

2 Sheets—Sheet 1.

Patented Nov. 17, 1891.



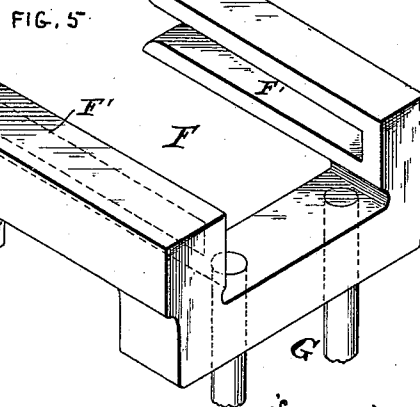
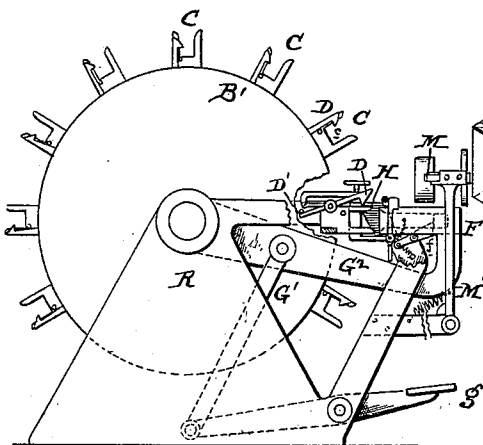
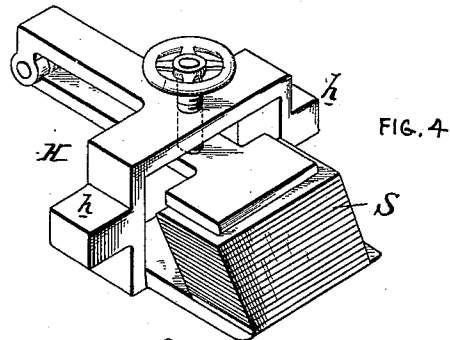
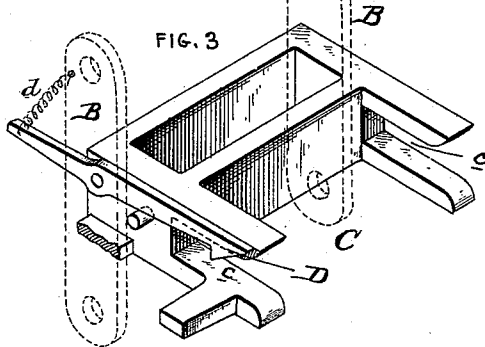
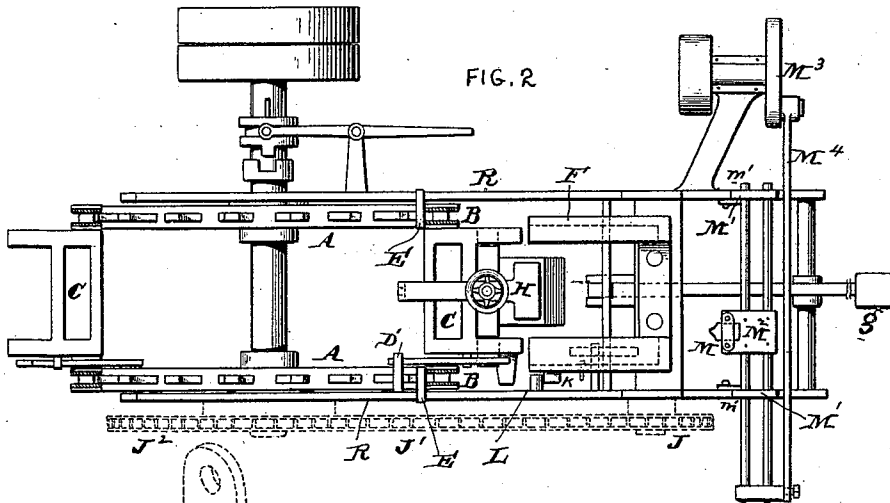
(No Model.)

2 Sheets—Sheet 2.

R. M. HUNTER.
MACHINE FOR GILDING CARDS, &c.

No. 463,370.

Patented Nov. 17, 1891.



Witnesses:
Henry D. Dwyer
S. J. Yerkes.

FIG. 8

Inventor:

R. M. Hunter

UNITED STATES PATENT OFFICE.

RUDOLPH M. HUNTER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
CHARLES A. WRIGHT, OF SAME PLACE.

MACHINE FOR GILDING CARDS, &c.

SPECIFICATION forming part of Letters Patent No. 463,370, dated November 17, 1891.

Application filed May 20, 1891. Serial No. 393,399. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH M. HUNTER, of 926 Walnut street, in the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Machines for Gilding and otherwise Treating Cards, of which the following is a specification.

My invention has reference to machines for gilding and otherwise treating cards; and it consists of certain improvements, which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

The object of my invention set out in this application (Case 196) is to provide mechanical devices for conveying cards, while held in suitable clamps, past a given point, where, under the direction of an operator, the burnishing or other operation may be carried on mechanically.

In carrying out my invention, I provide a carrier upon which clamps for holding cards are detachably secured and by which they are conveyed to and from or past a given place, and combine therewith a burnishing device into which the card-clamps are shifted during the process of removal from the carrier, and from which after being burnished they are moved back, if desired, upon the carrier again. The devices are so constructed that the carrier performs its function of conveying the clamps with their cards past a brush for brushing off the surplus gold after the same has been secured to the edges of the cards by the employment of size. After the clamp has been so treated it is conveyed to a given position and automatically released, so that it may be drawn into an independent carrier, which is moved by foot-power or automatically, to convey the card-clamp and its cards past a burnishing or other tool, which is mechanically operated for the purpose of burnishing the gold which has been previously laid upon the edges of the card held in the clamp, or otherwise treating the cards. This independent carrier preferably moves parallel with the main carrier; and, after the cards have been burnished, the clamp may be returned to the main carrier and relocked

upon it, and thereby be conveyed to the point of discharge. In place of returning the clamp to the carrier it may be removed from the independent carrier after the completion of the burnishing operation. The cards held in the clamps are first treated with sizing, and upon the surface so treated the gold-leaf is laid by hand, and these cards are then placed upon the carrier and conveyed, if desired, past a fan or other suitable device well known for drying the sizing prior to the cards being treated with the brush for removing the surplus gold and prior to the burnishing operation.

The essential feature of my invention consists in mechanism for treating the cards to the burnishing or other operation independently of the means employed for conveying the cards and their clamps for the drying operation and the brushing of the surplus gold from off the cards.

Referring to the drawings, Figure 1 is a side elevation of a card-gilding machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a perspective view of one of the clamp-holders of the endless carrier. Fig. 4 is a perspective view of one of the card-clamps. Fig. 5 is a perspective view of one form of independent carrier. Fig. 6 is a side elevation of a modification of the carrier with the clamp supported therein. Fig. 7 is a perspective view of the clamp-lock for the carrier shown in Fig. 6, and Fig. 8 is a modification of my invention showing a different form of carrier.

A are cylinders or sprocket-wheels arranged at a distance apart and about which endless chains B pass. These endless chains act as conveyers and are connected by transverse clamp supports or holders C, of which there may be any number desired. These clamp supports or holders C are best shown in Fig. 3, from which it will be observed that they are formed with guideways or notches *c* upon each side, into which lugs *h* on the clamps H pass, and in which they are locked by the pawl D, which is held in position by a suitable spring *d*. When the card-clamps H, containing the cards S, are pushed into the

guides *c*, they are held in that position by the pawl *d* until the latter is raised by hand or by striking against the stationary pin or stop *D'* on the main frame *R*. The clamps may be of any suitable construction, that shown 5 being excellently adapted for the purpose, and for beveled-edged cards the lower jaw is projected forward of the upper jaw, which is pressed downward by means of ordinary screw. When the card-clamps, with their 10 cards, are secured to the holders *C*, they are conveyed by the endless carrier *B* through the air sufficiently to dry the sizing with which the gold-leaf has been attached, then conveyed past the brush *T*, and thence to the 15 burnishing apparatus. When the holder *C* reaches the position of the independent carrier *F*, the pawl *d* is raised by the action of the stop *D'* (see Fig. 1) and the card-clamp *H* may be pulled forward into the guides *F'* of the independent carrier *F*. When it is pulled forward, the projections/snap back of the locking-pawl *f*, and thus hold the clamp in the forward part 20 of the carrier. This carrier *F* is secured to two upright guide-rods *G*, which are elevated either by means of foot-lever *g* and link *G'*, or by means of a cam *I*, which may derive rotation from sprocket-wheels *J* and *J'* and the chain *J'* or other suitable power-transmitting devices 25 between the main carrier and the cam *I*. The result of an automatic power device for raising the independent carrier is a uniform treatment of the cards by the burnishing-tool, since the ascending speed will be uniform. 30 In the case of foot-power this might not be so readily accomplished.

M is the burnishing-tool, and is formed usually of agate and secured to a head *M'*, guided in bearings *m'* on the upper end of the upright frame *M'*, which is pulled toward the 40 card-clamp and carrier by means of spring *m*.

*M*⁸ is a crank revolving at a rapid speed, and is connected by means of link *M*⁴ with a laterally-reciprocating frame *M*³, carrying the burnishing-tool. As the burnishing-tool reciprocates, the carrier *F* ascends, and if the 45 cards present oblique faces, as indicated in dotted lines in Fig. 1, the burnishing-tool is removed to the right to compensate for the inclination of the cards, the joints between the several parts being sufficiently loose to permit this motion. As the carrier *F* is made to ascend, the arm *K*, which is normally held 50 out of contact with the holders *C* by the stationary pin *L*, is liberated and its spring *l* pulls it into the dotted position, Fig. 1, so that if the card-clamp is to be returned to the endless carrier the foot-power may be controlled and the carrier *H* made to travel at the same 55 speed as the holder *C* to permit the operator pushing back the clamp into the holder *C* prior to returning the carrier *F* to position for the next card-clamp. In carrying out this operation, as soon as the arm *K* is liberated 60 it extends out laterally to the left and catches under the lower surface of one of the ascend-

ing holders *C*, so that no movement of the treadle could raise it past the said holder. If the independent carrier is moved by power mechanism connected with the main carrier, 70 it would not be necessary to provide this controlling mechanism.

If it is not desired to permit the burnishing-tool *M* to reciprocate to and from the independent carrier, the card-clamp *H* may 75 be caused to assume the position indicated in Fig. 6 when pulled into the independent carrier. Referring to this figure, the guide *F'* is made curved, so that that portion thereof to the right of the locking-pawl *f* is oblique, and 80 thereby holds the card-clamp into such a position that the front edge of the card is in a vertical plane. In this event the burnishing-tool would be pressed by spring action against the card, but would not be required to make 85 any material movement to and from the carrier. In burnishing serrated cards this movement would be greater than in the case of smooth-edged cards. The locking-pawl *f* is 90 so arranged that when the card-clamp is pulled into the carrier *F* it is locked in position and cannot become dislodged until the carrier *F* is moved considerable of a distance. When that distance is accomplished, the head 95 *f*² of the rod *f'*, connecting with the spring-pawl *f*, strikes a stop on the main frame *R* and pulls the pawl down, which act liberates the card-clamp and permits it to be removed from the carrier. It may then be removed 100 permanently and need not be replaced in the machine until the cards are reset and gold-leaf laid upon the edges of the new cards from the reset cards. Otherwise the cards may be returned to the main carrier, as before described. 105

T is the brush which is designed to brush the surplus gold from the cards, and is supported on a spring-arm *t* to compensate for any variations in the surface of the cards in descending. This brush may be arranged to 110 the right of the machine. If desired, any suitable fan or current-creating device may be employed to more quickly dry the cards, which fan forms no part of my present invention. In practice motion is imparted to the 115 sprocket wheels or cylinders *A*, and such other motions as is obtained may be derived therefrom.

In place of forming the endless carrier of chains and sprocket cylinders or wheels, it 120 may be formed of a wheel *B'*, (shown in Fig. 8,) to the periphery of which is secured the holders *C*. In this case the independent carrier *F*, in place of moving vertically or parallel with the carrier, will be pivoted by an arm 125 *G'* to the axis of the wheel *B'* and move eccentrically about the wheel *B* and past the burnisher-tool *M*, which may be constructed substantially as set out in Figs. 1, 2, and 6. When the card-clamp after burnishing is not 130 to be returned to the main carrier, it is immaterial to my invention as to what direction

the independent carrier may move, the only requirement in that case being that it shall be so combined with the main carrier that it may receive a clamp from said main carrier at some point.

It is evident that the machine might also be employed for otherwise treating cards than for burnishing. For instance, in place of the burnishing-tool shown in Fig. 6, a cutter or serrating tool of any suitable description N may be employed, past which cards are moved and by which they are serrated or cut.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for treating cards, the combination of a carrier having a series of card-clamp holders and adapted to move a series of card-clamps successively past a given point, with an independent carrier arranged adjacent to the main carrier, means to move said independent carrier, and detachable card-clamps detachably secured to the main carrier and adapted to be shifted from the holders of the main carrier to the independent carrier.

2. In a machine for treating cards, the combination of a carrier having a series of card-clamp holders and adapted to move a series of card-clamps successively past a given point, with an independent carrier arranged adjacent to the main carrier, means to move said independent carrier, detachable card-clamps detachably secured to the main carrier and adapted to be shifted from the holders of the main carrier to the independent carrier, and a tool for treating the cards held in the clamps past which the clamps are moved by the independent carrier.

3. In a machine for treating cards, the combination of a carrier having a series of card-clamp holders and adapted to move a series of card-clamps successively past a given point, with an independent carrier arranged adjacent to the main carrier, means to move said independent carrier, detachable card-clamps detachably secured to the main carrier and adapted to be shifted from the holders of the main carrier to the independent carrier, and a laterally-reciprocating burnishing-tool for treating the cards held in the clamps, past which the clamps are moved by the independent carrier.

4. In a machine for treating cards, the combination of a carrier having a series of card-clamp holders and adapted to move a series of card-clamps successively past a given point, with an independent carrier arranged adjacent to the main carrier, means to move said independent carrier, detachable card-clamps detachably secured to the main carrier and adapted to be shifted from the holders of the main carrier to the independent carrier, and a reciprocating spring-actuated burnishing-tool for treating the cards held in the clamps, past which the clamps are moved by the independent carrier.

5. In a machine for treating cards, the combination of a carrier having a series of card-clamp holders and adapted to move a series of card-clamps successively past a given point, with an independent carrier arranged adjacent to the main carrier, detachable card-clamps detachably secured to the main carrier and adapted to be shifted from the holders of the main carrier to the independent carrier, a tool for treating the cards held in the clamps past which the clamps are moved by the independent carrier, and power mechanism for moving the independent carrier at a speed commensurate with that of the main carrier.

6. In a machine for treating cards, the combination of a main carrier having a series of card-clamp holders, locks for holding the card-clamps to said holders, an independent carrier, means to move said carrier, a lock to hold the card-clamps to said independent carrier, automatic stops for operating the said locks for liberating the card-clamp from the holder and from the independent carrier, a series of card-clamps carried by the holders of the main carrier and adapted to be successively moved from the holders to the independent carrier, and a tool for treating the cards during their movement with the independent carrier.

7. In a machine for treating cards, the combination of a main carrier having a series of card-clamp holders, locks for holding the card-clamps to said holders, an independent carrier, means to move said carrier, a lock to hold the card-clamps to the said independent carrier, automatic stops for operating the said locks for liberating the card-clamps from the holder and from the independent carrier, a series of card-clamps carried by the holders of the main carrier and adapted to be successively moved from the holders to the independent carrier, and a tool for treating the cards during their movement with the independent carrier consisting of a spring-actuated reciprocating burnishing-tool.

8. In a machine for carrying cards, the combination of an endless carrier provided with a series of clamp-holders having spring-actuated locking devices, a series of detachable card-clamps having projections adapted to be locked in said holders, and an automatic stop to actuate the locks to release the card-clamps at a given place in their travel.

9. In a machine for conveying cards, the combination of an endless carrier having a series of clamp-holders, with a series of clamps for holding the cards provided with moving clamping-jaws, and projecting portions adapted to be detachably secured to the holders.

10. In a machine for treating cards, the combination of a carrier adapted to be reciprocated and provided with a holder for a card-clamp, a card-clamp detachably secured to said carrier, and a tool for treating the cards

held in the clamp upon moving the said card-clamp past the said tool.

11. In a machine for treating cards, the combination of a carrier adapted to be reciprocated and provided with a holder for a card-clamp, a card-clamp detachably secured to said carrier, and a reciprocating burnishing-tool for treating the cards held in the clamp upon moving the said card-clamp past the said tool.

12. In a machine for treating cards, the combination of a carrier adapted to be reciprocated and provided with a holder for a card-clamp, a card-clamp detachably secured to said carrier, and a tool for treating the cards held in the clamp upon moving the said card-clamp, consisting of a reciprocating burnish-

ing tool spring-pressed against the cards held in the clamp.

13. The combination of a reciprocating carrier for a card-clamp, a card-clamp detachably secured thereto, a lock to lock said card-clamp upon the carrier, a tool for treating the cards, being conveyed by the carrier past it, and mechanism for automatically removing the lock for releasing the card-clamp after the passage of the cards past the tool.

In testimony of which invention I have hereunto set my hand.

R. M. HUNTER.

Witnesses:

ERNEST HOWARD HUNTER,
JOHN A. BRAMLEY.