

Aug. 21, 1923.

W. J. BRENNAN

PRESS

Filed June 13, 1919

1,465,339

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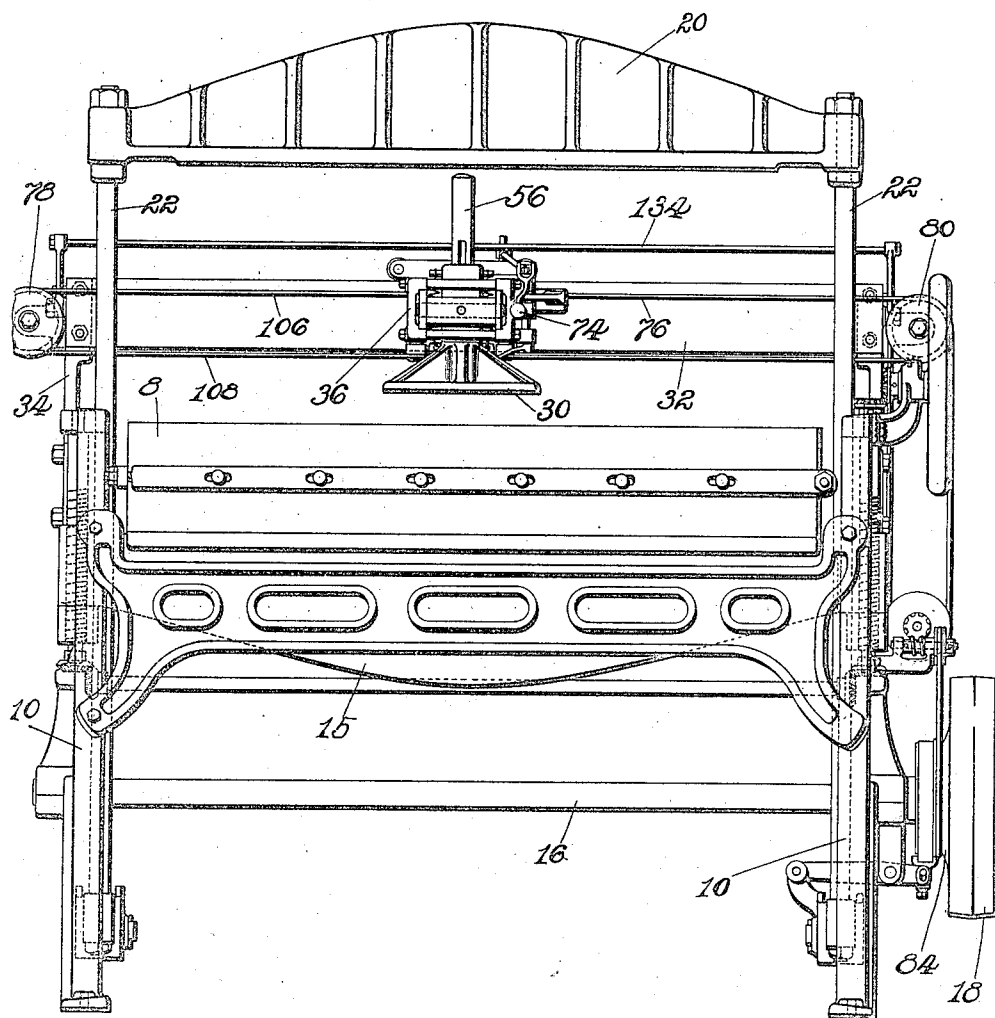


Fig. 1.

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Aug. 21, 1923.

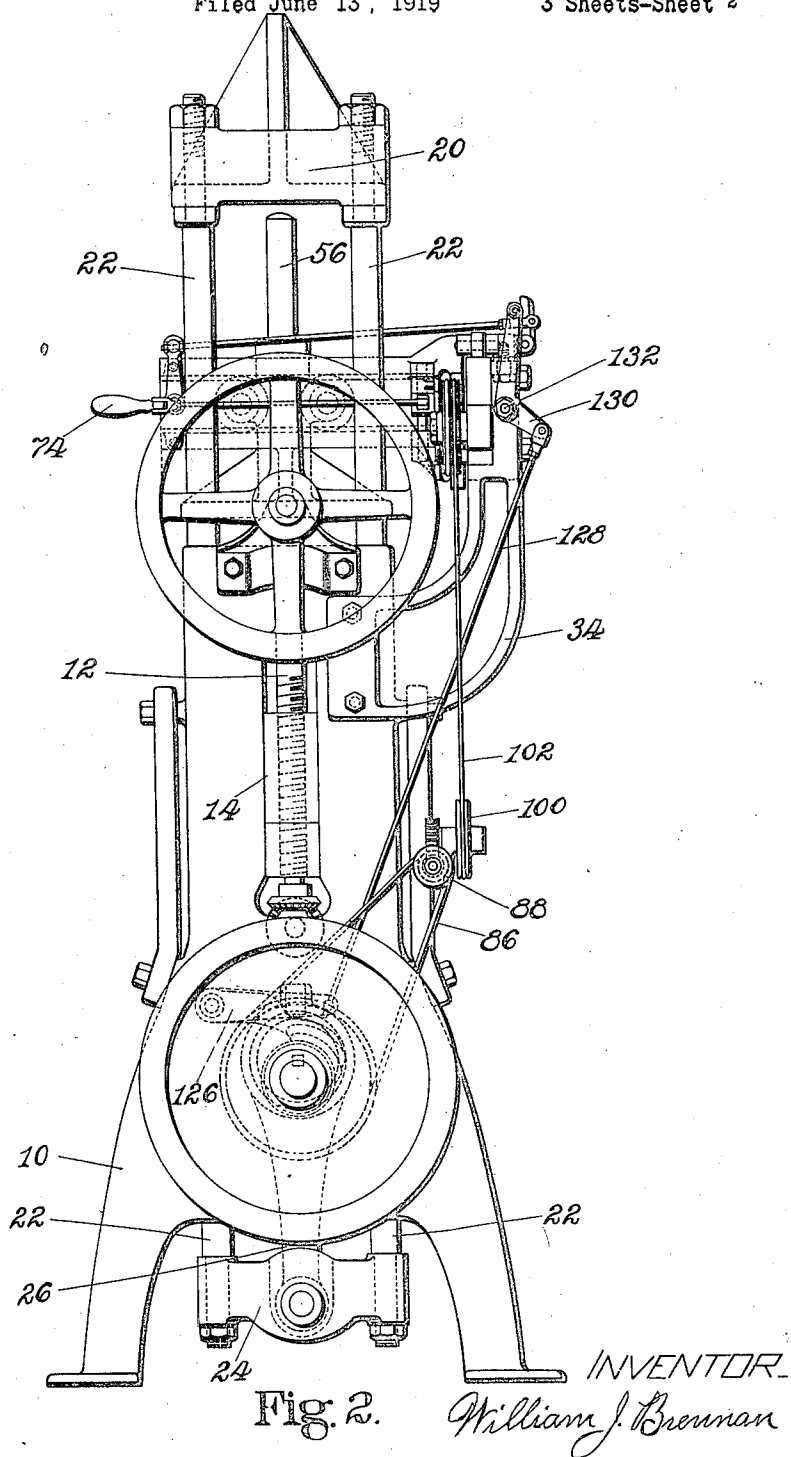
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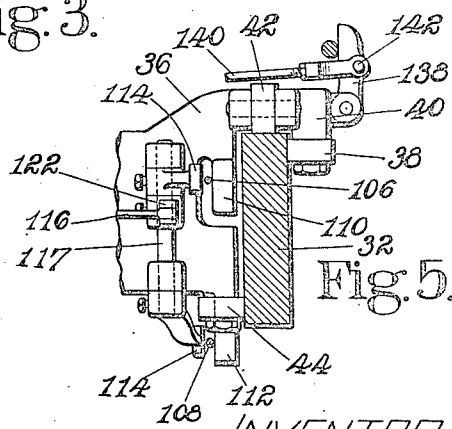
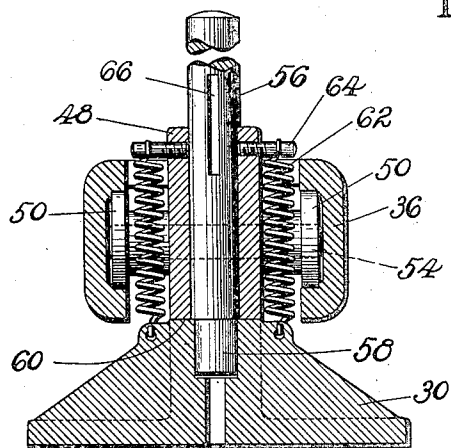
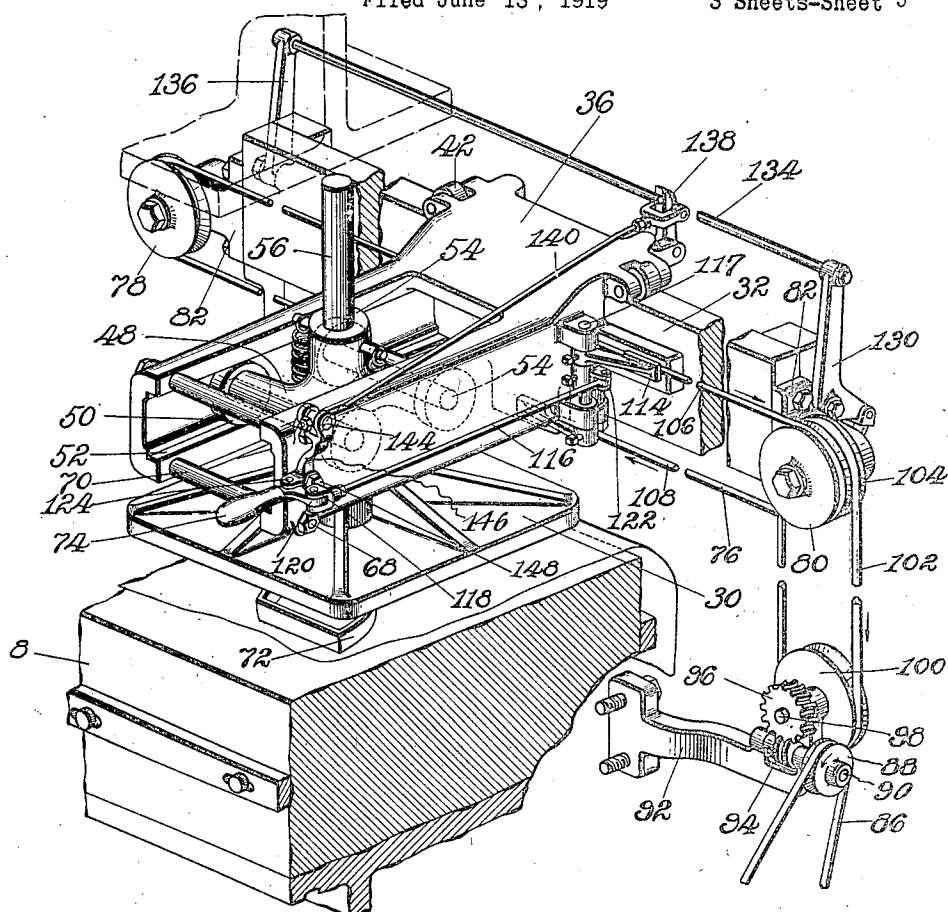
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3 Sheets-Sheet 3



INVENTOR

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UNITED STATES PATENT OFFICE.

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PRESS.

Application filed June 13, 1919. Serial No. 304,003.

To all whom it may concern:

Be it known that I, WILLIAM J. BRENNAN, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented certain Improvements in Presses, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to presses in which the presser members are not only relatively movable in the pressing direction but in which they are also relatively movable in another direction or in other directions; and especially to presses in which the presser members are relatively movable into different pressing relations to work preferably carried by one of said members. More particularly the invention relates to presses in which a presser member is movable into different pressure-applying relations to a bed upon which the work is supported.

In its illustrated preferred embodiment the invention is shown as applied to a press in which the bed is adapted to the support of work in the form of sheet material from which blanks may be cut by the use of freely movable dies.

An important object of the invention is the provision of improved means for supporting the presser member for movement in a plane parallel to the work supporting bed and also for movement toward and from the bed in pressure-applying operations, the construction and arrangement being preferably such that the presser member projects over the work supporting bed from a support at one side of the bed into the path of movement of the operating means for the presser member.

Another important object of the invention is to provide, in an organization designed to utilize freely movable dies in cutting operations upon sheet material, a presser member which is mounted for movement along its support at the rear of the work supporting bed and independently of its operating mechanism so that the latter mechanism bears no part of the weight of the presser member, a feature of marked importance having the advantages of economy of power

and increased durability of the machine organization.

In a practical embodiment of the invention, the movable presser member is mounted on a stationary support at the rear of the work supporting bed, the construction and arrangement being preferably such that the presser member is movable along the stationary support by power means under the control of the operator to attain co-operative relations successively with all portions of the work supporting bed.

It is a further object of the invention to provide a presser member with power means for moving it along its support to any desired position over the work supporting bed and with power means for causing pressure-applying movements of the presser member wherein a manually operable controlling means for both said power means is mounted on and movable with the presser member.

Other features of importance reside in an organization in which the movable presser member projects from its support on the frame of the machine into a space between the work supporting bed and the operating means for the presser member, the space referred to being of such dimensions that there is room for all necessary and desirable manipulation of the work and of the freely movable dies and for the access of light to the work.

Other objects and advantages of the invention will be apparent from the following detailed description and will be pointed out in the claims.

In the drawings—

Fig. 1 is a front view of one embodiment of the invention;

Fig. 2 is an end elevation of the machine shown in Fig. 1;

Fig. 3 is a detail perspective view partly in section showing the movable presser member and the means for moving the same relatively to the work supporting bed;

Fig. 4 is a section through the movable presser member showing the manner of mounting the same in its carriage, and

Fig. 5 is a detail view showing the clutch for connecting the presser member to the means for shifting the presser member relatively to the work supporting bed.

In the illustrative machine the lower presser member or work supporting bed 8 is supported adjustably upon the frame members 10 in the manner that is well-known in machines of this type, adjusting screw threaded members 12 being provided in co-operation with the extensions 14 from the bed support 15 to adjust the work supporting bed in a vertical direction. Mounted in the frame of the machine is a main shaft 16 carrying at one end the power pulley 18, connections being provided between the shaft and a cross head 20 to reciprocate the latter toward and from the work supporting bed 8, the connections comprising a pair of bars 22 at each end of the cross head fixedly attached thereto and connected in pairs at their lower ends by yoke members 24 to which there are pivoted pitmen 26 one adjacent to each end of the shaft, the said pitmen carrying the usual strap portions arranged in engagement in the usual manner with eccentrics on the shaft. The arrangement is preferably such as will hereinafter be explained that upon clutching the power pulley to the shaft the cross head 20 will be given one complete reciprocation toward and from the work supporting bed, the clutch being of the well-known one revolution type like that shown, for instance, in the patent to Arthur Bates No. 921,503, granted May 11, 1909.

The other presser member which is arranged to co-operate with the work supporting bed 8 is mounted independently of the cross head 20 and is arranged to project into the space between the cross head and the work supporting bed, the relationship of these parts being such, as clearly disclosed in Fig. 1 of the drawings, that room is provided for free manipulation of the work and of the dies in locating the latter relatively to the work and for access of sufficient light to enable the operator to position the dies as desired and in accordance with the characteristics of the material being operated upon. In the illustrated embodiment of the invention the presser member 30 is mounted upon a stationary support 33 extending longitudinally of one side of the work supporting bed and preferably in a plane above the bed, brackets 34 being arranged to hold the support 32 fixedly in position, the said brackets being attached to or made integral with the frame members 10 as clearly disclosed in Figs. 1 and 2 of the drawings. Means are provided for mounting the presser member 30 for movement along its support 32 so that the presser member may be located in any desired relation with respect to various portions of the cutting bed 8, the said means comprising preferably an arm 36 provided with means for slidably engaging surfaces on the supporting member 32. In order to reduce, as far as pos-

sible, any friction between the arm and its support there are provided rollers 38 (see Fig. 5) carried by an extension 40 of the arm, the said extension being arranged to engage over the upper edge of the support 32 and position the rollers 38 in engagement with the rear surface of the support or supporting bar 32. Other rollers 42 on the arm 36 engage the upper edge of the supporting bar 32 while still other rollers 44 on the arm engage the lower front surface of the supporting bar, the arrangement of the rollers being such that the arm 36 is slidably supported with respect to the bar 32 for movement at a minimum of friction between the supporting surfaces. The presser member 30 is movably supported in the arm 36, preferably in such manner that it may be moved toward and from the supporting bar 32 so that co-operation of the presser member 30 with all portions of the cutting bed transversely thereof is provided for and so that the presser member may be operated toward and from the work supporting bed to apply pressure upon dies located upon the work. The means for supporting the presser member 30 comprises, in the illustrated embodiment of the invention, a carriage 48 movable along the arm 36 in directions toward and from the supporting bar 32, the mounting for the carriage consisting of rolls or wheels 50 guided along passageways or tracks 52 in the forked or bifurcated portions of the arm 36. The wheels or rolls 50 are mounted at the ends of shaft 54 carried by the carriage 38 and are of such dimensions relatively to the tracks or passageways 52 as to be received rotatably therein for movement longitudinally of the passageways or tracks 52 but without movement in a vertical direction in the tracks. In other words, the rolls or wheels 50 fit snugly in the passageways or tracks 52 so that there is no movement vertically of the carriage 48 with respect to the arm 36 during the pressure-applying movements of the presser member 30. The said presser member is mounted for movement toward and from the work supporting bed through a sliding connection with the carriage 48, the illustrative construction comprising a tubular bearing portion 54 in the carriage 48 designed to receive slidably the shaft or post 56 to the lower end of which the presser member 30 is connected by being pressed upon or pinned to the reduced portion 58 of the post. Referring to the disclosure in Fig. 4, it will be observed that the presser member 30 has a shoulder portion 60 which is held normally in abutting relation to a plane surface on the under side of the carriage 48 by yielding means comprising preferably springs 62 attached at their lower ends directly to the member 30 and at their upper ends to pins or studs or other projections

64 located adjacent to the upper end of the carriage. The arrangement by which the shoulder 60 on the presser member 30 is moved into contact with the plane surface of the carriage after downward actuation of the presser member is an important detail of the construction by which the presser member is returned to a position of rest promptly and without oscillatory movements such as frequently occur with other constructions. While the post 56 is slidable vertically in the bearing 54 it is preferably prevented from rotative movement therein by any well-known means such for instance as a key or a stud projecting from the inside of the bearing into a slot such for instance as that shown at 66 in the post 56. As a detail of the construction of the arm 36 there are provided rods 68 carrying spacing members 70 and extending through the outer ends of the forked or bifurcated portions of the arm 36 so as to maintain the said portions against lateral movement relatively to each other during the strains incident to pressure applying operations. These securing rods 68 and spacing members 70 perform the additional function of limiting the movement of the carriage outwardly or toward the front of the machine as the carriage travels along the tracks or guideways 52. From an inspection of Figs. 1 and 2 of the drawings it will be observed that the post 56 extends upwardly beyond the carriage 54 almost into contact with the lower surface of the cross-head 20. It will be clear then that upon reciprocation of the cross-head the presser member 30 will partake of the downward movement of the cross-head through contact of the cross-head with the upper end of the post 56 and that a pressure applying operation of the presser member 30 will take place with respect to work upon the work supporting bed 8. If, for instance, it is desired to cut blanks from sheet material either of one layer or of a multiplicity of layers, the said material is placed upon the supporting bed 8 and a die 72 located thereon in the desired position. The presser member 30 is positioned over the die so that upon downward movement of the presser member 30 the die will be forced through the work to cut blanks therefrom. As heretofore stated, the presser member and its supporting arm 36 are movable along the supporting bar 32 so as to bring the presser member over any selected portion of the work supporting bed. The arrangement just described is such that the presser member may be moved away from over the die after a dieing-out operation to permit of the removal of the die and its relocation with respect to the work. Then the presser member may again be moved over the die and the operation repeated as above described by which other blanks are separated from the material. In moving the presser member longitudinally of the cutting bed the operator may make use of a handle 74 provided in an accessible and convenient location at the front end of the arm 36. Since the arm 36 is mounted upon its support by means comprising the rollers 38, 42 and 44, as above described, the shifting of the arm requires very little effort on the part of the operator. However, in order to relieve the operator of all manual labor with respect to the positioning of the presser members relatively to each other there is provided power means for moving the movable presser member, the construction and arrangement being preferably such that the operator can connect the presser member to the power means through the manipulation of the same handle 74 through connections hereinafter described.

The power means for moving the presser member to various positions over the work supporting bed is shown in the illustrative machine as comprising an endless cable 76 passing around pulleys 78 and 80 mounted upon stub shafts carried by brackets 82 adjacent to each end of the supporting bar 32, the brackets in the construction shown being mounted upon the ends of said supporting bar. The pulley 80 is constantly driven by connections from the main shaft 16 of the machine, the said connections comprising in the illustrative embodiment of the invention a pulley member 84 (Fig. 1) attached to or integral with the power pulley 18, a cable or pulley belt 86 passing around the pulley 84 and extending to and around a second pulley 88 fixedly secured to a shaft 90 carried by a bracket 92 extending from the frame of the machine. Driving connections are provided between the shaft 90 and the cable pulley 80 which comprise in the illustrated construction a worm gear 94 secured on the shaft 90 arranged in constant mesh with a gear 96 on a stub shaft 98 which carries fixedly attached thereto a pulley 100. Passing around pulley 100 is a cable or belt 102 by which power is transmitted to another pulley 104 integral with or attached to the pulley 80. If the connections just described be traced it will be found that the cable 76 is driven constantly in one direction by power derived from the constantly rotating power pulley 18 on the main shaft of the machine. If the presser member which is movable along its supporting bar 32 with which the cable 76 is arranged in parallelism be connected to the upper run or strand 106 of the cable 76 the presser member will be carried to the right in Figs. 1 and 3 and if the presser member be connected to the lower run or strand 108 of the cable 76 the presser member will be carried to the left as viewed in the same figures. Means is therefore provided for connecting the presser member to the con-

stantly running cable in such manner that the time and duration of the connection between the presser member and cable can be determined by the operator, the construction provided being, moreover, of such nature as to require the very minimum of effort on the part of the operator in effecting the connections for moving the presser member in either direction as desired. In the illustrative embodiment of the invention the runs or strands of the cable are arranged to pass transversely across the supporting arm 36 closely adjacent to portions 110, 112 of the arm, the construction being such that the portions 110, 112 serve as clamping members rigidly attached to or integral with the arm. The co-operating clamping member is provided in the construction shown with two clamps or clamping members 114 mounted preferably on a vertically arranged shaft 117 to extend, in opposite directions therefrom so that upon oscillation of the shaft one clamping member 114, carried thereby will be caused to cooperate with the stationary clamping member 110 on the arm while upon oscillation of the shaft in the other direction the other clamping member 114 will be caused to clamp the other run of the cable against the stationary clamping member 112 opposite the same, the arrangement being such that the presser member may be caused to move in the desired direction by selectively operating the clutches or clamping members to grip either the upper or lower run or strand of the constantly moving cable 76. Normally the clamping members 114 are so disposed with respect to their co-operating clamping members 110 and 112 that the runs or strands of the cable pass freely between the clamping members and thus the presser member 30 remains stationary until the proper clutch or clamping member is operated by the operator. The means for enabling the operator to operate the clutch or clamping members comprises a connection between the clutch and the handle 74 hereinbefore described. This connection may consist of a rod 116 pivotally attached at 118 to a projection 120 on the handle 74, the other end of the link or rod 116 being also pivotally attached to an arm 122 extending laterally from the shaft 117. Upon inspection of Fig. 3 of the drawings, it will be seen that upon turning the handle 74 about the vertical pivot 124 the shaft 117 will be rocked or oscillated in such manner as to cause one or the other of the clamping members 114 to engage with and press a strand or run of the cable 76 against the co-operating and relatively stationary clamping member on the arm 36. It is to be noted, moreover, that the handle 74 is moved by the operator in the direction that is desired to move the presser member 30. Thus, for instance, movement of the handle 74 to the right as viewed in

Fig. 3 of the drawings will cause the upper clamping member 114 to press the upper run or strand 106 of the cable against the co-operating clamping member 110, thus moving the arm 36 and its presser member 30 toward the right, that is, in the same direction in which the handle 74 is moved by the operator. Again, movement of the handle 74 toward the left in the same figure will oscillate the shaft 117 in such manner as to cause the lower clamping member 114 to press the lower run or strand 108 of the cable against the relatively stationary clamping member 112 and thus effect movement of the arm 36 and the presser member 30 toward the left. In order to stop the movement of the presser member along the cutting bed it is necessary only to release the pressure on the handle 74, thus freeing the cable from the grip of the clutch or clamping members.

When the presser member has been moved into position above the die, the machine is operated to effect a pressure applying operation of the presser member upon the die, means being provided for causing actuation of the clutch mechanism whereby the power pulley 18 is clutched to the main shaft 16 to cause one reciprocation of the movable cross-head 20. Machines of this type have ordinarily been provided with a treadle mechanism for tripping the clutch just referred to. For this purpose, however, applicant has provided improved means for tripping the machine when the presser member has been brought into the desired operative relation with respect to the die and the cutting bed, the said means comprising preferably connections from the clutch on the main shaft to the handle 74 so that the operative by proper manipulation of a single manually-controllable means, can cause the presser member to be moved in the desired direction from and toward a position over the die and then through the same means cause a tripping of the machine to effect a pressure applying movement of the presser member. The connections between the handle 74 and the clutch tripping lever 126 (Fig. 2) comprise a link 128 pivotally connected at its lower end to said lever 126 and pivotally connected at its upper end to one arm of a bell crank 130 (Figs. 2 and 3) pivoted at 132 to the upper end of the bracket 34. The other arm of the bell crank 130 carries one end of a rod 134, the other end of which is mounted in an arm 136 pivoted to and extending upwardly from the bracket 34 at the other end of the machine and at the opposite end of the supporting bar 32. Pivotaly mounted on the rear end of the arm 36 is a lever 138 (Figs. 3 and 5) which extends upwardly substantially above the line of the rod 134 and normally in contact with said rod so that upon actuation of the

lever 138 the rod 134 will be moved to operate the bell crank 130. Means is provided for operating the lever 138 comprising preferably a link 140 pivotally connected at 142 to the lever 138 and at its other end having a pivotal connection at 144 to an upward extension 146 of the handle 74. The construction is such that as the handle 74 is depressed to turn the handle about its pivot 148, the lever 138 is operated through the connecting rod 140, movement of the lever 138 forwardly resulting in the oscillation of the bell crank 130 which, through the connections described, lifts the clutch lever 126 to cause the tripping of the clutch on the main shaft of the machine. It will be clear that the sliding connection between the lever 138 and the rod 134 is arranged to secure the tripping of the clutch upon manipulation of the handle 74 wherever the presser member may at the time be located longitudinally of the cutting bed.

In operating with the machine, the work in the form of sheet material is drawn over the work supporting bed usually from the rear of the machine and a die is placed upon the work in the desired location, the presser member being readily movable to a location out of the field of manipulation of the die and being as readily movable into position over the die so that a pressure applying movement of the presser member may be initiated to drive the die through the work. In moving the presser member from and into position over the die the operator makes use of the handle 74 by the proper manipulation of which the presser member may be located as desired and the actuation of the presser member secured by tripping the clutch through another movement of the same handle. After a single actuation of the presser member the handle 74 may be so operated as to cause movement of the presser member away from over the die so that the latter may be readily relocated upon the work and so that the work may be inspected if desired preliminarily to the repositioning of the die upon the same.

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

1. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, means at the rear of and in a plane above the bed providing a support, a presser member movably supported upon said support and projecting forwardly therefrom to overhang the bed, and means independent of the first-mentioned means for actuating the presser member toward and from the die wherever located on the work supporting bed.

2. In a machine of the class described, a freely movable die adapted to be positioned

on material to be cut, a work supporting bed, means at the rear of the bed providing a support, a presser member movably mounted upon said support and projecting forwardly therefrom to overhang the bed, means for guiding the presser member so that its operative face is maintained parallel to the upper face of the die, and means contacting with the presser member from above for actuating the presser member toward and from the die wherever located on the work supporting bed.

3. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a supporting member at one side of the bed, a presser member movably mounted on the supporting member and arranged to be positioned on the die when located selectively on different portions of the bed, and means supported and operated independently of the supporting member for causing the presser member to move toward and from the work supporting bed.

4. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a stationary supporting member in a plane above the bed, a presser member movably mounted on the supporting member and arranged to be positioned selectively at the will of the operator over different portions of the bed, and means, located in a different vertical plane from that of the supporting member, for causing the presser member to move toward and from the die wherever located on the work supporting bed.

5. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a stationary support at the rear of the bed and extending longitudinally thereof, a presser member slidably mounted upon said support for movement lengthwise thereof, and reciprocable means independent of the presser member for actuating the presser member toward and from the die wherever located on the work supporting bed.

6. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a stationary support at the rear of the bed and extending longitudinally thereof, a presser member slidably mounted upon said support for movement lengthwise thereof, and reciprocable means for actuating the presser member toward and from the die wherever located on the work supporting bed.

7. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a stationary cross-head at one side of the bed, a reciprocable cross-head, and a

presser member mounted on said stationary cross-head and arranged to be operated by the reciprocable cross-head to apply pressure on the die wherever located on the work supporting bed.

8. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a stationary cross-head in a plane above and at the rear of the bed, a reciprocable cross-head above the bed, and a presser member mounted on said stationary cross-head and arranged to be operated by the reciprocable cross-head to apply pressure on the die wherever located on the work supporting bed.

9. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a support at the rear of the bed, an arm movably mounted upon said support and projecting forwardly over the bed, a presser member movably carried by said arm, the construction and arrangement being such that the presser member may be positioned over the die wherever the latter may be located on the bed, and means for moving said presser member toward and from the bed.

10. In a machine of the class described, a work-supporting bed, a supporting bar at the rear of the bed, an arm slidably mounted upon said supporting bar and projecting forwardly over the bed, a presser member slidably carried by said arm, and means for causing said presser member to strike a blow upon a die supported on the work supporting bed.

11. In a machine of the class described, a work supporting bed, a presser member movable over said bed into any selected position, means at the rear of the bed and extending longitudinally thereof for supporting said presser member for straight line movement along the bed, and power means operative at the will of the operator for moving the presser member into selected position.

12. In a machine of the class described, a work supporting bed, a presser member movable over the bed into any selected position, stationary means at one side of the bed for supporting the presser member, continuously moving means for moving the presser member, and means under the control of the operator for connecting the presser member directly to said moving means to move therewith.

13. In a machine of the class described, a bed, a support extending along one side of the bed, a presser member projecting forwardly from the support and movable over the bed, continuously operating power means traveling in opposite directions and arranged adjacent to the presser member, and means under the control of the operator for

connecting the presser member selectively to said power means to move the presser member in either direction as desired.

14. In a machine of the class described, a work supporting bed, a presser member movable over said bed, means for supporting the presser member, reciprocable means for actuating the presser member, power means provided with portions moving in opposite directions longitudinally of the bed, and means under the control of the operator for connecting the presser member selectively to the oppositely moving portions of said power means so that said presser member may be caused to move in the direction desired.

15. In a machine of the class described, a work supporting bed, a presser member movable over the bed into any selected position, stationary means at the rear of the bed for supporting the presser member, continuously operating power means for moving the presser member along said supporting means, and means under the control of the operator for connecting the presser member to said power means.

16. In a machine of the class described, a work supporting bed, a presser member movable along said bed, means extending longitudinally of the bed for supporting the presser member, power means for causing the presser member to strike a blow, continuously moving power means for moving the presser member therewith in either direction along the bed, and a single means for controlling the connection of the presser member to said last-mentioned power means and for causing actuation of the first-mentioned power means.

17. In a machine of the class described, a work supporting bed, a cross-bar extending longitudinally of the bed and at the rear thereof, an arm extending forwardly from said cross-bar and carrying a presser member, said arm being slidably movable on said cross-bar to position the presser member over any desired portion of the work supporting bed, and a cross-head above the bed for actuating said presser member.

18. In a machine of the class described, a work supporting bed, a supporting bar at the rear of the bed, an arm slidably mounted on said supporting bar for movement lengthwise of the bed, a presser member carried by said arm and movable along the arm toward and from said supporting bar, the construction and arrangement being such that the presser member is movable universally in a horizontal plane over the bed, and means for causing said presser member to move toward and from the work supporting bed with its operative face maintained constantly in parallelism with the bed.

19. In a machine of the class described, a

work supporting bed, a presser member movable over the bed into any selected position, a support for said presser member, power means for moving the presser member in either direction along the bed comprising a continuously running endless cable, means for effecting pressure applying movements of the presser member so constructed and arranged as to be out of contact with the presser member during lateral adjustment thereof, and means under the control of the operator for connecting the presser member to either run of the cable to cause the presser member to move with the selected run of the cable moving in the desired direction.

20. In a machine of the class described, a work supporting bed, a presser member movable in a straight line along the bed to any selected position, power means comprising a cross-head for causing pressure applying operations of the presser member, and manually operable means movable with the presser member for controlling said power means.

21. In a machine of the class described, a work supporting bed, a presser member movable over said bed, means comprising a cross-head for causing pressure applying operations of the presser member, continuously operating power means for moving the presser member over the bed, and a clamping device associated with the presser member and movable therewith for connecting the presser member to said power means to cause the presser member to move over the work supporting bed.

22. In a machine of the class described, a work supporting bed, a presser member movable along said bed, a support at the rear of the bed from which the presser member projects forwardly over the bed, continuously operating power means for moving the presser member along the bed, and clamping devices associated with the presser member and movable therewith for connecting the presser member to said power means to cause the presser member to move in either direction along the work supporting bed.

23. In a machine of the class described, a work supporting bed, a supporting bar at the rear of the bed, an arm extending forwardly from the bar and slidably mounted thereon for movement lengthwise of the bed, a presser member slidably supported by said arm, means for forcing the presser member toward a die located on the bed, and spring means for returning the presser member to normal position.

24. In a machine of the class described, a work supporting bed, a presser member movable universally over the bed into any selected position, a support for said presser member located laterally of the bed and comprising an arm projecting forwardly from said support and movable along said bed, a carriage movable in said arm toward and from said support and co-operating with the arm to position the presser member over any desired portion of the bed, and means for causing the presser member to strike a blow on a die on the work supporting bed.

25. In a machine of the class described, a work supporting bed, a presser member projecting forwardly over the bed and movable therealong, a support at the rear of the bed for said presser member, power means comprising an endless cable for moving the presser member along the bed, and means under the control of the operator for connecting the presser member directly to the endless cable to cause the presser member to move in either direction along the work supporting bed.

26. In a machine of the class described, a work supporting bed, a presser member movable over the bed into any selected position, means for supporting the presser member, power means for moving the presser member along the bed, means for connecting the presser member to said power means comprising a manually operable member mounted on the presser member and constructed and arranged to move in the direction that it is desired that the presser member should move to connect the presser member to said power means, and means, normally out of contact with the presser member, for causing the presser member to be moved toward the work supporting bed.

27. In a machine of the class described, a work supporting bed, a presser member movable over the bed into selected position, a support for the presser member comprising an arm extending forwardly over the bed, power means for moving the presser member along the bed comprising a continuously driven cable passing transversely across the supporting arm, and means for clutching the arm to the cable to cause it to move with the cable along the work supporting bed.

28. In a machine of the class described, a work supporting bed, a presser member movable along the bed, a support for the presser member extending longitudinally at one side of the bed, power means for causing actuation of the presser member comprising a main shaft and a clutch thereon, and means for tripping the clutch comprising a bar extending longitudinally of the support for the presser member, and manually operable means movable with the presser member and operatively connected to said bar for controlling said clutch in any position of the presser member over the work supporting bed.

29. In a machine of the class described, a work supporting bed, a presser member movable over the bed into any selected position, a supporting member extending longitudinally at one side of the bed, an arm slidably mounted on said supporting member for movement lengthwise of the bed, a carriage mounted in said arm for movement transversely of the bed, means for movably mounting the presser member in said carriage, and means for actuating the presser member to cause the same to move toward and from the work supporting bed.

30. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a presser member movable along said bed, means on the frame of the machine for supporting the presser member, with the operative face of the presser member maintained in parallelism with the work supporting surface of the bed, and means located above the presser member for operating the same, the construction and arrangement being such that the presser member is arranged to project from its supporting means into the space between its operating means and the bed and to be movable in said space into operative relation with respect to the die wherever located on the work supporting bed.

31. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a support at one side of the bed, a presser member maintained with its operative face in parallelism with the work supporting surface of the bed, and means for causing pressure applying operations of the presser member, the presser member being mounted on said support to project from its support over the die wherever located on the work supporting bed and into the path of movement of the operating means for the presser member.

32. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a stationary support at one side of the bed, a presser member, and reciprocable means for operating the presser member, the presser member being mounted on the support to project from its support into position over the die wherever located on the work supporting bed and into the path of movement of the reciprocable means.

33. In a machine of the class described, a work supporting bed, a presser member mounted independently of its operating means, a support for the presser member

along which the latter is guided for sliding movement universal in a horizontal plane to attain co-operative relations successively with all portions of the work supporting bed, and operating means for the presser member mounted over the bed with an unobstructed space between the operating means and the bed.

34. In a machine of the class described, a freely movable die adapted to be positioned on the material to be cut, a work supporting bed, a presser member movable toward and from the bed in pressure applying operations upon the die, a support for the presser member on which the latter is vertically movable, said support having a surface against which the presser member is yieldingly held, spring means for normally holding the presser member against said surface and for returning it into contact with the surface after a pressure applying operation, and means for moving the presser member toward the work supporting bed.

35. In a machine of the class described, a work supporting bed, a presser member movable over said bed into any selected position, means extending longitudinally of the bed at one side thereof for supporting said presser member, power means for moving the presser member into the desired operative position, and means mounted on the presser member for connecting the presser member to said power means.

36. In a machine of the class described, a work supporting bed, a presser member movable bodily along the bed to any selected position, power means comprising a cross head for causing pressure applying operations of the presser member, and a manually operable lever movable with the presser member for initiating operation of said power means.

37. In a machine of the class described, a freely movable die adapted to be positioned on material to be cut, a work supporting bed, a support at one side of the bed and above the plane of the work supporting surface thereof, a presser member mounted for vertical sliding movements on its support, and means comprising a reciprocable cross head for causing pressure applying operations of the presser member, the presser member being mounted on said support to project therefrom into the space between the work supporting bed and the cross head so as to be positioned above the die and operated during reciprocations of said cross head.

In testimony whereof I have signed my name to this specification.

WILLIAM J. BRENNAN.