This invention relates to automatic sheet stacker apparatus. Hereinafter, so-called sheet stackers were provided primarily between a printer-slottor machine and the conveyors or pallets for carrying away from the printing machines the printed sheets such as cardboard sheets printed and slotted for preparing boxes. The purpose of such stackers is to receive the printed sheets from the printing and slotting machines and then stack the sheets in straight vertical stacks. The main disadvantages of stackers heretofore utilized was that as the stacker was rising substantially in proportion to the piling of the stack, the rate of speed varied and the outlet end of the stacker did not move on a truly perpendicular path, therefore it did not stack the sheets in straight stacks. Another disadvantage of such previous stackers was that the so-called layboy which first received the sheets from the printer and slottor and by which these were transferred to the stacker did not control with the stacker properly for continuous automatic operation.

The primary object of this invention is to provide a sheet stacker which is fully automatic and which is operated at a substantially uniform rate on a substantially perpendicular delivery path to raise uniformly and to pile the printed sheets on pallets into uniformly straight stacks; and which is automatically returned for the continuing operation of piling another stack as the first pallet is filled and cleared at a pre-set rate of return. Another object of this invention is to provide a combination of stacker and the so-called layboy wherein the two are so united that the lay-boy works in synchronism with the movement of the stacker, yet can be easily swung into an out-of-the-way position. Another object of the invention is to provide a novel device in stackers for piling of printed sheets on pallets or the like, for raising the delivery end of the stacker at a substantially uniform rate, and at the same time to move the stacker so that its delivery end is constantly maintained in the same vertical relation to the pallet so that it moves generally on a straight perpendicular line; means being provided for causing a lay-boy to move in synchronism with the swinging of the stacker while the stacker follows the raising of the pile of sheets.

I am aware that some changes may be made in the general arrangements and combinations of the several devices and parts, as well as in the details of the construction thereof without departing from the scope of the present invention as set forth in the following specification, and as defined in the following claims; hence I do not limit my invention to the exact arrangements and combinations of the said device and parts as described in the said specification, nor do I confine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, reference is had to the accompanying drawings for the illustrative embodiment of the invention, wherein:

Fig. 1 is a side view of a stacker constructed in accordance with my invention, shown partly in section at its lowered position.

Fig. 2 is a partly sectional view of my stacker in partially raised position.

Fig. 3 is a partly sectional view of my stacker and layboy combination at the top elevated position.

Fig. 4 is a fragmental partly sectional view showing the device on my stacker to stop the delivery of sheets in the highest elevated position of the stacker.

Fig. 5 is a top plane view of my stacker; and

Fig. 6 is a wiring diagram illustrating the electrical control of my stacker.

Fig. 7 is a fragmental detail plan view of the relative arrangement of the switch actuating cams and the respective switches for controlling the operation of the stacker mechanism;

Fig. 8 is a fragmental, partly sectional side view of side switch actuating cams and switches showing them in the position for lowering the stacker; and

Fig. 9 is a fragmental view of the wiring diagram showing the valve in by-passing position for the return movement of the stacker.

The basic parts of my device as heretofore known generally include a base 1 on which is swingably or pivotally mounted a stacker frame 2 having suitable cross-frame members 3, and a series of belt conveyors 4 mounted on suitable pulleys 6 and on tension pulleys 7 to deliver and carry sheets 8 and to pile them into a stack on suitable pallets or conveyors 9. A so-called layboy 11 is provided at the intake end of the conveyors 4 for the purpose of receiving sheets from a printing or slotting machine, not shown, and conveying them onto the stacker. However in my the layboy is such that it can be moved out of the way and give access to the printing machine when needed.

My invention includes a stacker elevating mechanism 12, the mounting and compensating fulcruming of the pivoter of the stacker on the base 1 for true vertical stacking; the relationships and particular combination with the swinging layboy 11 which facilitates operation and access to press set up and clearing; the power actuation of the layboy to move it to out of the way position; the mechanism 13 for stopping the sheets when the stacker reaches its highest elevated position and the top of the pile for which it was adjusted; and the convenient automatic actuation of the stacker.

At an end of the base 1 near the layboy 11 are provided a pair of brackets 14 aligned respectively with the opposite longitudinal sides 16 of the stacker frame 2. On each bracket 14 is pivoted an arm 15 which extends generally upwardly and has its upper end pivoted on the intake or receiving end of the stacker frame 2 and forms a journal for a conveyor pulley shaft 17 extended transversely across the intake end of the stacker frame 2. In this manner the stacker frame 2 is supported pivotally about the intake conveyor shaft 17 and also swingably on the arm 15 fulcrummed on the lower pivots 18 of the arms 15 in the brackets 14 of the base 1. Thus the stacker frame 2 can be swung upwardly about the conveyor shaft 17 as a pivot, but this conveyor shaft 17 is slidable generally horizontally in proportion and oppositely to the horizontal component of the normal arc of pivotal movement of the frame 2.

For control of this compensating shifting of the stacker frame pivot, a bell crank lever 19 is journaled on a fulcrum 21 on a bracket 22 on the base 1 at each outside longitudinal side 16 of the skeleton frame 2 so that the lever arm 23 thereof initially extends toward the intake end of the stacker frame 2.

The relative location of the crank lever pivot 24 relatively to the length of the stacker frame 2 is such that
the crank lever pivot 24 moves on an arc, the horizontal component of which causes the stacker frame 17, is elevated about its pivot pulley shaft 17, to also swing horizontally toward the delivery or stacking end of the stacker so as to negative said arc and thus cause said delivery end to move on a generally vertical line 28 as indicated on Fig. 3.

In the present dimensions of said stacker this is accomplished by spacing the crank lever pivot 24 from the pivot shaft 17 or fulcrum of the frame or about one-third of the length of the stacker. For instance, on a 13 foot length stacker frame, the bell crank pivot axis aligns with pivot axis is in the top of the fulcrum arm 15, substantially horizontally when the stacker frame 2 is horizontal or is within about 1° of horizontal. The bell crank lever has a constant crank angle but the arcuate drive hereinafter described has a shifting angle. For this purpose it is significant that the stacker is raised in a clockwise direction around its pivot shaft 17, but the bell crank lever 19 turns in a counterclockwise direction to accomplish the said raising and negative shifting of the stacker. Thus as the bell crank lever 19 is turned in a counterclockwise direction view of Fig. 3, so that the crank lever 23 is turned toward the delivery or stacker end of the frame is simultaneously that the bell crank lever 23 is moved upwardly and away from the base 15, it not only turns the entire stacker upwardly in a counterclockwise direction, but also pulls the stacker frame 15 so as to turn the pivot arms 15 also in a counterclockwise direction, and allows the raising and simultaneous swinging of the stacker frame toward its delivery or stacker end in such proportion as to maintain the delivery or stacker end of the stacker constantly in about the same perpendicular plane.

The mechanism for turning the bell crank 19 is such as to apply a constant speed of turning. In the herein illustration the inner end of each crank arm 26 of the bell crank lever 19 is in the form of a gear segment or toothed head 31 the teeth of which are in mesh with a suitable sprocket chain 32. The anchor end 33 of the sprocket chain 32 is anchored at the end of the head 31 nearest to the delivery end of the stacker 2. The sprocket chain 32 is played over a segmental sprocket or head 34 and has its other end 35 anchored on the end of the segmental sprocket 34 farthest from the delivery end of the stacker frame 2. Thus the sprocket chain 32 engages both sprockets 31,33 generally with respect to the arc of the heads or segments so that during the turning of the sprockets the chain 32 moves at a constant linear speed and thus exerts pull upon the bell crank 19 at a constant speed, thus the pivoted end of lever arm 23 moves at a constant peripheral speed.

The sprockets 34 are fixed on a transverse shaft 36 which is journaled in brackets 37 on the base 1. Intermediate between the ends of the shaft 36 is provided a transmission segment sprocket 38 which is fixed on the shaft 36. A drive sprocket chain 39 is placed over the teeth of the segmental drive sprocket 38 and has an end 41 thereof anchored on the end of the segmental drive sprocket 38 nearest to the delivery end of the stacker frame 2. The other end of the drive sprocket chain 39 is secured to the end of a plunger rod 42 connected to a plunger which works in a hydraulic or pneumatic cylinder 43. The plunger rod 42 is connected by a pivot 44 to a vertical bracket 46 on the base 1. A fluid conduit 47 conveys fluid to the hydraulic cylinder 43 which is controlled by suitable automatic device and valve system. In the initial position, where the stacker frame is in its lowest position (Fig. 1) the segmental drive sprocket 38 is in a position where its last teeth are in generally perpendicular position with respect to the sprocket shaft 36 and as pull is exerted on the plunger rod 42, by reason of the engagement of the sprocket chain 39 always tangentially at the top of the drive sprocket 38, the drive sprocket 38 is turned at a constant peripheral speed.

In other words, drive is transmitted by the chains always through the teeth of the sprocket in line with the chain and the chain functions somewhat similarly to a rack of a rack and gear transmission. The principle of operation involves the application of a lineal generally parallel uniform pull tangentially of the respective arcuate heads through a flexible pulling line.

In my device a layboy is so arranged that it moves in synchronism with the relative shifting of the position of the stacker as heretofore described and in the same direction. My layboy 11 includes a skeleton frame 52 side members 53 (Fig. 5) of which are journaled on the intake pulley shaft 17. A layboy pulley shaft 54 is journaled in the side frame members 53 at the end thereof spaced from the previous journaled end. To a middle transverse box frame 55 is pivotally connected a fluid operated plunger rod 56. The plunger of the rod 56 works in a fluid cylinder 57, the lower end of which is journaled on a base link 58. The base link 58 is in turn journaled on a pivot 59 at the adjacent end of the base 1. An adjustable screw abutment 61 projects downwardly from the fluid cylinder 57 to determine parallelism or angle in the initial position of the layboy. The axis of the cylinder 57 is generally parallel with the sprocket 15 so as the function in swinging as at a parallelogram in the layboy 11. A plurality of belt conveyors 62 are placed around pulleys 63 of the layboy shaft 54 and also around pulleys 63 on the intake pulley shaft 17 of the stacker. The layboy is adjacent to the printer and slotter machine so that printed sheets are fed upon the layboy at suitable height and are carried by the belt conveyors 62 thereof onto the belt conveyors 4 on the stacker, and are carried by the latter belt conveyors 4 to the delivery end of said conveyors 4 and to the stacker, as the stacker is moved upwardly in the manner heretofore described.

When the stacker reaches its uppermost elevated position shown in Fig. 3, then the pile is completed and the further piling of sheets is prevented until the stacker is lowered again. For this purpose I provide a plurality of friction pads 71. Each pad 71 is supported on a spring arm 72 normally holding the pad 71 below the level of the belt conveyor 4, so that the pad can be pushed upwardly between adjacent stacker conveyors 4 and against the respective sheets passing thereover. As shown in Fig. 4, a cam shaft 73 extends transversely and is journaled in the generally tangent line of the stacker, and carries a plurality of roller cams 74 positioned below the respective pads 71. As the shaft 73 is turned, it will turn the eccentric pads 74 so as to force the respective friction pads 71 against the adjacent sheets 8 as shown in Fig. 4, and prevent their movement over and off the stacker.

In the present form the stacker 2 is covered by a wood flooring and the upper run of the conveyors 4 move over said flooring. The spring arms 72 are formed in this form by slits in the flooring separating a strip which could be flexed upwardly sufficiently to bring the pads 71 into operative position when needed heretofore described.

For the actuation of this last described anti-friction sheet restraining device there is provided a solenoid 78, mounted on the stacker frame 2 which when energized pulls its core 79 inwardly so as to pull a link 81, thereby to turn a crank arm 82 which latter is keyed on the cam shaft 73, so as to tilting convey a fluid conduit 84 to the sheet conveying direction, thus viewing Fig. 4. After the stacker is returned to its initial position, the solenoid 78 is deenergized and a coil spring 83 connected to the crank arm 82 and anchored on an ear 84 returns the crank arm 82 to its initial position and thereby allows the spring strip 72 to lower the friction pad 71 below the level of the stack conveyors 4 and allow the sheets to again pass off the end of said stacker frame 2 onto the pile.

For the automatic control of the lowering and raising of the stacker there are provided cams 91, 92 and 93
on the shaft 36 so that as the shaft 36 is turned in clock- 
wise direction, viewing Fig. 7, during the raising of the 
stacker, the cams 91 and 92 also turn in clockwise direction 
and are so adjusted that at the top position of the stacker 
the cams 91 and 92 engage respectively switches 94 and 
96 for actuating the brake mechanism 12, and for by-
passing the pressure medium from the hydraulic cylin- 
der 43 thereby allowing the lowering of the stacker mech-
anism. The third cam 93 is adjusted oppositely to the first 
cams 91 and 92 so as to abut a switch 97 to brake a 
relay electric circuit to be hereinafter described and 
release the brake mechanism 13 and connect the pressure 
medium to the hydraulic cylinder 43 for raising the 
stacker.

The sequence of operation is diagrammatically illus-
trated in the wiring diagram of Fig. 6 which explains the 
automatic operation and actuation of the stacker. In 
the cylinder 43 works a piston 98 on the end of the plunger 
rod 42. The pressure medium is introduced through the 
conduit 47 ahead of the piston 98 so as to push the piston 
 radially of the cylinder 43 thereby to pull the plunger 
rod 42 and the sprocket chain 39 so as to turn the sprock-
et on the transverse shaft 36 in clockwise direction view-
ing Figs. 1 and 2 for raising the stacker at a constant speed 
in the manner hereafter described. The pressure 
medium is provided through a pump 99 which takes the fluid 
from a reservoir 101 through an intake pipe 102. 
Suitable valves are connected in the line 47 which for 
the sake of simplicity of diagrammatic illustration are 
represented by a three-way by-pass valve 103. This 
by-pass valve 103 has a straight passage 104 for direct 
connection through the line 47. The valve 103 also has a 
by-pass connection 106 at right angles to one side so that 
when turned in a clockwise direction viewing Fig. 6, the 
passage 104 is aligned with a bypass passage 107 leading 
back to the reservoir 101 and the bypass passage 106 is 
aligned with the portion of the conduit 47 leading from 
the cylinder 43, as shown in Fig. 9. There is provided a 
suitable relief valve 108 in the pump circuit so that when 
the conduit 47 is blocked from the pump 99 the increase 
of pressure will operate the relief valve and by-pass the 
pump fluid back to the intake conduit 102 and the res- 
ervoir 101.

In the diagrammatic view in Fig. 6 the valve 103 is il-
ustrated as a cock valve the handle 110 of which is turned 
by a 109 connected to the core of a solenoid 111. 
Whenever the solenoid 111 is energized, it turns the valve 
103 into the by-passing position shown in Fig. 9. A 
suitable spring 112 pulls the valve 103 back to its press-
ure position when the solenoid 111 is deenergized. 

For clarity of illustration in the wiring diagram in 
Fig. 6, three sets 94, 92 and 93 are shown separately ad-
 jacent to the exploded diagrammatic view of the three 
respective switches 94, 96 and 97.

The switch 94 is for closing the circuit from line 113 
to line 114 leading to the solenoid 111 from which a 
line 116 leads to the other terminal of the source of elec-
tricity. When the cam 91 closes the switch 94, the sole-
 noid 111 is energized and the by-pass valve 103 is op-
 erated so as to bypass the pressure from the cylinder 43 
and the pump and to allow the lowering of the stacker.

The switch 96 is for closing the circuit between line 
113 and line 117 to the solenoid 78 of the brake device 
13 which latter solenoid 78 is then connected to line 116 
to the other terminal of the source of electricity.

The switches 94 and 96 are held normally open by any 
suitable device such as springs 118. The cam 92 is ad-
vanced somewhat with respect to the cam 91, as shown 
in Fig. 8, so as to operate the brake device 13 slightly in 
advance of the lowering of the stacker.

Each of the switches 94 and 96 is held in a circuit clos-
ing position by relays or solenoids 119 respectively. The 
intake lines 121 of the solenoids 119 are broken respec-
tively by a switch 122 operably coupled with the switch 
94 and 96 respectively, so that when the switches 94 
and 96 are closed respectively by the cams 91 and 92, 
then the relay switches 122 are closed also so as to 
energize the solenoids 119 and thereby hold the switches 
94 and 96 in circuit closing position until the stacker 
again reaches its lowestmost position, as shown in Fig. 1. 
In this lowest position of the stacker the cam 93 abuts 
and opens the normally closed switch 97 for breaking 
the circuit in line 121 and thereby deenergizing the solenoids 
119 and permitting the opening of switches 94 and 96 for 
the resuming of the raising of the stacker. For this pur-
pose, the switch 97 is in series in the circuit with the intake 
line 121 and the relay solenoids 119 and is held normally 
in circuit closing position by suitable means such as a 
spring 123.

In operation the machine is started in the usual man-
ner by turning on a main switch 124 in the line 121 (Fig. 
6), which main switch also controls a motor 126 which 
through a suitable chain 125 drives the conveyor shaft 17.

Thus the conveyors are continuously in operation on 
both the stacker and layboy. Then the pump motor 
switch 127 (Fig. 6) is turned on for operating the pump 
motor 128 and thereby applying the pressure medium 
into the cylinder 43. As the piston 98 moves back into 
the cylinder 43, it pulls the plunger rod 42 which latter 
turns the sprocket chain 39 and turns the segment 
sprockets and the sprocket chain in the manner here-
fore described so that the bell cranks 2 are so turned in a 
contra-clockwise direction viewing Fig. 1. This move-
ment causes upward pivoting or lifting of the stacker 
end of the layboy about the conveyor shaft 17 and the 
simultaneous swaying of the supporting arms 15 and 
the layboy 11 in the opposite direction in proportion 
of the arc of movement of the stacker end of the 
stacker, with a resultant lineal vertical path of the stacker 
end of the stacker. The conveyors 4 carry the sheets 
8 on the stacker and deposit them in substantially true 
alignment in the vertical stack.

As the stacker reaches its uppermost position shown in 
Fig. 5, then first the cam 92 closes the switch 96 to apply 
the brake device 13 for retarding movement of sheets 
8 on the stacker conveyors 4. Immediately thereafter 
the cam 91 closes the switch 94 for closing the circuit 
of the by-pass valve relay or solenoid 111 so as to turn 
the by-pass valve into the position shown in Fig. 9. The 
weight and leverage of the stacker device pulls the piston 
98 with comparative rapidity down into the lowest 
dotted line position shown in Fig. 3.

The double switch arrangement of switches 94 and 
96 causes the simultaneous closing of the relay switches 
122 for energizing the solenoids 119 which keep the 
switches 94 and 96 in circuit closing position until the 
stacker is lowered into the lowest dotted line position 
shown in Fig. 5. When the stacker reaches this lower-
most position, the release cam 93 engages the release 
switch 97 so as to open the same and thereby deenergizes 
the relays 119 and permit the opening of the switches 
94 and 96, which in turn, results in deenergizing the solenoids 
78 and 111 so that the brake device is released and the 
valve 103 is turned to connect the pressure medium from 
the pump 99 to the cylinder 43 and thus resume the 
constant uniform raising of the stacker for stacking sheets 
as heretofore described. During this lowering and raising 
operation, the layboy swings correspondingly so as to 
feed in constant relation to the stacker conveyors and 
allow the aforesaid compensation for the varying hori-
zontal components of the arc of swinging movement of 
the stacker.

The particular structure of the layboy also permits the 
easy lifting of the layboy about its pivot shaft by operating 
a hydraulic or pressure cylinder device 57 so as to push 
the layboy up and into an out of the way position. Before 
operation the layboy must be lowered into its operative 
position as shown. It is to be noted that even the pressure 
lifting device of the layboy is suitably pivoted to follow
with the swinging movement of the layboy and the stacker supports for the aforesaid take-up of the horizontal component of movement in order to cooperate in accomplishing the result of constant, uniform and true vertical stacking.

I claim:

1. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrummed on said base beneath said stacker frame and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain said upward movement of said stacker end on a generally perpendicular plane, operating means to turn said lifting elements about their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position.

2. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrummed on said base beneath said stacker frame and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain said upward movement of said stacker end on a generally perpendicular plane, operating means to turn said lifting elements about their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position, and a layboy frame pivotally supported on said support means in registry with said receiving end so as to shift longitudinally together with said stacker frame, and a pressure operated pivoted cylinder and piston connection between said base and said layboy frame for lifting said layboy frame into an out of the way position and lowering said layboy frame into an operative registering position with said receiving end at will, said layboy frame having longitudinal conveyors thereon for every sheet so to said receiving end of said stacker frame.

3. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrummed on said base beneath said stacker frame and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain said upward movement of said stacker end on a generally perpendicular plane, operating means to turn said lifting elements about their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position, and a layboy frame pivotally supported on said support means in registry with said receiving end so as to shift longitudinally together with said stacker frame, and a pressure operated pivoted cylinder and piston connection between said base and said layboy frame for lifting said layboy frame into an out of the way position and lowering said layboy frame into an operative registering position with said receiving end at will, said layboy frame having longitudinal conveyors thereon for every sheet so to said receiving end of said stacker frame.

4. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrummed on said base beneath said stacker frame and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain said upward movement of said stacker end on a generally perpendicular plane, operating means to turn said lifting elements about their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position, and a layboy frame pivotally supported on said support means in registry with said receiving end so as to shift longitudinally together with said stacker frame, and a pressure operated pivoted cylinder and piston connection between said base and said layboy frame for lifting said layboy frame into an out of the way position and lowering said layboy frame into an operative registering position with said receiving end at will, said layboy frame having longitudinal conveyors thereon for every sheet so to said receiving end of said stacker frame.

5. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of
In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being longitudinal and having their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position and to carry said sheets to said receiving end of said stacker frame, said support means being pivotally connected to said frame and means to drive the conveyors on said stacker frame and on said layboy frame in synchronism.

In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being longitudinal and having their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position and to carry said sheets to said receiving end of said stacker frame, said support means being pivotally connected to said frame and means to drive the conveyors on said stacker frame and on said layboy frame in synchronism.

In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being longitudinal and having their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position and to carry said sheets to said receiving end of said stacker frame, said support means being pivotally connected to said frame and means to drive the conveyors on said stacker frame and on said layboy frame in synchronism.

In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being longitudinal and having their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position and to carry said sheets to said receiving end of said stacker frame, said support means being pivotally connected to said frame and means to drive the conveyors on said stacker frame and on said layboy frame in synchronism.

In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being longitudinal and having their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position and to carry said sheets to said receiving end of said stacker frame, said support means being pivotally connected to said frame and means to drive the conveyors on said stacker frame and on said layboy frame in synchronism.
and render said operating means ineffective at said top position as to permit the frame to turn to its lowermost position, said lifting elements comprising spaced parallel bell crank levers, means on said base for fulcruming said bell crank levers on an axis transverse with respect to said stacker frame, an arm of each bell crank lever being pivotally connected to said stacker frame and extending generally from said fulcrum toward said receiving end, and the other arm of each bell crank lever being connected to said operating means for applying force about said fulcrum.

9. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end of said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end as to permit said frame to shift its position longitudinally during its movement about pivot axis; lifting elements fulcrummed on said base beneath said stacker frame and pivotally connected to said frame for shifting said frame upwardly and to its lowermost position, said lifting elements comprising spaced parallel bell crank levers, means on said base for fulcruming said bell crank levers on an axis transverse with respect to said stacker frame and between said base and said stacker frame, an arm of each bell crank lever being pivotally connected to said stacker frame and extending generally from said fulcrum toward said receiving end, and the other arm of each bell crank lever being connected to said operating means for applying force about said fulcrum, the axes of said fulcyrums and of the pivoting of said arms of said bell crank levers being so spaced from each other and from the axis of the pivot of said receiving end that all said axes are essentially on the same general horizontal plane when the stacker frame is in its horizontal position, said operating means including a transverse shaft journalled on said base beneath the axis of said bell crank fulcrum and offset horizontally from said fulcrum toward the receiving end of the stacker frame, a driven element for driving said transverse shaft for elevating said stacker frame and for imparting generally horizontally spaced heads on each drive element and the adjacent other arm of the crank lever, an arcuate periphery on each head, a flexible pull line anchored at its opposite ends tangentially on each periphery to each arcuate periphery so as to apply tangential pulling force and motion to said heads at uniform peripheral speed respectively, and a driven element extended generally radially from said shaft, a head on said driven element having an arcuate periphery, a powered puller device, and a flexible line tangentially anchored to the head of said driven element and connected to said puller device to exert a linear tangential pull on said head of said driven element to turn all said heads and said bellcrank levers at constant speed for elevating said stacker frame about its pivot.

10. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end of said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end as to permit said frame to shift its position longitudinally during its movement about pivot axis; lifting elements fulcrummed on said base beneath said stacker frame and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain said upward movement of said stacker end on a generally perpendicular plane, operating means to turn said lifting elements about their respective fulcrums so as to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means operative from the lowermost position to the top position of said stacker frame and render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position, said lifting elements comprising spaced parallel bell crank levers, means on said base for fulcruming said bell crank levers on an axis transverse with respect to said stacker frame and between said base and said stacker frame, an arm of each bell crank lever being pivotally connected to said stacker frame and extending generally from said fulcrum toward said receiving end, and the other arm of each bell crank lever being connected to said operating means for applying force about said fulcrum, the axes of said fulcyrums and of the pivoting of said arms of said bell crank levers being so spaced from each other and from the axis of the pivot of said receiving end that all said axes are essentially on the same general horizontal plane when the stacker frame is in its horizontal position, said operating means including a transverse shaft journalled on said base beneath the axis of said bell crank fulcrum and offset horizontally from said fulcrum toward the receiving end of the stacker frame, a driven element for driving said transverse shaft for elevating said stacker frame and for imparting generally horizontally spaced heads on each drive element and the adjacent other arm of the crank lever, an arcuate periphery on each head, a flexible pull line anchored at its opposite ends tangentially on each periphery to each arcuate periphery so as to apply tangential pulling force and motion to said heads at uniform peripheral speed respectively, and a driven element extended generally radially from said shaft, a head on said driven element having an arcuate periphery, a powered puller device, and a flexible line tangentially anchored to the head of said driven element and connected to said puller device to exert a linear tangential pull on said head of said driven element to turn all said heads and said bellcrank levers at constant speed for elevating said stacker frame about its pivot.
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13 parallel bell crank levers, means on said base for full crum ing said bell crank levers on an axis transverse with respect to said stacker frame and between said base and said stacker frame of each bell crank lever being pivoted to said stacker frame and extending generally from said fulcrum toward said receiving end, and the other arm of each bell crank lever being connected to said operating means for applying force about said fulcrum, the axes of said fulcrums and of the pivoting of said arms of said bell crank levers being spaced from each other and from the axis of the pivot of said receiving end so as to be substantially on the same general horizontal plane when the stacker frame is in horizontal position, said operating means including a traverse shaft journaled on said base beneath the axis of said bell crank fulcrum and offset horizontally from said fulcrum toward the receiving end of the stacker frame, a drive element extended generally radially from the shaft adjacent to each bell crank, coating generally horizontally spaced heads on each drive element and the adjacent other arm of the crank lever, an arcuate periphery on each head, a flexible pull line anchored at its opposite ends tangentially on each pair of coating arcuate peripheries so as to apply tangential pulling force and motion to said heads at uniform peripheral speed respectively, and a driven element extended generally radially from said shaft, a head on said driven element having an arcuate periphery, a powered pulley device, and a flexible line tangentially anchored to the head of said driven element and connected to said pulley device to exert a lineal tangential pull on said driven element to turn said driven element about said pivot of said stacker frame about its pivot, said powered pulley device including a cylinder pivoted on said base, a plunger working in said cylinder, a plunger rod extended from said plunger, said flexible line from said driven element connected to said plunger, and means to introduce a pressure medium into said cylinder to move said plunger away from said driven element thereby to pull said flexible line of said driven element for turning said transverse shaft.

14 In a stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end of said stacker frame so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivellable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrumed on said base beneath said stacker frame and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain such upward movement of said stacker end on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means operative from the lowestmost position to the top position of said stacker frame and render said operating means ineffective at said top position so as to permit the frame to turn to its lowestmost position, said lifting elements comprising spaced parallel bell crank levers, means on said base for fulcruming said bell crank levers on an axis transverse with respect to said stacker frame and between said base and said stacker frame, an arm of each bell crank lever being pivoted to said stacker frame and extending generally from said fulcrum toward said receiving end, and the other arm of each bell crank lever being connected to said operating means for applying force about said fulcrum, the axes of said fulcrums and of the pivoting of said arms of said bell crank levers being so spaced from each other and from the axis of the pivot of said receiving end that all said axes are substantially on the same general horizontal plane when the stacker frame is in horizontal position, said operating means including a traverse shaft journaled on said base beneath the axis of said bell crank fulcrum and offset horizontally from said fulcrum toward the receiving end of the stacker frame, a drive element extended generally radially from the shaft adjacent to each bell crank, coating generally horizontally spaced heads on each drive element and the adjacent other arm of the crank lever; an arcuate periphery on each head, a flexible pull line anchored at its opposite ends tangentially on each pair of coating arcuate peripheries so as to apply tangential pulling force and motion to said heads at uniform peripheral speed respectively, and a driven element extended generally radially from said shaft, a head on said driven element having an arcuate periphery, a powered pulley device, and a flexible line tangentially anchored to the head of said driven element and connected to said pulley device to exert a lineal tangential pull on said driven element to turn said driven element all said heads and said bell crank levers at constant speed for elevating stacker frame about its pivot, said powered pulley device including a cylinder pivoted on said base, a plunger working in said cylinder, a plunger rod extended from said plunger, said flexible line from said driven element connected to said plunger, and means to introduce a pressure medium into said cylinder to move said plunger away from said driven element thereby to pull said flexible line of said driven element for turning said transverse shaft.
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journalled on said base beneath the axis of said bell crank fulcrum and offset horizontally from said fulcrum toward the receiving end of the stacker frame, a drive element extended generally radially from the shaft adjacent to each bell crank, coating generally horizontally spaced heads on each drive element and the adjacent other arm of the crank lever, an arcuate periphery on each head, a flexible line portion anchored at its opposite ends tangentially on each pair of coating arcuate peripheries so as to apply tangential pulling force and motion to said heads at uniform peripheral speed respectively, and a driven element extended generally radially from said shaft, a head on said driven element having an arcuate periphery, a powered puller device, and a flexible line tangentially anchored to the head of said driven element and connected to said puller device to exert a linear tangential pull on said head of said driven element to turn all said heads and said bell crank levers at constant speed for elevating said stacker frame about its pivot, said powered puller device including a cylinder pivoted on said base, a plunger working in said cylinder, a plunger rod extended from said plunger, a flexible line from said driven element being connected to said plunger, and means to introduce a pressure medium into said cylinder to move said plunger away from said driven element thereby to pull said flexible line of said driven element for turning said transverse shaft, said control devices including a control cylindrical member, said pulling member, and said pressure medium to control the flow of said pressure medium into cylinder for elevating said stacker frame from its lowermost to its highest position and to by-pass said pressure medium from said cylinder to permit the return of said stacker frame to its lowermost position.

15. In a stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end of said stacker end so as to deposit such sheets in stacks, support means on said frame for pivotally supporting the receiving end of the said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis, lifting elements fulcrummed on said base and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain such upward movement of said stacker frame on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame from said receiving end to said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said control devices being pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain said upward movement of said stacker frame on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means operative from the lowermost position to the top position of said stacker frame and render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position, and sheet obstructing devices near the
stacker end of said stacker frame normally below the level of said conveyors, electrically actuated means to raise said uppermost elevated position to its lowest position.

16. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end of said stacking end so as to deposit such sheets in stacks, support means on said base of pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrumed on said base and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain such upward movement of said stacker end on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame for operating means for applying force about said fulcrum, the axes of said fulcrons and of the pivoting of said arms of said bell crank levers being spaced from each other and from the axis of the pivot of said receiving end, that all said axes are substantially on the same general horizontal plane when the stacker frame is in horizontal position; and means to introduce a pressure medium into said cylinder to move said plunger away from said driven element thereby to pull flexible line from said driven element being connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain said upward movement of said stacker end on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means operative from the lowest position to the top position so as to permit the frame to turn to its lowest position, a layboy frame pivotally supported on said support means in registry with said receiving end so as to shift longitudinally together with said stacker frame, and a pressure operated pivotally supported connection between a transverse axis and said layboy frame for lifting said layboy frame into an out of the way position and lowering said layboy frame into an operating register position with said receiving end at will, said layboy frame having longitudinal conveyors thereon to carry sheets to said receiving end of said stacker frame, a conveyor drive shaft transverse at said receiving end for driving the conveyors on said stacker frame and on said layboy, said support means including a pair of spaced parallel arms, the lower ends of said arms being pivotally connected to said base and forming said pivot axis of said support means and the upper ends of said arms being opposite end of said conveyor drive shaft, the receiving end of said stacker frame and said layboy frame being journaled on said conveyor drive shaft, said conveyors on said layboy being driven by said conveyor drive shaft and power means to constantly rotate said drive shaft.

18. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end of said stacking end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrumed on said base and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintain such upward movement of said stacker end on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means operative from the lowest position to the top position so as to permit the frame to turn to its lowest position, a layboy frame pivotally supported on said support means in registry with said receiving end so as to shift longitudinally together with said stacker frame, and a pressure operated pivotally supported connection between a transverse axis and said layboy frame for lifting said layboy frame into an out of the way position and lowering said layboy frame into an operating register position with said receiving end at will, said layboy frame having longitudinal conveyors thereon to carry sheets to said receiving end of said stacker frame, a conveyor drive shaft transverse at said receiving end for driving the conveyors on said stacker frame and on said layboy, said support means including a pair of spaced parallel arms, the lower ends of said arms being pivotally connected to said base and forming said pivot axis of said support means and the upper ends of said arms being opposite end of said conveyor drive shaft, the receiving end of said stacker frame and said layboy frame being journaled on said conveyor drive shaft, said conveyors on said layboy being driven by said conveyor drive shaft and power means to constantly rotate said drive shaft.
ing along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrumed on said base and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintaining said upward movement of said stacker end on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means operative from the lowermost position to the top position of said stacking frame and render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position, said lifting elements comprising spaced parallel bell crank levers, means on said base for fulcrumming said bell crank levers on an axis transverse with respect to said stacker frame and between said base and said stacker frame, an arm of each bell crank lever being pivotally connected to said stacker frame and extending generally from said fulcrum toward said receiving end, and the other arm of each bell crank lever being connected to said operating means for applying force about said fulcrum, the axes of said fulcrums and of the pivoting of said arms of said bell crank levers being spaced from each other and from the axis of pivot of said receiving end that all said axes are substantially on the same general horizontal plane when the stacker frame is in horizontal position, said operating means including a transverse shaft journaled on said base beneath the axis of said bell crank fulcrum and offset from said fulcrum toward the receiving end of said stacker frame, a sector shaped arm on said shaft adjacent each bell crank lever, the adjacent other arm of each bell crank lever being also generally sector shaped, the arcuate peripheries of adjacent sector shaped arms being offset generally in the same plane, a flexible pull line being anchored on each pair of adjacent sector peripheries to exert a generally straight line pull on said peripheries generally on the line of a tangent common to said adjacent sector peripheries, a third sector shaped arm on said shaft, a powered pulver device, and a flexible line extended from said pulver device and anchored to the periphery of said third sector shaped arm generally tangentially and horizontally with respect to the periphery of said sector.

19. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end and including a plurality of conveyors longitudinal on said frame to carry sheets along said frame from said receiving end of said stacker end so as to deposit such sheets in stacks, support means on said base for pivotally supporting the receiving end of said frame, the pivot axis of said frame being along said receiving end and transverse to said frame, said support means being swivelable about an axis beneath and generally parallel with said pivot axis and said receiving end so as to permit said frame to shift its position longitudinally during its movement about said pivot axis; lifting elements fulcrumed on said base and pivotally connected to said frame for shifting said frame upwardly about said pivot axis and longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said pivot axis and maintaining said upward movement of said stacker end on a generally perpendicular plane, operating means to impart generally constant and uniform lifting force to said lifting elements, and control devices actuated by the positioning of said frame to render said operating means operative from the lowermost position to the top position of said stacking frame and render said operating means ineffective at said top position so as to permit the frame to turn to its lowermost position, said lifting elements comprising spaced parallel bell crank levers, means on said base for fulcrumming said bell crank levers on an axis transverse with respect to said stacker frame and between said base and said stacker frame, an arm of each bell crank lever being pivotally connected to said stacker frame and extending generally from said fulcrum toward said receiving end, and the other arm of each bell crank lever being connected to said operating means for applying force about said fulcrum, the axes of said fulcrums and of the pivoting of said arms of said bell crank levers being spaced from each other and from the axis of pivot of said receiving end that all said axes are substantially on the same general horizontal plane when the stacker frame is in horizontal position, said operating means including a transverse shaft journaled on said base beneath the axis of said bell crank fulcrum and offset from said fulcrum toward the receiving end of said stacker frame, a sector shaped arm on said shaft adjacent each bell crank lever, the adjacent other arm of each bell crank lever being also generally sector shaped, the arcuate peripheries of adjacent sector shaped arms being offset generally in the same plane, a flexible pull line being anchored on each pair of adjacent sector peripheries to exert a generally straight line pull on said peripheries generally on the line of a tangent common to said adjacent sector peripheries, a third sector shaped arm on said shaft, a powered pulver device, and a flexible line extended from said pulver device and anchored to the periphery of said third sector shaped arm generally tangentially and horizontally with respect to the periphery of said sector.

20. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end, conveyor means longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets on a stack at said stacking end, swiveling supports extended from said base to the receiving end of said stacker frame, a conveyor drive shaft of said conveyor means being journaled on the top of said stacker frame to form the fulcrum for the raising and lowering of said stacker frame about the axis of said shaft, lifting levers fulcrumed on said base beneath said stacker frame, each lifting lever being extended toward said receiving end and being pivotally connected to said stacker frame between said shaft and the fulcrum of said lifting levers so that the turning of said levers shall move the same stacker frame about the axis of said shaft pivotally and also longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said shaft axis and maintaining the upward movement of said stacker end on a generally perpendicular plane, operating means on said base connected to said levers for turning said lifting levers about their respective fulcrums by a generally constant and uniform lifting force, and control devices actuated by said frame to render said operating means operative from the lowermost position to the top position of said stacker frame and render said operating means ineffective at said top position so as to permit the frame to return to its lowermost position.

21. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end, conveyor means longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets on a stack at said stacking end, swiveling supports extended from said base to the receiving end of said stacker frame, a conveyor drive shaft of said conveyor
means being journaled on the top of said swiveling supports so as to form the fulcrum for the raising and lowering of said stacker frame about the axis of said shaft, lifting levers fulcrumed on said base beneath said stacker frame, each lifting lever being extended toward said receiving end and being pivoted to said stacker frame between said shaft and the fulcrum of said lifting levers so that the turning of said levers shall move the said stacker frame about the axis of said shaft pivoting and also longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said shaft axis and maintain the upward movement of said stacker end on a generally perpendicular plane, an arm extended from the fulcrum of each lever, an arcuate engagement member on each arm, a base shaft on the base transverse to said base and beneath said frame, a generally segmental crank arm on said base shaft, a flexible line connecting said segmental arm with said arcuate engagement member for transmitting movement from one to another, and means to apply a constant turning to the base shaft and to said segmental arms for raising said stacker frame.

22. In a sheet stacker of the character described, in combination, a base, a stacker frame having a receiving end and a stacking end, conveyor means longitudinal on said frame to carry sheets along said frame from said receiving end to said stacking end so as to deposit such sheets on a stack at said stacking end, swiveling supports extended from said base to the receiving end of said stacker frame, a conveyor drive shaft of said conveyor means being journaled on the top of said swiveling supports so as to form the fulcrum for the raising and lowering of said stacker frame about the axis of said shaft, lifting levers fulcrumed on said base beneath said stacker frame, each lifting lever being extended toward said receiving end and being pivoted to said stacker frame between said shaft and the fulcrum of said lifting levers so that the turning of said levers shall move the said stacker frame about the axis of said shaft pivoting and also longitudinally toward the stacking end while the frame is raised so as to compensate oppositely for the horizontal component of the arc of movement of the frame about said shaft axis and maintain the upward movement of said stacker end on a generally perpendicular plane, an arm extended from the fulcrum of each lever, an arcuate engagement member on each arm, a base shaft on the base transverse to said base and beneath said frame, a generally segmental crank arm on said base shaft, a flexible line connecting said segmental arm with said arcuate engagement member for transmitting movement from one to another, and means to apply a constant turning to the base shaft and to said segmental arms for raising said stacker frame, and a layboy, a conveyor on the layboy being driven by said conveyor shaft and being supported on said conveyor shaft in alignment with the receiving end of said stacker frame, and means to selectively adjust the angular position of said layboy about said conveyor shaft.

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