

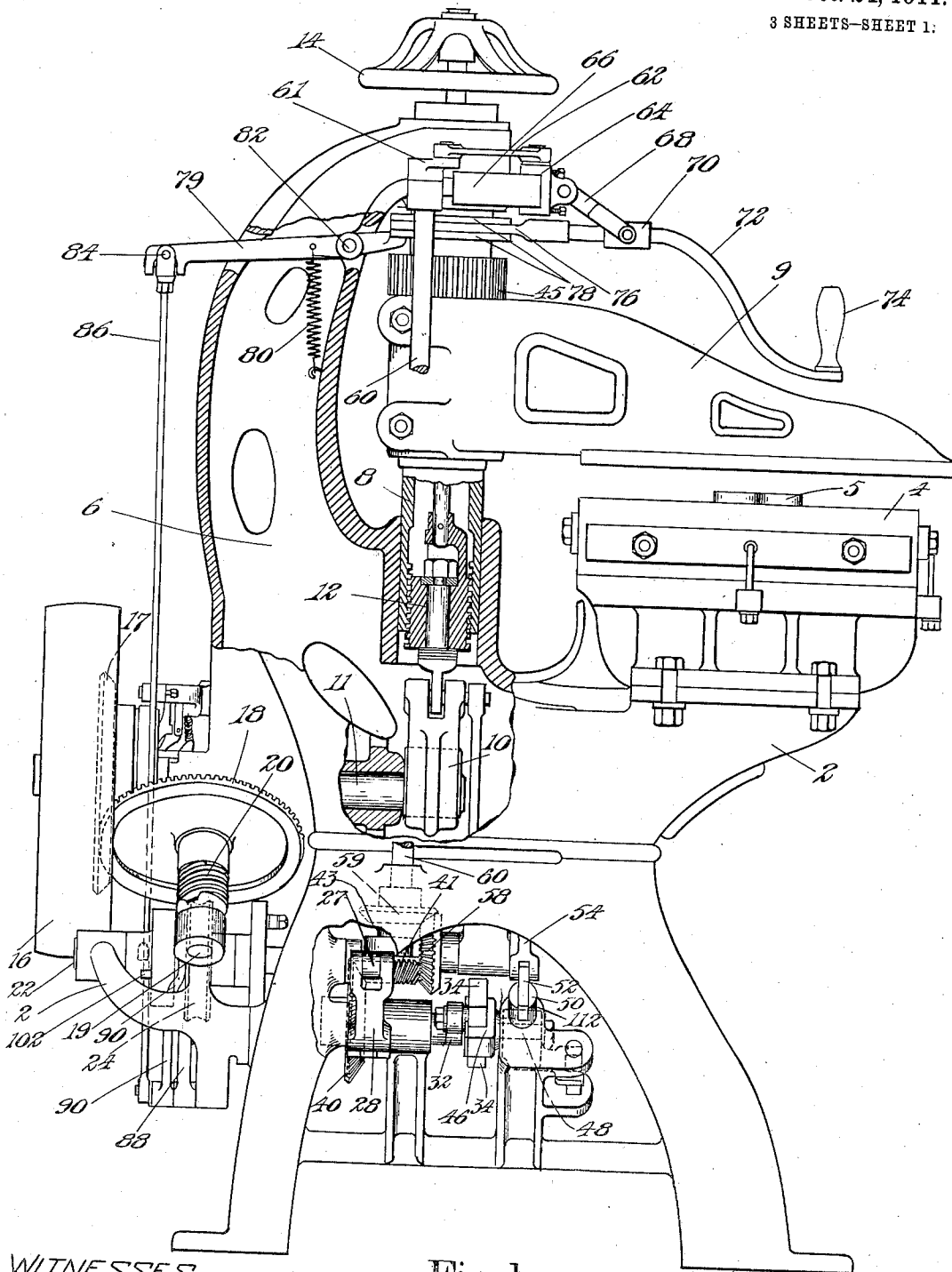
F. ASHWORTH.
PRESS.

APPLICATION FILED JUNE 12, 1908.

1,006,453.

Patented Oct. 24, 1911.

3 SHEETS—SHEET 1:



WITNESSES.

Elizabeth C. Cony
Edith C. Holbrook

Fig. 1.

INVENTOR.

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3 SHEETS—SHEET 2.

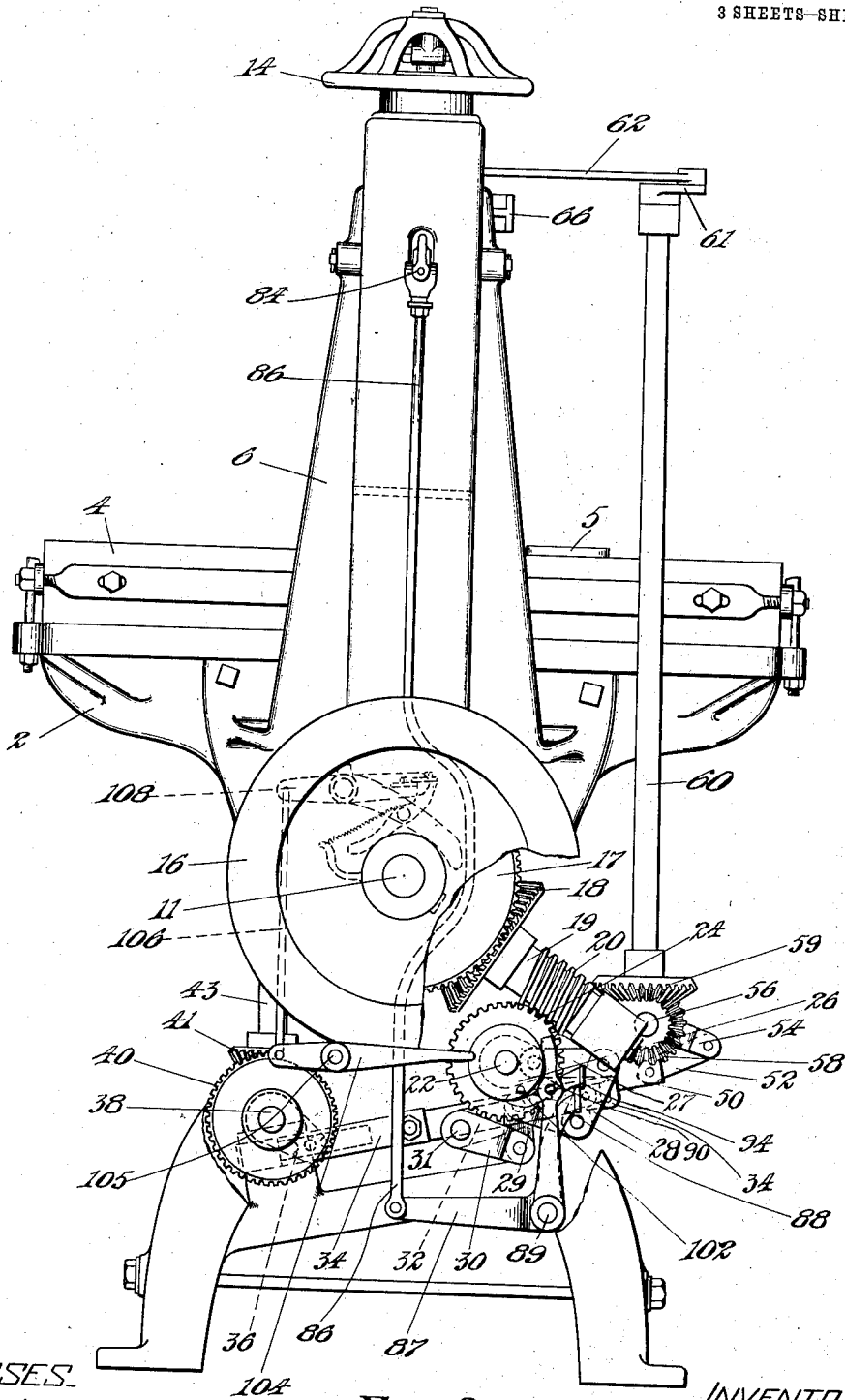


Fig. 2.

WITNESSES.

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3 SHEETS—SHEET 3.

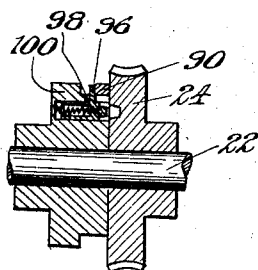
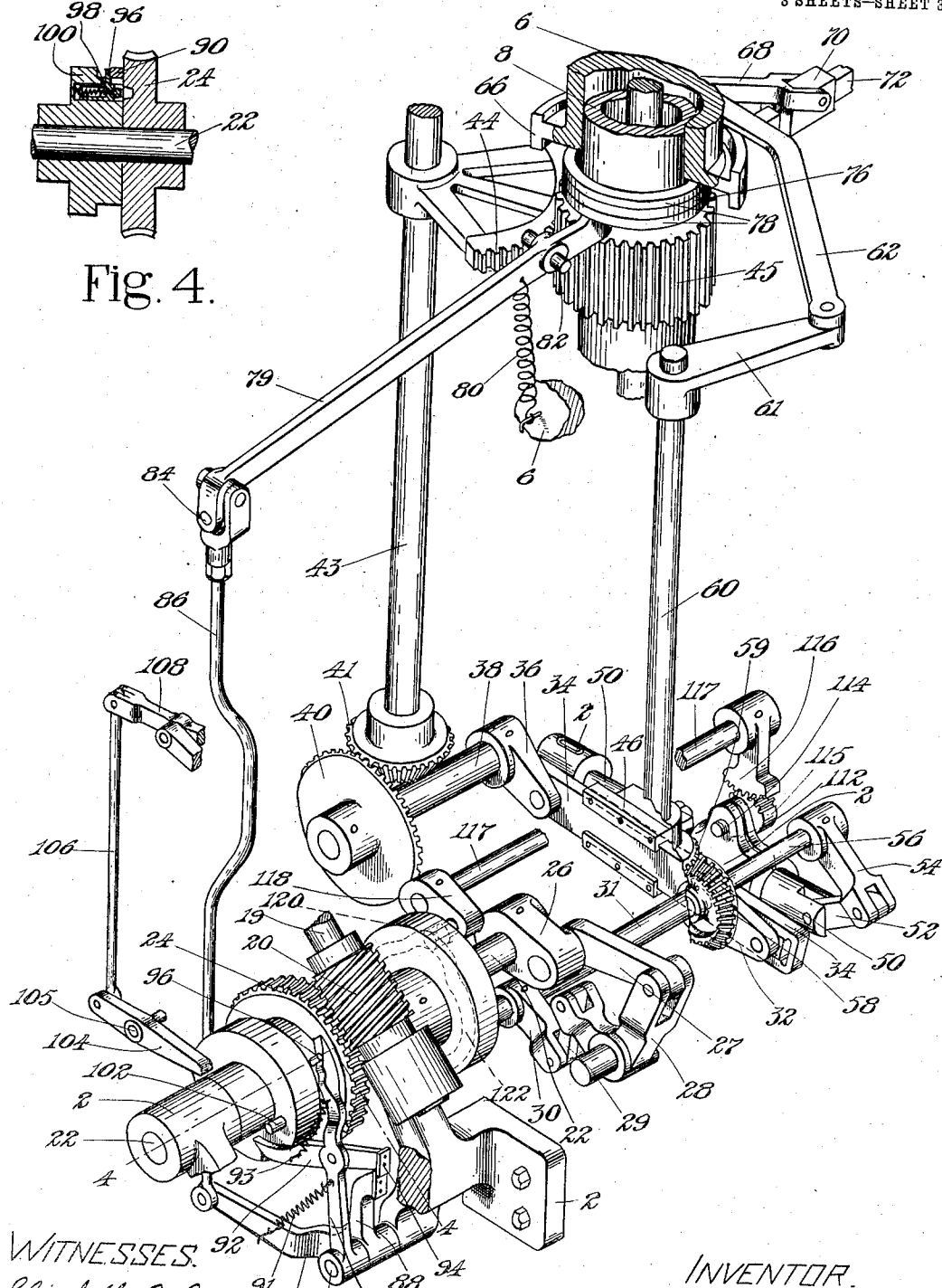


Fig. 4.



WITNESSES.

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Fig. 3.

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UNITED STATES PATENT OFFICE.

FRED ASHWORTH, OF BEVERLY, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PRESS.

1,006,453.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed June 12, 1908. Serial No. 438,137.

To all whom it may concern:

Be it known that I, FRED ASHWORTH, a citizen of the United States, residing at Beverly, in the county of Essex and Commonwealth 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 relatively movable not only in a direction to effect a pressing operation, but also 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.

In particular the invention relates to presses of that type in which a pressure-applying member is movable into various operative relations to its bed, and for the sake of illustration the invention is shown as embodied in a press of the type mentioned which is especially adapted for forcing a die through sheet material, such as leather, for the purpose of dying out from said material blanks for manufacturing uses, although it will be understood that the invention is by no means limited to application to presses of this character.

In presses of the type above referred to, as heretofore constructed, the pressure-applying member has usually been arranged to be moved by the operator into and out of the desired relation to the pressure-receiving member or bed. This has been a simple way of effecting a movement of the pressure-applying member into and out of position over a die placed by the operator upon a portion of stock lying upon the bed which has been selected by him as most suitable for a blank for which the particular die is shaped.

To improve the operation of this machine, however, and render its movement more automatic and therefore less fatiguing to the operator, the present invention aims to provide means for moving the pressure-applying member out of the selected operative position after it has been actuated to perform a pressure-applying operation, said means

being preferably so constructed and arranged that the movement out of the selected operative position follows automatically the actuation to perform the pressure-applying operation.

In its preferred embodiment the invention includes also means whereby the pressure-applying member is moved automatically into such position that it will, when actuated to perform a pressure-applying operation, operate upon a portion of the bed previously selected by the operator. Preferably the means last mentioned is connected with or includes mechanism which also causes the member to perform a pressing operation when it arrives at the proper point above the bed, and is preferably also connected with or includes the above-mentioned means for returning the member to an inoperative position, preferably its initial position, after the pressing operation has been performed.

In its illustrated preferred embodiment the invention comprises controlling means which can be moved over the bed in much the same manner as the pressure-applying member of the earlier constructions has been moved, the controlling means being mounted, however, to move independently of the pressure-applying member into a position above the bed corresponding substantially to that which it is desired that the pressure-applying member shall be moved, and an object of the invention is the provision of controlling or selecting means, comparatively easy to manipulate, by which the operator can determine in advance of an automatic movement of the pressure-applying member the point or position above the bed at which the automatic movement will stop.

Preferably the means for starting the mechanism which effects the automatic movement of the pressure-applying member is carried by, or connected with the controlling or selecting means above referred to, whereby the determination of the extent of movement of the pressure-applying member and the initiation of such movement may be effected quickly and easily by a single hand of the operator.

As hereinbefore suggested, the mechanism started by the starting means after the controlling or selecting means has been moved into position to determine the movement

of the pressure-applying member preferably includes not only means for effecting a movement of the pressure-applying member into the selected pressure-applying relation to its bed, but also means for effecting a pressure-applying operation, and means for moving the member out of the operative position in which the pressure-applying operation has been performed, and these means are preferably so interrelated that the operations take place in automatic succession.

Preferably the means for moving the pressure-applying member over the bed into and out of various operative relations thereto and the means for effecting a pressure-applying operation of said member when it has come into a selected operative relation operate through the same connection with said member, and in the illustrated form of the invention it will be seen that this common operating connection may conveniently be constituted by the support for said member. It will be understood, however, that the invention is not limited to the particular construction of means for determining the operative relation to its bed into which the pressure-applying member shall be moved, nor to means for effecting a relative movement of the presser members of a press of this type which involves an automatic movement of the pressure-applying member into a selected pressure-applying relation to its bed as distinguished from a movement of the bed relatively to the pressure-applying member or simultaneous movements of presser members relatively to each other, and it will be further understood that the invention is not limited to the illustrated mechanism for effecting in automatic succession and for the purposes described the relative movements of the presser members into and out of a selected operative relation to each other, and an intervening relative pressure-applying movement.

With the foregoing and other objects in view, the invention is herein shown as embodied in a press of the type known to the trade as "clicking press," that is, a press intended especially for dying out boot or shoe blanks. A machine of the general type of that herein illustrated is disclosed in United States Letters Patent to Arthur Bates No. 921,503, granted May 11, 1909, for improvements in machines for cutting out thin sheet material such as upper leather for boots and shoes to which reference may be had for specific description of parts herein illustrated but not fully described.

In the embodiment of the invention herein shown a bed is provided over which a radial presser arm carried upon a vertical shaft or column is movable into various operative positions with respect thereto, the arm being preferably rigidly attached to its shaft or column, and the column being preferably ar-

ranged to rotate with the arm in its movements parallel to the surface of the bed and to reciprocate vertically with the arm to effect its pressure-applying movement. The bed of this machine, like the bed of the machine shown in the patent above referred to, presents a surface upon which the stock to be died out may be spread out for convenient inspection and the operation of laying the die upon the stock while the pressure-applying member is out of operative position above the die is the same as that performed in the use of the machine of the said patent. In the illustrated machine, however, as hereinbefore suggested, when the radial pressure-applying arm has been moved into its operative position over the die and has been actuated by suitable actuating means to perform its pressure-applying operation whereby the die is forced through the stock, means is preferably provided for automatically returning the pressure-applying arm or member to an inoperative position with respect to the die. Preferably also means is provided for moving the pressure-applying member automatically into the selected operative position, and in the illustrated preferred embodiment this means is controlled by a device movable by the operator over the bed, the connections between the means for moving the pressure-applying member and the device being such that when the device has been moved to a position vertically above a point upon the bed at which it is desired that pressure shall be applied actuation of the means for moving the pressure-applying member will serve to cause said member to be moved automatically into operative position above the selected point.

Preferably the device before mentioned for selecting the position above the bed into which it is desired that the pressure-applying member shall be automatically moved is connected with, or includes, means for effecting an actuation of the means for producing the automatic movement of the pressure-applying member. As hereinbefore suggested, the means for effecting the automatic movement of the pressure-applying member into the selected operative position above the bed is preferably connected to, or includes, means which actuates the member to perform the pressure-applying operation when it has come into the selected operative position, and preferably also is connected to or includes means for returning the member automatically to an inoperative position after the pressure-applying operation has been performed, these means being so interrelated that the various movements take place in automatic succession.

As herein shown the device under control of the operator by which he may readily determine one of the limits of the automatic movements of the pressure-applying mem-

ber hereinbefore referred to is connected to or includes means which serves not only to effect an actuation of the means for moving the member into the selected pressure-applying position, but preferably through suitable connections and without further attention on the part of the operator serves to effect an actuation of the means for causing the pressure-applying member to perform the pressure-applying operation and preferably, still without further attention on the part of the operator, serves to effect an actuation of the means for returning the pressure-applying member to an inoperative position.

It will be seen from the following description that the illustrated construction embodies means for effecting a movement of the pressure-applying member which is substantially proportional to the movement of a controlling device and that the provision of such means constitutes an important feature of the invention. The illustrated means for effecting or causing to be effected a movement of the pressure-applying member proportional to a movement of its controlling device comprises a lever having a fulcrum adjusted by the movement of said controlling device. Adjustment of the fulcrum of the lever serves to vary the ratio of the movements of the parts between which the lever constitutes an operative connection. It will be understood, however, that the invention is not limited to the particular construction of means for effecting a movement of the pressure-applying member substantially proportional to the movement of a controlling device, and that the invention comprehends the provision of any suitable controlling means by which an operator may determine in advance of its automatic movement the point upon the bed at which pressure will be applied by a pressure-applying member movable thereover when the means for effecting such automatic movement has been actuated.

Other features of novelty which contribute to the carrying out of objects of the invention hereinbefore enumerated or to other objects of the invention which will be apparent from a consideration of the disclosure of the invention in the specification and drawings will either be pointed out in the following detailed description or included in the claims, or attention will be directed to them both in the specification and claims, and it will be understood that it is my intention to cover by claims in this application all that is herein disclosed of my invention.

On the accompanying drawings which represent this invention as embodied in a press that may be used in dyeing out sheet material such as leather, etc., Figure 1 shows such a press in side elevation, partly broken away to show a part of the mechanism;

Fig. 2 is a rear elevation also showing the press as partly broken away; Fig. 3 is a perspective view of the actuating mechanism, the frame work of the machine being removed, and Fig. 4 is a section on line 4-4 of Fig. 3.

On the drawings, 2 indicates the frame of the machine which is arranged to support a bed 4 in any approved manner. The frame 2 is preferably extended to form an arm 6 which forms bearings for a vertically and horizontally movable column 8 on which a pressure-applying member 9 may be secured in any preferred manner. The column 8 may be vertically reciprocated to move the pressure-applying member 9 toward or away from the bed 4 by an eccentric 10 mounted on shaft 11 and connected with said column by connections 12 which may be adjusted by a hand wheel 14.

Mounted to turn freely on shaft 11 is a belt pulley 16 provided with a bevel gear 17 which co-acts with a second bevel gear 18 mounted rigidly on a shaft 19 which is journaled in bearings in the frame of the machine and provided with a worm 20. Mounted to turn in bearings formed on the frame of the machine is a shaft 22 on which there is mounted a worm wheel 24 which meshes with and is turned by the worm 20. The worm wheel 24 is mounted on its shaft 22 so as to turn independently thereon but may be connected with said shaft to actuate it by any convenient clutch mechanism as hereinafter described. Rigidly secured to shaft 22 is a crank arm 26 connected by link 27 with one arm of a bell crank lever 28 which is suitably pivoted in the frame 2 and has its other arm connected by a link 29 with a crank arm 30 rigidly secured to a rockshaft 31. A second crank arm 32 is also rigidly mounted on rockshaft 31 and is connected at its outer end by a sliding block and slot or similar connection with one end of a lever 34, the other end of which is pivotally connected with a crank arm 36 rigidly secured to a rockshaft 38. A bevel gear 40 mounted on rockshaft 38 engages a bevel gear 41 mounted on a second rockshaft 43 which actuates the vertically movable rod or column 8 about its axis by means of the segmental gear 44 mounted on said rockshaft 43 and meshing with a gear 45 on said vertically movable column 8.

Slidably mounted on lever 34 is a block 46 having a stem 48 (Fig. 1) that is journaled in a slide 50 longitudinally movable in bearings on the frame of the machine, the block 46 with the stem 48 constituting an adjustable fulcrum for said lever 34 whereby the ratio of its arms may be varied. To one end of slide 50 is pivotally connected by means of a link 52 a crank arm 54 rigidly secured to a rockshaft 56. This rockshaft carries a bevel gear 58 meshing with a corresponding

bevel gear 59 on a vertical shaft 60 carrying a rigidly connected crank arm 61 pivotally connected by a link 62 to a movable carriage 64. Carriage 64 is movably mounted on ways having the form of a T-shaped ridge 66 formed on the part of arm 6 that forms a bearing for the vertically movable column 8. To the carriage 64 is pivotally secured a link 68 which is preferably forked and pivotally secured to a block 70 slidably supported on actuating arm 72. Arm 72 is provided with a handle 74 for convenience in adjustment and also with an annular portion 76 taking in a circumferential groove formed in an annular portion 78 of a lever 79, said annular portion 78 surrounding column 8 with sufficient clearance to permit of the operation of the lever. The lever 79 which is held normally with its annular portion in raised position by a spring 80 is pivoted at 82 on the frame of the machine and is connected by means of a universal joint 84 with a clutch actuating link 86 which is pivotally connected to one arm 87 of a bell crank lever mounted on a pin 89 secured in the frame 2 of the machine. On pin 89 is also pivotally mounted a wedge member 90 connected by a spring 91 with the arm 87 of the bell crank lever to which actuating link 86 is attached and carrying pivotally attached thereto a trip lever 92. Corresponding ends of wedge member 90 and trip lever 92 are drawn together by a spring 93 and the outer end of trip lever 92 is provided with a catch or plate 94 which normally extends over the end of a similar plate mounted on the other end 88 of the bell crank lever above referred to. Wedge member 90 coacts with a pin 96 mounted on a spring pressed plunger 98 (Fig. 4) in a collar 100 keyed to shaft 22, said plunger 98 being pressed forward by a spring to engage one of a series of recesses formed in the side of gear wheel 24. Mounted on collar 100 is a second pin 102 arranged to contact with the end of trip lever 92 on the rotation of collar 100 and shaft 22. Arranged with one arm in the path of pin 102 is a second lever 104 pivoted at 105 and connected by a link 106 to a third lever 108 which operates a clutch mechanism shown in Fig. 2 that is similar to that just described and serves for connecting belt pulley 16 to shaft 11 for actuating the eccentric 10 and vertically reciprocating the pressure-applying member 9.

A locking device for slide 50 consists of a split sleeve 112 that may be a part of the frame 2 surrounding said slide and having its two sides engaged by oppositely directed screw threads on a screw 114 provided with a head 115 that is provided with teeth that mesh with the teeth of segmental gear 116 mounted on a crank arm that is rigidly mounted on a rocking shaft 117 suitably supported and carrying at its other end a

second crank arm 118 having a cam roll 120 that co-acts with a cam 122 mounted to turn with shaft 22.

In the operation of the machine the operator first determines the place over the bed 4 at which it is desired to apply pressure and then grasping the handle 74 moves actuating arm 72 to a position that is substantially vertically over said place. In case the machine is to be used in dying out sheet material such as leather, etc., the actuating arm will be moved to a position over the die 5 after said die has been suitably positioned by the operator on the stock supported on the bed. Movement of arm 72 to the desired position is transmitted by link 68 to carriage 64 which is moved on T-shaped ways 66 to a position corresponding to that of arm 72. By means of links 62 and 61 motion is transmitted from the carriage 64 to the bevel gear 59 which in turn by means of bevel gear 58, rockshaft 56 and the two links 54 and 52 move slide 50 in its bearings in the frame of the machine to an extent corresponding to the movement of arm 72. This movement of slide 50 is permitted by its locking device when the machine is at rest, as seen in Fig. 3, at which time the cam 122 holds the rocking shaft 117 in such position that split clamping sleeve 112 is held spread by a screw 114. It will be seen that every position of arm 72 over bed 4 will correspond to a definite position of slide 50 in its bearings and consequently to a definite position of block 46 on lever 34, the stem 48 of said block being journaled in said slide 50 and serving as a fulcrum of said lever 34. In other words, every position of arm 72 over the bed 4 will correspond to a different position of the fulcrum of lever 34.

To effect an actuation of the mechanism for moving the pressure-applying member 9 to the position over the bed at which it is desired to exert pressure, the operator depresses handle 74 on the arm 72. This movement of the arm 72 is without effect upon the carriage 64 and connected parts as block 70 is so mounted on said arm as to be movable only longitudinally thereof. The depression of the handle, however, serves to turn lever 79 on its pivot 82 and this motion is transmitted by link 86 to bell crank lever 87, 88 which is rocked on its pin 89 and acts through plate 94 and trip lever 92, moving wedge member 90 out of engagement with pin 96. On the release of pin 96, as just described, plunger 98 is moved forward by a spring to engage one of the recesses in gear wheel 24 which is constantly driven by its connections with belt pulley 16 as above indicated. Shaft 22 is thus clutched to gear wheel 24 by means of collar 100 keyed on said shaft. Immediately on the actuation of shaft 22 rockshaft 117 is turned by its cam 118, turning screw 114 and locking

the slide 50 in the position it may occupy at that time. By reason of the shape of cam 122 which is indicated in Fig. 3, slide 50 remains locked in this position during practically the entire period of rotation of shaft 22, or until just before said shaft comes to rest. Every rotation of shaft 22 also serves by means of crank arms 26 and 30, links 27 and 29 and bell crank lever 38 to rock the shaft 31 through a definite angle, the magnitude of which is determined by said connections. This rocking movement of shaft 31 is transmitted by means of crank arm 32 to the adjacent end of lever 34 which is moved a constant distance for every rotation of shaft 22. The constant movement of one end of lever 34 imparts a variable throw to the other end of said lever, the extent of which is determined by the position of fulcrum block 46 on said lever. This variable throw of lever 34 is communicated to pressure-applying member 9 by means of gear 45 mounted on the actuating column 8 for this member, segmental gear 44, vertical shaft 43, bevel gears 40 and 41, rockshaft 38 and crank arm 36 and serves to turn said pressure-applying member 9 to a position over the bed corresponding to that indicated by arm 72. After the pressure-applying member has been thus moved over the place on the bed at which it is desired to apply pressure, said member is moved toward said bed to apply pressure and is then returned to its original position. The pressure applying movement of the arm is obtained by connecting the shaft 11 on which the actuating eccentric 10 for said members is mounted to the belt pulley 16 and this is accomplished at a suitable stage in the rotation of shaft 22 when pin 102 rocks lever 104 on its pivot, thus by means of link 106 and lever 108 tripping the one revolution clutch that connects said shaft 11 and belt pulley 16. The return of the member 9 to its original position is accomplished after its actuation to apply pressure by the return stroke of lever 34.

To insure the stopping of shaft 22 for one revolution trip lever 92 extends into the path of pin 102 and is engaged thereby shortly after the starting of the machine. The engagement of trip lever 92 by pins 102 rocks said lever on its pivot and raises catch plate 94 out of engagement with bell crank lever arm 88, thus allowing wedge member 90 to be moved by spring 91 into such position that it will engage pin 96 at the proper time in the revolution of shaft 22 and move said pin to disconnect the clutch and stop the machine.

It will be noted that the actuating handle 72 is quite separated from the pressure-applying member 9 and in the operation of the machine is moved to the desired location over the bed independently of said member.

Thereafter, on the depression of said handle 72 the pressure-applying member 9 is moved from its original position, in which it is preferably clear of the bed 4, to the location over the bed indicated by said handle, is reciprocated toward the bed to apply pressure at the desired location thereover and is then returned to its original position clear of said bed.

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, the combination with cooperating presser members relatively movable into different pressing relations to stock carried by one of said members, of means for effecting a relative pressure-applying movement of said members after they have been brought into a selected pressing relation to each other, and means for effecting automatically a relative movement of said members out of the selected pressing relation after their relative pressure-applying movement and in a direction transverse thereto.

2. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative relations to said bed, means for actuating said pressure-applying member to apply pressure after a relative movement into a selected operative relation, and means for automatically returning said pressure-applying member to its original position after such actuation.

3. A machine of the class described, having in combination, a bed, a pressure-applying member movable into various operative positions over said bed, means for actuating said pressure-applying member to apply pressure when it has come into a selected operative position over said bed and means for automatically moving said pressure-applying member out of the selected operative position after such actuation.

4. In a machine of the class described, the combination with a bed, a die movable over said bed, and a pressure-applying member movable over said bed into operative position above said die, of means for actuating said pressure-applying member to apply pressure to said die, and means for automatically moving said member out of its operative position over said die after such actuation.

5. A machine of the class described, comprising a bed, a die movable over said bed at the will of the operator into various selected positions, a pressure-applying member movable into operative position over said die and means for automatically moving said member a predetermined distance out of operative position over said die.

6. In a machine of the class described, the combination with a bed and a die movable

over said bed, of a pressure-applying member movable into operative position above said die, means for actuating said pressure-applying member to apply pressure to said die after a movement into operative position, and means for automatically returning said pressure-applying member to its original position after such actuation.

7. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative positions over said bed, means for moving said pressure-applying member relatively to said bed to apply pressure, and means separate from said pressure-applying member for determining the position over the bed at which pressure shall be applied.

8. In a machine of the class described, the combination with a bed and a die movable over said bed, of a pressure applying-member movable into operative position over said die, means for moving said pressure-applying member relatively to said bed to apply pressure to said die, and means separate from said pressure-applying member for controlling the movement of said member into position over said die.

9. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative relations to said bed, and means independent of said pressure-applying member for determining the place over the bed at which pressure shall be applied.

10. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into different operative relations to said bed, means for effecting a movement of said pressure-applying member relatively to the bed to apply pressure, and means separate from said pressure-applying member and under the control of the operator to determine the place over the bed at which the pressure shall be applied.

11. In a machine of the class described, the combination with cooperating presser members relatively movable into different pressing relations to stock carried by one of said members, of selecting means under the control of the operator for determining the desired pressing relation for a particular operation of the machine, and means controlled by said selecting means for automatically effecting a relative movement of said members into the selected pressing relation.

12. In a machine of the class described, the combination with cooperating presser members relatively movable into different pressing relations to stock carried by one of said members, of selecting means under the control of the operator for determining the desired pressing relation for a particular operation of the machine and means controlled by said selecting means for automati-

cally effecting both a relative movement of said members into and a pressing operation of said members in the selected pressing relation.

13. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative positions relative thereto, means for determining the place over the bed at which said pressure-applying member shall apply pressure, and means for moving said pressure applying member to said place over the bed and actuating it to apply pressure.

14. In a machine of the class described, the combination with cooperating presser members relatively movable into different pressing relations to stock carried by one of said members, of selecting means under the control of the operator for determining the desired pressing relation for a particular operation of the machine and means controlled by said selecting means for automatically effecting a relative movement of said members into and out of the selected pressing relation.

15. In a machine of the class described, the combination with cooperating presser members relatively movable into different pressing relations to stock carried by one of said members, of selecting means under the control of the operator for determining the desired pressing relation for a particular operation of the machine, and means controlled by said selecting means for automatically effecting a relative movement of said members into the selected pressing relation, causing a pressing operation of said members in such relation and then automatically effecting a relative movement of said members out of such relation.

16. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative relations to said bed, means acting to determine the place where said pressure-applying member shall be operative to apply pressure, and means acting on the actuation of said last-mentioned means for moving said pressure-applying member to the desired position, actuating it to apply pressure and returning it to its original position.

17. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative positions relatively thereto, means movable independently of said pressure-applying member to determine the place over the bed at which said pressure-applying member shall be actuated to apply pressure, said last-mentioned means being also constructed and arranged to be actuated to cause said member to be moved to said pressure-applying position and to be actuated to apply pressure.

18. In a machine of the class described,

the combination with a bed, of a pressure-applying member movable into various operative relations to said bed, means movable independently of said pressure-applying member to determine the place over the bed at which the pressure shall be applied, said last-mentioned means being also constructed and arranged to be actuated to cause said member to be moved to said pressure-applying position to be actuated to apply pressure and to be returned to an inoperative position.

19. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative positions with respect to said bed, and means acting to move said pressure-applying member to a selected position over said bed, to actuate it to apply pressure, and to return it to its original position.

20. In a machine of the class described, the combination with a bed, of a pressure-applying member movable into various operative positions over said bed, and means acting to move said pressure-applying member to the desired position over the bed at which it is desired to apply pressure, to actuate said pressure-applying member to apply pressure at said predetermined position, and automatically to return said pressure-applying member to its original position.

21. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over a selected limited area thereof, and means acting to selectively determine the location upon the bed at which the pressure shall be applied.

22. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over a selected limited area thereof less than the whole area of said bed, and means under the control of the operator for selectively determining the place upon the bed at which the pressure shall be applied.

23. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over a limited area of said bed of selected location, and means acting to move said member automatically to said selected location.

24. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over a limited area of said bed of predetermined location, means acting to move said member to said predetermined location, together with means under the control of the operator for initiating the operation of said last-mentioned means.

25. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over

various portions thereof, means for automatically moving said member to the selected place over said bed at which it is desired to apply pressure, and means arranged to be actuated on the actuation of said first-mentioned means for causing said member to exert pressure at the place desired.

26. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over various portions thereof, means for automatically moving said member to the selected place at which it is desired to apply pressure, and means automatically actuated on the actuation of said first mentioned means for causing said member to exert pressure at the place desired.

27. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over various portions thereof, means under the control of the operator for determining the place over the bed at which the pressure shall be applied, means for moving said member to the place over the bed at which it is desired to apply pressure, and means acting on the actuation of said last-mentioned means for moving said member to exert pressure at the place desired.

28. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over various portions thereof, means under control of the operator for determining the place over the bed at which the pressure shall be applied, means actuated from said above-mentioned means for moving said member to the place over the bed at which it is desired to apply pressure, and means acting on the actuation of said last-mentioned means for moving said member to exert pressure at the place desired.

29. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over various parts thereof, means for selectively determining the part of the bed over which pressure shall be applied, means for moving said member over the part of the bed at which it is desired to apply pressure, and means for moving said presser member relatively to the bed to apply pressure at the place desired.

30. In a machine of the class described, the combination with a bed and presser member movable thereover into different selected operative relations thereto, of a shaft and connections between said member and shaft for moving said member to the selected place over the bed at which pressure is to be applied.

31. In a machine of the class described, the combination with a bed and a presser member movable thereover, of a shaft, connections between said member and shaft for

moving said member to the place over the bed at which pressure is to be applied, and means under the control of the operator for determining the place over the bed at which pressure is to be applied.

32. In a machine of the class described, the combination with a bed and a presser member movable thereover, of a shaft, connections between said member and shaft for moving said member to the selected place over the bed at which pressure is to be applied, and means under the control of the operator for determining the action of said connections.

33. In a machine of the class described, the combination with a bed and a presser member movable thereover, of a shaft and connections between said member and shaft for automatically moving said member to the selected place over the bed at which pressure is to be applied and means for moving said member relatively to said bed to exert pressure.

34. In a machine of the class described, the combination with a bed and a presser member movable thereover, of a shaft, connections between said member and shaft for moving said member to the place over the bed at which pressure is to be applied, and other connections between said member and shaft for causing movement of the member relatively to the bed to exert pressure.

35. In a machine of the class described, the combination with a bed, of a member co-acting therewith to apply pressure over various parts thereof, and power operated means for moving said member into operative position over a selected part of said bed at which pressure is to be applied.

36. In a machine of the class described, the combination with a stock supporting bed presenting a surface with various portions of which a stock cutting die may co-operate in dying out stock, of die-pressing means movable into and out of different operative positions over said die and bed and means for automatically effecting such movements of said pressing means.

37. In a machine of the class described, the combination with a stock supporting bed presenting a surface with various portions of which a stock cutting die may coöperate in dying out stock, of die-pressing means movable into and out of different operative positions over said die and bed and means for automatically moving said pressing means into a selected operative position over said die and for causing said means to perform a pressing operation upon said die.

38. In a machine of the class described, the combination with a stock supporting bed presenting a surface with various portions of which a stock cutting die may co-operate in dying out stock, of die-pressing

means movable into and out of operative position over said die and means for automatically bringing said pressing means into a selected operative position over said die, causing said means to press upon said die and then moving said means into an inoperative position.

39. In a machine of the class described, the combination with a bed, a pressure-applying member movable over said bed into various operative relations thereto and movable toward and away from said bed to perform a pressure-applying operation, of a support for said member, means for effecting the movements of said member over said bed into various operative relations thereto, and means for effecting the movements of said member toward and away from said bed, said last-named two means operating through said support.

40. In a machine of the class described, the combination with a bed, and a presser member movable to apply pressure over various parts thereof, of a lever, means for imparting a movement of constant magnitude to one end of said lever, an adjustable fulcrum for said lever, a member for determining the position over the bed at which the pressure shall be applied, connections between said last-mentioned member and said fulcrum for the lever and connections between the other end of said lever and said presser member whereby the movement of constant magnitude imparted to one end of said lever moves said presser member a variable distance to the place over the bed at which the pressure is to be applied.

41. In a machine of the class described, the combination with a bed, of a presser member movable to apply pressure over various parts thereof, a lever, means for imparting a movement of constant magnitude to one end of said lever, an adjustable fulcrum for said lever, a member for determining the position over the bed at which the pressure shall be applied, connections between said last-mentioned member and said fulcrum for the lever, means for locking said fulcrum in the position to which it has been moved by said connections, and connections between the other end of said lever and said presser member, whereby the movement of constant magnitude imparted to one end of said lever moves said presser member a variable distance to the place over the bed at which the pressure is to be applied.

42. In a machine of the class described, the combination with a horizontal bed, a vertically reciprocating column and a radial arm carried by said column and rotative into different relations to said bed, of automatic means comprising a lever having an adjustable fulcrum for imparting to said radial arm rotative movements varying in amount in accordance with the position of 17

said fulcrum, and means for adjusting said fulcrum.

43. A machine of the class described, having in combination, a bed, a die movable over said bed, a presser member movable from a position at one side of the die into a position over the die wherever located on the bed, mechanism for moving the presser member toward the bed to force the die through stock supported on the bed, and means for automatically moving the presser member out of operative position over the die after the pressing operation.

44. A machine of the class described, having in combination, a bed, a die movable over said bed, a presser member laterally movable over said bed into and out of position over the die wherever located on the bed, mechanism for moving the presser member toward the bed to force the die

through stock supported on the bed, and means for effecting automatically the lateral movements of the presser member.

45. A machine of the class described, having in combination, a bed, a die movable over the bed, a presser member laterally movable over the bed into position over the die wherever located on the bed, controlling means also laterally movable over the bed into position over the die and means actuated by said controlling means for effecting the lateral movement of the presser member.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRED ASHWORTH.

Witnesses:

EDITH C. HOLBROOK,
EMILE H. TARDIVEL.