May 29, 1934. M. W. CANFIELD 1,960,475

MECHANISM FOR FORMING BOOK COVERS

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Fig. 1

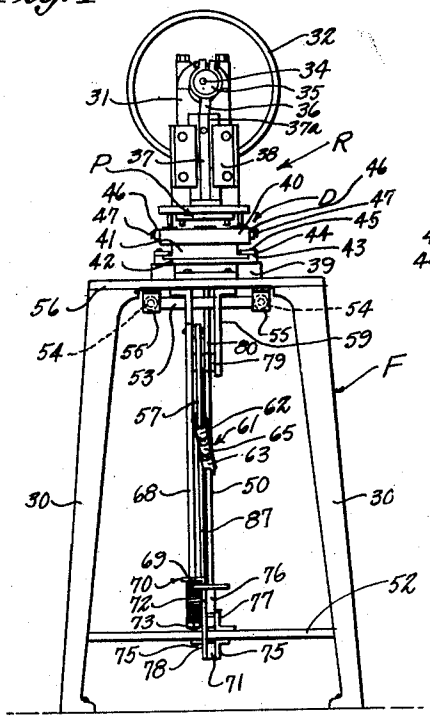


Fig. 2

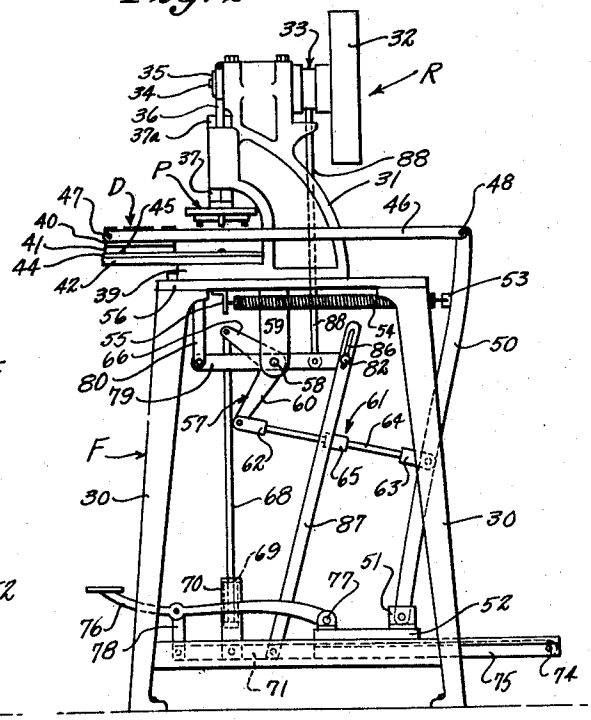
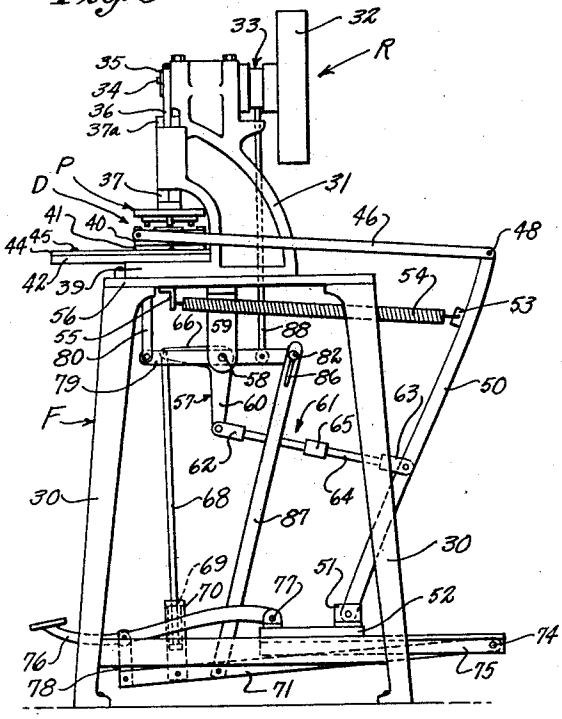


Fig. 3



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MECHANISM FOR FORMING BOOK COVERS

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Fig. 10

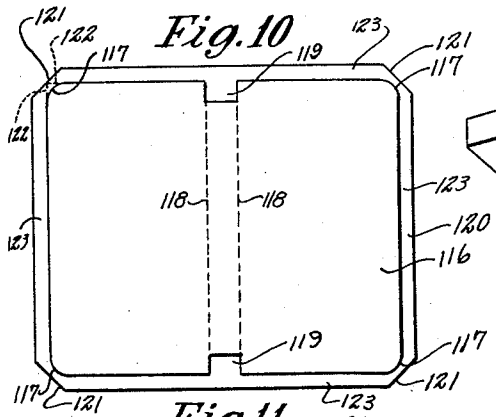


Fig. 11

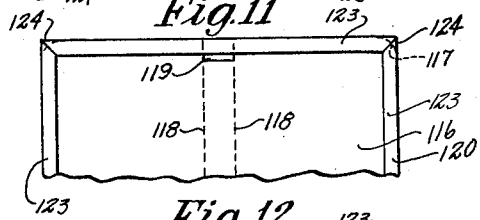


Fig. 12

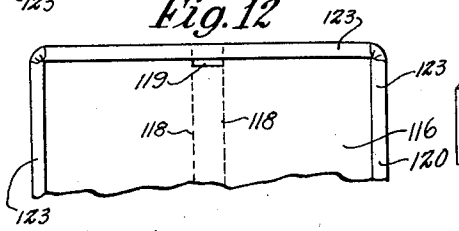


Fig. 5

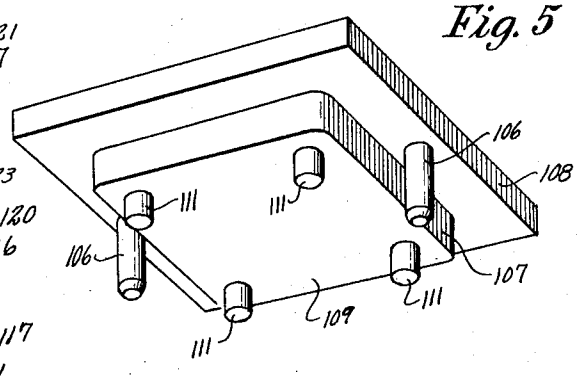


Fig. 6

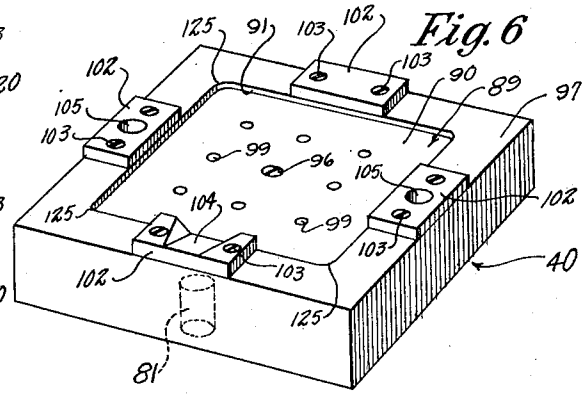
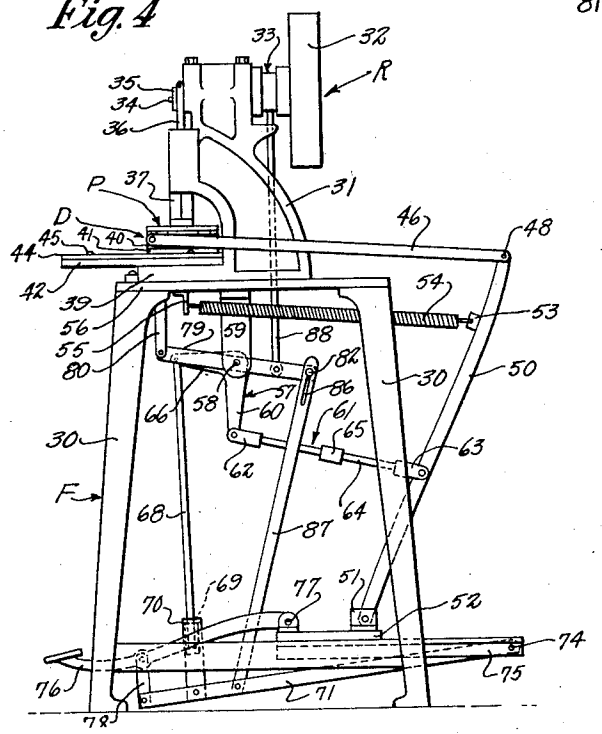


Fig. 4



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MECHANISM FOR FORMING BOOK COVERS

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Fig. 7

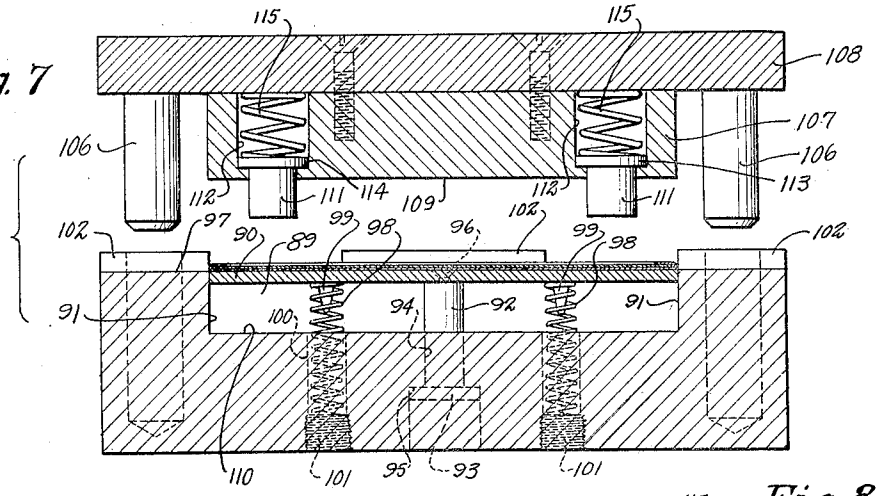


Fig. 8

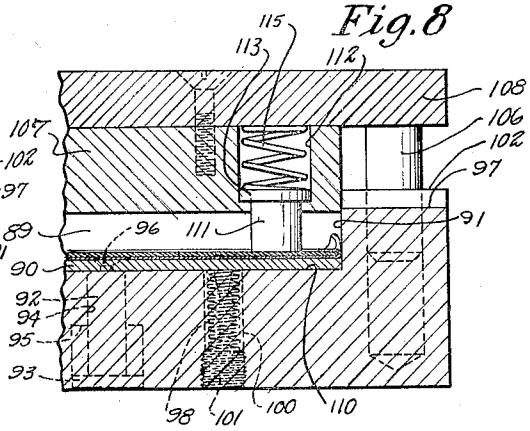


Fig. 9

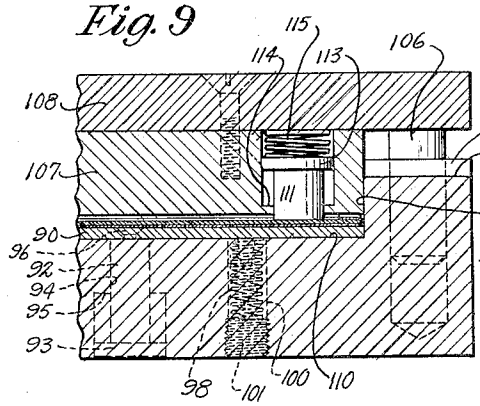
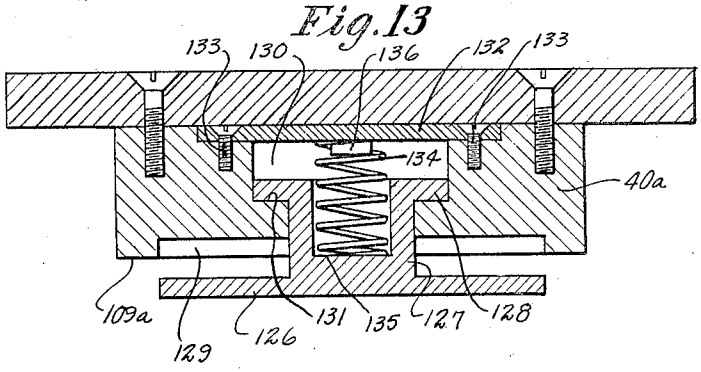


Fig. 13



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UNITED STATES PATENT OFFICE

1,960,475

MECHANISM FOR FORMING BOOK COVERS

Melville W. Canfield, Los Angeles, Calif., assignor to Coast Envelope & Leather Products Company, Los Angeles, Calif., a corporation of California

Application July 3, 1931, Serial No. 548,532

22 Claims. (Cl. 154—41)

My invention relates to devices for fabricating book covers and the like, and, more particularly described, is a mechanism adapted to form the corners of such articles by folding the corner-portions to predetermined configurations.

Without implying any limitation as to the applicability of my invention, I shall, for the purpose of complete disclosure and to illustrate the principles involved, confine my description to specific mechanisms for forming rounded corners on the edges of book covers, it being understood that all modifications and variations in form and structure that properly come within the scope of my appended claims are included in my invention.

Book covers are commonly manufactured by covering one side of a suitably shaped backing of cardboard with a slightly larger sheet of gummed fabric, such as cloth or imitation leather, the covering sheet being folded at its border over the edges of the cardboard. In the case of covers having rounded corners, the time required to assemble these two elements by hand is substantially longer than in the case of square corners, because of the care and attention required to dispose the fabric in a smooth fold along the curved edge-portion of the cardboard.

An object of my invention, in this application of its principles, is to apply machinery to the formation of such rounded folds, thereby rapidly producing book covers of curved corner configuration at a minimum cost differential over plain rectangular covers.

A further object of my invention is to provide compact well flattened edge folds at the corners of finished appearance and to obtain uniformity throughout a manufacturing lot.

My mechanism may be broadly described as comprising a die-block having a recess conforming to the desired configuration of a finished article, means to force an unfinished article flat-wise into the recess, thereby turning up a flange along the edge of the confined article, and means movable against the flanged article when so confined to fold and stamp the flange inward against the article.

Such a mechanism may be conveniently incorporated in a punch-press construction, preferably with the die-block slidingly mounted on the bolster plate of the press and adapted to be moved out of register with the coacting punch on the ram for the purpose of feeding the press. A feature of my invention, as so incorporated, is a manually operated interlocking control mechanism arranged to reciprocate the die-block into and out of registry with the coacting punch, to secure the die-block in such registry, and to operate the clutch of the press, all in a proper sequence. Interlocking members safeguard the sequence and prevent tripping the clutch when the die-block is out of registry.

Other objects and advantages of my invention will best be understood from the detailed description to follow, considered with the accompanying drawings in which:

Fig. 1 is a front view of a punch-press incorporating my invention;

Fig. 2 is a side elevation showing the parts in their normal inoperative positions;

Fig. 3 is a similar view showing the die moved into registry with the punch;

Fig. 4 is a like view in which the clutch has been tripped and the punch engages the die;

Fig. 5 is a perspective view of the bottom of the punch;

Fig. 6 is a perspective view of the top of the die;

Fig. 7 is a central, vertical section through the punch and die, showing the normal relation of the parts;

Fig. 8 is a similar but fragmentary view showing the relation of the parts as the punch approaches the bottom of the recess;

Fig. 9 is a similar view showing the punch at the bottom of the recess;

Fig. 10 is a plan view of a cardboard laid on a gummed sheet of fabric;

Fig. 11 is a similar but fragmentary view indicating how the edges are folded to the configuration of a rectangle preparatory to placing the cover in my mechanism;

Fig. 12 is a similar view indicating the finished edge of the cover after it leaves my device; and

Fig. 13 is a vertical sectional view indicating the construction of a modified form of punch.

In Figs. 1 to 4, a frame, generally designated F, constructed in the form of a table having four legs 30, supports a small punch-press generally designated R. The punch-press is of a type well known in the art, having a body casting 31. On the rear end of the punch-press shaft is a belt-driven fly-wheel 32 and a clutch 33, of any of the well known types, by means of which the shaft may releasably engage the fly-wheel. An eccentrically positioned spindle 34 extends longitudinally from the forward end of the shaft to serve as a crank, on which an eccentrically bored bushing 35 is revolvably mounted. This bushing is adjustably embraced by the upper end of

connecting rod 36. The lower end of connecting rod 36 is pivoted between the upper ends 37*a* of bifurcated ram 37. The ram reciprocates vertically in guides 38, and carries at its lower end a punch generally designated P.

The operation of such a press is well known. When the clutch 33 is tripped, causing the shaft to be engaged by fly-wheel 32, connecting rod 36 reciprocates the ram and punch vertically.

Above bolster plate 39 of the press, a die, generally designated D, is slidingly mounted to reciprocate into and out of registry with punch P. This sliding die consists of a die block 40, which may be assembled to a suitable base plate 41. Plate 41 is adapted to slide on a plate 42, which is mounted on bolster plate 39. Plate 41 slides backward and forward between guides 43 integral with plate 42, and is confined to the space between the guide bars by overhanging guide cleats 44, which are suitably attached to guides 43 by bolts 45. Plate 42 and the above named guiding elements extend forward from the body 31 of the press a sufficient distance to permit the die being displaced forward a convenient distance for changing material.

As previously mentioned, I prefer to incorporate in my invention an interlocking control mechanism for reciprocating the die into and out of registry with the punch and for operating the clutch of the press. Two bars 46 pivoted at their forward ends by bolts 47 to the sides of die blocks 40, extend in parallel relation substantially horizontally to the back of the machine where their opposite ends are tied together by a lateral rod 48. Rod 48 extends through an aperture in the upper end of a bent bar 50, which bar is pivoted at its lower end in suitable brackets 51. These brackets are mounted on the upper surface of a shelf 52, carried by the four legs 30 of the frame. Fixed to the bent bar 50 near its upper end is a cross-bar 53 to the ends of which are secured the ends of substantially parallel contractile coiled springs 54, the forward ends of the springs being secured by corresponding brackets 55 suitably attached to the bottom of a frame plate 56, near its forward edge.

A bell crank 57 is pivoted on a lateral rod 58, the rod being supported by spaced brackets 59, which are in turn attached to the bottom of frame plate 56. One arm 60 of the bell crank is connected to arm 50 by means of a suitable connecting member 61. This connecting member may consist of clevises 62 and 63 pivoted to the bell crank 60 and arm 50 respectively, and an intermediate rod 64 having an integral nut 65. This rod is threaded in opposite directions on its opposite ends so that by turning nut 65 the length of the connecting member 61 may be adjusted as desired. Upper arm 66 of the bell crank is pivotally connected at its end to the upper end of a rod 68. The lower end of rod 68 extends through a suitable aperture in a flange 69, formed on the end of a link 70, which link serves to operatively connect rod 68 to a control lever 71. An expansible helical spring 72 surrounds the lower end of rod 68 and is confined between flange 69 on link 70 and a suitably adjustable nut 73 on the lower end of rod 68, thus forming a yielding connection between the two members. Control lever 71 is pivoted by a suitable bolt 74 between two spaced and opposed sections of angle iron 75 fastened to the bottom of shelf 52. These sections of angle iron serve both as brackets and as guide members for lever 71. Manual operation of control lever 71 may be provided for by mounting a pedal 76 to a suitable bracket 77 on the top of shelf 52, and operatively connecting the pedal with the control lever by means of a suitable link 78.

Springs 54 are of such strength that normally arm 50 is drawn forward placing die block 40 at the forward limit of its range of movement. The normal positions of the remaining parts are shown in Figs. 1 and 2. When pedal 76 is manually depressed, thereby depressing control lever 71, the linkage of the members above described causes arm 50 to be swung backward, thereby bringing the die under the punch.

Pivoted to lateral rod 58 is a rocker arm 79 on the forward end of which is pivotally mounted a vertical plunger 80 which is slidingly journalled in and vertically guided by a bore provided through frame plate 56 and bolster plate 39. This bore permits plunger 80 to move upward into engagement with a suitable complementary bore 81 in die-block 40, thus locking the die block against horizontal movement. Plunger 80 and bore 81 in the die block are so positioned that when the two are engaged, die D is in perfect registry with the punch P. A headed pin 82 on rocker arm 79 engages an extended slot 86 on the upper end of a bar 87, the lower end of the bar being pivotally connected to control lever 71. Rocker arm 79, intermediate its pivot point and headed pin 80, is pivotally connected to a clutch rod 88 which extends upward to operatively connect with clutch 33.

Slot 86 is of such a longitudinal extent that control lever 71 may be displaced to move the die into registry with the punch before the downward movement of bar 87 affects rocker arm 79. As indicated by a comparison of Figs. 3 and 4, additional downward displacement of control lever 71 causes plunger 80 to move towards die-block 40. If the die is not in perfect registry with the punch, plunger 80 is blocked in this upward movement, thereby preventing clutch rod 88 being moved to an effective extent; if, however, the die is in perfect registry to permit admitting plunger 80, rocker arm 79 may be further revolved to a point where clutch rod 88 trips clutch 33 to operate the press.

Die-block 40 has a suitable recess 89 conforming to the desired configuration of a finished article, the shape being, in this case, a rectangle having rounded corners. The recess is spanned by a slightly smaller plate or pad 90 of substantially the same configuration, which is adapted to move flatwise towards the bottom of the recess.

In order to provide for such movement and to maintain the desired perpendicular relation of the plate to the sidewalls 91 of the recess, the plate may be centrally mounted on a stem 92 having a flanged end 93, which stem is adapted to reciprocate in a vertical bore 94 in the bottom of the die-block. This bore is counter-bored to form shoulders 95 presented to the stem head 93 to limit the upward movement of the stem. Stem 92 may be attached to plate 90 in any suitable manner, as by a screw 96 engaging a suitable complementary aperture in the plate. Preferably the upper limit of the plate motion is in substantially the same plane as the upper face 97 of the block, and yielding means is provided to normally support the plate in this plane, such as a plurality of helical expansile springs 98 acting between the bottom of the plate 90 and the die-block 40. The upper ends of these springs may be engaged by depending pins 99 mounted on the bottom of plate 90 for that purpose, and

the bottoms of the springs may seat in bores 100 provided in the bottom of die-block 40, the ends of the springs resting upon plugs 101 screw-threadedly closing the bottoms of the bores.

Four guide cleats 102, one on each of the four sides of aperture 89, may be attached to the face 97 of the die-block by suitable screws 103 for the purpose of locating unfinished book covers on plate 90. The cleat on the front side is cut away to provide a wide tapered slot 104 as a further convenience in feeding material. At the right and left of recess 89 suitable bores 105 extend through the guide cleats into the guide block in positions to receive complementary guide pins 106 which depend from the punch for the purpose of guiding the punch proper or punch block 107 into the recess.

Punch block 107 is preferably of substantially the same configuration as recess 89 and is dimensioned to enter the recess with a sliding fit. Both punch block 107 and guide pins 106 are suitably carried by a punch plate 108, which in turn is attached to the ram 37 of the press.

One or more members yieldingly extend from the leading face 109 of the punch towards recess 89 for the purpose of first securing an unfinished cover against plate 90, and then forcing plate 90 towards the bottom 110 of the recess in advance of the movement of leading face 109 to that bottom, the yielding members being contracted into the punch block 107 at the end of such downward movement of the punch. In the preferred form of my invention such means takes the form of four short pins 111, one near each corner of block 107, which are slidingly mounted in bores 112 to be completely withdrawn therein. The pins have inner flanged heads 113 which engage shoulders 114 of the bores to limit the extent of their downward protuberance, and the pins are normally held extended by expansile helical springs 115 which are confined in compression between the heads 113 of the pins and punch plate 108. It is essential to the proper functioning of the mechanism that the combined strength of springs 115 be substantially greater than the combined strength of springs 98, in order that plate 90 may be completely depressed before pins 111 are forced into punch block 107.

As illustrating the operation of my mechanism, one of the procedures in fabricating a book cover in which it may be utilized will now be described. The article to be processed is a small bank book.

Fig. 10 shows a flat piece of cardboard 116 cut to the desired configuration, having rounded corner portions 117. The cardboard is intermittently scored along lines 118 and notched at 119 on two opposite sides for the purpose of subsequently forming the back portion of the cover. Cardboard 116 is applied to the gummed surface of a slightly larger rectangular sheet of fabric 120, which has its corners cut to form 45° diagonal corner edges 121. Preferably the corner edges 121 are so spaced from the rounded corners 117 of the cardboard that they include the intersection of imaginary lines 122 extended from the edges of the cardboard.

The exposed margins 123 of the fabric are then folded over the edges of the cardboard, as shown in Fig. 11. The result is a semi-finished cover of rectangular configuration in which the extreme corner portions 124 are unsupported by the cardboard.

The semi-finished cover is placed upon plate 90 of the die with its fabric side down. The cover lies with each of its four sides contiguous to a guide cleat 102 and rests wholly upon plate 90 except for the extreme unsupported corner portions 124 which overhang the rounded corners of the plate to rest upon face 97 of the die-block.

When the semi-finished cover is first placed in the machine the parts of the mechanism are in the positions indicated by Fig. 2. The operator depresses foot pedal 76, thereby moving the die into registry with the punch, as indicated by Fig. 3. Continued movement of the foot pedal causes plunger 80 to enter the die-block bore 81 and further motion of the foot pedal trips the clutch, causing the punch to descend into engagement with the die, the position of the parts then being as indicated by Fig. 4.

As the punch descends, guide pins 106 enter guide bores 105 to insure absolute registry of the punch. Extended pins 111 press against the cover near each corner, thereby securing the cover against the plate 90, and, since the combined strength of springs 115 is substantially stronger than the combined strength of springs 98, continued descent of the punch forces plate 90 to the bottom of recess 89, as indicated by Figs. 7 and 8. As the plate is depressed the straight sides of the cover merely slide along the vertical walls 91 of the recess, but the unsupported corner portions 124 which extend beyond the rounded corner edges of plate 90 are caught on the rounded corner portions 125 of the rim of the recess and bent upward as indicated in Fig. 8. When plate 90 reaches the bottom 110 of the recess, further descent of the punch forces pins 111 into bores 112 against springs 115 and punch block 107 makes an impact against the cover. Since the punch block fits tightly against the vertical walls of the recess and flanged corner portions 124 of the cover are confined by those walls, the corner portions 124 can only fold inward under the impact, as indicated by Fig. 9, thereby resulting in the finished, neatly folded corners shown in Fig. 12. It will be noted that sufficient space is provided between the wall 91 and extended pins 111 to permit the upturned flange to curl or bend inward from wall 91 as shown in Fig. 8. Such action favors the folding function of the punch. As the punch block 107 moves out of recess 89 the reverse of the movements indicated by Figs. 7, 8 and 9 takes place, plate 90 rising to the top of the recess with the finished cover. Clutch 34 is, of course, of the non-repeating type common to punch presses, so that the punch remains at the upper limit of its range of reciprocation until clutch rod 88 is raised and again lowered. The operator removes pressure from the foot pedal, spring 72 then serves to raise control lever 71 until plunger 83 clears aperture 85 in die-block 40, whereupon the pair of springs 54 move the die-block forward to the position shown in Fig. 2, and, in doing so, moves pedal 76 upward to its normal position.

Fig. 13 indicates a modification of a punch in which a single yieldingly extended member is substituted for the four pins 111. This member consists of a plate 126 having an integral rectangular stem 127, which, at its inner end, is provided with a flanged portion 128. This plate is of smaller area than plate 90, in order that it may contact the cover inside of the folded marginal portion 123, shown in Fig. 11. The leading face 109a of the die block has a suitable recess 129 to receive plate 126. Stem 127 reciprocates in a suitable rectangular aperture 130 which is reduced to form shoulders 131 to coact with flange 128 in limiting the downward movement of the plate 126. The inner end of aperture 130 is blocked by a

suitable plate 132 secured to die block 40*a* by screws 133. A single helical expansible spring 134 of substantially the combined strength of springs 98 of my preferred form seats in a suitable recess 135 in the upper end of stem 127 and at its upper end embraces a guide lug 136 on the lower side of plate 132. This modified punch operates in the same manner as my previously described preferred form, and no additional explanation is deemed necessary.

Having described my invention, I claim:

1. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover; a plate of similar configuration associated with the die-block and adapted to move into the recess, said plate normally being yieldingly spaced from the bottom of the recess; a punch movable into the recess; and one or more members yieldingly extending from the leading face of the punch and adapted to press the plate into the recess in advance of the punch and to be retracted by continued movement of the punch towards the bottom of the recess.

2. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover; a plate of similar configuration associated with the die-block and adapted to move into the recess, said plate normally being yieldingly spaced from the bottom of the recess; guide means associated with the die block to locate a cover on the plate; a punch movable into the recess; and one or more members yieldingly extending from the leading face of the punch and adapted to press the plate into the recess in advance of the punch and to be retracted by continued movement of the punch towards the bottom of the recess.

3. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover; a plate of similar configuration associated with the die-block and adapted to move towards the bottom of the recess; yielding means normally holding the plate spaced from the bottom of the recess; a punch movable into the recess; one or more members retractably extending from the leading face of the punch towards the plate; and yielding means normally holding the members so extended, the second named yielding means being substantially stronger than the first named means.

4. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover; a plate of similar configuration associated with the die-block and adapted to move towards the bottom of the recess, guide means associated with the block to locate an unfinished cover on the plate; yielding means normally holding the plate spaced from the bottom of the recess; a punch movable into the recess; one or more members retractably extending from the leading face of the punch towards the plate; and yielding means normally holding the members so extended, the second named yielding means being substantially stronger than the first named means.

5. A mechanism for forming the edges of a book cover or the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover; a plate of similar configuration associated with the die-block, and adapted to move towards the bottom of the recess; means associated with the die-block and plate to maintain the plate constantly perpendicular to the side walls of the recess; yielding means associated with the die-block normally holding the plate near the rim of the recess; a punch movable into the recess; and means associated with the punch to depress the plate in advance of the inward movement of the punch.

6. A mechanism of the class described, having in combination: a punch; a complementary die movable laterally into and out of registry with the punch; a clutch-trip to control the punch; and means associated with the die and the clutch-trip adapted to block the clutch-trip when the die is out of registry with the punch.

7. A mechanism of the class described, having in combination: a punch; a complementary die movable laterally into and out of registry with the punch; a clutch-trip to control the punch; and interlocking means adapted to block the clutch-trip when the die is out of registry, said means being movable when the die is in registry to a position securing the punch and permitting operation of the clutch trip.

8. A mechanism of the class described, having in combination: a punch; a complementary die movable laterally into and out of registry with the punch; a clutch-trip to control the punch; and interlocking means adapted to block the clutch-trip when the die is out of registry, said means being movable when the die is in registry to a position both securing the punch and releasing the clutch trip.

9. A mechanism of the class described, having in combination: a punch; a complementary die movable laterally into and out of registry with the punch; manually operable means to move the die laterally; a clutch-trip to control the punch, said clutch-trip being operatively connected with said manual means; and a securing member operatively connected with said manual means and movable thereby from a position blocking the clutch-trip to a position freeing the clutch-trip and securing the die in registry with the punch, and vice versa.

10. A mechanism of the class described, having in combination: a punch; a complementary die movable laterally into and out of registry with the punch; manually operable means to move the die laterally; a clutch-trip to control the punch, said clutch-trip being operatively connected with said manual means; and a securing member operatively connected with said manual means and movable thereby from a position blocking the clutch-trip to a position securing the die in registry with the punch, said member being adapted to operate the clutch when moving to the second position.

11. A mechanism of the class described, having in combination: a punch; a complementary die movable laterally into and out of registry with the punch; a securing member adapted to hold the die in registry with the punch; a clutch-trip to control the punch; and manually operated means operatively connected with the die, securing member, and clutch-trip, said means being adapted to move the die into registry with the punch, to move the securing member into engagement with the die, and to actuate the clutch-trip in sequence, said securing member being positioned, when out of engagement with the die, to block the clutch-trip.

12. A mechanism of the class described, having

in combination: a punch; a complementary die movable laterally into and out of registry with the punch; a securing member adapted to hold the die in registry with the punch; a clutch-trip to control the punch; and manually operable means operatively connected with the die, securing member, and clutch-trip and adapted to move progressively to effect in sequence: the shifting of the die into registry with the punch, the engagement of the die by the securing member, and the actuation of the clutch-trip, said die being adapted when out of registry with the punch to limit movement of the securing member and thereby to limit movement of the manual means to prevent actuation of the clutch-trip.

13. A mechanism for forming the edges of a book cover or the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover; a plate of similar configuration normally yieldingly supported near the rim of said recess and movable towards the bottom of the recess; a punch adapted to move perpendicularly into the recess; and means associated with the punch to depress the plate in advance of the punch.

14. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at the corners relative to an unfinished cover; a plate of similar configuration normally yieldingly supported near the rim of said recess and movable towards the bottom of the recess, said plate being adapted to receive an unfinished cover; means to press a cover against the plate, thereby moving the plate into the recess and forming corner flanges on the edge of the cover; and a punch of substantially the same cross-sectional configuration as the recess, said punch being adapted to move into the recess perpendicularly to the plate, thereby folding said flanges over against the cover.

15. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at the corners relative to an unfinished cover; a plate of similar configuration normally yieldingly supported near the rim of said recess and movable towards the bottom of the recess, said plate being adapted to receive an unfinished cover; guide means associated with the die-block to locate an unfinished cover on the plate; means to press a cover against the plate, thereby moving the plate into the recess and forming corner flanges on the edge of the cover; and an impact member movable into the recess in sliding contact with the side walls thereof to fold and pound said corner flanges against the cover.

16. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at the corners relative to an unfinished cover; a plate similar in configuration associated with the die-block and adapted to move into the recess; means associated with the die-block and the plate to maintain the plate constantly perpendicular to the side walls of the recess; yielding means associated with the die-block normally holding the plate near the rim of the recess; means to press a cover against the plate; means to depress the plate carrying the cover into the recess, thereby forming corner flanges on the cover; and an impact member adapted to move perpendicularly against the depressed plate, thereby folding and pounding said corner flanges against the cover.

17. A mechanism for forming the edges of a book cover and the like, compriisng, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at the corners relative to an unfinished cover, a plate similar in configuration associated with the die-block and adapted to move into the recess; yielding means associated with the die-block to press the plate away from the bottom of the recess; means associated with the die-block to limit the outward movement of the plate near the rim of the recess; means to press a cover against the plate; means to depress the plate carrying the cover into the recess, thereby forming corner flanges on the cover; and means movable through the open end of the recess perpendicular to the bottom of the recess to fold said corner flange over against the cover when the plate is so depressed.

18. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at the corners relative to an unfinished cover; a plate similar in configuration associated with the die-block and adapted to move into the recess; means associated with the die-block and the plate to maintain the plate constantly perpendicular to the side walls of the recess; yielding means associated with the die-block normally holding the plate near the rim of the recess; guide means associated with the die-block to locate a cover on the plate; means to press a cover against the plate; means to depress the plate carrying the cover into the recess, thereby forming corner flanges on the cover; and a punch of substantially the same cross-sectional area and configuration as the recess adapted to move into the recess prependicularly to the plate thereby forcing said corner flanges over against the cover.

19. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at a corner relative to an unfinished cover; a punch of substantially the same cross-sectional configuration as the recess, adapted to move into the recess; a plate of similar configuration normally yieldingly supported near the rim of said recess, said plate being adapted to receive an unfinished cover; and means to press an unfinished cover against the plate to move the plate into the recess in advance of the punch, thereby forming a corner flange on the cover, said means comprising members yieldably extended from the punch in spaced relation to the planes of the sides of the punch, said punch being adapted to fold said corner flange against the cover.

20. A mechanism for forming the edges of a book cover and the like, comprising in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at a corner relative to an unfinished cover; means to force an unfinished cover completely into the recess, thereby forming below the rim of the recess an upturned corner flange on the edge of

the cover; and a punch of substantially the same marginal configuration as the recess adapted to reciprocate into and out of the recess perpendicularly to the plane of the rim of the recsss to fold said corner flange over against the cover.

21. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at a corner relative to an unfinished cover; means to force an unfinished cover completely into the recess, thereby forming below the rim of the recess an upturned corner flange on the edge of the cover, said means providing a space for the corner flange to curl inward from the wall of the recess; and a punch of substantially the same marginal configuration as the recess adapted to reciprocate into and out of the rcesss perpendicularly to the plane of the rim of the recess, to fold said cover flange over against the cover.

22. A mechanism for forming the edges of a book cover and the like, comprising, in combination: a die-block having a recess conforming to the configuration of a finished cover, said recess being of contracted configuration at a corner relative to an unfinished cover; a punch of substantially the same marginal configuration as the recess movable into the recess; and a member yieldingly extending from the leading face of the punch to enter the recess in advance thereof, said member being adapted to force an unifinished cover completely into the recess to form a corner flange on the edge of the cover, the punch being adapted to follow said member into the recess to flatten said corner flange against the cover.

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