(No Model.)

C. A. WRIGHT.

CARD STACKING MACHINE.

No. 492,130. Patented Feb. 21, 1893.

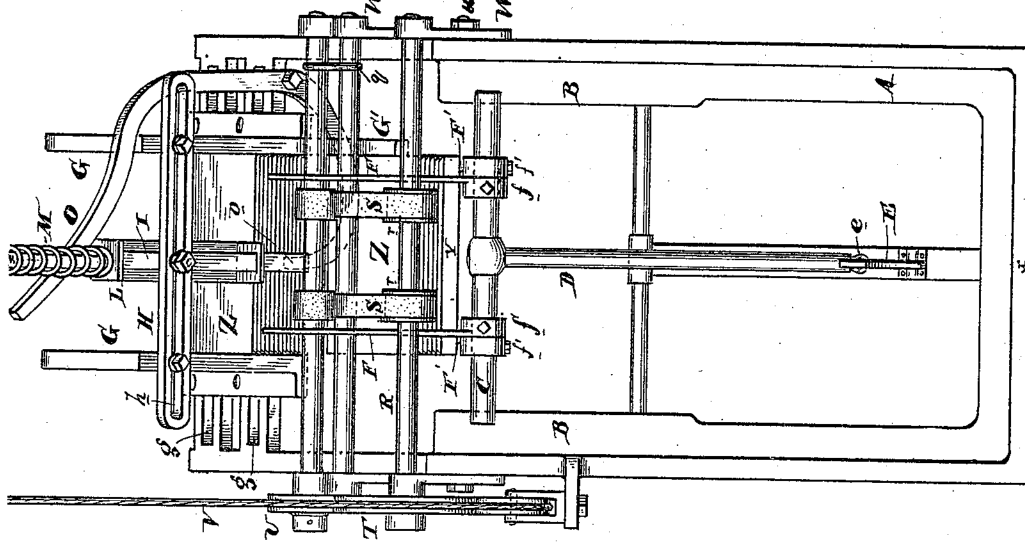

FIG. 2

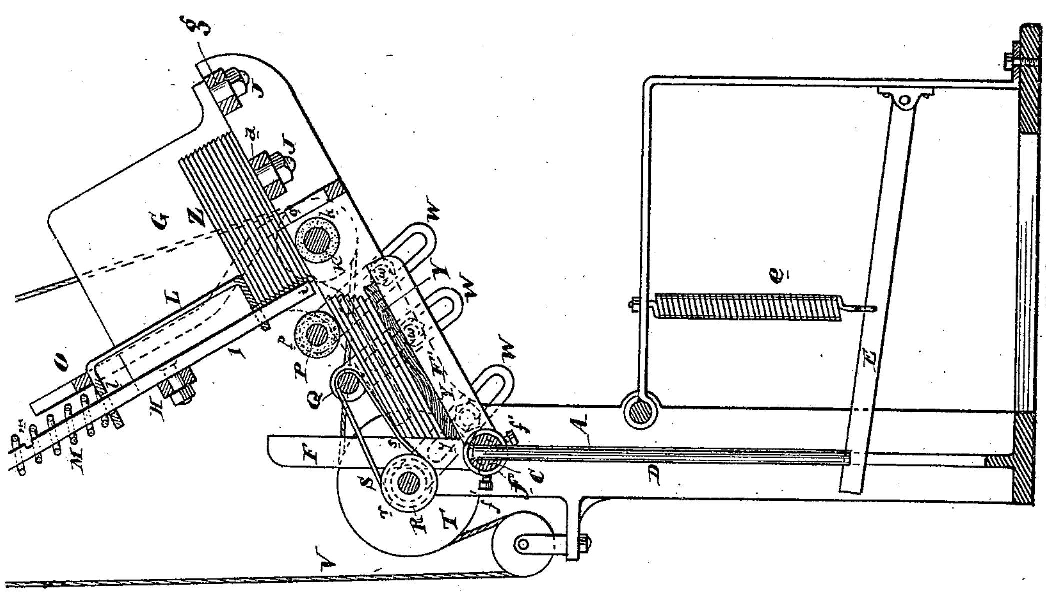

FIG. 1

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UNITED STATES PATENT OFFICE.

CHARLES A. WRIGHT, OF PHILADELPHIA, PENNSYLVANIA.

CARD-STACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,130, dated February 21, 1893.

Application filed April 8, 1886. Serial No. 198,234. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. WRIGHT, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Card-Stacking Machines, of which the following is a specification.

My invention has reference to card stacking machines; and consists in certain improvements all of which are fully set forth in the following specification and shown in the accompanying drawings which form part thereof.

This invention has particular reference to that class of machines in which beveled edged cards are stacked in consecutive order one upon the other so that their oblique edges shall be brought in a single plane in proper condition for gilding and burnishing. This has heretofore been done by hand by bending the cards back and forth between the fingers, but that operation was extremely slow, uncertain, and necessitated a great deal of practice.

The object of this invention therefore, is to facilitate the stacking of cards or placing them in a proper condition for gilding in an automatic manner by machinery, which stacking shall be done most perfectly and thoroughly and with great rapidity. This machine is equally adapted to stacking straight edged cards in an oblique manner, as is necessary when the bevel is given by grinding.

In the drawings:—Figure 1 is a sectional elevation on line *x x* of a card stacking machine embodying my improvements and, Fig. 2 is a front elevation of same.

A is the frame of the machine the upper part of which is provided with a hopper formed by the two adjustable side plates G and the guide rod I. These side plates are secured to slotted cross bars *d* and are secured in position by bolts J passing through the slots *g*, and may thereby be laterally adjusted to suit cards of different widths or lengths. The forward part of the plates G are secured together by an adjustable bar H having a slot *h* through which the tightening bolts pass. The guiding iron I is bolted to this cross bar H. The cards are placed within the hopper and rest upon the feeding roller *k* which may be of rubber and secured upon the rotating shaft K. To insure their being fed under the lower edge *i* of the guide I the cards Z are pressed down upon the roller *k* and the supporting bars *a* by the presser L which is guided upon the bar I and forced down by a spring M. When not in use or when placing the cards within the hopper this presser is raised and its edge *l* snapped into the locking notch *m* in the guide I thereby holding it in a raised position. This forms a lock to secure the presser in a raised position, and is perhaps the simplest locking device which could be devised, though many others might be substituted for it.

O is a lever which is pivoted to the frame of the machine and has one arm passing under the cards as at *o* and the other arm passing above the cards and over the presser L. The object of this is that if there are cards in the hopper and it is desired to prevent the machine feeding, the raising of the presser or upper end of the lever will raise the lower end *o* and lift the cards from the feeding roller *k* and above the edge *i* of the guide bar. As the cards are fed from under the edge *i* they pass under the feeding roller *p* secured upon the shaft P and by these rollers are caused to pass still further downward and forward and upon the receiving part Y or upon the cards already stacked thereon. This receiving part and the cards supported and stacked thereon are held by the adjustable guide plates F F and F′ F′ which are provided with hubs *f* and secured at the proper angles with each other and upon a cross head C by set screws *f*. The angle between the guides F and F′ will correspond to the angle of the bevel on the edge of the card, and they may be adjusted to suit different bevels given to the card. As the cards run upon these adjustable guides their outer edges are pressed down by elastic bands S which pass about the shaft Q and wheels *r* on the shaft R. The intermediate portion of the lower part of the bands as at *s* press upon these outer edges of the cards and through their mediation and the feeding rollers *p* the cross head and its burden are forced downward with the reception of each successive card. To admit of this downward movement the cross head C runs upon the guides B B in the frame A and is provided with a depending rod D connecting with a lever E which is drawn upward by

a spring *e*. By this means it is seen that the cross head always has an upward tendency to movement and in being depressed it extends the spring *e*, and this in turn insures the requisite pressure between the cards and the roller *p* and part *s* of the bands S to insure the cards being properly stacked and compacted.

The shafts P Q and R are supported in bearings made adjustable by slotted parts W and bolts *w* whereby their relative positions may be adjusted.

V is a band which passes around a band wheel T on shaft R and wheel U on the feeding shaft K whereby the requsite power is given to the machine to perform its various functions. To insure the revolution of the roller *p* and its shaft P a simple rubber band *q* may connect the shafts P and Q together, or if desired they may be positively geared, but in practice it is found that the momentum given to the card in passing from the hopper is practically sufficient without relying to any great extent on the feeding power of the rollers *p*.

If desired the lateral guide G′ may be used upon one or both sides of the stacked cards and secured to the hopper or other part of the machine whereby as the cards are fed from the hopper on to the receiving frame and its guides, they may be laterally adjusted so as to bring all of their ends as well as their sides in line.

The entire mechanism upon which the cards are received and stacked may be termed as the receiving table, it being in effect a vertically movable table or frame upon which the cards are received one by one.

In operating, the cards whose edges may have been previously beveled on another machine, are stacked in the frame or hopper and the lowermost card rests upon the feeding roller *k*, and by the rotation of the same lowermost card is fed forward under the lower edge *i* to the feeding rollers *p* by which it is pushed down upon the guides F′ or the board Y, which guides are arranged at the proper angle with respect to the vertical guides F to suit the beveled edge of the card. The said guides are adjustable at any angle with respect to each other, between zero and ninety degrees. The beveled edges of the cards rest against the upright guides F, against which they are pressed by the rollers *p* and bands S which also perform the function of depressing these guides with each successive card. The necessary friction between the card and rollers and bands created by the action of the spring *e* insures a positive oblique stacking of the cards so that the edges to be gilded shall all lie in the same plane. When the cards are stacked they are removed with the board Y and placed in the clamps in the gilding wheels and are ready to be gilded and burnished.

The various parts may be modified and changed in various ways without departing from the spirit of my invention, the essential features of which are a positive feeding device combined with an oblique stacking support table or guides.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a card stacking machine the combination of a feeding device substantially as set forth for feeding the cards in succession, with a movable receiving table or frame having guides to receive and support said cards, and cause them to automatically arrange themselves one above the other in an oblique stack substantially as and for the purpose specified,

2. In a card stacking machine the combination of a feeding device substantially as set forth for feeding the cards in succession, with a movable receiving table or frame having adjustable guides to receive and support said cards and cause them to automatically arrange themselves one above the other in an oblique stack substantially as and for the purpose specified.

3. In a card stacking machine the combination of a feeding device substantially as set forth for feeding the cards in succession with a movable receiving table or frame having guides to receive and support said cards and cause them to automatically arrange themselves one above the other in an oblique stack movable pressure parts to press upon the cards as they are stacked and depress the receiving frame, and springs, or their equivalent to raise said frame and cause it to press the cards against the said bands rollers or their equivalent substantially as and for the purpose specified.

4. The combination of a hopper, a roller to feed the cards from under said hopper one at a time a receiving table or frame adapted to receive the cards and rearrange them one upon the other in an oblique stack, and suitable guides to insure the requisite angle to the oblique stack substantially as and for the purpose specified.

5. The combination of a hopper, a roller to feed the cards from under said hopper one at a time a receiving table or frame adapted to receive the cards and rearrange them one upon the other in an oblique stack, and suitable adjustable guides to insure the requsite angle to the oblique stack substantially as and for the purpose specified.

6. The combination of a hopper, a roller to feed the cards from under said hopper one at a time a receiving table or frame adapted to receive the cards and rearrange them one upon the other in an oblique stack and suitable guides to insure the requisite angle to the oblique stack and means substantially as set forth to press said cards down upon the receiving frame substantially as and for the purpose specified.

7. In a card stacking machine the combination of a feeding device substantially as set forth for feeding the cards in succession with

a receiving table or frame having guides to receive and support said cards and cause them to automatically arrange themselves one above the other in an oblique stack and pressure bands arranged to press upon the upper and forward edge of the cards whereby they are compacted upon the receiving frame substantially as and for the purpose specified.

8. In a card stacking machine the combination of a feeding device substantially as set forth for feeding the cards in succession with a movable receiving table or frame having guides to receive and support said cards and cause them to automatically arrange themselves one above the other in an oblique stack pressure bands arranged to press upon the upper and forward edge of the cards whereby they are compacted upon the receiving frame and springs to force the frame and its cards up against the said bands substantially as and for the purpose specified.

9. In a machine for stacking beveled edged cards preparatory to gilding, the combination of feeding devices substantially as described to feed the cards one at a time, a receiving support adjacent to the feeding devices to receive the cards therefrom and a guide arranged obliquely with reference to the receiving support to cause the stacked cards upon said support to assume an oblique position thereon.

10. The combination of the hopper feeding roller *k*, cross head C and adjustable guides F F′ substantially as and for the purpose specified.

11. The combination of the hopper feeding roller *k*, cross head C and guides F F′ a spring to raise said cross head shafts R and Q and bands S substantially as and for the purpose specified.

12. The combination of the hopper feeding roller *k* cross head C and guides F F′ a spring to raise said cross head rollers *p* shafts R and Q and bands S substantially as and for the purpose specified.

13. The combination of the hopper feeding roller *k* cross head C, and guides F F′ a spring to raise said cross head and feeding rollers *p* substantially as and for the purpose specified.

14. The combination of the hopper feeding roller *k* cross head C and guides F F′ a spring to raise said cross head shafts R and Q and bands S and lateral guide G′ substantially as and for the purpose specified.

15. The combination of the hopper feeding roller *k*, cross head C and guides F F′ a spring to raise said cross head and feeding rollers *p* and lateral guide G′ substantially as and for the purpose specified.

16. The combination of a hopper a feeding roller at the base of the hopper, a guide under which the cards are fed, a spring presser for forcing the cards down upon the roller and a receiving and stacking table or frame upon which the cards are fed substantially as and for the purpose specified.

17. The combination of a hopper a feeding roller at the base of the hopper, a guide under which the cards are fed, a spring presser for forcing the cards down upon the roller a lock for holding said presser clear of the cards and a receiving and stacking table or frame upon which the cards are fed substantially as and for the purpose specified.

18. The combination of a hopper a feeding roller at the base of the hopper, a guide under which the cards are fed, a spring presser for forcing the cards down upon the roller a lock for holding said presser clear of the cards and a lever to raise the cards from the feeding roller to prevent feeding and a receiving and stacking table or frame upon which the cards are fed substantially as and for the purpose specified.

19. The combination of a hopper a feeding roller at the base of the hopper, a guide under which the cards are fed, a spring presser for forcing the cards down upon the roller and a lever to raise the cards from the feeding roller to prevent feeding and a receiving and stacking frame upon which the cards are fed substantially as and for the purpose specified.

20. The combination of a stationary frame having guides for supporting and permitting the movement of the cards, with stacking table or frame having the guides F F′ made relatively adjustable substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

CHARLES A. WRIGHT.

Witnesses:
R. M. HUNTER,
RICHD. S. CHILD, Jr.