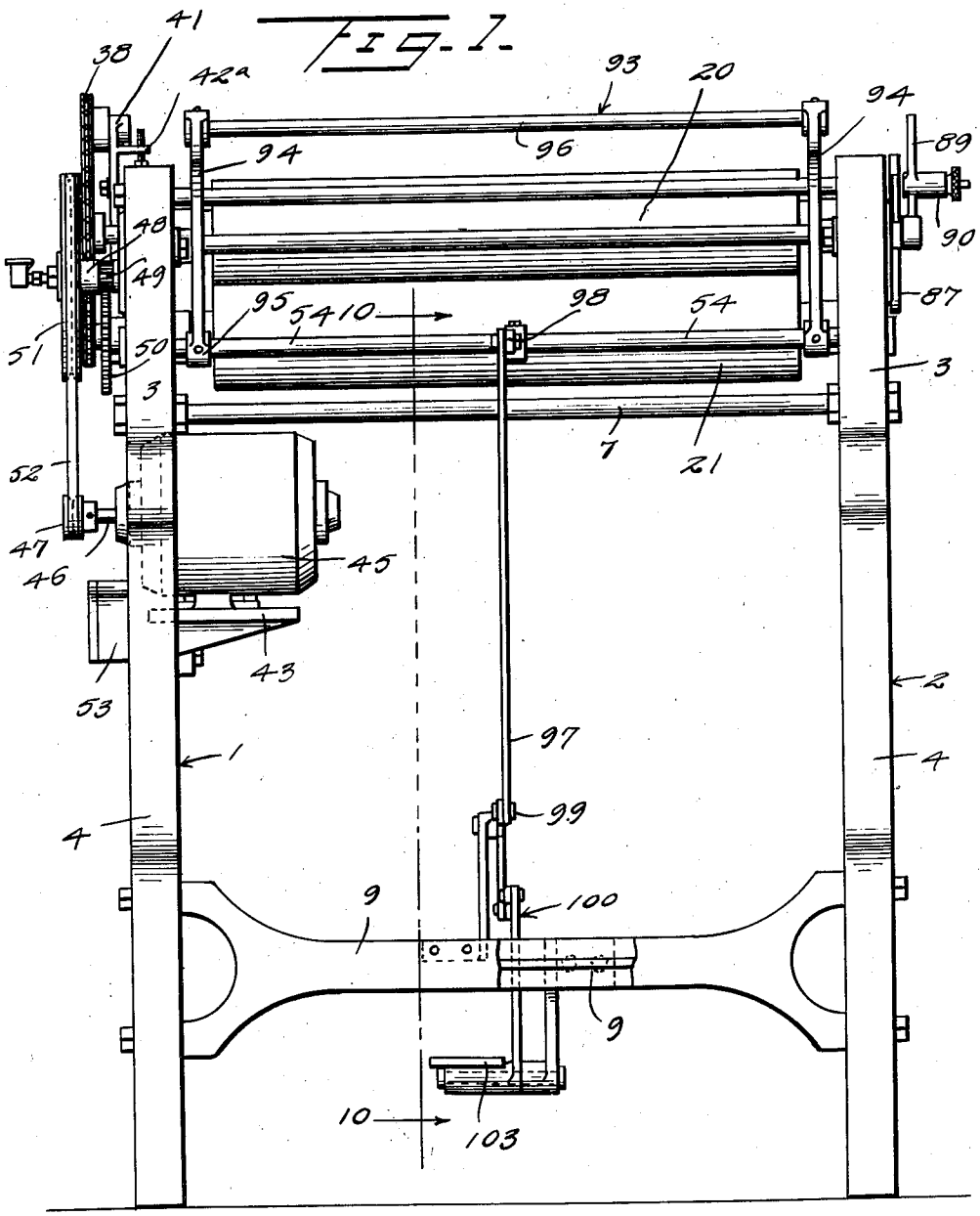
Nov. 17, 1942. J. M. MINKOW 2,302,566

ROTARY PRESS

Filed Dec. 10, 1940 4 Sheets-Sheet 1

Fig. 1.



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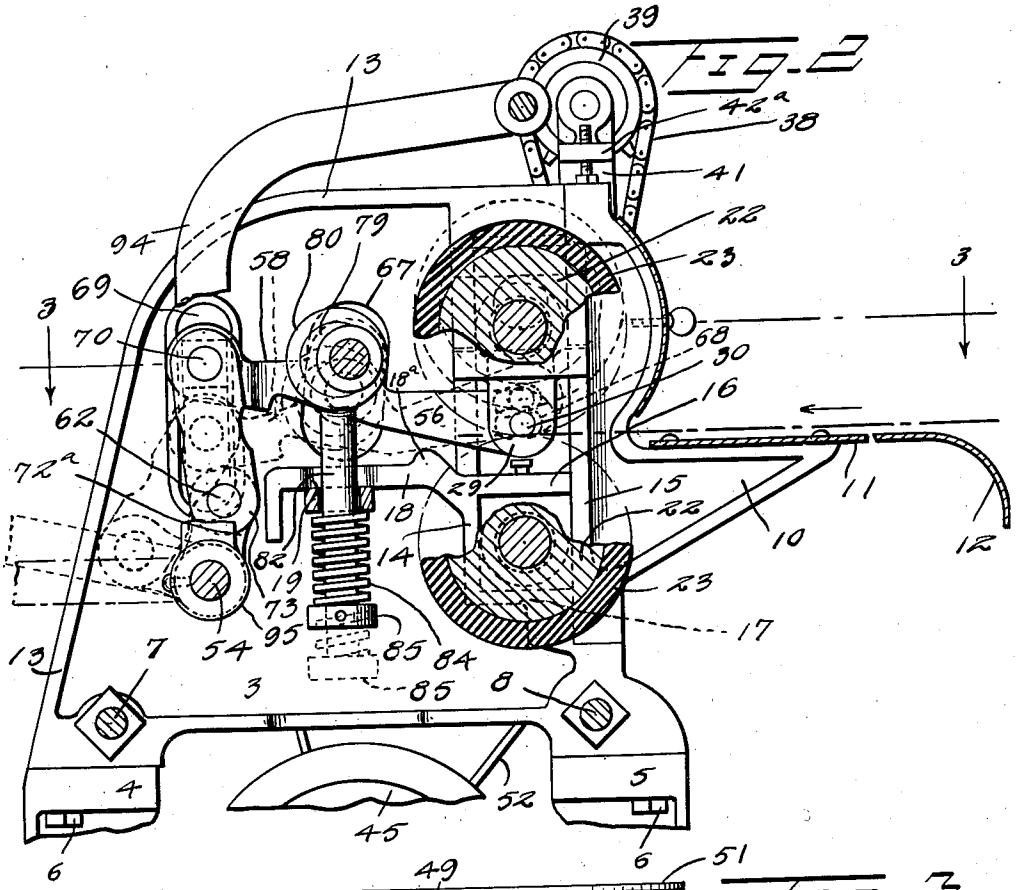


FIG. 2

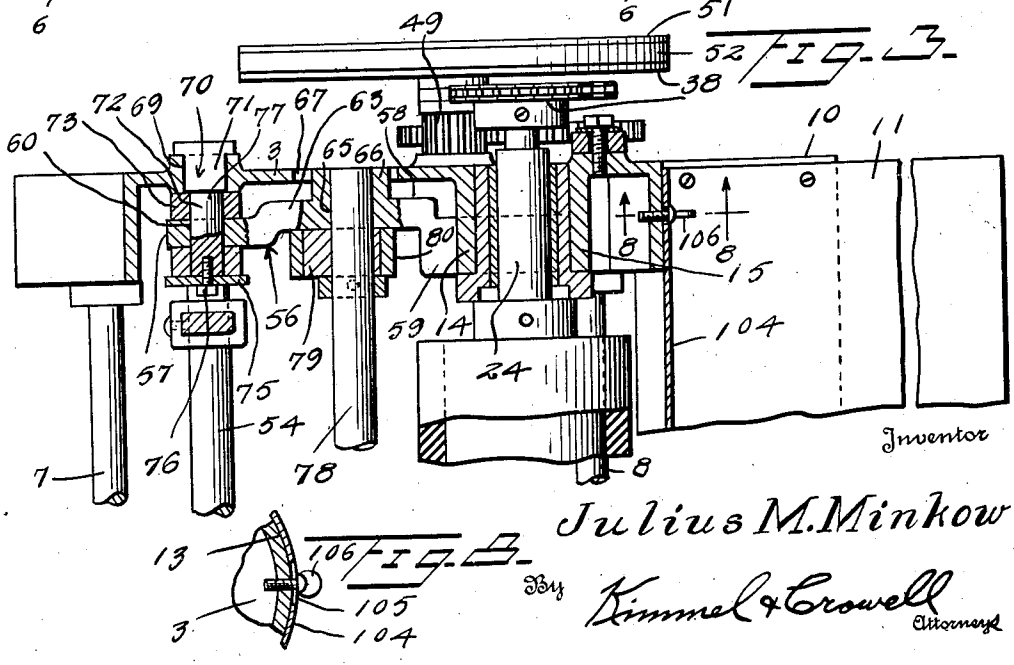


FIG. 3

FIG. 4

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FIG. 4.

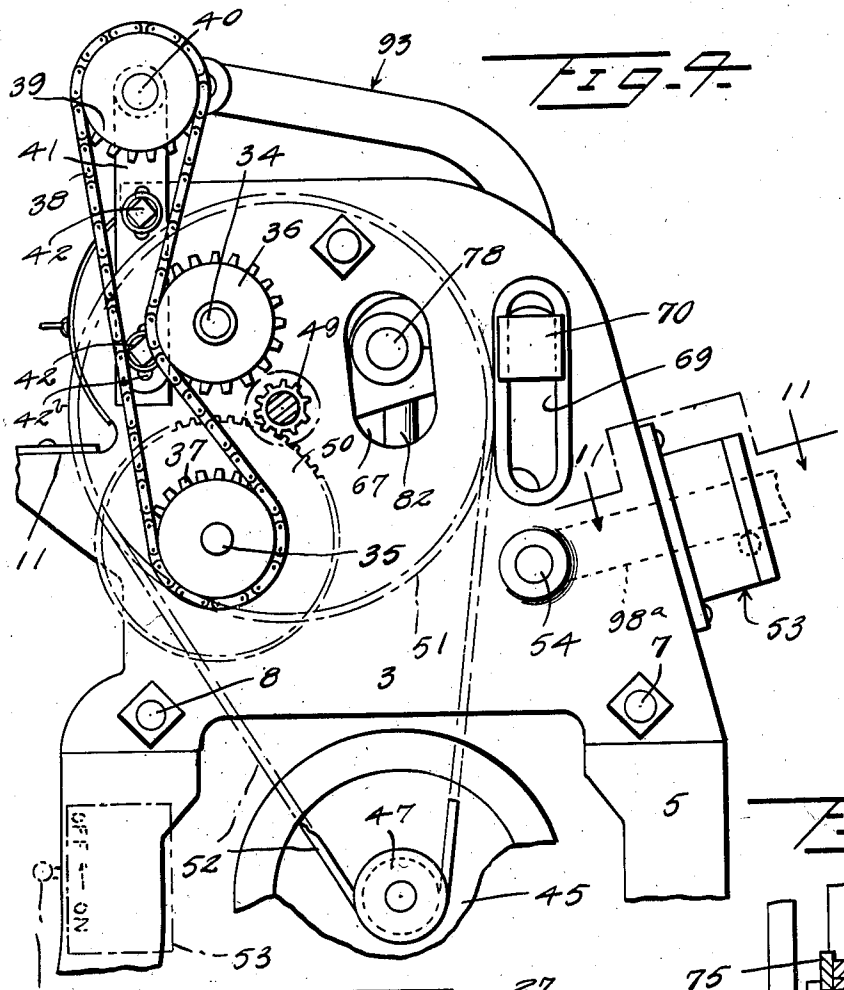


FIG. 5.

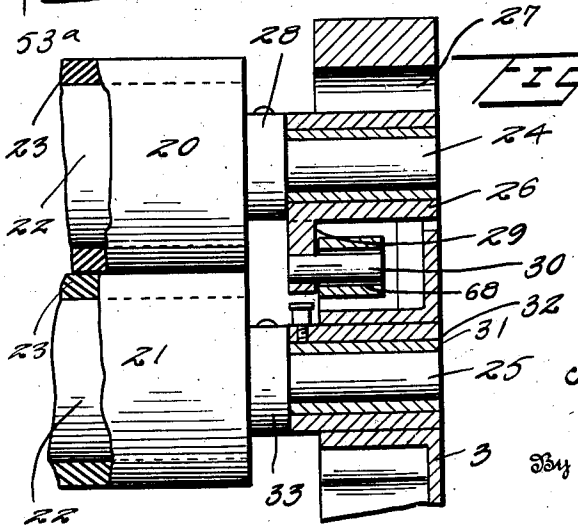
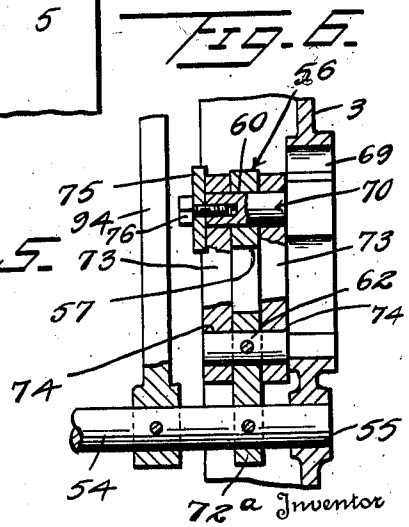


FIG. 6.



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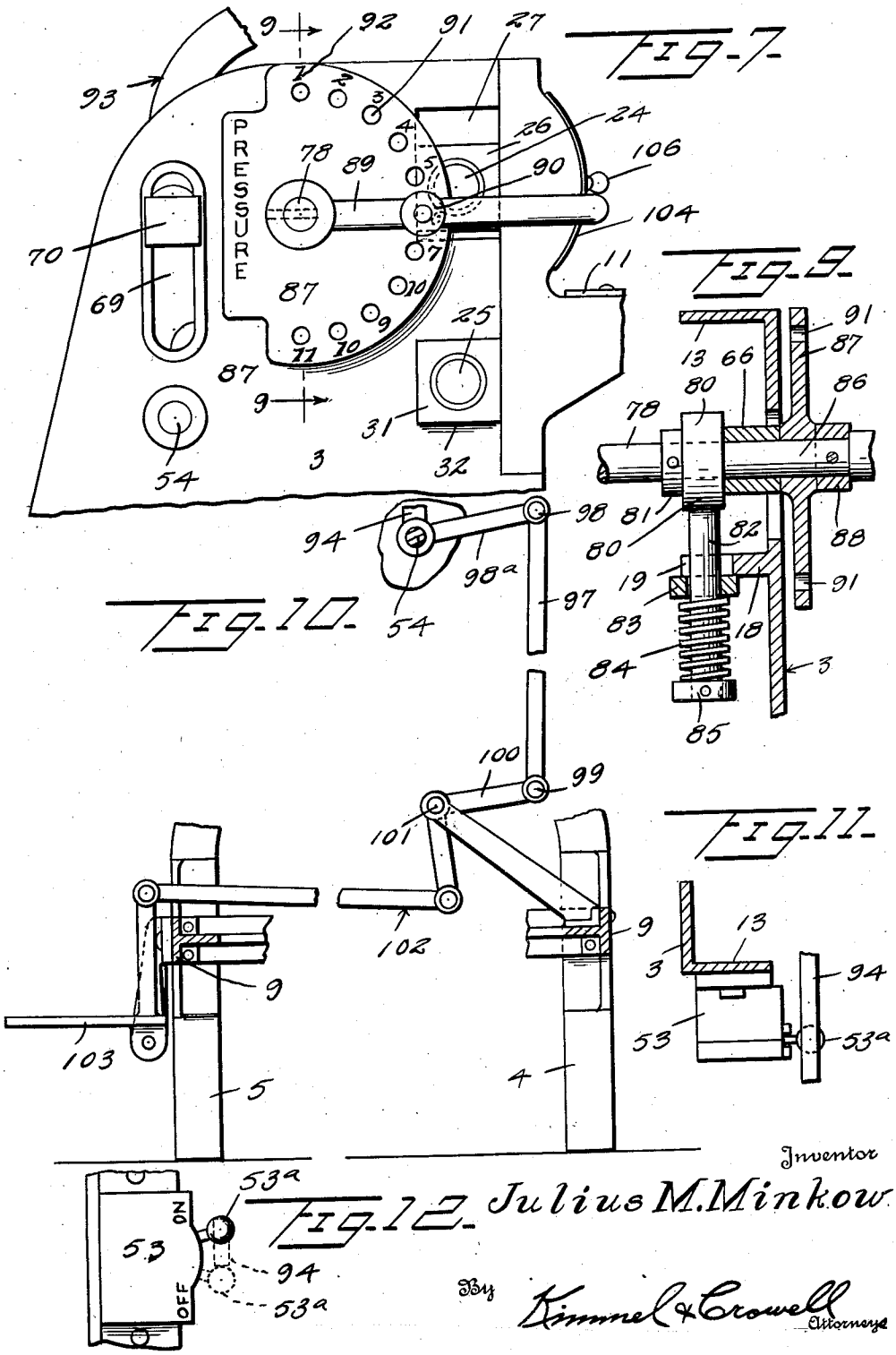


Fig. 7.

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

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Patented Nov. 17, 1942 2,302,566

UNITED STATES PATENT OFFICE

2,302,566

ROTARY PRESS

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Application December 10, 1940, Serial No. 369,509

16 Claims. (Cl. 154—1)

This invention relates to a rotary or roller press and is designed primarily for use in the paper box making industry where wrappers are to be secured to the body or base material of the box, but the invention also has general application for compressing together adhesively coated laminations of fibrous material, such as cardboard and paper to smoothly press one onto the other and provide a composite body. It is to be understood, however, that a rotary or roller press, in accordance with this invention, is for use in any connection for which it may be found applicable.

The invention further aims to provide a press, of the class referred to, with means for smoothly and satisfactorily pressing together a plurality of adhesively coated laminations of fibrous, paper or other materials to form a solid composite sheet.

The invention aims to provide a press, of the class referred to, in a manner as hereinafter set forth, including a lower pressure applying roller operating on a fixed axis and an upper bodily movable pressure applying roller operating on a shiftable axis for disposition in superimposed contacting relation with respect to the lower roller, adjustable pressure applying means for the upper roller and means to provide for quickly and easily shifting the upper roller away from the lower roller without the necessity of resetting the originally predetermined set pressure for the upper roller when the latter is returned to its contacting pressure applying relation with respect to the lower roller.

The invention further aims to provide, in a manner as hereinafter set forth, a press of the class referred to, including a chain drive common to the upper and lower pressure applying rollers whereby full driving contact is maintained in any position of the upper roller relative to the lower roller, and whereby the arrangement of the chain drive relative to the rollers is such that when the upper roller is adjusted or moved away from the lower roller full contact is maintained by the chain drive in the position of the upper roller, or in other words, when material is run through between the rollers the upper roller drive gear merely rides up on the chain the thickness of the material and runs smoothly, which is a material advantage over the employment of intermeshing gears as if gears were used, contact between the gear teeth would be decreased by the space of the thickness of the material and the pitch diameters would be off their centers, thereby resulting in a very poor mesh and excessive wear on the teeth.

The invention further aims to provide, in a manner as hereinafter set forth, a press of the class referred to, for smoothly pressing a coated facing of paper to and throughout one face of a web of cardboard or like material of the same or greater thickness to thereby provide a smooth composite sheet.

The invention further aims to provide, in a manner as hereinafter set forth, a press of the class referred to, having a quick acting safety release in case the operator requires quick separation of the upper and lower pressure rollers as for example when the operator's hand is caught or the work is jammed.

The invention further aims to provide, in a manner as hereinafter set forth, a press of the class referred to, including a manually operable mechanism for instantly spreading and holding the rollers apart in case of emergency or when the use of the machine is not desired, to overcome the pressure applied to the upper roller acting to flatten the roller which would be the case if the rollers remained in superimposed relation for an extended period, and whereby when the rollers are brought into contact again, the pressure setting means remains as before the rollers were separated.

The invention further aims to provide, in a manner as hereinafter set forth, a press of the class referred to, including new and novel means for applying pressure to the upper roller.

The invention further aims to provide, in a manner as hereinafter set forth, a rotary or roller press having means to permit of the spreading of the pressure applying rollers without effect on the action of the roller driving means and during the operation of the latter.

The invention aims to provide, in a manner as hereinafter set forth, a press of the class referred to, which is comparatively simple in its construction and arrangement, strong, durable, thoroughly efficient in use for the purpose intended thereby, readily assembled, expeditiously repaired when occasion requires and comparatively inexpensive to manufacture.

Embodying the aims aforesaid and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a rear elevation partly broken away of the press,

Figure 2 is a fragmentary view in vertical section looking towards the inner face of the upper portion of one side of the machine, showing the safety device or roller spreading means, in full lines in normal position with the rollers contacting, and in dotted lines in active position, the rollers being spread apart,

Figure 3 is a section on line 3—3, Figure 2,

Figure 4 is a fragmentary view in elevation looking towards the upper portion of the outer face of one side of the machine illustrating the drive for the pressure applying rollers,

Figure 5 is a fragmentary view in vertical section of the upper portion of one side of the machine, illustrating the mounting for an end of the upper and lower rollers,

Figure 6 is a fragmentary view in vertical section illustrating elements of the safety,

Figure 7 is a fragmentary view in elevation looking towards the outer face of the upper portion of one side of the machine and showing the controlling means for the pressure applying means for the upper roller.

Figure 8 is a section on line 8—8, Figure 3,

Figure 9 is a section on line 9—9, Figure 7,

Figure 10 is a fragmentary section on line 10—10, Figure 1,

Figure 11 is a section on line 11—11, Figure 4, and

Figure 12 is a side elevation of the switch.

The machine includes a frame formed of a pair of side members 1, 2, each including an upstanding head piece 3 and a pair of spaced aligned rear and front legs 4, 5, respectively, upon which the head piece 3 is mounted. The head piece 3 and legs 4, 5 are secured together by the holdfast means 6. The head pieces 3 are secured together by cross bars 7, 8. The frame includes a combined bracing and supporting member 9, which is connected to the legs, 4, 5 at the lower portion of the latter.

Each head piece 3 is formed at its front and below its top with an extension 10 substantially of triangular form and said extensions coact to provide a support for a table or platform 11 having a downturned outer end 12. Each head piece 3 is provided with an inwardly extending flange on its inner face as indicated at 13. The flange 13 is flush with the edge of the head piece. The inner face of each head piece in proximity to its front is provided with spaced parallel vertically disposed reinforcing ribs 14, 15 and also with a transverse reinforcing rib 16 arranged between the ribs 14, 15. The lower ends of the ribs 14, 15 are connected together by a transverse rib 17. The inner face of each head piece 3 is provided with a web 18, which extends rearwardly from the rib 14 and aligns with the rib 16. The web 18 is cut out, as at 19, to form a clearance. The web 18 is provided with a rounded protuberance 18*a* on its upper face forwardly of the cut-out 19. The protuberance 18*a* constitutes a fulcrum for the horizontal leg 58 of the lever 56, hereinafter described.

The machine includes an upper pressure applying roller 20 and a lower pressure applying roller 21. These rollers are normally arranged in superimposed relation. Each roller includes a metallic core 22 having a facing of rubber 23 of the desired thickness. The rollers 20, 21 are carried by shafts 24, 25 respectively. The shaft 24 is mounted in vertically adjustable bearings 26 arranged between the ribs 14, 15 and extended into aligned slots 27 provided in the head pieces 3. The bearings 26 project inwardly of the ribs 14, 15. The shaft 24 has secured thereto fixed collars 28, which abut the ends of the roller 20. The bearings 26 at their inner ends are formed with depending parts 29 carrying outwardly directed pins 30.

The shaft 25 for the roller 21 is mounted in bearings 31 disposed between the ribs 14, 15 and extended into aligned openings 32 formed in the head pieces 3. The shaft 25 is provided with fixed collars 33 which bear against the ends of the roller 21. The shafts 24, 25 have corresponding ends reduced at 34, 35 respectively which extend outwardly from a head piece 3 and carry respectively sprocket gears 36, 37 which have correlated therewith a travelling endless link chain 38 constituting a drive for the roller 20. The chain travels against one side of the gear 36 and around the gear 37. The gears 36, 37 permanently mesh with a stretch of the chain 38. An idler sprocket gear 39 is arranged above the gears 36, 37 over which travels the chain 38. The gear 39 is carried by a stub shaft 40 mounted in the upper end of a vertically adjustable slotted support 41 which is adjustably connected, as at 42, to a head piece 3 and said support extends above such head piece. The adjusting means for the support 41 is indicated at 42*a* and it seats on the top of a head piece 3 (Figure 2). The adjustability of the support 41 provides for overcoming slack in the chain 38. The connections 42 extend through slots 42*b* in support 41 and engage in a head piece 3.

Secured to the side 1 of the frame is a support 43 for an electric motor 45, the shaft 46 of the latter which is extended outwardly carries a grooved pulley 47. Rotatably supported by and extended outwardly from a head piece 3 is a transmission shaft 48 provided with a pinion 49 which meshes with a gear 50 fixed to the shaft 26 inwardly of the sprocket gear 37. The shaft 48 has fixed thereto a grooved pulley 51 of greater diameter than the pulley 47. Extending from the latter to the pulley 41 for the purpose of driving it to provide for the operation of the shaft 48 is an endless belt 52. There is correlated with the motor 45 a switch 53 adapted to be connected to a source of electrical energy to provide for the operation of the motor 45. The motor 45 and its connection with respect to the shaft 25, provide for the operation of the roller 21, and the chain connection between the gear 37 and the gear 36 provides for the operation of the roller 20 simultaneously with the roller 21, but in a direction opposite to the direction of movement of said roller 21.

Journalled in the rear portions of the head pieces 3 are the end terminal portions of a rock shaft 54, as at 55 (Figures 1 and 6). Arranged relative to and above the end terminal portion of the shaft 54 is a pair of aligned forwardly extending elevation and lowering levers 56 of like form which are arranged within the head pieces and are common to the safety and to the pressure applying means for the roller 20. The rear ends of the levers 56 are connected with the shaft 54 by a holding means to be referred to. Each lever 56 includes a rear portion 57, an intermediate portion 58 and a forward portion 59. The portion 58 is offset outwardly with respect to the portions 57, 59. The portion 57 is formed with an opening 60. The portion 58 is provided substantially centrally thereof with an opening 65

and an outwardly directed collar 66 having its inner face forming an outward continuation of the wall of opening 65. The collar 66 extends into a slot 67 formed in a head piece 3. The said portion 59 terminates in a slot 68 of oval form which surrounds the pin 30, whereby the lever is pivotally connected with a bearing 26. Connected to and slidably mounted in the head pieces 3, as well as extending inwardly through the slots 69 in said head pieces, are pivot shafts 70 each having an enlarged flanged outer portion 71 and a reduced inner portion 72. The reduced portion 72 extends through the opening 60 in the rear portion 57 of a lever.

The holding means for connecting each of the levers 56 with the shaft 54 is in the form of an off-center toggle which functions to hold the levers 56 in set position relative to the application of pressure to the roller 20, and to hold levers 56 elevated when they shift the roll 20 upwardly from the roll 21 on the operation of the safety. Each holding means consists of an upstanding normally inwardly inclined link 72*a* which is fixed at its lower end to the shaft 54. Positioned at each side of the rear portion 57 of a lever 56 and pivoted at their upper ends upon the portion 72 of the shaft 70 is a normally upstanding outwardly inclined link 73. The link 72*a* is provided intermediate its ends with a fixed pin 62 which extends laterally in opposite directions with respect to the side faces of such link. The links 73 are provided in proximity to their lower ends with openings 74 for pivotally mounting them on the pin 62. The normal position of the holding means is shown in full lines, Figure 2, and in such position, said means acts to retain or hold the levers 56 in pressure applying position with respect to the roller 20. The dotted line showing of the holding means, Figure 2, is the position of said means when it has been shifted from normal when the safety is operated, and when in shifted position it holds the levers 56 in the dotted line position, Figure 2, to thereby releasably maintain the roller 20 elevated.

Apertured discs 75 are secured by the holdfast means 76 against the inner end of the shafts 70 for the purpose of retaining the links and the levers 56 on the reduced portions 72 of the shafts 70. The enlarged portions 71 of the shafts 70 form shoulders 77 and the said levers 56 and links 73 are confined between the discs 75 and the shoulders 77.

The machine includes a pressure applying means for the upper roller 20, and such means consists of a rock shaft 78 journalled at its ends in the collars 66 and extending through the openings 65 in the portions 58 of the levers 56. Fixed to the shaft 78 and arranged against the said portions 58 are cams 79, which are encompassed by upstanding collars 80 mounted in slidable relation with respect to the cams. Retaining collars 81 are fixed to the shaft 78 and act to confine the collars 80 against the said portions 58. Integral with the lower part of the collars 80 are depending rods 82, which pass through the cut-outs 19 in the webs 18. Surrounding the rods 82 and abutting the webs 18 are horizontal collars 83, which constitute abutments for coiled pressure applying springs 84. The lower end of the rods 82 have fixed thereto horizontal collars 85. The springs 84 surround the rods 82 and are interposed between the collars 83, 85. The collars 85 constitute abutments for the springs 84. The shaft 78 at one end extends from a collar 66, and the said extending end of shaft 78 is indicated at 86. The springs 84 have a dual purpose, one for applying pressure to the roller 20, and the other for releasably maintaining the holding means in its normal, or full line position and in its shifted or dotted line position.

There is correlated with the shaft 78 a combined controlling adjusting and latching means for such shaft which comprises an apertured stationary dial plate 87 mounted on the end 86 of shaft 78 and which abuts and is fixed relatively to a collar 66. Fixed to the shaft portion 86 outwardly of the dial plate 87 is a collar 88 carrying a handle or lever 89 for the purpose of rotating shaft 78 in selected directions. The handle or lever 89 is formed intermediate its ends with a spring-controlled latching element 90 for selective correlation with spaced openings 91 of an arcuate row formed in the dial plate 87 for the purpose of selectively latching the shaft 78 in its adjusted position for the purpose of maintaining the pressure desired for the upper roller 20. There is correlated with the openings 91 a progressively increasing scale 92 for selectively determining the pressure desired for the upper roller 20.

When the handle or lever 89 is moved clockwise, the shaft 78 is rotated in the same direction casing the eccentrics or cams 79 to move therewith in a like direction within the collars 80. The rods 82 which are integral with the collars 80 are thereby raised causing the tension of the springs 84 to be increased and in turn increasing the pressure of the roller 20 against the roller 21 through the movement downwardly of the levers 56. On a counter-clockwise movement of the lever 89, the reverse action is had and the pressure between the rollers is decreased.

The rods 82, one of which is on each side of the machine, move the same way at the same time when the shaft 78 is rotated. The slots 67 in the head pieces 3 provide a clearance for the up and down movement of the shaft 78 and the associated collars 66 on the levers 56. The pressure as applied to the upper roller 20 is yieldable, as is evident owing to the springs 84 forming elements of the pressure applying means.

The safety or spreading device which forms an element of the machine for the purpose of spreading apart the rollers, that is to say, of moving the roller 20 away from the roller 21 and returning the roller 20 to superimposed relation with respect to the roller 21, includes not only the protuberance 18*a*, the toggles and the levers 56, but further includes an upstanding frame 93 of arcuate contour in vertical cross section. The sides 94 of the frame are fixed to the shaft 54 at their lower ends, as at 95. The top bar 96 of the frame constitutes a gripping means for shifting the frame. In normal position, the frame extends upwardly at the rear of the machine and the bar 96 is positioned at a point in close proximity to the front of the machine at the top of the latter.

The safety is moved to operative position by the operator gripping the bar 96 and swinging the frame 93 rearwardly, which in turn will rock the shaft 54, and the latter acting on the levers 56 will cause them to move downwardly against the protuberances 18*a*. The levers 56 will then rock on the protuberances 18*a* as a fulcrum and will lift the upper roller 20 to the desired extent, whereby the rollers 20, 21 will be arranged in spaced apart relation. The lifting of the roller 20 is also assisted by the expansion of the springs 84 acting on the shaft 78. In this connection, attention is directed to the dotted line showing

in Figure 2. The safety is provided for the purpose of quickly spreading the rollers if one of the operator's hands or the work is jammed between the rollers, or if it is desired to keep the rollers apart when pressure is not wanted thereon. At the time that the levers **56** are rocked downwardly at their rear ends to roller releasing position, the tension of the springs **84** is reduced by downward movement of the rods **82**. However, upon raising of the rear ends of the levers **56** to a normal operating position, wherein the roller **20** is engaging the roller **21**, the rods **82** will be raised and the preselected tension or compression of the springs **84** will be reestablished. This is due to the fact that the shaft **78** is latched against rotation relative to the levers **56** by the latching means including the apertured plate **87** and the latching member **90**.

The safety also includes an auxiliary means for moving the frame **93** to its normal position and the levers **56** to the position from which they were shifted. The said means, with reference to Figures 1 and 10, includes an upstanding lift bar **97** which is pivotally connected at its upper end, as at **98**, to a lever arm **98***a* fixed to and extended rearwardly from the shaft **54**. The lower end of the lift bar **97** is pivotally connected as at **99** to the rear end of a link **100** which has its forward end pivotally connected, as at **101**, to a forwardly extending combined tread and shifting mechanism **102** connected to and depending at its front from the supporting member **9**. The tread **103** of the mechanism **102** is disposed at the front of the machine, and on depressing tread **103** the mechanism **102** will move rod **97** upwardly and rock shaft **56** in a direction to elevate the frame **93** to its normal position as shown by Figure 1.

The switch **53** may be secured as shown in dot and dash lines, Figure 4, to a leg **4** or as also shown in full lines, Figure 4 on the rear of a head piece. When switch **53** is secured to a leg **4**, it is manually opened and closed. When supported on the rear of a head piece **3**, it is also manually opened and closed and furthermore automatically opened. This latter action on the switch is had by means of one of the side bars **94** of the frame **93**, when the latter is lowered, engaging with the switch handle **53***a* and shifting the latter to off position to thereby discontinue the operation of the motor **45**, and in this connection attention is directed to Figure 11. It is to be understood that the position of the switch **53** is optional with the attendant of the machine.

The machine includes a vertically adjustable guide plate **104** which is arranged against the front of the head pieces **3** above the extensions **10**. The plate **104** correlates with the inner end of the platform or table **11** to form a guide passage for the material. The plate **104** is of arcuate contour in vertical section and is formed with oval-shaped slots **105** through which extend headed screws **106** threadedly engaging in the flanges **13** of the head pieces **3**. The screw and slot connections permit of the vertical adjustment of and for releasably maintaining the plate **104** in its adjusted position. If desired, the head piece **3** of which the chain gears are arranged exteriorly may be provided with a removable cover for its outer face.

In the use and operation of this machine the rollers **20** and **21** are rotated from the motor **45** and the material is fed between the rollers over the table **11**. The upper roller **20** is tensioned against the lower roller **21** by adjustment of the latching means including the crank **89**, pin **90** and plate **87**. Rocking of the crank **89** will rotate the cam shaft **78** in the desired direction to thereby vary the tension of the springs **84** to the pressure desired.

In the normal operation of the machine the parts will be in the full line positions shown in Figure 2 with the rear ends of the levers **56** raised. In the event an obstruction enters between the rollers **20** and **21**, the bar **96** is swung rearwardly to thereby rock the shaft **54** and pull the rear ends of the levers **56** downwardly. The levers **56** are assisted in their downward movement by the expansion of the springs **84**. The levers **56** will initially rock downwardly at their rear ends with the pivots **30** as fulcrums and when the levers **56** strike the protuberances **18***a* the further downward movement of the rear ends of the levers **56** will cause the forward ends thereof to be raised with the levers **56** fulcrumed on the protuberances **18***a*. In this manner the upper roller **20** will be raised to a released position.

The movement of the levers **56** heretofore described is effected without changing the adjustment of the latching means, so that when the obstruction is removed from between the rollers **20** and **21** the tread **103** is depressed to rock the shaft **54** in a direction opposed to the movement of this shaft by the bar **96**. The return of the links **73** to the full line position shown in Figure 2, which is their normal operation position, will raise the rear ends of the levers **56** and compress the springs **84** to the extent determined by the original adjustment of the latching means.

It will therefore be apparent that the upper roller **20** will be returned to its selected applied pressure by rocking of the tread **103** without adjustment of the tensioning means irrespective of how many times the safety mechanism is operated to a released position.

What I claim is:

1. In a rotary press, upper and lower normally superimposed revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of spaced parallel forwardly directed lifting and lowering levers for and pivotally connected at their forward end with said upper roller, tensionable pressure applying means for loosely supporting said levers intermediate their ends, rockable means below the rear end of said levers, bodily slidable pivot means for said levers disposed between said means for loosely supporting said levers and said rockable means, a toggle disposed on opposite sides of the rear portion of each of said levers, pivotally mounted on said pivot means and secured to said rockable means, shiftable means connected to said rockable means for rocking the latter in a direction to relieve the tension on said tensionable means, and a stationary abutment constituting a lever fulcrum disposed below each lever and between said pressure applying means and the axis of said upper roller, said pressure applying means upon release of the tension thereof assisting said shiftable means in effecting downward rocking of the rear ends of said levers whereby said levers will engage said abutments and pivot thereupon to thereby raise the forward ends of said levers and shift said upper roller away from said lower roller.

2. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of forwardly directed elevating and lowering levers for and pivotally con-

nected at their forward ends with said upper roller, rockable means, bodily slidable pivot means for said levers, a toggle disposed on opposite sides of the rear portion of each of said levers, pivotally mounted on said pivot means and secured to said rockable means, an adjustable vertically bodily movable rock shaft journalled in said levers and having adjacent each end thereof a cam, yieldable pressure applying elements for said upper roller operating on a shiftable axis, said elements providing holders for said toggles, combined vertically movable suspension and controlling devices for said elements, said cams operating in said devices for vertically bodily moving said devices with said shaft in unison, and means for adjusting said shaft and latching it in its adjusted position.

3. In a rotary press, upper and lower pressure applying rollers normally disposed in superimposed relation, said upper roller operating on a shiftable axis, said lower roller operating on a stationary axis, a pair of spaced parallel adjustable pressure applying elements for said upper roller, adjusting means common to said elements for adjusting them simultaneously, combined controlling and latching means for said adjusting means, operating means for said lower roller, non-meshing gears at corresponding ends of said rollers, and a traveling endless chain permanently meshing with said gears to thereby operate said upper roller and operated from the gear on the lower roller.

4. In a rotary press, upper and lower pressure applying rollers normally disposed in superimposed relation, said upper roller operating on a shiftable axis, said lower roller operating on a stationary axis, a pair of spaced parallel adjustable pressure applying elements for said upper roller, adjusting means common to said elements for adjusting them simultaneously, combined controlling and latching means for said adjusting means, operating means for said lower roller, non-meshing gears at corresponding ends of said rollers, a travelling endless chain permanently meshing with said gears to thereby operate said upper roller and operated from the gear on the lower roller, an idler gear permanently meshing with said chain, and a vertically adjustable support for said idler gear.

5. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of spaced parallel forwardly extending levers for elevating and lowering said upper roller, said levers being pivotally connected at their forward ends with said upper roller, rockable means below the rear ends of said levers, bodily slidable pivot means for and extending through the rear ends of said levers, a toggle pivotally disposed on opposite sides of the rear end of each lever, pivotally mounted on said pivot means and connected to said rockable means, means loosely supporting said levers intermediate their ends, fulcrums for said levers forwardly of said pivot means, and means for shifting said rockable means selectively in opposite directions to provide for said levers operating on said fulcrums for elevating the upper roller from the lower roller and for lowering the upper roller to the lower roller.

6. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of forwardly extending elevating and lowering levers for and being pivotally connected at their forward ends with said upper roller, pivot means for the rear end of said levers, a bodily vertically movable adjustable pressure applying structure for said upper roller having an element thereof loosely extending through said levers intermediate their ends for vertically moving them, combined controlling and latching means for said adjustable pressure applying means, and rockable means connected with said pivot means.

7. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of forwardly extending elevating and lowering levers for and being pivotally connected at their forward ends with said upper roller, pivot means for the rear ends of said levers, a bodily vertically movable adjustable pressure applying structure for said upper roller having an element thereof loosely extending through said levers intermediate their ends for vertically moving said levers, combined controlling and latching means for said adjustable pressure applying means, fulcrum means for the forward portions of said levers, rockable means below said pivot means, and a toggle pivotally supported on opposite sides of the rear end of each of said levers, pivotally mounted on said pivot means and connected to said rockable means.

8. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of forwardly extending elevating and lowering levers for and being pivotally connected at their forward ends with said upper roller, pivot means for the rear ends of said levers, a bodily vertically movable adjustable pressure applying structure for said upper roller having an element thereof loosely extending through said levers intermediate their ends for vertically adjusting them, combined controlling and latching means for said adjustable pressure applying structure, rockable means below the rear ends of said levers, each of said levers provided with an offset part formed with an opening and a collar registering with the opening, said element of said adjustable pressure applying means extending through said openings and collars, shiftable means for holding said levers in adjusted position, and said pressure applying structure including means for releasably retaining said shiftable means in holding position.

9. In a rotary press, upper and lower normally superimposed revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of spaced parallel adjustable forwardly directed lifting and lowering levers for and pivotally connected at their forward end with said upper roller, tensionable pressure applying means for said upper roller secured to said levers intermediate their ends, rockable means below the rear ends of said levers, bodily slidable pivot means for the rear ends of said levers disposed between said pressure applying means and said rockable means, toggles on opposite sides of the rear ends of each of said levers, pivotally mounted on said pivot means, secured to said rockable means and providing for holding the levers in adjusted position, a stationary pivot means below each lever, shiftable means connected to said rockable means for rocking the latter to provide for said levers engaging said stationary pivot means and effecting shifting of said upper roller under the action of said pressure means and said shiftable means

away from and to lower roller, an electric motor, a driving connection between said motor and lower roller, a driving connection leading from the lower roller to the upper roller, a controlling switch for said motor disposed in the path of said shiftable means and moved to off position by said shiftable means when the latter is moved to rock said rockable means in one direction, said toggles providing for holding said levers in adjusted position, and said pressure applying means including means for releasably maintaining said toggles in lever holding position.

10. In a rotary press of that type including upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, the combination of a pair of spaced parallel forwardly extending elevating and lowering levers for said upper roller, vertically movable pivot means for the rear ends of said levers, a bodily vertically movable adjustable pressure applying structure for the upper roller loosely connected to said levers intermediate their ends for vetrically moving them, combined controlling and latching means for said pressure applying structure, fulcrum means for the forward portions of said levers, and releasable means connected to said pivot means for shifting said levers toward said fulcrum means whereby said levers will rock on said fulcrum means to elevate the upper roller.

11. In a rotary press having upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and stationary axis, the combination of a pair of forwardly extending elevating and lowering levers for and adapted to be pivotally connected at their forward ends with the upper roller, a vertically bodily movable pivot means for the rear ends of said levers, a bodily vertically movable adjustable pressure applying structure for said upper roller having said levers intermediate their ends loosely mounted thereon, fulcrum means for the forward portion of said levers, rockable means below said pivot means, holder means for and supported on opposite sides of the rear ends of said levers, pivotally mounted on said pivot means and connected to said rockable means, means for shifting said rockable means for moving said levers in a direction to elevate the upper roller, and said structure including means for releasably locking said holder means in holding position relative to said levers.

12. In a rotary press of that type embodying a pair of rollers, lever means connected with one of said rollers, releasable means connected with said lever means for holding said one roller in contact with the other roller, means operatively connected with said releasable means for shifting said releasable means to a released position, stationary elements disposed in a position for engagement with said lever means upon movement of said lever means to a released position, and a combined pressure applying and lever means, shifting means connected with said lever means for normally holding said one roller under pressure against the other roller, said pressure applying means assisting said shifting means upon release of said releasable means in shifting said lever means into engagement with said stationary elements to thereby shift said one roller out of contact with the other roller.

13. In a rotary press of that type embodying a pair of rollers, lever means connected with one of said rollers, releasable means connected with said lever means for holding said one roller in contact with the other roller, means operatively connected with said releasable means for shifting said releasable means to a released position, stationary elements disposed in a position for engagement with said lever means upon movement of said lever means to a released position, and pressure applying means connected with said lever means for normally holding said one roller under pressure against the other roller, said pressure applying means upon release of said releasable means assisting said shifting means in shifting said lever means into engagement with said stationary elements to thereby shift said one roller out of contact with the other roller, said means connected with said releasable means being adapted to restore said releasable means to a normal position whereby said one roller will contact with the other roller and said pressure applying means will hold said one roller under pressure.

14. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of adjustable forwardly directd elevating and lowering levers for and pivotally connected at their forward ends with said upper roller, releasable holding means pivotally connected with the rear ends of said levers for holding said rear ends in an upper operative position, tensionable pressure applying means connected with said levers intermediate the ends thereof for constantly urging said levers to rock downwardly at their forward ends to thereby assist in shifting said upper roller toward said lower roller, and a stationary pivot disposed below each lever between said pressure applying means and the forward ends of said levers, said pressure applying means upon release of said latching means assisting said holding means in effecting lowering of the rear ends of said levers and engagement of said levers with said pivot means whereby the forward ends of said levers may be raised and said upper roller held in a disengaged position with respect to said lower roller.

15. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axis, a pair of adjustable forwardly directed elevating and lowering levers for and pivotally connected at their forward ends with said upper roller, releasable holding means pivotally connected with the rear ends of said levers for holding said rear ends in an upper operative position, tensionable pressure applying means connected with said levers intermediate the ends thereof for constantly urging said levers to rock downwardly at their forward ends to thereby assist in shifting said upper roller toward said lower roller, a stationary pivot disposed below each lever between said pressure applying means and the forward ends of said levers, said pressure applying means upon release of said latching means assisting said holding means in lowering of the rear ends of said levers and engagement of said levers with said pivot means whereby the forward ends of said levers may be raised and said upper roller held in a disengaged position with respect to said lower roller, an electric motor, a driving connection between said motor and said lower roller, a driving connection leading from the lower roller to the upper roller, and a controlling switch for said motor disposed in the path of said holding

means and moved to off position when the latter is moved to a released position.

16. In a rotary press, superimposed upper and lower oppositely revoluble pressure applying rollers operating respectively on a shiftable and a stationary axle, a pair of spaced parallel forwardly extending adjustable levers for elevating and lowering said upper roller and being pivotally connected at their forward ends with said upper roller, bodily slidable pivot means for said levers extending through the rear ends of said levers, stationary pivot means for said levers forwardly of the rear ends of the latter, releasable holding structure including parts disposed on opposite sides of the rear end of said levers pivotally mounted on said pivot means, tensionable pressure applying means for said upper roller secured to said levers intermediate their ends, means for releasing said structure and lowering of the rear ends of said lever, lowering of the rear ends of said lever effecting engagement of said levers with said stationary pivot means to thereby raise the upper roller from the lower roller, an electric motor, a driving connection between said motor and lower roller, a driving connection leading from the lower roller to the upper roller, and a controlling switch for said motor disposed in the path of said holding structure and moved to off position in one direction of movement of said holding structure.

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