

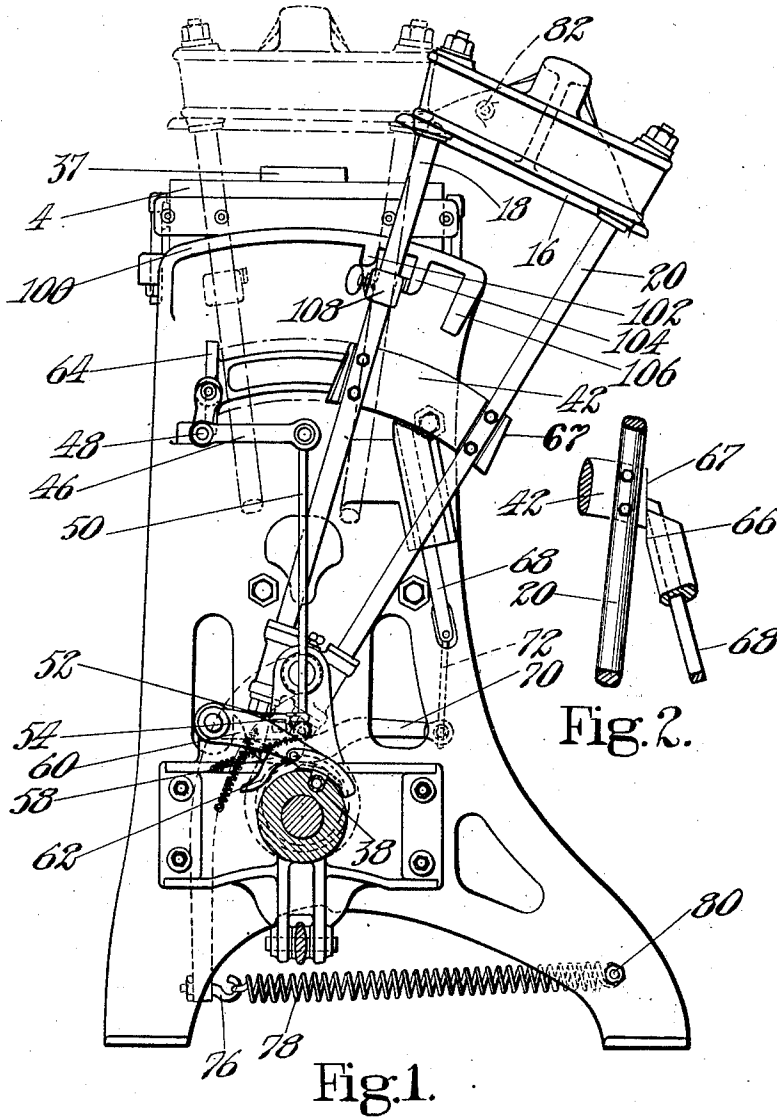
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PRESS.

APPLICATION FILED MAR. 17, 1910.

1,005,139.

Patented Oct. 10, 1911.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

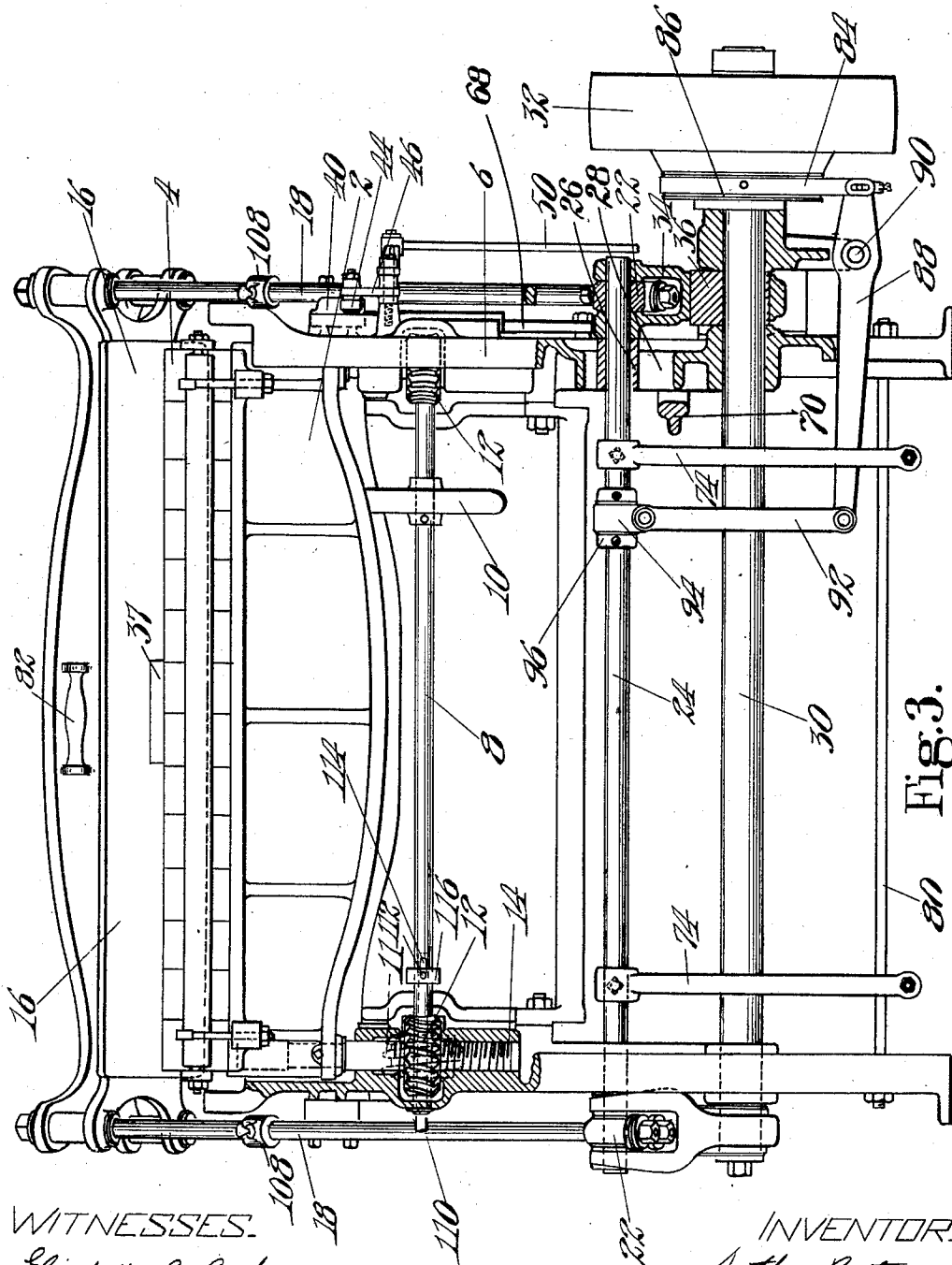


Fig. 3.

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4 SHEETS—SHEET 3.

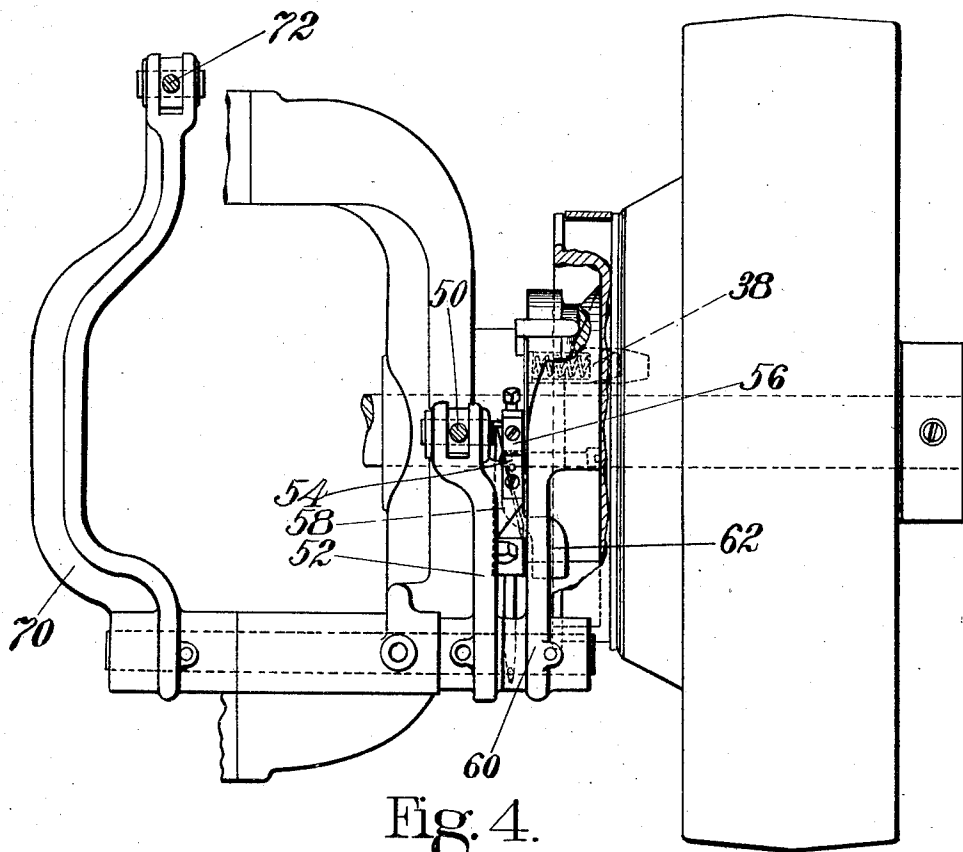


Fig. 4.

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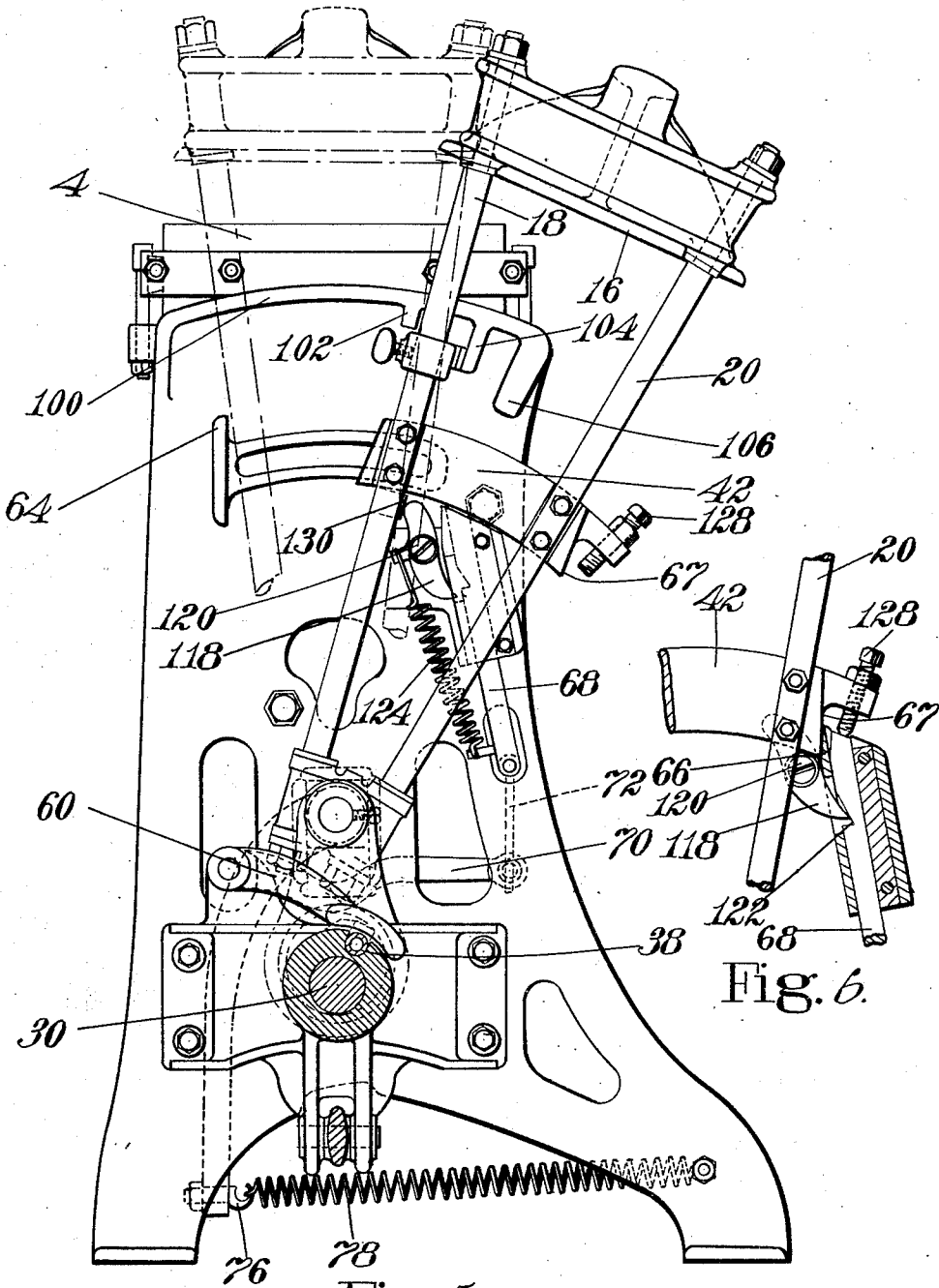
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4 SHEETS-SHEET 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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PRESS.

1,005,139.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed March 17, 1910. Serial No. 549,924.

To all whom it may concern:

Be it known that I, ARTHUR BATES, a subject of the King of England, residing at Leicester, Leicestershire, England, 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 and in particular to presses of the type employed in cutting out sheet material in which the presser members are relatively movable into and out of operative relation to each other in a direction transverse to the direction of the pressing movement.

In presses of the type to which the invention particularly relates, the relative movement of the presser members in a direction transverse to the direction of the pressing movement serves to bring them into such relation to each other that the material to be operated upon may conveniently be inspected and manipulated, and that the die or dies may be placed with accuracy upon those parts of the material which it is desired to cut. Presses thus constructed are advantageously employed in cutting out thin sheet material such as shoe upper leather or upper linings. In presses thus constructed and employed the pressing operation is usually quickly effected since all that is necessary in the pressing operation is to force the die through the stock and presses thus employed are therefore frequently referred to as machines, those employed for cutting out upper leather being commonly called clicking machines. For brevity, however, the term "press" will be used in the following description and claims to cover all machines to which this invention may be applied.

In its illustrated preferred embodiment the invention is shown as applied to a press of the aforementioned general type in which the platen has a pressure surface area substantially co-extensive with that of the bed and is movable bodily into and out of operative relation to the bed, and an object of the invention is to improve and simplify the construction of machines of this type whereby they may be put to a great variety of uses, particularly in the manufacture of boots and shoes. Preferably the movement of the platen into and out of operative rela-

tion to the bed will be a swinging movement whereby the pressure surface of the platen is moved into and out of parallelism to the pressure surface of the bed.

Since it is important in machines which operate with dies, especially with shallow, open dies such as are employed in cutting out upper material, that the pressure surfaces be parallel at the time the pressing or cutting operation takes place, another object of the invention is to insure such parallelism of the pressure surfaces at the time the pressing operation takes place and throughout the relative pressing movement, particularly in machines of the type just referred to in which the pressure surfaces are relatively movable into and out of parallelism to each other.

Another object of the invention is to provide a press of the aforementioned general type in which there is a relative positioning movement in advance of the pressing movement which shall be so constructed that these movements will take place in quick succession.

In the illustrated embodiment of the invention the positioning movement is manually effected, and an important feature of the invention is the provision of means for insuring that the positioning movement shall be completed before the pressing movement begins.

Another important feature of the invention is the provision in a machine of this type in which the pressing movement is effected by power driven mechanism of means for automatically actuating said mechanism upon the completion of the positioning movement which is particularly applicable to machines in which the operative relation of the presser members is the same for each operation.

Another important feature of the invention is the provision in a machine of the type described of means for preventing relative movement of the presser members out of operative relation to each other, after they have been brought into operative relation, until after the pressing operation.

In the preferred embodiment of the invention in which a presser member is arranged to swing about a horizontal axis below a bed to bring its pressure surface into and out of parallelism to the pressure surface of the bed, it is important not only that the pres-

sure surfaces come into parallelism before the pressing operation takes place and that they be maintained in parallelism throughout the pressing operation, but also that the mechanism through which the pressing operation is effected be constructed to impart to the presser member a right line movement. In one aspect, therefore, the invention may be said to comprise the provision in a press of the type described of a presser member movable about an axis into and out of a position in which its pressure surface is parallel to that of the bed, of mechanism for effecting a right line pressing movement of the presser member, and means for preventing the actuation of said mechanism until the pressure surfaces come into parallelism.

As hereinabove suggested, an important feature of the invention is the provision in a press of the aforementioned general type of means for automatically actuating the mechanism by which the pressing movement is effected upon the completion of the positioning movement, or, as in the illustrated embodiment of the invention, the provision in a press of the type hereinabove described of means whereby the coming into operative position of the presser member actuates normally inoperative mechanism by which the pressing operation is effected. As further suggested above, the positioning movement in the illustrated embodiment of the invention is manually effected. In another aspect, therefore, the invention may be said to comprise the provision in a press of the type described in which a presser member is arranged to be manually moved into and out of operative relation to the stock supporting bed, of means whereby the coming into operative position of the presser member actuates the mechanism by which the pressing operation is effected.

In the illustrated embodiment of the invention both the movement of the presser member into operative position and its movement out of operative position are manually effected. To increase the capacity of the machine and at the same time to relieve the operator somewhat of the burden of one of these movements means is preferably provided for aiding one of the movements. When the press is constructed as herein illustrated so that the presser member swings about an axis below the bed in its movement into and out of operative position, the movement out of operative position will obviously not require much effort, since it will be aided by gravity. Means is therefore preferably provided for aiding the movement of the presser member into operative position, such means being preferably arranged to resist yieldingly the movement of the presser member out of operative position.

Another feature of the invention consists in the provision of means for insuring a right

line pressing movement of the presser member, particularly in a machine of the type herein illustrated in which the presser member swings in its positioning movement about an axis below the bed. This means, which will comprise preferably means for guiding the presser member in its pressing movement, may be arranged to become operative either before or after the pressing movement begins or simultaneously with the beginning of the pressing movement. To insure positively the parallelism of the pressure surfaces it is preferable that the means for guiding the presser member in its pressing movement be arranged to become operative before the pressing movement begins and a further important feature of the invention, therefore, is the provision of means for insuring a right line movement of the presser member which becomes operative before the pressing movement begins.

In the illustrated construction the means for guiding the presser member in its pressing movement comprises stops which prevent the movement of the presser member out of operative position until after the pressing operation. Of these stops one is engaged as the presser member comes into operative position, and the other is arranged to be brought into operative relation to the presser member before the beginning of the pressing movement. In another aspect, therefore, the invention may be said to comprise the provision in a machine of the class described in which a presser member is arranged to be swung about a horizontal axis into and out of a position in which its pressure surface is parallel with that of the bed of means for preventing movement of the presser member out of operative position before the operation of the mechanism by which the pressing movement is effected. In still another aspect the invention may be said to comprise the provision, in a machine of the class described, of means for preventing the presser member from moving out of operative position until after the pressing operation which comes into operative relation to the presser member before the beginning of the pressing movement.

In the preferred embodiment the means just described is arranged to be brought into operative relation to the presser member through means actuated by the presser member as it comes into operative position and the invention may, therefore, be further defined as comprising the provision in a machine of the class described of means for preventing the movement of the presser member out of operative position until after the pressing operation which is brought into operative relation to the presser member as the presser member comes into operative relation to the bed.

As hereinabove suggested it is important,

in a machine of this type, that the pressure surfaces be in parallelism when the pressing operation takes place. As further suggested above, an object of the invention is to insure parallelism of the pressure surfaces at the time the pressing operation takes place.

In the illustrated embodiment, in which the positioning movement of the presser member is manually effected and in which the actuation of the mechanism for effecting the pressing operation takes place upon the completion of the positioning movement, it is therefore important to prevent the actuation of this mechanism at other times, and an important object of the invention, therefore, is the provision of means for thus preventing the actuation of the mechanism for effecting the pressing movement when the presser member is not in operative position. In the illustrated embodiment this means comprises means for preventing the movement into operative position of the guiding means until the presser member has come into operative position, said guiding means being so associated with the means for actuating the mechanism above referred to that this mechanism cannot be actuated until the guiding means has come into operative position. In another aspect, therefore, the invention may be said to comprise the provision, in a press of the type described, of means for insuring a right line movement of the presser member during the pressing movement constructed and arranged to prevent the actuation of the mechanism by which the pressing movement is effected when the presser member is not in operative position.

Other features and objects of the invention will be apparent from a consideration of the following description and claims in connection with the accompanying drawings, in which:—

Figure 1 is a side elevation of the machine with parts shown in section; Fig. 2 is a side elevation of a detail; Fig. 3 is a front elevation of the machine with parts shown in section; Fig. 4 is a detail of the clutch tripping mechanism; Fig. 5 is a side elevation of an alternative construction of machine according to the present invention showing in detail the combined clutch tripping mechanism and rear guide device; and Fig. 6 is a side elevation of a detail of the guiding mechanism shown in Fig. 5.

The table or support 2 for the cutting block 4 is preferably adjustably mounted in the frame 6 of the machine whereby the block may be raised as its upper surface is worn away. Means is preferably provided for adjusting the two ends of the table 2 simultaneously, the illustrated means comprising a shaft 8 provided with a hand wheel 10 and having upon each end a worm 11 which engages a worm wheel 12 confined

against vertical movement with respect to the frame 6, and threaded upon a post 14 by which the table 2 is carried.

The block 4 is adapted to support the material to be cut and the dies by which the cutting is effected, and the cooperating platen 16 preferably having a pressure surface of an area sufficient to cover at one time the whole of the opposed surface of the block 4 is supported at each of its ends, or upon each side of the machine, on rods 18 and 20, conveniently two, which are secured at their lower ends to blocks 22 fixed on the pivot or fulcrum shaft 24. The shaft 24 turns in fulcrum blocks 26 guided in vertical ways 28 in the machine frame whereby the platen 16 may turn with the shaft 24 about the axis of said shaft in its positioning movement with respect to the block 4 and may move vertically with the shaft 24 and the fulcrum blocks 26 in its pressing movement. The vertical movement of the shaft 24 and of the platen 16 is effected through connections with a driving shaft 30 which is normally inoperative, but to which a loose pulley 32 mounted upon said shaft and connected to any suitable source of power may be clutched. Any suitable clutch mechanism may be employed for this purpose, preferably of the non-repeating type.

The connections between the shaft 24 and the shaft 30 comprise links 34 which are forked at their upper ends to embrace the blocks 22 and are pivoted upon the ends of the shaft 24. The lower ends of the links 34 are provided with openings which receive eccentrics 36 upon the shaft 30 by which the desired movement of the links and with them the shaft 24 and platen 16 is effected as the shaft 30 turns.

As hereinabove suggested a clutch, preferably of the non-repeating type, is provided for clutching the loose pulley 32 to the driving shaft 30. In the illustrated construction the tripping mechanism for this clutch is so arranged that when the platen is manually or otherwise moved into its operative position, that is, into a position in which its pressure surface will be parallel to that of the block 4, the tripping mechanism will be actuated to cause the clutch to effect an operative connection between the loose pulley 32 and the shaft 30 automatically at the right time. This will cause a single rotation to be imparted to the shaft 30 whereby the platen 16 will be moved down into engagement with the die or dies to effect the pressing or cutting operation, the downward movement of the platen being effected by the connections between the shaft 30 and the shaft 24 comprising the eccentrics 36 and the links 34 hereinabove described. A die is shown at 37.

The clutch may conveniently be of the

type disclosed in an application for Letters Patent of the United States of Arthur Bates, Serial No. 443,060, filed July 11, 1908, which comprises an expanding ring and means for expanding said ring into clutching engagement with the surrounding flange upon the loose pulley comprising a spring-pressed plunger, the plunger of this clutch being shown in section in Fig. 1 of the drawings and indicated by the reference numeral 38. The clutch tripping gear may also conveniently be of the general type disclosed in said co-pending application which comprises a wedge carrying lever arranged to drop into such position that its wedge engages a projection upon the spring-pressed plunger and withdraws it from its ring expanding position, and a second lever arranged to be latched to said wedge carrying lever to lift the latter lever out of its clutch releasing position and to be automatically unlatched from said wedge carrying lever to permit the wedge to drop into clutch releasing position before the completion of one rotation of the driving shaft.

The clutch tripping gear, together with the connections through which the movement of the platen or of the presser member into operative position over the bed serves to clutch the loose pulley 32 to the shaft 30, may conveniently be referred to as a whole as "clutch tripping mechanism" or "clutch actuating mechanism." The illustrated mechanism comprises a contact face 40 formed upon a lateral projection of a cross piece 42 bolted to the lateral supports 18 and 20 for the platen, the said face 40 being arranged to engage a roll 44 upon one arm of a bell-crank lever 46 fulcrumed at 48 upon the machine frame, the other arm of the bell-crank lever 46 being linked by a rod 50 to a lever 52 constituting an element of the clutch tripping gear hereinabove referred to. The lever 52 carries a catch plate 54 arranged to engage beneath a similar catch plate 56 carried upon a latch 58 pivoted to the wedge carrying lever 60. The tail 62 of the latch 58 is arranged to be engaged by a projection upon the normally stationary clutch member when the clutched parts begin to rotate after the wedge carrying lever 60 has been lifted out of clutch releasing position through its connection with the lever 52, the engagement of said projection with the tail 62 causing the catch 56 to be moved out of operative position over the catch 54, thereby permitting the wedge carrying lever 60 to be dropped back into clutch releasing position.

Whenever the platen 16 comes into position over the block or bed 4, the engagement of the face 40 with the roll 44 will cause the bell-crank 46 to be rocked in a direction to lift the rod 50 and with it the lever 52, thus carrying the wedge carrying lever 60 out of

clutch releasing position and permitting the spring-pressed plunger 38 to effect the clutching of the loose pulley 32 to the driving shaft 30 with the resultant series of operations hereinabove described.

To insure proper positioning of the platen over the bed before the pressing movement and at the same time to guide the presser member in its pressing movement, a combined stop and guide 64 is arranged upon the machine frame which coöperates with a guiding surface formed upon the lateral support for the platen or presser head or upon a part carried by this lateral support, the illustrated guiding surface being formed upon the front end of the cross piece 42 adjacent to the face 40. To further insure the proper positioning of the platen over the block or bed during the pressing operation and at the same time to prevent its movement out of operative position until after the pressing operation, another combined guide and stop 66 is provided which coöperates with a guiding surface 67 upon the rear end of the cross piece 42.

It will be noted that the combined stop and guide 66 does not become operative until the pressing movement begins. It is sometimes desirable, however, particularly when the movement of the platen into operative position is manually effected, to prevent the movement out of operative position before the pressing movement begins. To this end in the illustrated construction another guide and stop is provided which is brought into operative stopping position as the platen comes into operative position. The illustrated guide and stop comprises a bolt 68 having at its upper end a face beveled to lie flush with the face 66 and in the path of movement of the cross piece 42 when the bolt is in operative position, means being preferably provided for causing the bolt to be moved into operative position as the platen comes into its proper operative position over the bed.

The illustrated means comprises an extension 70 of the lever 52, said extension being connected by a link 72 to the lower end of the rod 68. It will thus be seen that as the platen 16 comes into operative position over the bed and the bell-crank 46 is rocked by the engagement of the face 40 with the roll 44, the lever 52 will be lifted through its connections with the bell-crank, thus lifting the extension 70 and moving the rod 68 up behind the face 67 upon the cross piece 42 and preventing the movement of the presser member out of operative position until after the pressing operation has been completed. It will be noted that the tail 62 upon the latch 58 is not engaged by the projection upon the stationary clutch member until after the clutched parts have turned far enough to cause the face 67 to come into

operative relation to the guide 66. The rod 68 is therefore not lowered until after the movement of the presser member out of operative position is prevented by the guide 5 and stop 66.

As hereinabove suggested, means is preferably provided for aiding one of the positioning movements of the presser member. As further suggested this means is preferably arranged to aid the movement into operative position since the movement out of operative position in the illustrated construction is aided by gravity. The illustrated means comprises arms 74 clamped 15 upon the shaft 24, said arms carrying at their lower ends hooks 76 to which are connected the forward ends of springs 78 connected at their rear ends to a rod 80 in the base of the machine. A handle 82 is provided to be grasped by the operator in swinging the platen of the presser member into operative position.

To check the turning movement of the shaft 30 at the end of one complete rotation, a brake band 84 is provided which surrounds a brake drum 86 carried by the normally stationary clutch member, the ends of this band being connected to one arm of a lever 88 fulcrumed at 90 upon a bracket 30 upon the machine frame, the other arm of the lever being connected by a link 92 to a strap 94 confined upon a collar 96 connected to the shaft 24. As the shaft 24 returns to its uppermost position after the pressing 35 operation, the brake band 84 will be tightened upon the drum 86 by the connections just described.

The machine frame may be provided with brackets or extensions 100 upon which are carried buffers or stops 102, 104, 106, so proportioned and situated that whenever the platen 16 is swung away from the block 4 an adjustable stop 108 upon one of the supporting rods will engage one of said buffers and 45 thus limit the extent of rearward movement of the platen. To prevent meddling with the machine when the operator has to leave it, means is provided for locking the platen in its rearmost position whereby the machine 50 cannot be started since it is essential that the platen be brought into its forward position before the clutch can be tripped.

It will be noted that when the platen is out of its operative position the cross piece 42 is located above the upper end of the rod 68 and that, therefore, the extension 70 of the lever 60 cannot be moved upward, thus preventing the tripping of the clutch, until the platen has been moved into its operative 60 position.

It will be noted further that the provision of link connections between the power driven shaft 30 and the shaft 24 and the provision of vertical guides for the fulcrum blocks 26, 65 together with the guides 64, 66 and 68, in-

sures a right line movement of the presser member throughout the pressing operation. This is important when a press of this type is to be used with dies for cutting out thin sheet material such as upper leather for 70 boots and shoes. These dies which are usually light, shallow and open should have delivered to them, in order to obtain the best results, a comparatively quick blow which will be delivered uniformly throughout the 75 outline of the die. If the pressure surfaces of the platen and block are not in parallelism at the time the pressing operation takes place it will be obvious that the pressure upon one side of the die will be greater than 80 upon the other, and that danger of distorting the die will be present. Furthermore one part of the die will be driven farther into the block than another, thus damaging the block and making it unsuitable for use 85 with the finer grades of stock such as upper leather.

The means for locking the machine against unauthorized manipulation hereinabove referred to may comprise, as in the 90 illustrated construction, a bolt 110 arranged to slide in a bore in the shaft 8 and carrying a pin 112 which is guided in a slot 114 in the shaft and is engaged by a collar 116 surrounding the shaft whereby the bolt may 95 be moved into position in front of the rod 18 to prevent the movement of the presser member into operative position over the block 4.

In the embodiment of the machine illustrated in Figs. 5 and 6, is shown an alternative construction of combined clutch tripping gear and rear guide device for guiding the platen during the first part of its downward movement. The sliding bolt 68 100 mounted upon the frame of the machine has attached to its lower end a spring 124 which tends to move the said bolt upward and does move it at such times as it is not restrained by the arcual underface of the 110 crosspiece 42 or by means about to be described. Attached by a pivot 120 to the frame of the machine is a pawl 118 that is adapted to engage a notch 122 in the aforesaid sliding bolt 68, and to hold it a slight 115 distance below the arcual underface of the cross piece 42. The spring 124 is coupled to an extension from the said pawl, and operates to impel the pawl toward engagement with the notch 122 in the bolt. An adjustable stop screw 128 is carried by a lug projecting rearwardly from the crosspiece 42 and this stop screw engages with the bolt 68 whenever the platen has been depressed sufficiently to bring the rear guide face 67 125 of the crosspiece 42 into engagement with the fixed guide face (66) on the frame of the machine. Upon the completion of the downward stroke of the platen this stop screw depresses the bolt sufficiently to enable 130

the pawl 118 to enter the notch 122. The platen supporting rod 18 is provided with a tappet face 130 adapted when the platen is moved into its rearmost position, to engage the tail end of the pawl 118 and operate it to release the bolt 68 so that it may then move upward under the influence of the spring 124 until stopped by contact with the arcual underface of the crosspiece 42.

10 The lower end of the sliding bolt 68 is coupled by the rod or link 72 to the rigidly united levers 60 and 70 that are adapted to trip a one revolution clutch of any known type on the driving shaft 30 whenever the sliding bolt 68 moves upward into engagement with the rear guide face 67 on the crosspiece 42.

The mode of operation of the alternative construction is as follows:—The platen being in the position shown in Fig. 5 is swung into operative position over the bed. As the platen moves into such position the end of the sliding bolt 68 rides against the arcual underside of the cross piece 42, but upon the termination of the platen positioning movement the bolt, by the action of the spring 124 is raised and brought into engagement with the guide face 67, thus forming a rear guide for the platen frame. At the same time the rod or link 72 attached to the sliding bolt 68 moves upward the lever 70, thereby tripping the clutch on the shaft 30 and starting the pressure applying movement. On the descent of the platen the stop screw 128 engages the bolt 68 and moves it downward against the pull of the spring 124 and into the position shown in Fig. 6 where the pawl 118 holds it during the re-ascend of the platen, and until the platen has been swung backward into inoperative position. When the platen reaches its rearmost position the tappet 130 trips the pawl 118 and thus releases the bolt to allow it to move upward into engagement with the arcual underface of the crosspiece 42 in readiness for the next operation.

I claim—

1. In a press, presser members arranged for relative bodily movement into and out of operative relation to each other, mechanism for effecting a relative pressing movement of said members, and means whereby said mechanism is automatically actuated when said members come into operative relation to each other.

2. In a press, presser members arranged for relative bodily movement into and out of operative relation to each other, mechanism for effecting a relative pressing movement of said members, and means whereby the coming into operative relation to each other of said members effects an actuation of said mechanism.

3. In a press, a stock supporting bed, a presser member arranged to be moved into

and out of operative relation to said bed, mechanism for effecting a relative pressing movement of said presser member and said bed, and means whereby the coming into operative relation to the bed of the presser member actuates said mechanism.

4. In a press, a bed, a presser member having a pressure surface area substantially co-extensive with that of the bed and movable into and out of a fixed operative relation to the bed, mechanism for effecting a relative pressing movement of the bed and the presser member, and means operated by said presser member as it comes into the said operative relation to the bed for actuating said mechanism.

5. A press, comprising in combination, a bed, a presser member arranged to be swung about a horizontal axis into and out of a position in which its pressure surface is parallel with that of the bed, mechanism for effecting a relative pressing movement of the presser member and bed, and means whereby the said mechanism is actuated when the pressure surfaces have come into parallelism.

6. In a press, a stock supporting bed, a platen arranged to be swung into and out of parallelism to the stock supporting face of said bed about an axis below the bed, mechanism for effecting a right line movement of said platen toward and away from the bed, and means for actuating said mechanism arranged to be automatically operated as said platen comes into parallelism to said bed.

7. In a press, a stock supporting bed, a presser member having a pressure surface area substantially co-extensive with that of the bed, arranged to swing about an axis below the bed into and out of a position in which its pressure surface is parallel to that of the bed, mechanism for effecting a relative pressing movement of the bed and the presser member when the pressure surfaces are parallel and means for automatically actuating said mechanism as the pressure surfaces come into parallelism.

8. A press, comprising in combination, a bed, a presser member manually movable into and out of operative relation to the bed, mechanism for effecting a relative pressing movement of the presser member and bed, and means whereby the manual movement of the presser member into operative position actuates said mechanism.

9. In a press, a stock supporting bed, a presser member arranged to be manually moved into operative relation to the bed about an axis below the bed, mechanism for moving the presser member toward and away from the bed, and means whereby the coming into operative relation to the bed of the presser member actuates said mechanism.

10. A press, comprising in combination, a

stock supporting bed, a presser member arranged to be moved into and out of operative relation to said bed, mechanism for effecting a relative pressing movement of said presser member and said bed, and means for actuating said mechanism comprising a part to be engaged by the presser member for this purpose and so located in the path of movement of the presser member that the actuation takes place only when the presser member comes into operative relation to the bed.

11. A press, comprising in combination, a bed, a presser member manually movable into and out of operative relation to said bed, mechanism for effecting a relative pressing movement of the presser member and the bed, means for actuating said mechanism comprising a part to be engaged by the presser member and so positioned in the path of manual movement of said presser member that such actuation will not take place until the presser member comes into operative position.

12. In a press, a stock supporting bed, a presser member having a pressure surface area substantially co-extensive with that of the bed and movable into and out of operative relation to the bed, mechanism for effecting a relative pressing movement of the bed and the presser member, means for actuating said mechanism comprising a clutch and clutch tripping means operated by the movement of said presser member into operative position.

13. A press, comprising in combination, a bed, a presser member movable into and out of operative relation to said bed, mechanism for effecting a relative pressing movement of the presser member and the bed, and means for actuating said mechanism constructed to permit only a single pressing operation, said means comprising a part to be engaged by the presser member and so located in the path of movement of the presser member that said mechanism is actuated only when the presser member comes into operative relation to the bed.

14. A press, comprising in combination, a bed, a presser member manually movable about a horizontal axis into and out of a position in which its pressure surface is parallel to that of the bed, mechanism for effecting a relative pressing movement of the presser member and bed, means for checking the manual movement of the presser member as the pressure surfaces come into parallelism, and means engaged and operated by the presser member as the pressure surfaces come into parallelism for actuating said mechanism.

15. A press, comprising in combination, a bed, a presser member manually movable about an axis below the bed into and out of a position in which its pressure surface is parallel to that of the bed, mechanism for

effecting a right line pressing movement of the presser member when the pressure surfaces are parallel, means in the path of movement of the presser member for checking the manual movement as the pressure surfaces come into parallelism, and means also located in the path of movement of the presser member for actuating the said mechanism as the pressure surfaces come into parallelism.

16. In a press, a stock supporting bed, a platen arranged to be swung into and out of parallelism to the stock supporting face of said bed, mechanism for effecting a right line movement of said platen toward and away from the bed, and means for preventing the actuation of said mechanism until said platen comes into parallelism to the bed.

17. A press, comprising in combination, a bed, a presser member arranged to be swung about a horizontal axis into and out of a position in which its pressure surface is parallel to that of the bed, mechanism for effecting a relative pressing movement of the presser member and bed, and means for preventing the actuation of said mechanism until the pressure surfaces have come into parallelism.

18. In a press, a stock supporting bed, a platen arranged to be manually swung into and out of parallelism to the stock supporting face of said bed about an axis below the bed, mechanism for effecting a right line movement of said platen toward and away from the bed, and means for preventing the actuation of said mechanism before the platen has come into parallelism to the bed.

19. A press, comprising in combination, a bed, a presser member arranged to be swung about a horizontal axis into and out of a position in which its pressure surface is parallel to that of the bed, mechanism for effecting a relative pressing movement of the presser member and bed, means whereby the said mechanism is actuated when the said pressure surfaces have come into parallelism and means for preventing the operation of said actuating means until the pressure surfaces have come into parallelism.

20. A press, comprising in combination, a bed, a presser member manually movable into and out of operative relation to said bed, mechanism for effecting a relative pressing movement of the presser member and bed, means whereby the coming into operative position of the presser member actuates said mechanism, and means for preventing the actuation of said mechanism until said presser member is in proper operative relation to the bed.

21. A press, comprising in combination, a bed, a presser member manually movable about an axis below the bed into and out of a position in which its pressure surface is

parallel with that of the bed, mechanism for effecting a right line pressing movement of the presser member, means in the path of movement of the presser member for actuating the said mechanism as the pressure surfaces come into parallelism, and means for preventing the actuation of said mechanism at other times.

* 22. A press, comprising in combination, a bed, a presser member movable into and out of operative relation to said bed, mechanism for effecting a relative pressing movement of the presser member and bed, and means for preventing movement of the presser member out of operative position until after the pressing operation constructed to prevent the actuation of said mechanism when said presser member is not in operative position.

23. In a press, a bed, a presser member having a pressure surface area substantially co-extensive with that of the bed and arranged to be swung about an axis below the bed into and out of a position in which its pressure surface is parallel to that of the bed, mechanism for effecting a relative pressing movement of the bed and the presser member when the pressure surfaces are parallel and means for maintaining the parallelism of said pressure surfaces throughout the pressing movement.

24. A press, comprising in combination, a bed, a presser member arranged to be swung about a horizontal axis into and out of an operative position in which its pressure surface is parallel to that of the bed, mechanism for effecting a relative pressing movement of the presser member and bed, and means for preventing movement of the presser member out of operative position before the operation of said mechanism.

25. A press, comprising in combination, a bed, a presser member movable into and out of operative relation to said bed, mechanism for effecting a relative pressing movement of said presser member and said bed, and means for preventing movement of the presser member out of operative position until after the pressing operation rendered operative by the movement of the presser member into operative position.

26. A press, comprising in combination, a bed, a platen arranged to be moved bodily into and out of operative relation to said bed, means for moving said platen toward and away from the bed to effect the pressing operation and a stop for preventing the movement of the platen out of operative position which becomes operative as the pressing operation begins.

27. In a press, a stock supporting bed, a platen arranged to be swung bodily into and out of operative position over said bed, mechanism for effecting a relative pressing movement of said platen and said bed, and

front and rear guides for insuring a right line pressing movement of said platen.

28. In a press, a stock supporting bed, a presser member arranged to be swung into and out of operative relation to said bed about a horizontal axis below the bed, mechanism for moving said presser member toward and away from the bed to effect a pressing operation, a front guide for said presser member in its pressing movement and a rear guide for said presser member brought into operative position as said mechanism is actuated.

29. A press, comprising in combination, a stock supporting bed, a presser member arranged to be swung into and out of operative relation to said bed, a stop for limiting the movement of said presser member into operative position, and a second stop for preventing its movement out of operative position until after the pressing operation, said second stop being rendered operative by the movement of said presser member into operative position.

30. A press, comprising in combination, a bed, a presser member arranged to be swung into and out of operative relation to said bed about pivots located below the bed, means for depressing the pivots when the presser member is in operative position to effect a pressing operation, and means for preventing movement of the presser member out of operative position during the pressing operation.

31. A press, comprising in combination, a bed, a presser member movable into and out of operative relation to said bed, mechanism for effecting a relative pressing movement of the presser member and bed, means whereby the movement of the presser member into operative position effects an actuation of said mechanism, and means operated from the aforementioned means for interposing a positive stop in the way of the movement of said presser member out of operative position.

32. A press, comprising in combination, a bed, a presser member movable into and out of operative relation to the bed, mechanism for effecting a relative pressing movement of the presser member and bed, means comprising a member located in the path of and arranged to be engaged by the presser member in its movement in one direction for actuating said mechanism, and means operated from said aforementioned means for preventing the movement of the presser member in the other direction until after the pressing operation.

33. In a press, a stock supporting bed, a presser member arranged to be swung into and out of operative relation to said bed about a horizontal axis below the bed, mechanism for effecting a relative pressing movement of said presser member and said bed,

and means for yieldingly resisting the movement of said presser member out of operative position.

34. In a press, a stock supporting bed, a presser member arranged to swing into and out of operative relation to said bed about a horizontal axis below the bed, mechanism for effecting a relative pressing movement of said presser member and said bed, a horizontal shaft located below the bed to which said presser member is attached, and means for yieldingly resisting the movement of said presser member out of operative position comprising arms attached to said shaft and springs attached to said arms.

35. A press, having in combination, a bed, a presser member arranged to be swung into and out of operative relation to the bed about a horizontal axis lying below the bed, mechanism for moving said presser member toward and away from the bed to effect a pressing operation, means for yieldingly resisting the movement of the presser member out of operative position, and means engaged by said member as it comes into operative position for actuating said mechanism.

36. A press, having in combination, a bed, a platen arranged to be brought into and out of operative relation to the bed, lateral supports for said platen arranged to turn about pivots below the bed, an adjustable stop upon a lateral support and a series of cooperating fixed stops upon the machine frame bearing different operative relations to said adjustable stop.

37. In a press, a stock supporting bed, a platen arranged to be manually swung into and out of parallelism to the stock supporting face of said bed about an axis below the bed, mechanism for effecting a right line movement of said platen toward and away from the bed to force a die through stock supported on the bed, and means for preventing the actuation of said mechanism when the platen is not in parallelism to the bed.

38. In a press, a stock supporting bed, a platen arranged to be swung bodily into

and out of operative position over said bed, mechanism for effecting a relative pressing movement of said platen and said bed to force a die through stock supported on the bed, and front and rear guides for insuring a right line movement of said platen.

39. In a press, a stock supporting bed, a platen, lateral supports for said platen arranged to turn about pivots below the bed, means for moving said pivots in a vertical line to depress said platen to effect a pressing operation when the platen is in operative position over the bed, means for insuring vertical movement of said pivots and means for insuring vertical movement of said lateral supports.

40. In a press, a bed, a platen for engaging a die and forcing it through stock supported on the bed, lateral supports for said platen arranged to turn about pivots below the bed, mechanism for depressing and raising said pivots to cause said platen to effect a pressing operation, means for insuring movement of said pivots in a vertical line as they are depressed and raised, and means for insuring movement of said lateral supports in a vertical line during the pressing operation.

41. In a press, a bed, a presser member arranged to be swung into and out of operative relation to said bed about a horizontal axis below the bed, fulcrum blocks carrying pivots about which said presser member turns, vertical guides for said fulcrum blocks, means for depressing said blocks and pivots to effect a pressing movement of said presser member when in operative position over the bed, and vertical guides for said presser member arranged to cooperate with the vertical guides of the fulcrum blocks to insure a right line pressing movement of the presser member.

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

ARTHUR BATES.

Witnesses:

ARTHUR ERNEST JERRAM,
KATHERINE PEYTON.