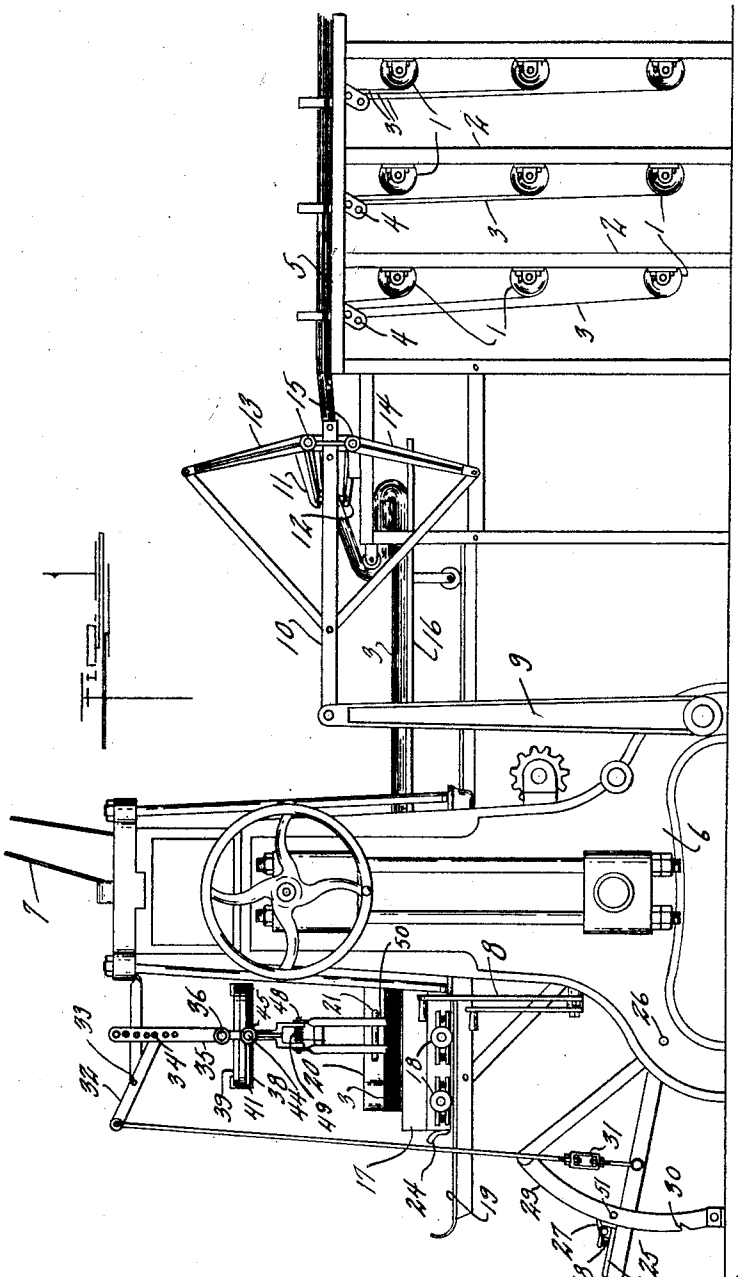
Oct. 29, 1929. M. McKINLEY 1,733,463

DIE PLACING AND SHIFTING

Filed Jan. 7, 1928 2 Sheets-Sheet 1



Inventor

Melvin McKinley

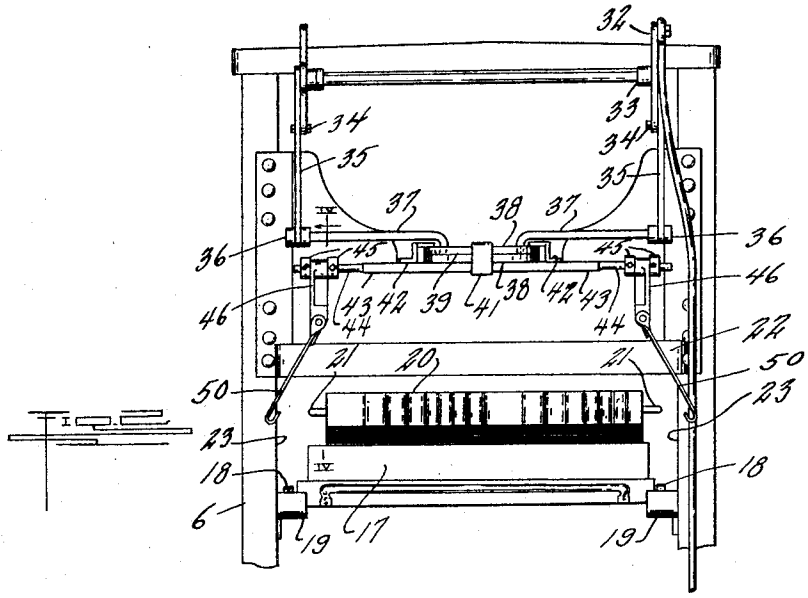
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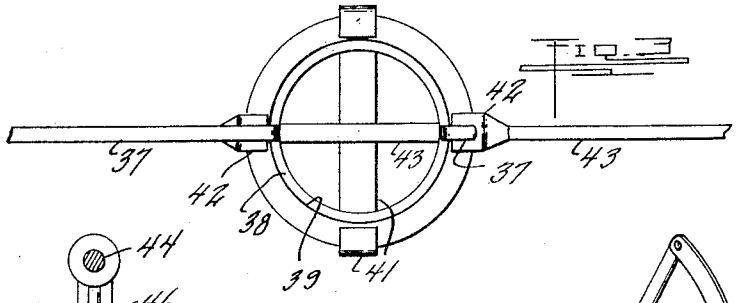
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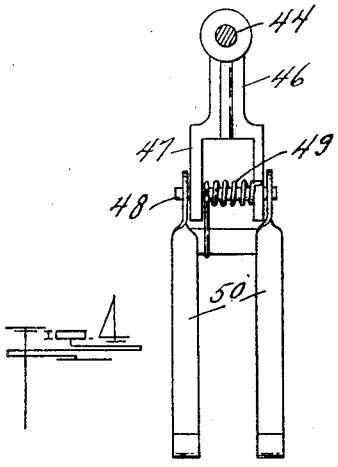
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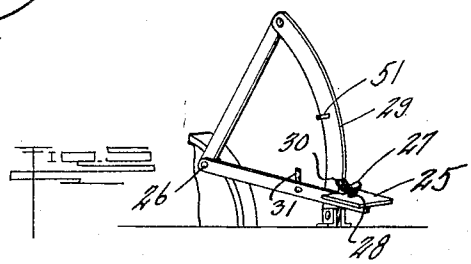
DIE PLACING AND SHIFTING

Filed Jan. 7, 1928 2 Sheets-Sheet 2









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Patented Oct. 29, 1929 1,733,463

UNITED STATES PATENT OFFICE

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DIE PLACING AND SHIFTING

Application filed January 7, 1928. Serial No. 245,250.

This invention relates to tool placing.

This invention has utility when incorporated in connection with dies for marking and especially cutting multiple fabric. The disclosure permits shifting a set of dies independently of the positioning or movement of the members of the press.

Referring to the drawings:

Fig. 1 is a side elevation, with parts broken away, showing an embodiment of the invention in connection with a press for a plurality of plies of fabric, say as in the manufacture of canvas gloves;

Fig. 2 is a fragmentary front elevation of the press of Fig. 1, showing the device in position to engage the dies;

Fig. 3 is a fragmentary plan view of the turn-table portion of the carrier for the dies;

Fig. 4 is a fragmentary section on the line IV—IV, Fig. 2, looking in the direction of the arrow to show the grapple; and

Fig. 5 is a detail of the control pedal.

Rolls 1 as mounted in racks 2 have reaches 3 of fabric, as canvas, therefrom passing over guides 4 to deck 5 whereon the material 3 is superposed to provide a plurality of plies of such material in general horizontal extent.

Press 6 is shown as having power drive 7 with clutch control arm 8 for connecting in lever 9 with link 10 therefrom carrying opposing gripping jaws 11, 12. Accordingly, in the pull up or rocking action of this device, the jaws 11 engage the plurality of plies of fabric 3 and pull such from the deck 5 in the movement of the lever 9 toward the press 6. In the reverse travel of the lever 9, the jaws 11, 12, are rocked clear of the multiple ply fabric, by swinging of the levers 13, 14, upon fulcra 15. This structure is of the type shown in detail in United States Letters Patent to Zimmerman 1,034,555, Aug. 6, 1912. This pull up portion of the stock is placed on the table 16 having connection to press block 17 so that in pulling such block 17 to have its rollers 18 ride on track 19, the plurality of plies of stock 3 may be on the side of the press 6 away from the supply rack 2. Springs in the connection between the rollers 18 and the block 17 tend to space slightly the block 17 from the track 19. Accordingly, as press action occurs toward the block 17, the load on the block 17 is at once transferred from through the rollers 18 directly to the track 19.

In this position, gang die 20 with terminal handles 21 may be deposited on this multiple ply fabric 3 at the desired location on such fabric. The block 17 may then be shifted back into the press 6 with the table 16 movable toward the deck 5, in this instance forming a fold in the stock therebetween, although a straight line delivery of the stock may be had without departing from the invention of this disclosure.

As the die on the stock is in position in the press, the press control lever may be operated to effect the pressing or cutting operation upon the goods or fabric. This action is accomplished by controlling the cross head 22 to cause such head to descend, contact the die, and force such through the fabric and upon completion of this cycle of operations, cross head 22 ascends on guides 23 of the press 6 to clear the block 17. Handle 24 may then be grasped to pull the block 17 forward to the position shown in Fig. 1. Treadle 25 having fulcrum 26 is provided with detent 27 normally thrust by spring 28 into engagement with segment 29.

The normal position for this treadle 25 is depressed, with the detent 27 in seat 30 of the segment 29. At this position, adjustable link 31 is effective through lever 32 on fixed fulcrum 33 carried from the press frame 6 to operate this lever 32 through adjustable connection 34 for lifting links 35. The links 35 are connected to have pivotal connections 36 with inwardly extending arms 37 to ring 38 below ring 39, assembled by clips 41, 42, fixed with cross bar 43 in forming a turn-table support. The bar 43 terminates in rod portions 44 carrying collars 45 adjustable therealong for locating depending arms 46 providing forks 47 (Fig. 4) carrying pins 48 mounting torsion springs 49 acting to normally throw depending hooks or grapples 50 outward.

Accordingly, as detent 26 is kicked free of the seat 30, the load of the turn-table 38 and linkage acting on the lever 32 descend as the

treadle 25 rises to stop 51 on the segment 29. This locates the grapples 50 in proximity to the handles 21 of the die so that these hooks 50 may be swung to engage the handles 21 and the operator may then depress the treadle 25 to thus lift the die 20 clear of the material 3 and clear of the block 17.

If the multiple plies of fabric be not discharged from the die, the treadle 25 may have the detent 27 engage the seat 30 and the die 20 is suspended clear of the cut material. The suspended die may be thus anchored clear of the stop for the repetition of the feeding operation through the lever 9. This stock as fed over the table 16 onto the block 17 may be in position for a repetition of the cycle of operations.

To this end the die 20 may be given a resetting. In some instances there is advantage in reversing the die between settings. To this end the turn-table 38 permits the operator to swing the die on such as an axis while the suspended linkage allows this movement to be clear with interception by the cross head 22. As the location for the dies is established, the detent 27 may be rocked clear of the seat 30 the die 20 allowed to descend for the desired location on the stock. The operator may hold his foot on the treadle and control this descent to the rate desired with a swinging of the die either toward or from the plunger 22 in locating the die at the desired position for economical cutting of the fabric. At the positioning of the die, release of the treadle 25 allows such clearance for the hooks 50 that they may be swung clear of the die handles 21. Thereafter, the treadle may, if desired, be depressed to shift the linkage and turn-table with grapples upward for greater clearance as to the work.

The pressing of the die, even as a heavy grouping, may be with a degree of accuracy and independently of the press operation. The treadle control provides a leverage for the operator determining the elevation of the die while leaving the operator free as to both hands in locating the die. This is a feature in speed of cutting, together with economical cutting of the stock.

What is claimed and it is desired to secure by Letters Patent is:

1. In a press having a frame and a die, the combination of an elevator for the die, said elevator carried from said frame for facilitating die shifting and embodying grappling means, and means normally urging the grappling means away from each other and clear of the die.

2. In a press having a frame, a portable die adapted to be selectively positioned by the operator over the material in each dieing operation, and a table with which said die coacts, the combination of a pick-up for the die embodying grappling means, linkage suspension for the grappling means from the frame, and means carried by said grappling means for throwing said grappling means out of die contact when said die is placed upon the table.

3. In a press comprising a frame providing a pair of spaced columns forming guides, a block member therebetween, a press member directed by said guides, driving means for effecting relative movement between the members, and a portable die adapted to be selectively positioned by the operator over the material at each dieing operation, the combination with said press of actuating means carried by and between the columns and operable independently of the members for shifting the portable die toward and from the block member, and a lock for holding the means in die suspending position.

4. In a press comprising a frame, a plunger, an opposing block, a press drive for operating the plunger in a cycle of operations toward and from the block, a guide permitting shifting of the block clear of the plunger, and a portable die to be acted upon by the plunger toward the block, said die adapted to be selectively positioned by the operator over the material at each dieing operation, the combination with said press of an elevator carried by the frame and operable independently of the plunger and block for positioning the die as to the block, a stop limiting descent of the dies as suspended by the means, and a catch operable with the stop for maintaining the die in an additional suspended position.

5. In a press comprising a frame, a plunger, an opposing block, a press drive for operating the plunger in a cycle of operations toward and from the block, a guide permitting shifting of the block clear of the plunger, and a portable die to be acted upon by the plunger toward the block, said die adapted to be selectively positioned by the operator over the material at each dieing operation, the combination with said press of an elevator carried by the frame embodying grapple means, linkage suspension for the grapple means operable independently of the plunger and block for positioning the die as to the block, and a stop limiting the descent of the die as suspended by the means.

6. In a press comprising a frame, a plunger, an opposing block, a press drive for operating the plunger in a cycle of operations toward and from the block, a guide permitting shifting of the block clear of the plunger, and a portable die to be acted upon by the plunger toward the block, said die adapted to be selectively positioned by the operator over the material at each dieing operation, the combination with said press of an elevator carried by the frame embodying grapple means including a turn table, linkage suspension for the grapple means operable independently of the plunger and block for po-

sitioning the die as to the block, and a catch for the means for maintaining the die suspended.

7. In a press comprising a frame, a plunger, an opposing block, a press drive for operating the plunger in a cycle of operations toward and from the block, a pair of spaced guides permitting shifting of the block clear of the plunger, said frame providing a pair of columns for the guides, and a portable die to be acted upon by the plunger toward the block, said die adapted to be selectively positioned by the operator over the material at each dieing operation, the combination with said press of an elevator carried by the columns embodying grapple means including a turn table, a rock shaft mounted upon and extending between the columns and having terminal cranks, linkage suspension from said cranks to the turn table, and a treadle connected to the rock shaft for governing the movement of the grapple means as to the block.

In witness whereof I affix my signature.

MELVIN McKINLEY.