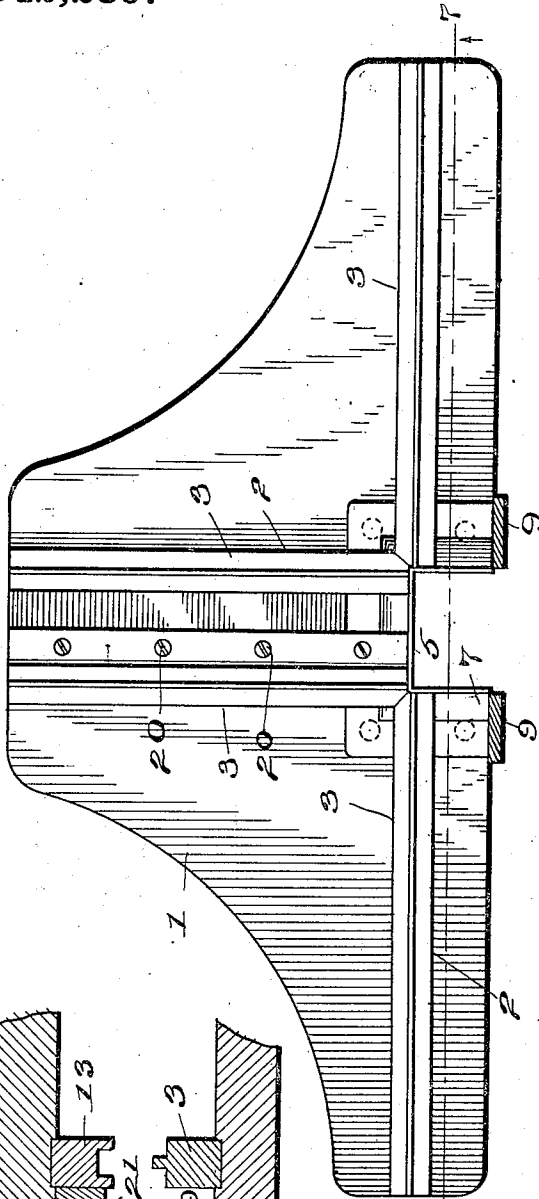


Fig. 7.

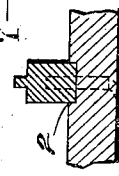
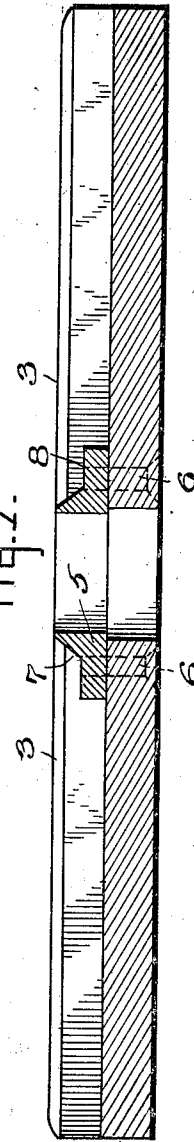


Fig. 8.



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UNITED STATES PATENT OFFICE.

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COMBINATION-DIES FOR PUNCHING, CREASING, AND FINISHING THE HEADS OF
SOLID-END PAPER BOXES.

1,342,239.

Specification of Letters Patent.

Patented June 1, 1920.

Application filed December 20, 1917. Serial No. 208,077.

To all whom it may concern:

Be it known that I, HARRISON B. WALTER, a citizen of the United States of America, residing at Danville, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Combination-Dies for Punching, Creasing, and Finishing the Heads of Solid-End Paper Boxes, of which the following is a specification.

This invention relates to an improvement in the combination of dies for punching, creasing, cutting and finishing the heads of solid end paper boxes.

The object of the invention is to produce a set of dies and cutting knives and creasing bars which are so arranged as to cut and stamp into a finished condition, box heads of minimum and maximum size and all intermediate sizes without changing the form of the dies or parts thereof.

The still further object of the invention is to produce bolsters that are capable of attachment to any standard press machine.

Still further objects and advantages will become apparent as the description proceeds when taken in connection with the accompanying drawings forming a part of this specification, in which:

Figure 1 is a perspective view of the dies and cutters showing the relation of the parts.

Fig. 2 is a bottom partial transverse vertical section therethrough.

Fig. 3 is a plan view of the under side of the top bolster showing the cutters and the arrangement of one set of creasing bars.

Fig. 4 is a section on line 4—4 of Fig. 3.

Fig. 5 is a transverse section through the creasing bars shown in Fig. 3.

Fig. 6 is a plan view of the bottom bolster showing the other portion of the cutters and the arrangement of the other set of creasing bars.

Fig. 7 is a section on line 7—7 of Fig. 6.

Fig. 8 is a transverse section through the creasing bar shown in Fig. 6.

Fig. 9 is a transverse section on line 9—9 of Fig. 2, showing the relation of the cutting mechanism and creasing bars.

Fig. 10 is a broken section of a blank strip before it has been operated upon.

Fig. 11 is a plan view of a portion of the

strip after the first operation of punching, creasing and cutting, when in the act of making the smallest size heads.

Fig. 12 is a plan view of the same strip, after the punching, creasing and cutting has been completed and the strip having been cut transversely thereof as indicated by lines 25.

Fig. 13 is a similar view showing the blank strip of maximum size illustrating in full lines the punching, creasing and cutting in the first operation and showing in dotted lines the punching, cutting and creasing as effected in the second operation.

The bolster 1, has channels 2—2 in which the creasing bars 3—3 are removably positioned which are preferably held in position by means of screws 4—4.

At the center of one edge of the bolster 1, a cutter anvil 5, is located and firmly held in place by means of the screws 6—6. This cutter anvil 5, is provided with a beveled portion 7, and squared portion 8, and the creasing bars 3, are so shaped at their inner ends as to snugly fit the beveled surface 7, and squared portion 8, and to be reinforced thereby. Strippers 9—9 are adjustably fastened to the edge of the bolster 1, by suitable means such as bolts 10—10.

Superposed above this bolster 1, is a top bolster 11, provided with channels 12—12, in which the creasing bars 13—13, are received and fastened by means of screws 13'—13'. A die or punch 14, having a concave surface 15, and vertical side edges 17—17 is fastened by suitable means 18—18, to the bolster 11, and is adapted to register with the cutting edge of the anvil 5.

Arranged between the creasing bars 3—3 on the bolster 1 is a suitable cutting mechanism which preferably consists of a shearing block 19, extending transversely of the bolster, the full length of the creasing bar 3, and of such a width as to extend to the center of the space between the creasing bars, being secured in place by bolts 20. 21, indicates a supporting block located between the upper creasing bars 13—13 arranged on the under side of the upper bolster being secured thereto by bolts 22. Detachably secured to the inner edge of this block is a cutting knife 23. This knife and supporting block are of such a width as to cause the

knife edge to register with the inner edge of the shearing block 19, when the bolsters are brought together thereby severing the strip being punched and creased into pre-determined lengths.

These dies are so arranged as to crease the head in four directions from the rectangular cut 24, and partially cut it transversely thereof as indicated by lines 25 in Fig. 11. Should the strip passing through be of the minimum size the strip is creased practically the full width transversely thereof, it being understood that at the second operation, as shown in Fig. 12, when the rectangular cut 24, and longitudinal crease are effected, the transverse creasing bars overlap or recrease the transverse lines and the strip is completely cut transversely on line 25.

As disclosed in Fig. 13, a strip of approximately twice the size of the minimum strip is punched, creased and cut by the same dies. In this case the wider strip is punched, creased and cut in the first operation as disclosed in solid lines in Fig. 13, after which it is passed through the machine and punched, creased and cut on the opposite half as indicated in dotted lines in Fig. 13. It is obvious that by this arrangement any size strip intermediate of the minimum and maximum size may be similarly treated by the same set of dies. Thus, it is seen that at each operation one-half of a head for solid end boxes is fully completed.

I claim:

1. The combination of a top and bottom bolster, and having alined longitudinal and parallel transverse creasing means on both, and punching means on said bolsters, consisting of longitudinal and transverse parallel cutting edges and arranged at the intersection of said longitudinal and transverse creasing means, the longitudinal and transversely parallel edges of the punching means

alining with the alined longitudinal and parallel transverse creasing means.

2. The combination of a top and bottom bolster, having longitudinal and transverse creasing means on both, punching means on said bolster arranged at the intersection of said longitudinal and transverse creasing means, and cutting means arranged transversely of the bolster at the rear of said punching means.

3. The combination of a top and bottom bolster, having alined longitudinal and parallel transverse creasing means on both, and punching means on said bolster arranged at the intersection of said alined longitudinal and parallel transverse creasing means, and cutting means arranged transversely of the bolsters between said parallel creasing means.

4. The combination of a top and bottom bolster, having longitudinal and transverse creasing bars on both, a cutting anvil on one of said bolsters, a punching means arranged upon the other bolster adapted to register with said cutting anvil and cutting knives arranged transversely of the bolster between the transverse creasing bars.

5. The combination of a top and bottom bolster, having longitudinal and transverse creasing means on both, a cutting anvil on one of said bolsters, a punching means on the other bolster adapted to register with said cutting anvil, cutting knives arranged transversely of the bolster between the transverse creasing means and a stripper on one of said bolsters comprising an annular portion adapted to be fastened to said bolster and to prevent the material being operated upon from clinging to the punch of the other bolster.

In testimony whereof I affix my signature.

HARRISON B. WALTER.