No. 787,271. PATENTED APR. 11, 1905.

C. L. BURDICK.

STENCIL PRINTING MACHINE.

APPLICATION FILED APR. 20, 1903.

4 SHEETS—SHEET 1.

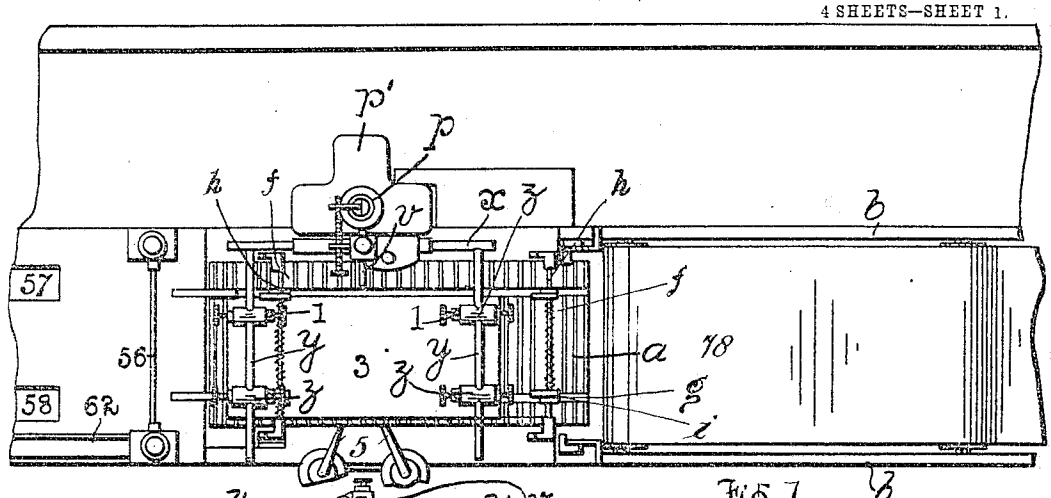


Fig. 1.

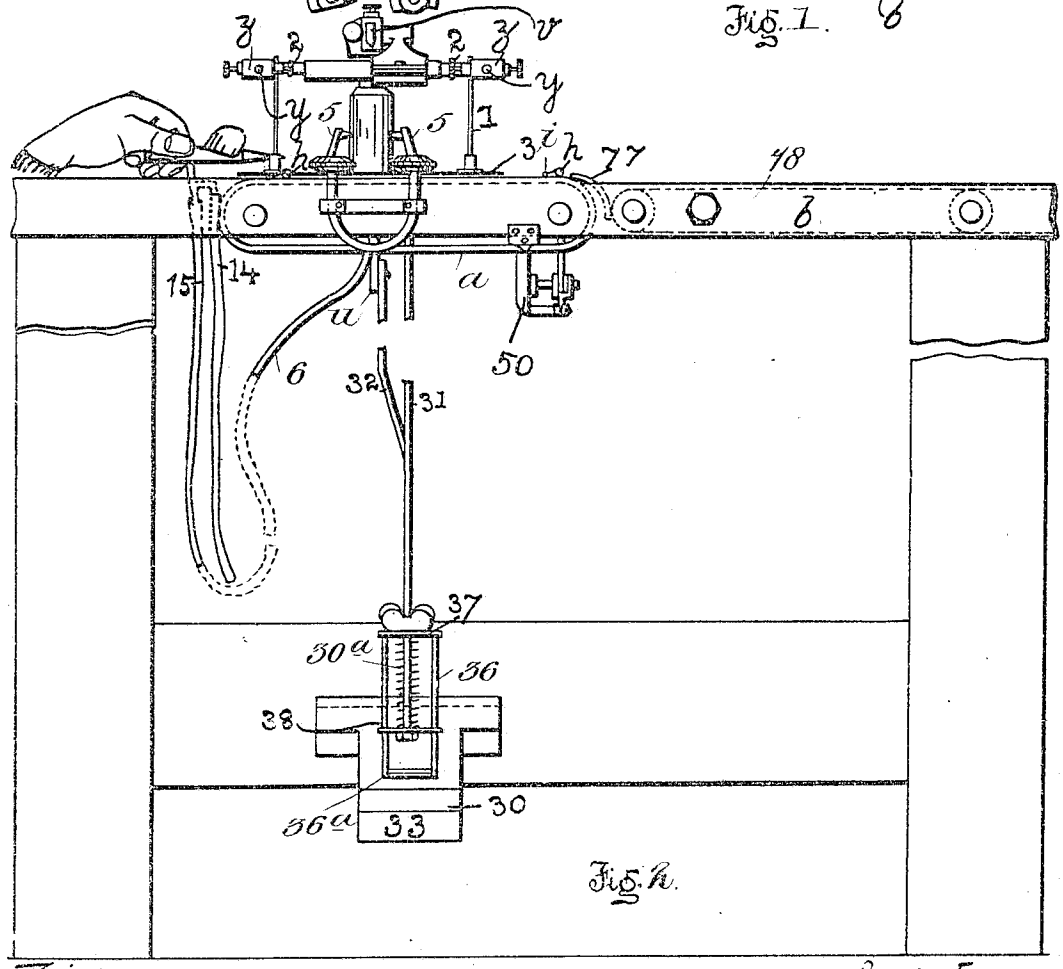


Fig. 2.

Witnesses:
Geo. Gifford Sinnatt.
Thomas G. Ogden

Inventor
C. L. Burdick
by Wilkinson & Fisher
his attorneys

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4 SHEETS—SHEET 2.

Fig. 3.

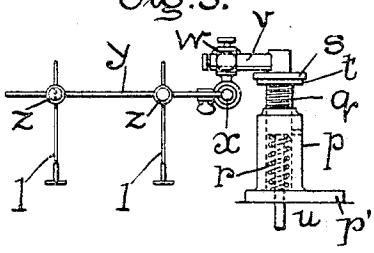


Fig. 4.

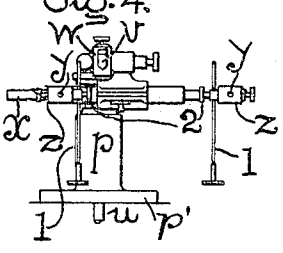


Fig. 5.

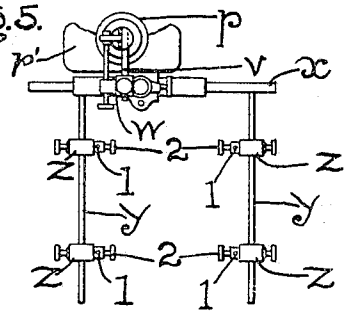


Fig. 6.

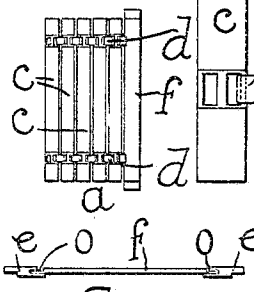


Fig. 7.

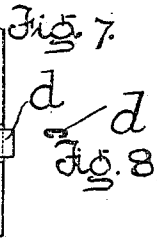


Fig. 8.

Fig. 9.

Fig. 10.

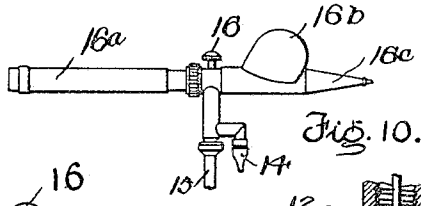


Fig. 11.

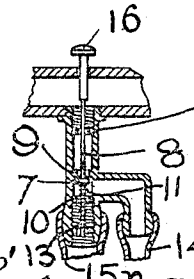


Fig. 11a.

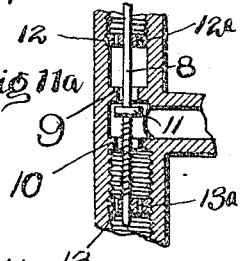


Fig. 12.

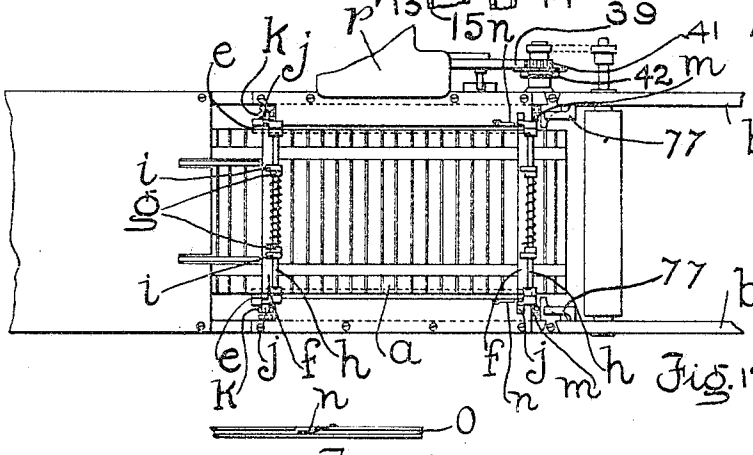


Fig. 13.

Witnesses.

Fredw. Englert

Geo. H. Graves.

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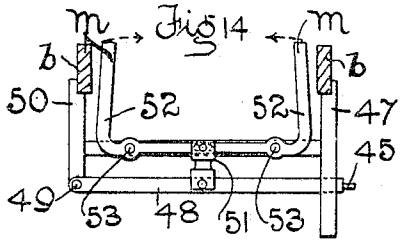
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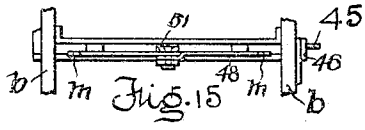


Fig. 15

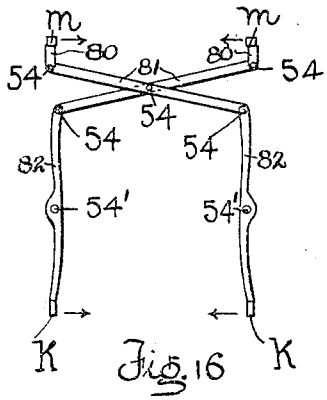
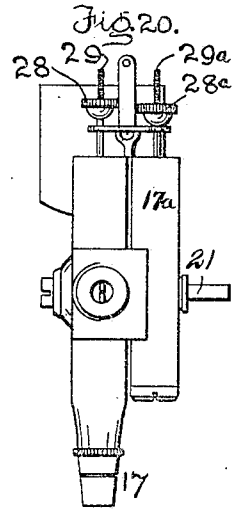


Fig. 16



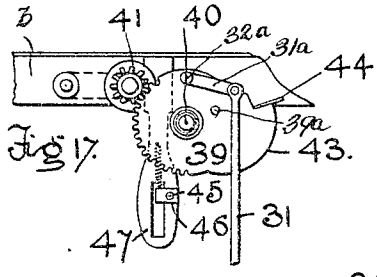


Fig 17.

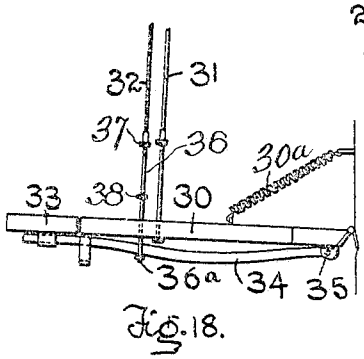


Fig. 18.

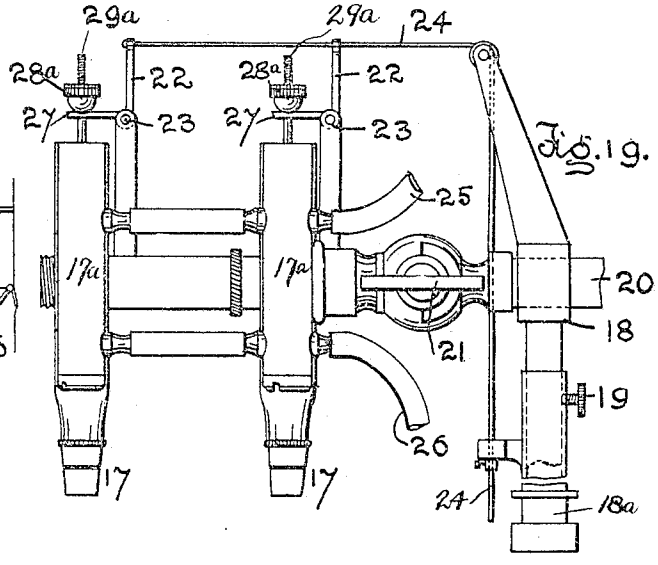


Fig. 19.

Witnesses.

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4 SHEETS—SHEET 4.

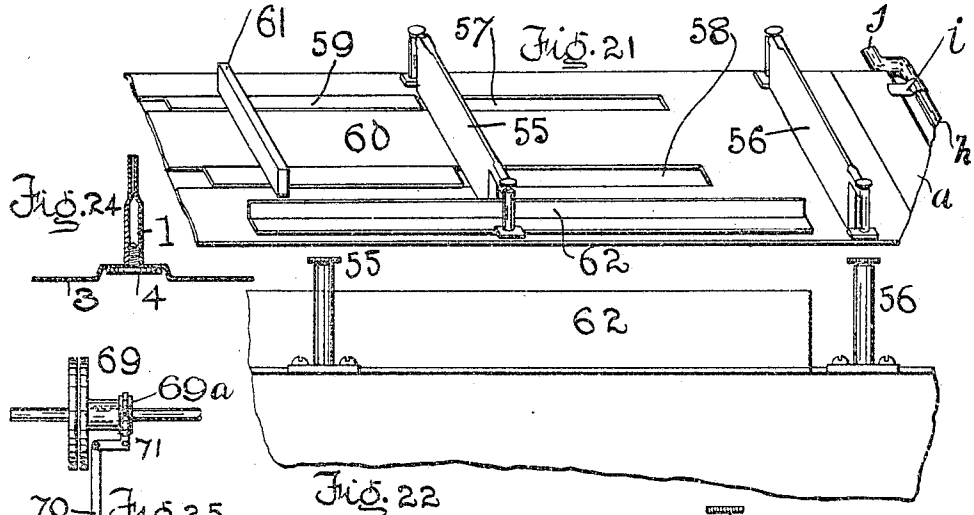


Fig. 21

Fig. 24

Fig. 25.

Fig. 22

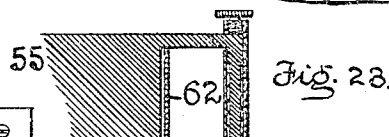


Fig. 23.

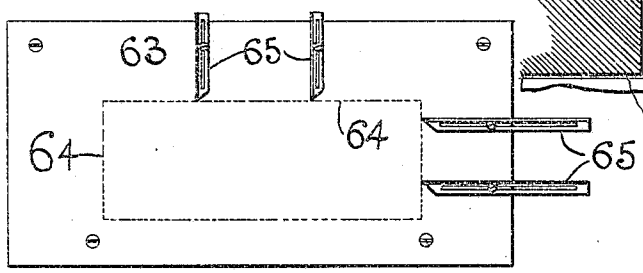


Fig. 28.

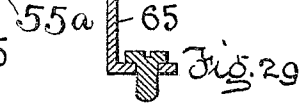


Fig. 29.

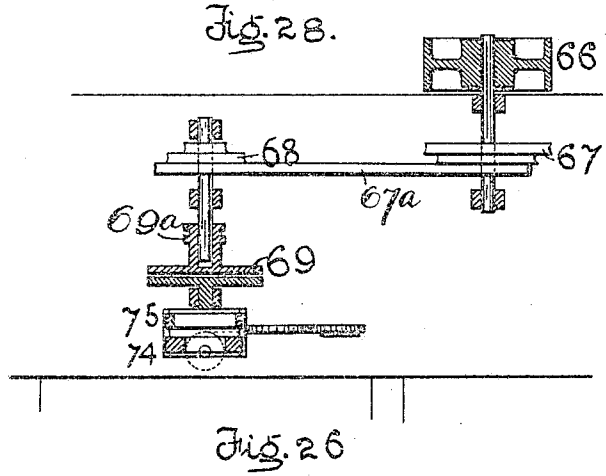


Fig. 26

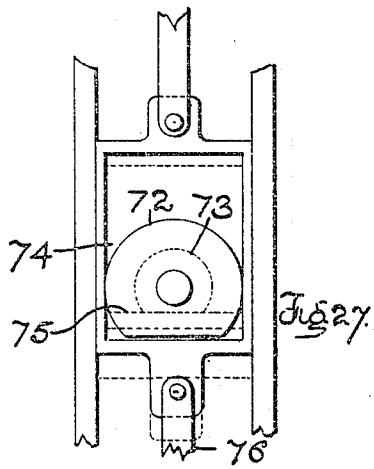


Fig. 27.

Witnesses.

Fred. W. English

Geo. H. Bruce

Inventor.

C. L. Burdick

by Williamson & Fisher

his Attorneys.

No. 787,271. Patented April 11, 1905.

UNITED STATES PATENT OFFICE.

CHARLES LAURENCE BURDICK, OF WOOD GREEN, LONDON, ENGLAND.

STENCIL-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 787,271, dated April 11, 1905.

Application filed April 20, 1903. Serial No. 153,491.

To all whom it may concern:

Be it known that I, CHARLES LAURENCE BURDICK, a citizen of the United States of America, residing at 4 Eastern road, Wood Green, in the county of London, England, have invented certain new and useful Improvements in Stencil-Printing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in stencil-printing machines to be used in connection with a set of stencils placed separately over the surface to which the color or liquid is to be applied, a different stencil being employed for each different color used. The color is preferably sprayed on by means of compressed air, but may be applied by other means.

This invention includes improvements of the following nature in apparatus of the class referred to: an improved construction of belt for carrying the cards or other articles to be colored or treated with liquids, improved means for holding and releasing the said cards or other articles, improved means for raising, lowering, and adjusting the stencil, improvements relating to devices for spraying the color or liquid, improved drying device and combined automatic spraying and drying device, improved driving mechanism, improved feed arrangement for cards or other articles to which the color is to be applied.

I construct my machine in the following manner: I have a frame supporting a table, part of which latter is cut away and replaced by a traveling band (driven by rollers) which carries the cards or other articles to be colored. Behind the traveling band I mount a spring-pillar carrying an adjustable stencil-holder, and I also provide a spraying apparatus to distribute color through the stencil onto the cards or other articles to be colored. Preferably approximately opposite the spring-pillar I provide a jet or jets for blowing hot air onto the stencil and colored card in order to dry same. I provide mechanism as hereinafter described for actuating the various parts.

In order that my said invention may be fully understood, I will proceed to describe the same with reference to the drawings accompanying this specification, in which—

Figure 1 shows a top plan view of the machine with stencil-carrying mechanism in place. Fig. 2 shows a side elevational view of the machine provided with foot-power actuating means. Fig. 3 shows an end elevational view of the stencil-carrying mechanism. Fig. 4 shows a front elevational view of Fig. 3. Fig. 5 shows a plan view of Fig. 3. Fig. 6 shows a plan view of a section of the traveling band. Fig. 7 shows a detail of one of the slats forming the traveling band. Fig. 8 shows the link for connecting the slats of the traveling band together. Fig. 9 shows a transverse sectional view through the bar *f* on the traveling band. Fig. 10 shows a side elevational view of the color-spraying nozzle. Figs. 11 and 11ª show sectional views of the valve arrangement of the spraying-nozzle. Fig. 12 shows a plan view of the traveling belt and its connections with the stencil-carrying mechanism removed. Fig. 13 shows a detail of the arrangement for stopping the backward movement of the traveling band. Fig. 14 shows a front elevational view of the mechanism for stopping forward movement of the traveling band. Fig. 15 shows a plan view of Fig. 14. Fig. 16 shows a plan view of mechanism for raising the clips *i* to enable a card to be inserted thereunder. Fig. 17 shows a side elevational view of the mechanism for actuating the mechanisms shown in Figs. 14 and 16. Fig. 18 shows a detail side elevational view of the foot-power operating-treadle. Fig. 19 shows a front elevational view of a modified form of spraying mechanism automatically operated. Fig. 20 shows an end elevational view of Fig. 19. Fig. 21 shows a perspective view of the card-feeding table with a portion of the adjacent end of the traveling band. Fig. 22 shows a side elevational view of a portion of Fig. 21. Fig. 23 shows a transverse sectional view through the part 55 of Figs. 21 and 22. Fig. 24 shows a detail view of the method of attaching the stencil to the stencil-carrier. Fig. 25 shows a detail view of the actuating means for operating the clutch used when the machine is

power-driven. Fig. 26 shows a plan view of a mechanism for driving the machine by power as an alternative to driving it by treadle. Fig. 27 shows a detail of the cams used in power-driving. Fig. 28 shows a plan view of a device for holding the cards in position on a fixed plate when being colored instead of clipping them onto a traveling band, and Fig. 29 shows a transverse sectional detail of the clamping-strips used in Fig. 28.

The same letters and figures of reference are employed to denote the same parts in all the views.

a (see Figs. 1 and 2) shows a band traveling round rollers mounted in the frame *b* of the machine. The band is formed of a number of metal strips *c*, (see Figs. 6 to 9,) connected together by links *d*, Fig. 8. The metal strips may be covered with felt on the side which carries the card or other article to be colored. The band rests at each side on a plate *e*. On the band *a* I fit several—say three—stout metal springs *f*, extending transversely of said band, each carrying in lugs *g* a rod *h*, with clips *i* to hold the card.

j shows lugs or bosses projecting from the ends of the rods *h*. (See Figs. 12 and 22.) As the band *a* travels these lugs or bosses *j* pass over stops or cams *k*, located at the sides of the band *a*, Fig. 12, which are forced inwardly under the lugs or bosses *j* in the manner hereinafter described by the action of the operating-treadle. The effect of the lugs or bosses *j* passing over the cams *k* is to force them upwardly and turn the rod *h*, thus raising the clips *i*, so that a card to be colored may be slipped beneath the said clips in position to be drawn onto the band *a*. As the band *a* travels along the clips *i* carry the card with it until it is in position for coloring, when the stops *m* are brought inwardly by the action of the operating-treadle and coming against the bar *f* effectually prevent any undue forward motion of the belt until such stops are withdrawn. Motion in a backward direction is prevented by springs *n*, inserted in grooves *o* in the plates *e*. (See Figs. 9, 12, and 13.)

The spring-pillar *p*, Figs. 1 to 5, is mounted on a suitable base *p'*, attached to the frame *b*, and comprises a hollow vertical cylinder in which a plunger *q* works, *r* being a spiral spring pressing upwardly on the plunger *q*. This plunger *q* is threaded, as shown, and on the threaded portion screw two disks *s t*, (one to lock the other,) by adjusting which the travel of the plunger is regulated.

u shows the rod connecting the plunger *q* to the treadle or other driving mechanism of the machine.

v is a bar projecting horizontally from the top of the plunger *q*. This bar *v* carries an adjustable nut or sleeve *w*, from which is carried a horizontal rod *x*, to which are fixed or attached, preferably at right angles, two (as shown) or more other rods, *y*, on which latter slide sleeves or nuts *z*, and through holes in these sleeves *z* the vertical stencil-holders 1 pass, being held at the required height by set-screws 2.

The method of attaching the stencil to the holders 1 is shown clearly at Fig. 24, where 3 represents the stencil. 1 shows foot of stencil-holder, (which is hollowed and threaded,) and 4 shows screw connecting the two, the head of the screw 4 being sunk in the stencil, as shown, in order that there may be no projections on the bottom of the stencil.

For spraying the color any convenient and suitable form of spraying-nozzles may be used. The general form is illustrated in Fig. 10, which shows pipe-lines 14 and 15 for conducting the cold and heated compressed air, a valve-knob 16, handle 16^a, color-reservoir 16^b, and spray-point 16^c. To the spraying-nozzles, however, I apply a two-way valve. (Shown in sectional view at Fig. 11.) I also use this valve in connection with hot-air jets 5, Figs. 1 and 2, which are arranged to point directly onto the stencil. A pipe 6 from these jets leads through a suitable heating agency and then connects with pipe 15, leading from the two-way valve.

Reverting to Fig. 11, 7 shows a valve mounted on a valve-spindle 8, and 9 and 10 show seatings of the said valve. A spiral spring is provided at 11, adapted to keep valve 7 on its upper seat 9.

12 and 13 are guides to the valve-spindle 8, which are perforated, as at 12^a and 13^a, Fig. 11^a, to allow of the passage of air.

14 is a pipe from compressed-air supply, and 15 a pipe leading in proximity to a suitable heating medium. When the valve 7 is in the position shown in the sketch, the compressed air entering at 14 is unable to pass said valve, but finds a passage downward through the pipe 15 to the heating medium through which it passes, being heated in its passage and is delivered through the hot-air jets 5 to dry the color after being applied by the spraying-nozzle. If the knob 16 is depressed, so that the valve 7 is forced down onto the seat 10, the compressed air is free to pass through the spraying-nozzles and spray the color and simultaneously close the valve to pipe 15 and to the hot-air supply at 10. This arrangement is to prevent the spray of color being diverted from its course by the jet of hot air playing on the stencil.

Instead of having spraying-nozzles operated by hand I may mount a number of these nozzles on a suitable frame attached to the machine-frame *b* and located above the stencil. An arrangement of this nature is shown at Figs. 19 and 20, in which 17 17 show two spraying-nozzles carried by a vertical sliding support 18 and provided with air-reservoirs 17^a. The support 18 is adjustably mounted in a socket 18^a, which may be attached to the

frame *b*, the socket having a set-screw 19 fitted therein for holding the device at any required height. 20 shows pipe from color-supply; 21, tap; 22, forked bell-crank levers pivoted at 23 for engaging with the nuts 28 and 28ª on spindles 29 and 29ª, operating the air and color valves, respectively, and 24 wire or gut operating bell-crank levers 22 and actuated from the driving mechanism. 25 shows pipe from compressed-air supply, and 26 pipe passing in proximity to the heating agency for the hot-air drying-spray. The spraying-nozzles 17 are fitted with the two-way valve above described. Horizontal arms 27 of the levers 22 operate the air and color valves by engaging the nuts 28 and 28ª, and thus raising the valve-spindles 29 and 29ª. By setting the nut on the color-valve spindle a little higher than that on the air-supply spindle the color-valve may be opened a little while after the air-valve is opened. (See Fig. 20.)

Referring to the driving mechanism of the machine and first considering treadle-driving, 30, Fig. 2, shows a treadle hinged to the back of the machine and held in position by a spring 30ª or other suitable means. This treadle is shown in side view in Fig. 18. Two rods 31 32 are actuated by this treadle, 32 being the rod which brings down the stencil-plate, being suitably connected to rod *n*, working in pillar *p*, (see Fig. 2,) and which it is not desired to operate until the end of the stroke of the treadle. In order to effect this delay in operating the rod 32, the foremost part 33 of the treadle 30 is made independent of the rest and is connected to a rod 34, hinged at 35, which rests upon the lower bar 36ª of the frame 36, which is adapted to slide upon the rod 32. When the treadle 30 has been pushed down, the top bar 37 of the frame 36 will have reached the cross-bar 38, fixed to the rod 32, through which frame 36 is adapted to slide, and on pressing the heel on the part 33 of the treadle the bar 34 will bear upon the lower bar 36ª of the frame 36, causing the top bar 37 to press on the cross-bar 38 of rod 32, and thus lower said rod. The rod 31 being simply attached in a suitable manner to the treadle 30 is operated as soon as the main part of the treadle is moved. This rod 31 is pivoted at its upper end to a link 31ª, pivoted at 32ª to a disk or cam 39, which link is adapted to engage the stud 39ª on the cam 39 when the rod 31 is actuated downwardly. (See Figs. 17 and 12.) This cam is carried by a spindle 40, mounted on the frame of the machine. A part of the periphery of the disk 39 is toothed and gears with a pinion 41 on the spindle of the right-hand roller of the traveling band *a*. A ratchet-and-pawl clutch 42 is provided adjacent to the pinion 41, so that this latter is inoperative on the return stroke of the rod 31.

43 shows the cam portion of the disk 39, and 44 shows a stop on the end of the cam 43. When the rod 31 is drawn down, the link 31ª engages the stud 39ª and the cam 43 turns and bears upon the pin 45 on the sliding piece 46, working in the slotted bracket 47, depending from the frame *b*. Referring to Figs. 14 and 15, it will be seen that the pin 45 is on the extremity of the bar 48, pivoted at 49 to a bracket 50, depending from the frame *b*. The depression of this pin 45 by the cam 43 results in the drawing down of fork 51, which turns the two bent levers 52 about their pivots 53 in the direction indicated by the arrows at Fig. 14. The tops of the levers 52 form stops *m*, so that when the band *a* has been turned, by means of the pinion 41, sufficiently to bring the card in place beneath the stencil the cam 43 will have moved the stops *m* transversely into position in front of the transversely-disposed bars *f*, thus locking the traveling band *a* against further movement. The stops or cams *k* are operated at the same time as the stops *m* by means shown at Fig. 16. Each of the stops *m* is connected by links 80 and 81, pivoted at 54 to links 82, in turn pivoted at 54′ to the frame *b*, and carry on their ends the cams *k*. As stops *m* move inwardly cams *k* also move inwardly and are brought in position to engage with lugs or bosses *j* and lift clips *i*, as heretofore described.

Referring to Figs. 21, 22, and 23, 55 and 56 show two standards or vertical plates between which the cards or other articles to be colored are stacked. Space is left, as shown at 55ª, Fig. 23, between the bottom of these plates or standards and the table on which the cards are stacked sufficient for one card to pass. 57 58 show two slots or grooves in which slide two bars 59 60, joined by a cross-bar 61, by which the two bars 59 60 are slid by hand in the slots 57 and 58 beneath the plate 55, thus pushing one card forward into the clips *i*. By withdrawing the cross-bar 61 and again advancing it another card is pushed into the clips, and so on. 62 shows strip of metal to assist in keeping cards in position.

At Fig. 28 is shown a method of dispensing with a traveling band. 63 shows a plate on which the cards are stacked in the position indicated by the dotted lines at 64. 65 shows strips against which the edges of the cards are set. These strips are shown in section at Fig. 29. In coloring cards stacked in this way the stencil is brought down onto the top card, which is colored, dried, and removed. The stencil is lowered a little farther each time correspondingly with the diminishing height of the stack of cards.

Referring to Fig. 26, 66 shows a driving-pulley for driving by power, and 67 and 68 speed-pulleys operatively connected by belting 67ª. 69 shows a clutch for connecting up the pulleys 68 with the mechanism for operating the machine. The clutch 69 is thrown into and out of gear by means of a rod 70 and bell-

crank lever 71 engaging a slotted sleeve 69ª, the whole being operated by hand. (See Fig. 25.) The mechanism is operated by two cams 72 73, actuating two frames 74 75, the rods leading from which take the place of and actuate the stencil, belt, and stop mechanism in the same way as the rods 31 32 in the case of treadle-driving. By disconnecting clutch 69 and attaching a rod 76 to a treadle treadle-driving of the cams may be substituted for power-driving.

In operating the machine a card is fed into the left-hand clips *i*, (see Fig. 12,) then, taking the case of a treadle-driven machine, the treadle is depressed, carrying the card along until in position beneath the stencil, in which position it is locked in the manner previously described. The stencil is then brought down by depressing the foremost part 33 of the treadle, the color is applied, and afterward the hot-air jet to dry the stencil-card. On releasing the treadle the belt remains stationary on account of the ratchet-and-pawl clutch 42. The stops *m* are withdrawn and the belt released. At the same time as the stops *m* are withdrawn cams *k*, Fig. 16, are moved from under the arms *j*, allowing the clips to fasten onto the card which is next to be operated upon, so that when the treadle is again depressed the belt is carried forward, the clips *i* being released from the card by reason of the lugs or bosses *j* engaging the cams 77, (see Fig. 12,) and thus turning the rod *h*. The card is delivered onto another traveling band 78 (see Figs. 1 and 2) and carried away to any suitable receptacle.

In operation a set of stencils are so cut that each stencil of the set will allow only the portions of the card which it is required to print in one particular color to be affected by the color, a different stencil of the set being employed for each different color used. A stencil is placed in position and a series of cards by the mechanism above described are successively brought beneath it and colored in one especial tone by the spraying-nozzle. A new stencil and spraying-nozzle provided with a different color are then adjusted in position and the same series of cards passed through the machine to receive their second required color, and so on until all the required colors have been properly placed on the cards.

What I claim as my invention, and desire to secure by Letters Patent of the United States of America, is—

1. A machine for stenciling cards comprising a stencil-holder, a card-support, color-applying and color-drying means, and mechanism connected therewith for suspending the action of one of said means when the other is in operation, substantially as described.

2. A machine for stenciling cards comprising a stencil-holder, a card-support, color-applying and color-drying means, and a two-way valve connected therewith for suspending the action of one of said means when the other is in operation, substantially as described.

3. A machine for stenciling cards, comprising an adjustable stencil-holder, a movable card-support, color-applying and color-drying means, and mechanism connected therewith for suspending the action of one of said means when the other is in operation, substantially as described.

4. A machine for stenciling cards, comprising a stencil-holder, a card-support, color-applying and color-drying means, and automatically-operated mechanism connected therewith for suspending the action of one of said means when the other is in operation, substantially as described.

5. In a machine of the class described, the combination with a card-feeding mechanism, of a traveling band for receiving the card, a stencil-carrying frame supported over said band, and means for intermittently driving said band to bring said card beneath said stencil and retain it in such position while being colored, substantially as described.

6. In a machine of the class described, the combination with a card-feeding mechanism constructed to feed separate cards from a stack placed thereon, of a traveling band for receiving the card fed forward, a stencil-carrying frame supported over said band, means for intermittently driving said band to bring said card beneath said stencil and retain it in said position while being colored, and means for lowering said stencil to contact with said card, substantially as described.

7. In a machine of the class described, the combination with a stencil-carrying frame, of an intermittently-driven band adapted to carry a card to be colored beneath said stencil, means for holding said card in position and means for releasing said card when colored, substantially as described.

8. In a machine of the class described, the combination with a stencil-carrying frame, of an intermittently-driven band adapted to carry a card to be colored beneath said stencil, means for coloring said card, and means for drying said color before said card is removed from beneath said stencil, substantially as described.

9. In a machine of the class described, the combination with a stencil-carrying frame, of a card-support beneath said stencil, a card suitably held on said support, means for lowering said stencil to contact with said card, means for coloring said card, and means for drying said color before said card is removed from beneath said stencil, substantially as described.

10. In a machine of the class described, the combination with a stencil-carrying frame, of a card-support beneath said stencil, means for feeding a card on said support and retaining the same beneath said stencil, means for lowering said stencil to contact with said card, means for coloring said card, means for drying said color before said card is removed from beneath

said stencil, and means for releasing said card from its position when colored, substantially as described.

11. In a machine of the class described, a stencil-carrier comprising a hollow standard having a plunger mounted therein, and a frame mounted on said plunger provided with depending fingers for engaging the stencil, substantially as described.

12. In a machine of the class described, a stencil-carrier comprising a hollow standard having a plunger mounted therein, a rod mounted thereon to have an adjustment in a plane parallel to said standard, and depending fingers mounted on said rod to have an adjustment at right angles thereto and constructed to engage the stencil, substantially as described.

13. In a machine of the class described, a stencil-carrier comprising a hollow standard, a spring-pressed plunger mounted therein, provided with a horizontally-arranged sleeve, a rod adjustably mounted in said sleeve provided with an arm projecting at substantially right angles thereto, and a finger for engaging the stencil adjustably mounted on said arm both as to a longitudinal and transverse movement, substantially as described.

14. In a machine of the class described, a stencil-carrier comprising a suitable framework, a plurality of depending fingers mounted thereon each of said fingers having a hollow foot and a plug constructed to fit therein and upon the stencil and clamp the same in position, substantially as described.

15. In a machine of the class described, an adjustable stencil-carrier, a card-support, actuating means, and connections between said actuating means and said stencil-carrier and card-support adapted to move said card-support into position before said stencil-carrier is adjusted, substantially as described.

16. In a machine of the class described, an adjustable stencil-carrier, a movable card-support, and an operating-treadle comprising a compound lever and connections between the parts thereof and said stencil-carrier and card-support, substantially as described.

17. In a machine of the class described, an adjustable stencil-carrier, a movable card-support, a compound operating-lever, a rigid connection between one portion thereof and said card-support and a yielding connection between another portion thereof and said stencil-carrier, whereby said card-support is moved into position before said stencil-carrier is adjusted, substantially as described.

18. In a machine of the class described, a stencil-carrier, a card-support, and an operating-treadle comprising a sole-operated portion and a heel-operated portion, a rod connecting said sole-operated portion to means for actuating said card-support, and a rod connecting said heel-operated portion to said stencil-carrier constructed to have a play when said sole-operated portion is moved and to only actuate said stencil-carrier when said heel-operated portion is moved, substantially as described.

19. In a machine of the class described, operating means, and a mechanism for automatically supplying color and drying the same comprising a suitable support, color and air tanks mounted thereon provided with suitable valves and pipes leading thereto from a suitable source of supply, a spindle for each valve and means connecting said spindles with the operating means, substantially as described.

20. In a machine of the class described, operating means, and a mechanism for automatically supplying color and drying the same comprising a suitable support, valved color and air tanks mounted thereon connected respectively to sources of color and air supply, spindles for said valve and mechanism constructed to open either of said valves before the other connecting said spindles with the operating means, substantially as described.

21. In a machine of the class described, operating means, and a mechanism for automatically supplying color and drying the same comprising a suitable support, valved color and air tanks mounted thereon connected respectively to sources of color and air supply, threaded spindles for said valves, nuts on said threads, levers mounted to engage with said nuts and means connecting said levers with the operating means, substantially as described.

22. In a machine of the class described, operating means, a card-support, and means for intermittently driving the same comprising a revoluble disk operatively connected to said support, a stop mounted to be engaged by said disk and brought into position, and connections between said disk and said operating means for revolving said disk, substantially as described.

23. In a machine of the class described, operating means, a card-support, and means for intermittently driving the same comprising a revoluble cam-disk geared to said support, a stop mounted on the machine-frame and constructed to be engaged by said disk and brought into position, a projection on said disk, and a rod connecting said disk and operating means constructed to engage said projection and revolve said disk, substantially as described.

24. In a machine of the class described, operating means, a card-support, means for intermittently driving the same comprising a revoluble disk operatively connected to said support, a stop mounted on the machine-frame and constructed to be engaged by said disk and brought into position, connections between said disk and said operating means for revolving said disk, and mechanism for securing the cards on said support actuated by said stop, substantially as described.

25. In a machine of the class described, the combination with a card-feeding mechanism,

of a traveling band for receiving the cards, a stencil-carrying frame supported over said band, a revoluble disk operatively connected to said band, means mounted to be engaged by said disk for stopping the movement of said band when a card reaches a position beneath the stencil, and means for revolving said disk, substantially as described.

26. In a machine of the class described, the combination with a stencil-carrying frame, of an intermittently-driven band adapted to carry a card to be colored beneath said stencil, and automatic means for coloring said card and drying said color before said card is removed from the stencil, substantially as described.

27. In a machine of the class described, the combination with a stencil-carrying frame, of an intermittently-driven band adapted to carry a card to be colored beneath said stencil, means for coloring said card and means for drying said color, and a double-seated valve therebetween whereby the drier cannot be operated until the color has been applied, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES LAURENCE BURDICK.

Witnesses:

A. BROWNE,

A. E. VEDAL.