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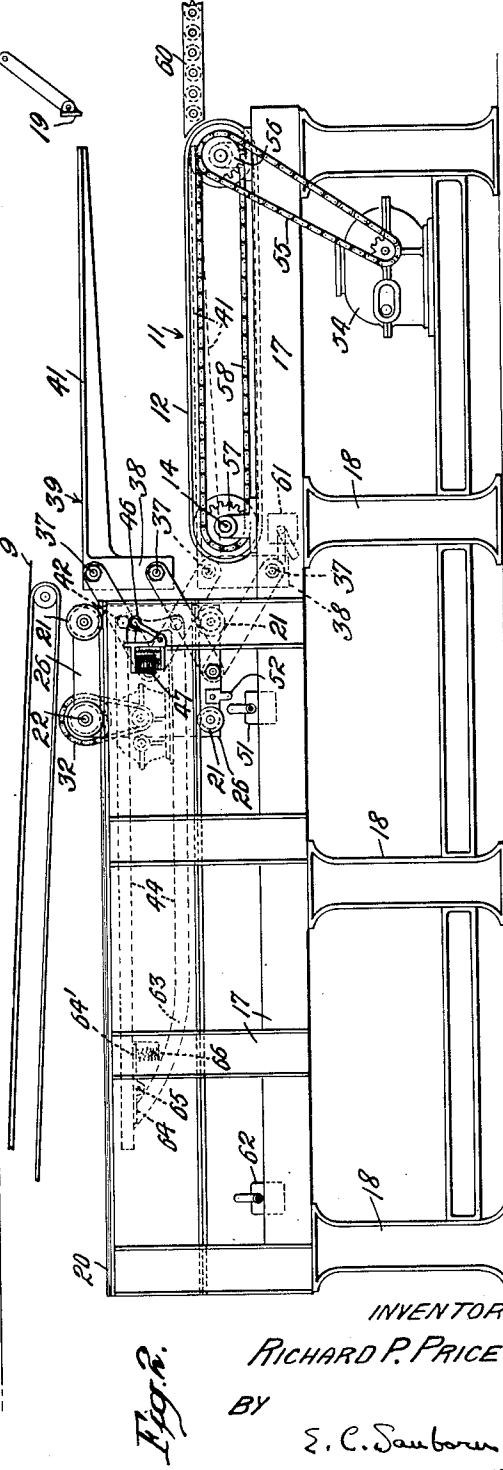
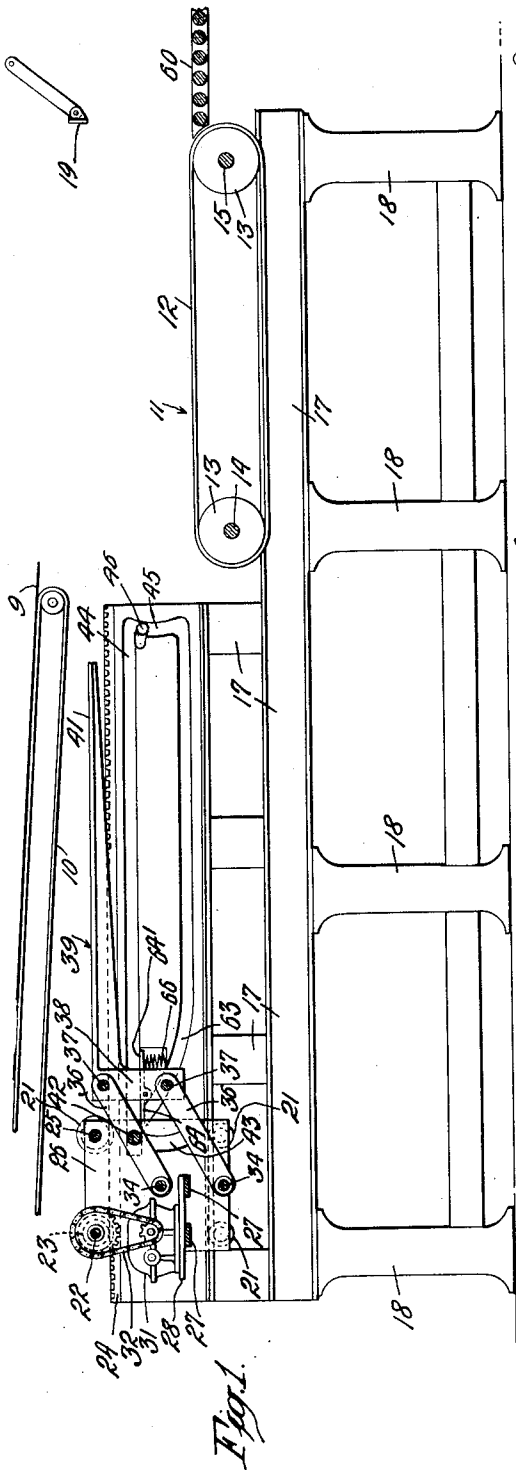
R. P. PRICE

2,084,741

CONTINUOUS AUTOMATIC LAYBOY

Filed Sept. 15, 1933

3 Sheets-Sheet 1



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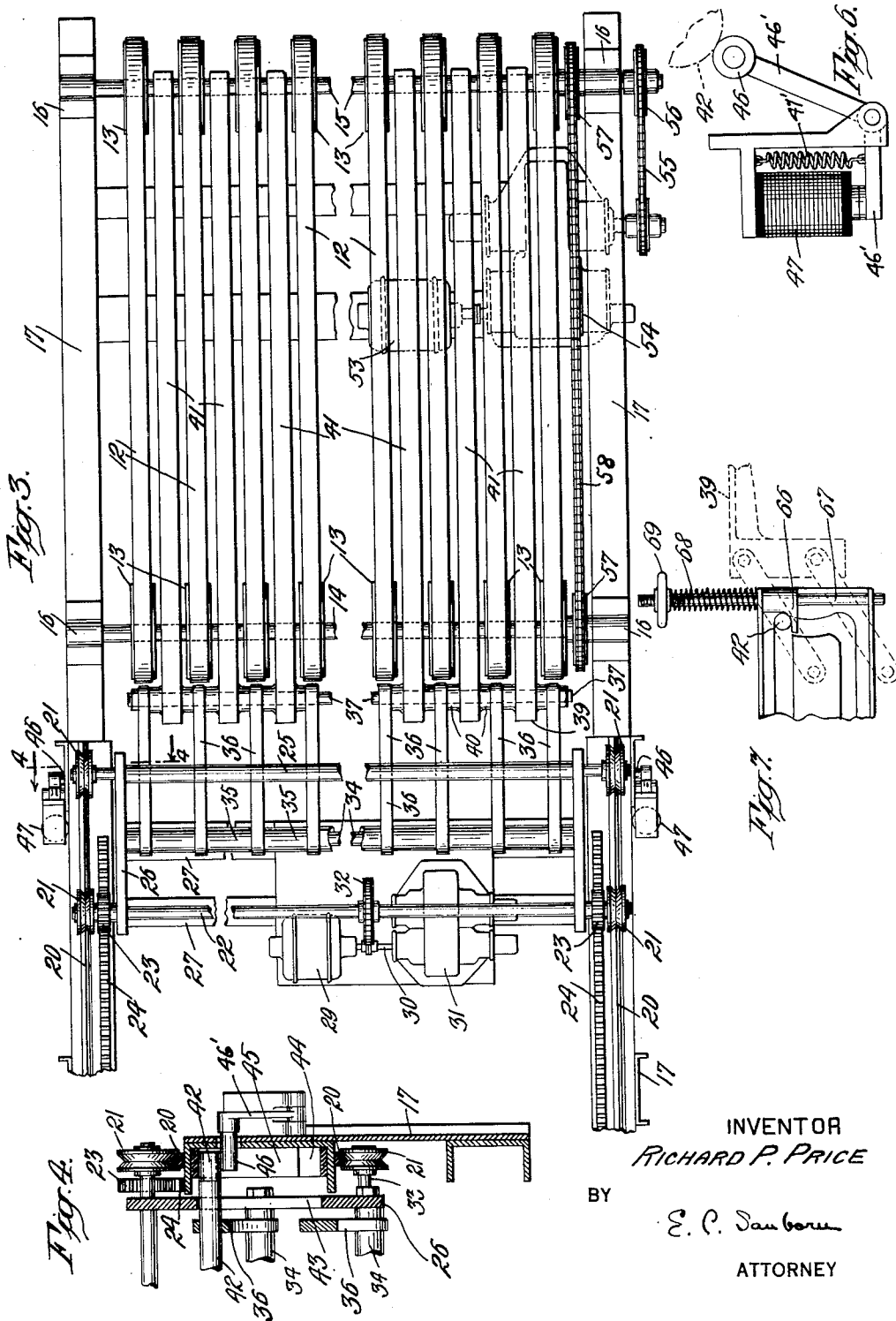
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3 Sheets-Sheet 2



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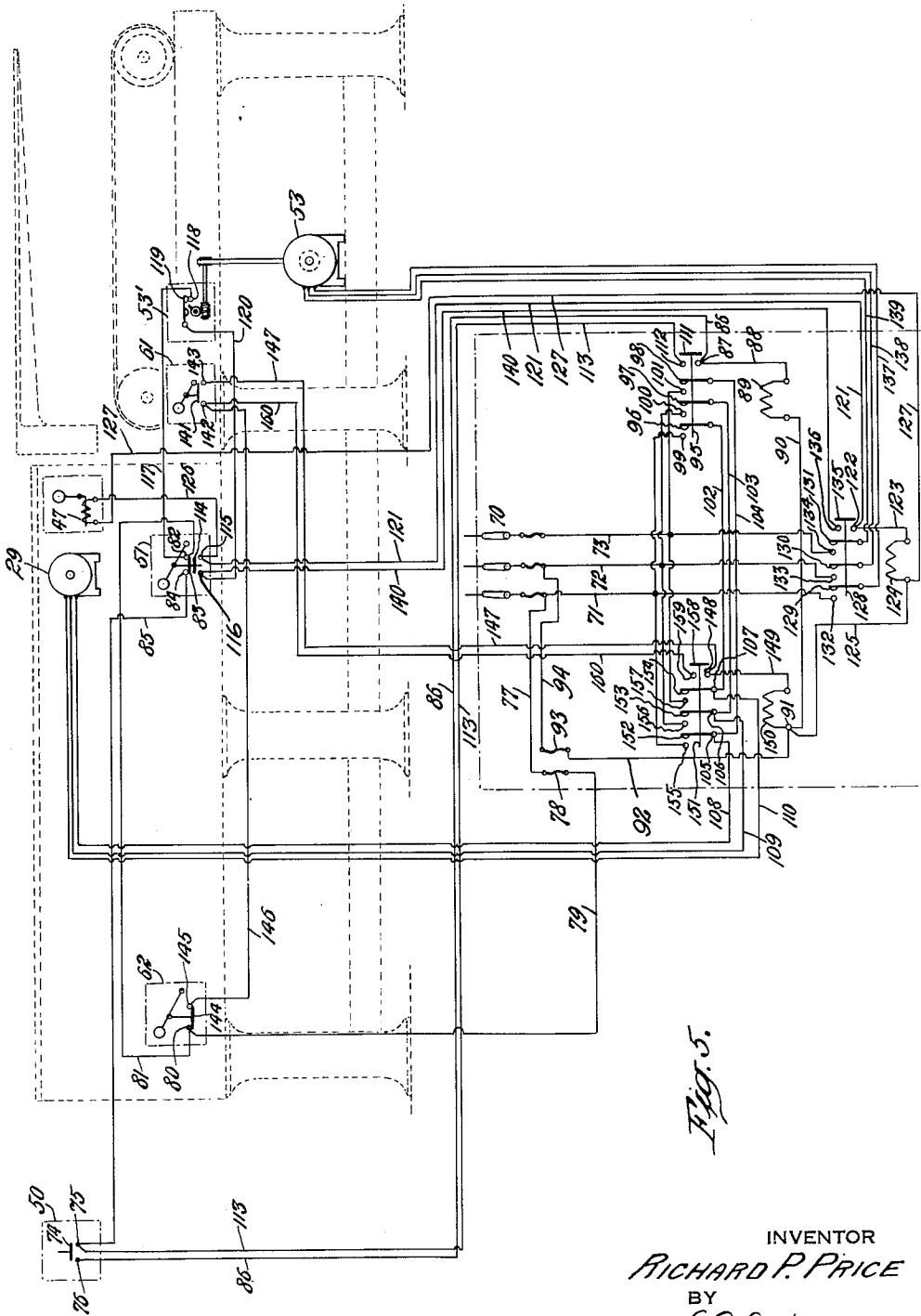


Fig. 5.

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2,084,741

CONTINUOUS AUTOMATIC LAYBOY

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Application September 15, 1933, Serial No. 689,552

16 Claims. (Cl. 271-76)

This invention relates to an improved lay boy which is capable of stacking sheets of paper, leather, metal and so forth, of separately supporting oncoming sheets while a stack is removed, and of then depositing the separately supported sheets on the surface from which the stack has been removed, to start a succeeding stack. An object of the invention is to devise such a machine which is capable of handling sheet material fed to it in a continuous stream and which is fully automatic in operation. Another object is to devise such a machine which is reasonably simple and inexpensive to build and efficient in operation. Other objects and advantages will appear as the following description of one form of my invention proceeds.

In the accompanying drawings, Fig. 1 is a side elevation, partly in section, of one form of machine in accordance with my invention, showing the parts in the position in which sheets are being fed to a platform to form a stack.

Fig. 2 is a side elevation of the same machine, but with the parts in position to intercept oncoming sheets and support them while a stack is being removed from the platform.

Fig. 3 is a plan view, on enlarged scale, of the machine as shown in Fig. 2.

Fig. 4 is a vertical section, on enlarged scale, taken on the line 4-4 of Fig. 3, looking in the direction of the arrows.

Fig. 5 is a wiring diagram illustrating a manner of controlling the operation of the machine.

Fig. 6 is a detail of locking mechanism for the stack intercepting means.

Fig. 7 is a detail view illustrating a modification.

Referring to the drawings, there is shown at 10 a belt conveyor down which sheets 9 of material to be stacked may be fed continuously so as to drop onto platform 11. This platform preferably comprises spaced parallel belts 12 carried on pulleys 13 secured to shafts 14, 15, which are supported for rotation in trunnions 16 on any suitable stationary frame 17, raised from the floor, if desired, by pedestals 18. The belts 12 may be of any desired number and dimensions, as required, and are preferably spaced sufficiently for purposes hereinafter indicated. The belts 12 remain stationary while sheets of material are fed onto them until a pile or stack of desired size has been formed. During such portion of a cycle of operations the parts of the machine take the positions shown in Fig. 1.

Any convenient device, shown somewhat diagrammatically at 19, may be provided for align-

ing the forward ends of sheets 9, to cause them to form a neatly piled stack. Such device is of particular advantage where the sheets are fed in overlapped relation by conveyor 10.

When the stack on platform 11 is complete, it becomes desirable to remove the stack without discontinuing the feed of material by conveyor 10, and in order to permit such removal there is provided mechanism for intercepting and separately supporting succeeding sheets fed by conveyor 10. Such mechanism may advantageously take the following form.

Opposed spaced rails 20 may be supported on frame 17 in any convenient manner, preferably at the same end of the platform 11 as the conveyor 10 and beneath the latter, although they might be located at the opposite end of the platform from the conveyor, if desired, so that the intercepting means would move out in the opposite direction to that in which the sheets are fed by the conveyor 10. The rails 20 may be tapered to cooperate with correspondingly grooved rollers 21, and upper and lower oppositely facing rails and a pair of rollers to engage each rail may be employed to prevent the carriage (hereafter described), which is supported on the rollers, from tipping. At least one pair of opposed rollers, preferably the upper rearward pair, may be connected to a shaft 22 to which pinions 23 may be secured for cooperation with racks 24 at either side of the frame. The forward, upper rollers may be connected to a freely rotatable shaft 25, and both shaft 22 and shaft 25 may be journaled in side plates 26 of the carriage. These side plates may be positioned inwardly of the racks 24 and be connected rigidly to cross members 27 of the carriage, these members being in turn rigidly connected to a platform 28 for carrying a three phase A. C. reversible electric motor 29. This motor may drive shaft 22 through shaft 30, reduction gearing 31, and chain 32, or other convenient mechanism. The lower rollers 21 may be carried on stub shafts 33 journaled in side plates 26 of the carriage.

Connected between the plates 26 there are provided a pair of shafts 34, one above the other, on which shafts sleeves 35 may be journaled. Spaced parallel links 36 may be secured to the sleeves 35 in any convenient manner, these links extending forwardly from the carriage and being pivoted adjacent their free ends to transverse rods 37 which extend through vertical arms 38 of L-shaped members 39. The other arms 41 of members 39 extend forwardly, preferably horizontally, and are adapted to support sheets fed

to them by conveyor 10. Suitable spacing elements 40 may be provided, formed on the L-shaped members 39, if desired, for maintaining alignment of the links 36 and properly spacing arms 41 of the L-shaped members, the arms 41 being adapted to descend between the belts 12 and below the upper surfaces of the latter. Through the parallel linkage described there is thus provided structure for maintaining the arms 41 horizontal at all times, as is desirable.

Connected to each of the upper row of links 36 there is provided a member 42 extending through slots 43 in the side plates 26 and into guideways 44, which are secured at either side of the machine to the stationary frame 17. When the cradle is retracted to the position shown in Fig. 1 the ends of member 42 are supported in suitable guideways 44, as shown, so that the arms 41 are maintained at the desired height above the belts 12. When the cradle advances to its position shown in Fig. 2, in the manner hereinafter described, the ends of the member 42 enter the upper ends of the generally vertical portions 45 of the guideways 44, and the members 39 tend to descend by their own weight and the weight of the sheets which pile on them. In order to maintain them in the position shown in Fig. 2, until the stack on belts 12 has been removed, suitable latching means may be employed, for instance, rollers 46, carried on pivoted bell cranks 46' at opposite sides of the machine and adapted to be held in off-center engagement with end portions of member 42, as best shown in Fig. 6, when the solenoids 47 are energized. Springs 47' aid the solenoids in maintaining the lock. Upon deenergization of the solenoids, as will hereinafter be described, member 42 under the weight of members 39 and the sheets thereon, will force the rollers 46 out of its path to permit the members 39 to descend. In this manner, provision is made for maintaining the L-shaped members 39 in elevated position as long as desired.

If desired, the sheet supporting members 39 might be counterbalanced in any convenient manner, as by weights or springs, so that only when a given weight of sheets had been fed onto the members, would they descend. Where the counterbalancing alone is sufficient to prevent descent of the members 39, until the desired number of sheets rest thereon, the latching means might be dispensed with. If desired, suitable cushioning means, such as dash pots and pistons may be employed to cushion the sheet supporting members at the bottom of the drop.

In the modification of the invention illustrated in Fig. 7 a spring counterbalancing device is employed for maintaining the arms 39 above the belts 12 until a predetermined weight of sheets has accumulated on said arms. This device may take the form of an element 66 underlying an end of the shaft 42 and secured to a rod 67 slidably mounted in the forward end of the carriage, a spring 68 surrounds said rod 67 and bears at one end against the top of the carriage and at its other end against a nut 69 threaded on said rod. A similar arrangement may be provided for cooperating with the opposite end of shaft 42. This spring device may be employed either with or without the solenoids 47; and the solenoids may of course be utilized without said counterbalancing device.

When the solenoids alone are employed the sheet supporting arms may obviously be counterweighted to assist in maintaining them in ele-

vated position under the control of said solenoids, but such is not necessary.

In order to cause the carriage to advance from its position in Fig. 1 to its position in Fig. 2 to move the arms 41 into sheet receiving position, motor 29 may be controlled, for instance by the following system of switches. A switch 50 may be provided, adapted to be momentarily closed to start motor 29 through the act of closing the operating coil circuit of a standard 3-pole magnetic motor starter having an auxiliary contact for the purpose of forming a holding circuit. To actuate switch 50 to make the circuit, this switch being normally open, a suitable counting device (not shown), such as a photoelectric cell focused on the sheets of material as they come from conveyor 10, or a mechanical counter, may be employed suitably connected to switch 50. This arrangement may take any convenient, known form. The motor 29 preferably advances the carriage at the same speed at which sheets 9 leave conveyor 10, in order to avoid buckling of the sheets, should the arms 41 move out too fast, or overhang of the sheets, should the fingers move too slowly. In short, the sheets pile up on the belts 12 until a desired quantity are stacked thereon, when the arms 41 move forward to intercept a given sheet and those following it to support them for a time. Just before the carriage reaches its foremost position, as shown in Fig. 2, the control switch 51 is tripped by a foot 52 on the carriage, and is momentarily closed, thus effecting, simultaneously, through suitable connections, the stopping of motor 29 and the energizing of a magnetic electric motor 53 in operation to effect discharge of the stack from belts 12. The solenoids 47 are connected in parallel with the coil of the magnetic motor starter for motor 53, and are thus synchronized with the operation of this motor, being energized when switch 51 is tripped as described. Having accomplished these purposes the control switch 51 snaps open again.

Suitable mechanism for operating belts 12 from motor 53 may include gearing 54, chain 55 and sprocket 56, or other suitable connections between the motor and shaft 15. Shaft 14 may also be driven, when desired, at the same speed as shaft 15, by means of sprocket 57 and chain 58. A platform 60, as shown diagrammatically in Figs. 1 and 2, may be provided, composed of a series of rollers, for receiving the sheets delivered by the belts 12. An automatic cam operated switch 53' of any suitable conventional design (shown diagrammatically in Fig. 5) may be connected to motor 53 for cutting off the current supplied to it upon the completion by it of a given number of revolutions or after a predetermined time interval, sufficient to allow the stack to be discharged from belts 12.

Simultaneously with the breaking of the circuit through motor 53 solenoids 47 are deenergized to permit the rollers 46 to be cammed out of locking position by the ends of member 42, thus permitting the parallel links 36 and L-shaped members 39 to descend to their positions indicated in dotted lines in Fig. 2, to deposit the sheets supported on arms 41 on the platform 11. The guide way portions 45 may be curved in the manner illustrated in Figs. 1 and 2 to enable the members 39 to descend in a vertical line. When the L-shaped members 39 reach their lowermost positions, as determined by the abutment of the ends of members 42

against the bottoms of slots 45, the lower ends of arms 38 trip switch 61 which momentarily closes to energize the magnetic control device for motor 29 to reverse it, thus causing it to return the carriage to the position shown in Fig. 1, whereupon the carriage trips limit switch 62 and shuts off motor 29 through the magnetic control device. As the carriage returns to its position shown in Fig. 1, the ends of member 42 are carried along portions 63 of guideways 44, at either side of the machine, which portions are inclined upwardly toward their rear ends, to cause the arms 41 to be returned to their elevated position, in which they are ready to be shot forward in the succeeding cycle to intercept the sheets supplied by conveyor 10.

In order to prevent the ends of member 42 from dropping down into guideways 63 as the carriage advances, levers 64 (Fig. 2) may be fulcrumed as at 65 on either side of frame 17 and normally bridge the upper ends of the guideways 63. The arms 64' of levers 64 may be urged upwardly as by springs 66, so that as the carriage moves toward its position shown in Fig. 1 the ends of member 42 will trip the arms 64 as they enter guideway 44 and then permit these arms to return to their positions shown in Fig. 2 to bridge the openings.

From the foregoing description it will be appreciated that the motors 29 and 53 are connected through standard magnetic motor starters, with suitable switches for controlling the operation of the motors. More particularly, the switch 50 is momentarily actuated to start the motor 29 to move the carriage forward, and thus serves the purpose of a conventional starting push button. Switch 51 is a limit switch of the type used on elevator hatchway doors. The switches 50 and 51 thus cooperate to start the motor and stop it at the end of its forward travel. Similarly, the switches 61 and 62 serve to start and stop the motor 29 to return the cradle to its rearmost position. The switch 51 also serves as a starting button to cause the magnetic motor starter for motor 53 to put the latter in operation, while the switch 53' stops the motor after it has made a given number of revolutions. The switch 53' may take any known conventional form. The combination of switches 51 and 53' thus serves the purpose of a conventional start and stop push button device for the magnetic motor starter for motor 53. At the same time, the combination of switches 51 and 53' effects the energizing and de-energizing of the solenoid 47 which is connected in parallel with the coil of the magnetic starter for motor 53. As mentioned above, the particular individual switch mechanisms form no part of the present invention and any suitable arrangement of them may be employed as will be understood by those skilled in the art. While 3-phase A. C. power is especially convenient where a reversible motor is employed, single phase A. C. power or D. C. power may be used.

The connections shown in Fig. 5 illustrate one system of circuits which may be employed in practicing the invention. Assuming the three-pole switch 70 to be closed, connecting the wires 71, 72, 73 to the three-phase power mains, the operation of this circuit system is specifically as follows:

In the closing of the switch 50 pursuant to the feeding of a predetermined number of sheets by the conveyor 10, the switch contact 74 bridges

contacts 75, 76. Current now flows from wire 71 thru wire 77, fuse 78, wire 79, contact 80 of switch 62, wire 81, contacts 82, 83, and 84 of switch 51, wire 85, contacts 75, 74, 76, wire 86, contact 87, wire 88, coil 89 of the standard three-phase motor starter, wire 90, contact 91, wire 92, fuse 93, and wire 94 to wire 72. The coil 89, being now energized, operates the armature 95 to bring contacts 96, 97, 98 into engagement with the contacts 99, 100, 101, respectively, which are electrically connected to the three-phase wires 71, 72, and 73. A circuit is now closed through the motor 29 from wires 71, 72, 73, through contacts 96, 97, 98, wires 102, 103, 104, contacts 105, 106, 107, and wires 108, 109 and 110. At the same time contact 111 is engaged with contacts 87, and 112, thereby establishing a holding circuit for coil 89 from wire 85 through contact 75, wire 113, and contacts 112, 111, and 87; thus maintaining coil 89 energized despite disengagement of contact 74 from contacts 75 and 76. The coil 89, together with the contacts 96-101, armature 95, and contacts 87, 111, and 112, form a three-phase motor starter of well-known and standard type.

Motor 29, as hereinbefore noted, continues in operation following its energization until the carriage is brought into a forward position, tripping the switch 51. When said switch is operated by foot 52 on the carriage, the contact 83 of said switch 51 is disengaged from contacts 82 and 84, breaking the circuit through the coil 89 with consequent disengagement of contacts 96, 97, 98 from the respective contacts 99, 100, 101, and of contact 111 from contacts 87 and 112. Motor 29 is now thrown out of operation. At the same time, contact 114 of switch 51 is engaged with contacts 115, 116, whereupon current flows as follows: from wire 71, through wire 77, fuse 78, wire 79, contact 80, wire 81, contact 82, wire 117, contacts 118, 119 of switch 53; wire 120, contacts 116, 114, 115 of switch 51, wire 121, contact 122, wire 123, coil 124 of the three-phase starter for motor 53, wire 125, contact 91, and thence by way of wire 92, fuse 93, and wire 94 to wire 72. At the same time, current flows from contact 115 through wire 126 and thence through the solenoids 47 (only one of which is illustrated in Fig. 5), said current thence flowing through wire 127 to wire 125. Solenoids 47 are thus energized at the same time that motor 29 is thrown out and coil 124 energized. Energization of coil 124 operates armature 128 to engage contacts 129, 130, 131 with the respective contacts 132, 133, 134 connected to wires 71, 72, 73, and further engages contact 135 with contacts 122 and 136. The engagement of contacts 129, 130, 131 with contacts 132, 133, 134 establishes a flow of current through motor 53 by way of wires 137, 138, 139; while the bridging of contacts 122, 136 by contact 135 establishes a holding circuit through coil 124 from wire 120 through contact 116 and wire 140, so that current continues to flow through said coil regardless of the disengagement of contact 114 from contacts 115, 116.

The motor 53 thus continues in operation until, at the end of a predetermined number of revolutions or at the end of a given time interval, sufficient to accomplish the removal of the sheets piled on the belts 12, the contact 119 of switch 53' is disengaged from contact 118. The circuit through coil 124 is now broken, and the armature 128 and contacts 129, 130, 131, return to their normal position, breaking the circuit through motor 53. Contact 135 also assumes its normal position shown in Fig. 5. The coil 124 and asso-

ciated contacts, like coil 89 and its contacts, constitute a standard three-phase motor starter. The disengagement of contact 119 from contact 118 breaks the circuit not only through the coil 124 but also through the solenoids 47. The members 39 now descend to their dotted line position in Fig. 2, depositing upon belts 12 the sheets which have been deposited on said members. During said descent, the switch 61 is actuated by the lower end of an arm 38, the contact 141 of said switch being thereby engaged with contacts 142 and 143.

Current now flows from wire 71 through wire 77, fuse 78, wire 79, contacts 80, 144, and 145 of switch 62, wire 146, contacts 142, 141, 143 of switch 61, wire 147, contact 148, wire 149, coil 150, contact 91, wire 92, fuse 93, and wire 94 to wire 72. The energization of coil 150 actuates armature 151 to bring contacts 152, 153, and 154 into engagement with contacts 155, 156, and 157 connected to wires 71, 72, 73 and thereby causes current to flow through motor 29 to operate the latter in the direction the reverse of that in which said motor is operated by energizing of coil 89. Said motor 29 thus now drives the carriage rearwardly. At the same time that contacts 152, 153 and 154 are engaged with contacts 155, 156, 157, contact 158 is engaged with contacts 159 and 148, establishing a holding circuit through coil 150 by way of wire 146, contact 142, and wire 160 whereby said coil 150 remains energized regardless of the disengagement of contact 141 from contacts 142, 143 of switch 61. Said coil 150 and its contacts form a standard three-phase motor starter of the same type as coil 89 and its associated contacts.

As the carriage arrives in its rearward position the switch 62 is tripped by said carriage, and contact 144 of said switch is thereby disengaged from contacts 80 and 145. The circuit through coil 150 is thus broken and the contacts associated with said coil return to their normal open position. The parts are now in their initial position ready for repetition of the cycle whenever switch 50 again closes.

It will be appreciated that through my invention there is provided a machine of the character indicated which is capable of stacking sheets continuously fed to it, of intercepting and supporting following sheets while the stack of a predetermined size is removed, and of then depositing the separately supported sheets to form a succeeding stack or a part thereof, the machine being fully automatic in operation.

The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described, or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

I claim:

1. In a machine for stacking sheet material, means to feed the sheets in a continuous stream, means to support the sheets in a stack, means to intercept the sheets as fed, at a plane above the second named means, means carrying said intercepting means, means for causing said carrying means to bring said intercepting means into intercepting position, means brought into action by the movement of said carrying means to intercepting position to cause the supporting means to discharge the stack of sheets therefrom, and subsequently operative automatic means to cause

the intercepting means to deposit the sheets thereon upon the supporting means.

2. In a machine for stacking sheet material, means to feed the sheets in a continuous stream, means including a plurality of spaced belts adapted to support the sheets in a stack, means to intercept the sheets as fed, at a plane above the second-named means, intermittently operable means to cause the supporting means to discharge the stack of sheets therefrom, and subsequently operative automatic means brought into action by the terminating of the discharging action to cause the intercepting means to deposit the sheets thereon upon the supporting means.

3. In a machine for stacking sheet material, means to feed the sheets in a continuous stream, means to support the sheets in a stack, means to intercept the sheets as fed, at a plane above the second-named means, said intercepting means including a frame, a carriage adapted to reciprocate along the frame, and arms supported on the carriage, means electrically controlled by said intercepting means to cause the supporting means to discharge the stack of sheets therefrom, and subsequently operative automatic means to cause the intercepting means to deposit the sheets thereon upon the supporting means.

4. In a machine for stacking sheet material, means to feed the sheets in a continuous stream, means for receiving sheets directly from said feeding means and supporting the sheets in a stack, means responsive to the accumulation of a given quantity of sheets on said supporting means for intercepting further sheets as fed from said feeding means, at a plane above the supporting means, said intercepting means comprising arms adapted to reciprocate in a generally horizontal plane, and mounted for motion in a vertical plane, means responsive to the arrival of said arms in a given position to cause the supporting means to discharge the stack of sheets therefrom, and subsequently operative automatic means to cause the intercepting means to immediately deposit the sheets thereon upon the supporting means.

5. In a machine for stacking sheet material, means to feed the sheets in a continuous stream, means to support the sheets in a stack, means to intercept the sheets as fed, at a plane above the second-named means, said intercepting means including arms carried on parallel motion linkage adapted to swing about horizontal pivots and means to reciprocate said arms along a generally horizontal path, means to cause the supporting means to discharge the stack of sheets therefrom, and subsequently operative automatic means to cause the intercepting means to deposit the sheets thereon upon the supporting means.

6. In a machine for stacking sheet material, means to feed the sheets in a continuous stream, means to support the sheets in a stack, means to intercept the sheets as fed, at a plane above the second-named means, said intercepting means including arms carried on parallel motion linkage adapted to swing about horizontal pivots and means to reciprocate said arms along a generally horizontal path, means to cause the supporting means to discharge the stack of sheets therefrom, and subsequently operative automatic means to cause the intercepting means to deposit the sheets thereon upon the supporting means, and thereafter to retract the intercepting means and raise the same to a plane above said supporting means.

7. In a machine of the character described, means to deliver sheet material in a continuous stream, spaced parallel belts to receive said sheets,

means to intercept said sheets at a plane above the belts, means to effect discharge of the sheets from said belts, means to maintain said intercepting means in elevated position during said discharging action, and means automatically operative as an incident to completion of the discharging action to release said maintaining means for permitting the intercepting means to deposit sheets supported thereon upon the belts.

8. In a machine of the character described, means to deliver sheet material in a continuous stream, spaced parallel belts to receive said sheets, means including a plurality of spaced arms adapted to descend between said belts and below the upper surfaces thereof and adapted to intercept said sheets at a plane above the belts, means to effect discharge of the sheets from said belts, means to maintain said intercepting means in elevated position during said discharging action, and means automatically operative as an incident to completion of the discharging action to release said maintaining means for permitting the intercepting means to deposit sheets supported thereon upon the belts.

9. In a machine of the character described, spaced, parallel trackways, a carriage reciprocable along the trackways, arms extending forwardly from the carriage, means to permit the arms to move in vertical planes with respect to said carriage, means to maintain the arms elevated in certain positions of the carriage and to permit them to descend with respect to said carriage at a predetermined time, and means to return the arms to elevated position at a subsequent predetermined time.

10. In a machine of the character described, spaced, parallel trackways, a carriage reciprocable along the trackways, arms extending forwardly from the carriage, means to permit the arms to move in vertical planes with respect to said carriage, means to maintain the arms elevated in certain positions of the carriage and to permit them to descend at a predetermined time, and means to return the arms to elevated position at a subsequent predetermined time, said last-named means including guideways cooperating with said arms during travel of the carriage.

11. Apparatus of the character described comprising means to feed a plurality of sheets, means for receiving said sheets from said feeding means, means shiftable into and out of a position for intercepting sheets as fed from said feeding means, means for causing said intercepting means to shift to an intercepting position, means operable as an incident to the travel of said intercepting means for causing the sheets on said receiving means to be removed therefrom, means for causing said intercepting means to deposit sheets on said receiving means following removal of the sheets previously supported thereon, and means brought into action by the depositing movement of said intercepting means for causing the latter to be withdrawn to normal position.

12. Apparatus of the character described comprising means for feeding a plurality of sheets,

means for receiving said sheets from the feeding means, means for causing the removal of the sheets from said feeding means, means for intercepting the following sheets from said feeding means while the first mentioned sheets are being removed, and electric control means correlated with said receiving and intercepting means for causing the intercepted sheets to be transferred to said receiving means following the removal of the first-mentioned sheets therefrom.

13. Apparatus of the character described comprising means for feeding a plurality of sheets, endless conveyor means for supporting the sheets in a stack, means for intermittently operating said conveyor means to discharge stacks of sheets therefrom, means comprising a single set of fingers for intercepting the sheets as fed from a time prior to a discharging operation of said conveyor until after said operation has been terminated, and means operable to cause said fingers to deposit the sheets thereon upon said endless conveyor means following said discharging operation.

14. Apparatus of the character described comprising means for feeding a plurality of sheets, means comprising a set of spaced substantially parallel endless belts for supporting the sheets in a stack and arranged to normally receive said sheets directly from said feeding means, means comprising a set of fingers extending substantially parallel to said belts for intercepting the sheets as fed, at a plane above said belts, means to cause said belts to discharge the stack of sheets therefrom, and subsequently operative automatic means to cause said fingers to descend into the spaces between said belts and to deposit the sheets on said fingers upon said belts.

15. In a machine of the character described, means to deliver sheet material in a continuous stream, means to support the sheets in a stack, means to intercept and support said sheets as fed, at a plane above said supporting means, and means to move said intercepting means horizontally in the direction of and approximately at the same speed as the flow of the sheets as it intercepts a sheet, and means to lower said intercepting means to deposit sheets thereon on said supporting means.

16. Apparatus of the character described comprising means for feeding a plurality of sheets along a substantially straight path, means comprising a set of spaced substantially parallel endless belts for supporting the sheets in a stack, means comprising a set of fingers extending substantially parallel to said belts and arranged to move longitudinally thereof for intercepting the sheets as discharged from said feeding means, at a plane above said belts, means to cause said belts to discharge the stack of sheets therefrom, and subsequently operative automatic means to cause said fingers to descend into the spaces between said belts and to deposit the sheets on said fingers upon said belts.

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