

Nov. 5, 1935.

A. W. PUPKE

2,019,929

APPARATUS FOR MAKING CARDS

Filed April 4, 1933

6 Sheets-Sheet 1

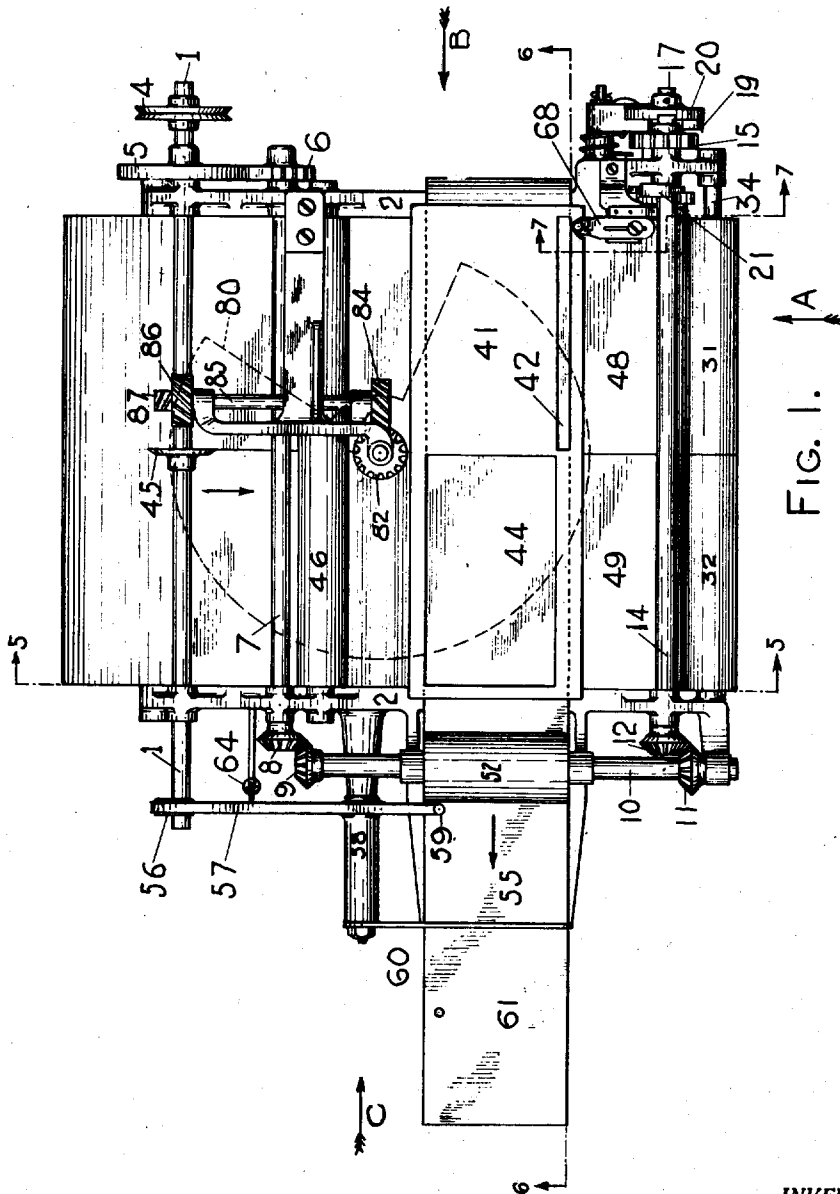


FIG. 1.

INVENTOR.
ARNOLD W. PUPKE
BY *Raussey & Kent*
ATTORNEYS.

Nov. 5, 1935.

A. W. PUPKE

2,019,929

APPARATUS FOR MAKING CARDS

Filed April 4, 1933

6 Sheets-Sheet 2

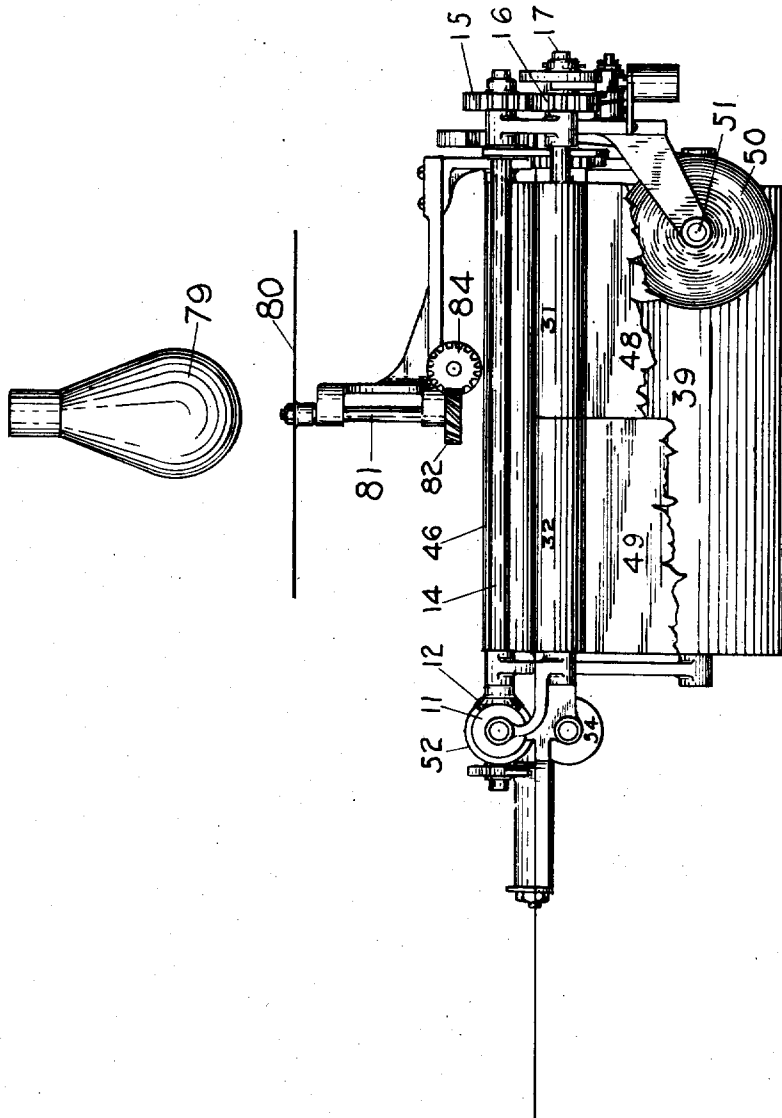


FIG. 2.

INVENTOR.
ARNOLD W PUPKE
BY Ramsey & Kent
ATTORNEYS.

Nov. 5, 1935.

A. W. PUPKE

2,019,929

APPARATUS FOR MAKING CARDS

Filed April 4, 1933

6 Sheets-Sheet 3

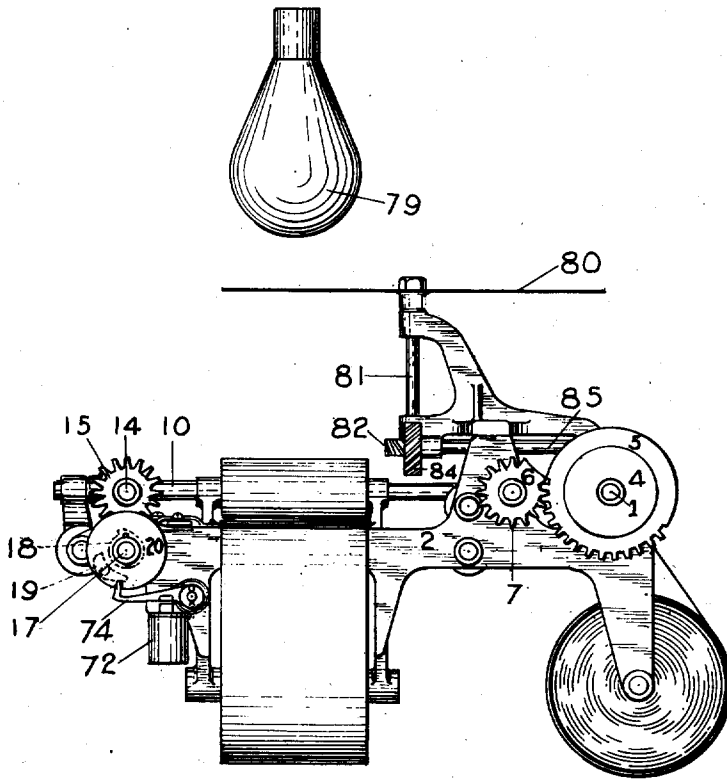


FIG. 3.

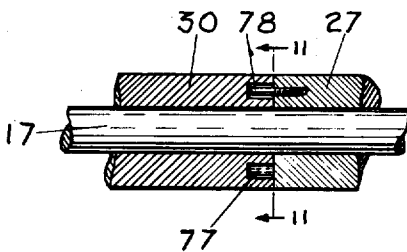


FIG. 10.

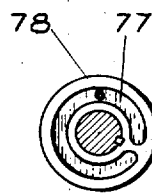


FIG. 11.

INVENTOR.
ARNOLD W. PUPKE
BY *Ramsey & Kent*
ATTORNEYS.

Nov. 5, 1935.

A. W. PUPKE

2,019,929

APPARATUS FOR MAKING CARDS

Filed April 4, 1933

6 Sheets-Sheet 4

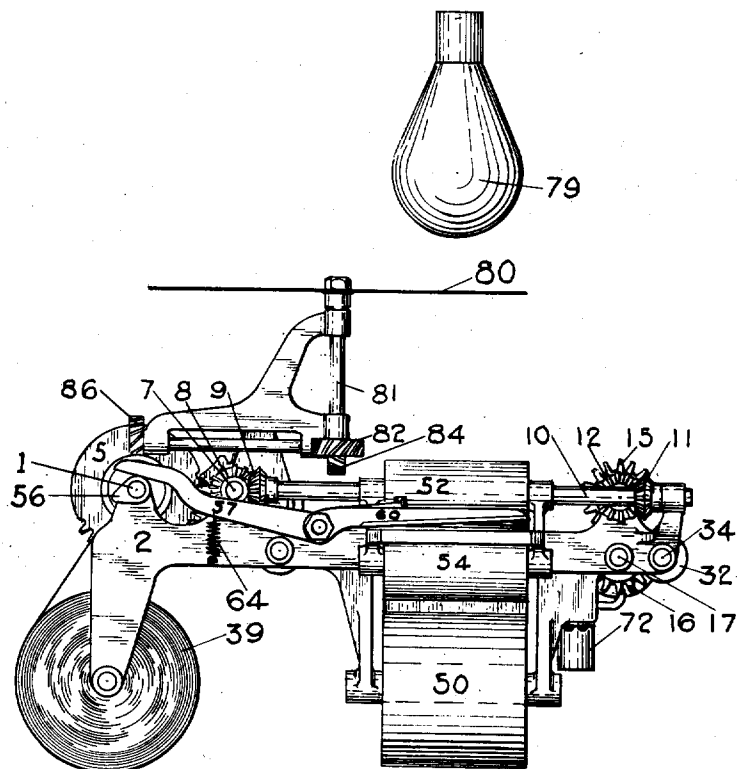


FIG. 4.

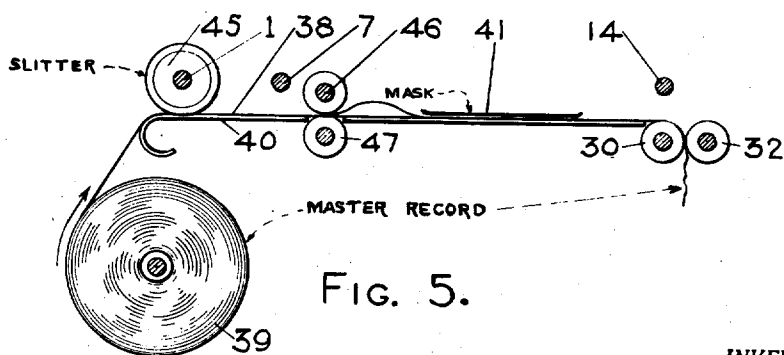


FIG. 5.

INVENTOR.
ARNOLD W. PUPKE
BY *Ramsey & Kent*
ATTORNEYS.

Nov. 5, 1935.

A. W. PUPKE

2,019,929

APPARATUS FOR MAKING CARDS

Filed April 4, 1933

6 Sheets-Sheet 5

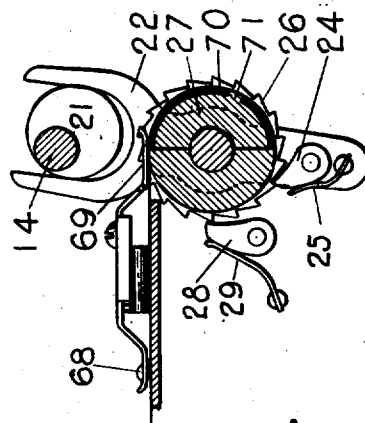
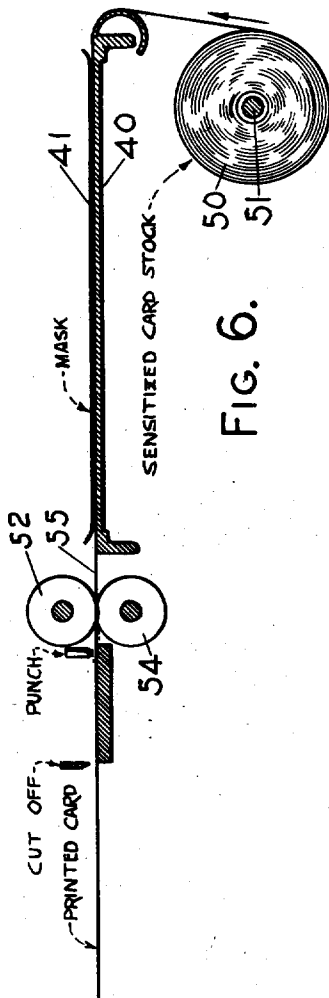


FIG. 7.

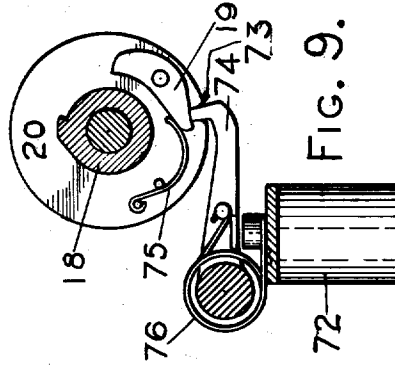
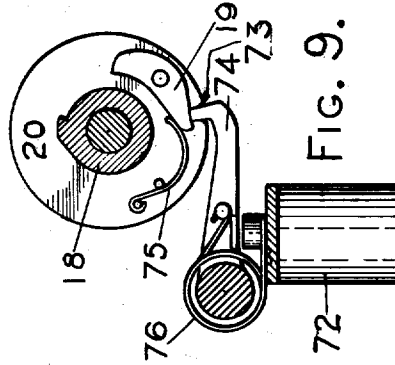


FIG. 8.



Nov. 5, 1935.

A. W. PUPKE

2,019,929

APPARATUS FOR MAKING CARDS

Filed April 4, 1933

6 Sheets-Sheet 6

65

67

38

FIG. 12.

90

91

61

62

FIG. 13.

INVENTOR
ARNOLD W. PUPKE
BY *Raussey & Kent*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,019,929

APPARATUS FOR MAKING CARDS

Arnold W. Pupke, Greenburg Township,
Westchester County, N. Y.

Application April 4, 1933, Serial No. 664,298

8 Claims. (Cl. 95—75)

The present invention relates to an apparatus for making cards wherein a similar designation is applied to a plurality of cards having different species information thereon.

The present invention is particularly adapted for the manufacture of cards for use in libraries, statistical organizations, etc.

It is a common practice in libraries to provide card catalogs wherein certain information will be repeated on a series of cards whereas other information will be different on each card. For example, each card may have a subject-matter heading which will be different on each card and followed by the body subject matter, such as the name of the author, title of volume, publisher, etc., which will be the same on each card. Under the prior practice, it has been the custom to write each card separately either in long hand or on a typewriter and then check each card against a master sheet which has been made out to cover the whole series of cards. This procedure has entailed a substantial amount of manual labor and has required considerable time to produce the cards desired.

The present invention comprises an apparatus whereby the cards are produced directly and automatically from a master sheet which need be checked but once, and then the master sheet automatically becomes the foundation upon which the several cards produced are built, so that the cards must be correct and need not be checked.

The present invention may be carried out in different apparatuses differing slightly from those specifically disclosed herewith, but the preferred form of the invention comprises the production of a master sheet carrying the several specific designations which are to be applied to the several cards.

These designations on the master sheet are preferably arranged in parallel columns, one of each side portion of this sheet. One column, for example, the left hand column, may contain information comprising, for example, the headings for a series of cards, each heading being different from each card. The other, or the right hand column of the master sheet, may carry the information for the body of the card which is to be the same for each of the series of cards.

This master sheet may carry in opposite parallel columns material useful for producing many different sets of cards. After the master sheet is prepared, it preferably is slit as it is used so that each column is carried on a separate strip of the master sheet. The card stock preferably is roll stock, and preferably is fed crosswise beneath the strips of the master sheet. In the preferred form, this roll card stock is paper of card thickness with one surface sensitive to light, and the master sheet is preferably transparent paper which may be used as a photographic nega-

tive. Suitable masks are provided so as to expose only desired portions of the master sheet.

Assume that the card stock for the first card is moved beneath the strip carrying column of the master sheet with the headings thereon so that a mask covers all of the master sheet except one single title or heading. Now when the master sheet and the sensitized card therebeneath are exposed to light, the subject-matter exhibited through the mask is printed on the card stock. The card stock is now advanced across the master sheet to lie beneath the strip carrying the body subject matter column, where a mask covers the area previously exposed, but exposes the general information portion of the master sheet, which information is desired on the card. This portion of the master sheet with the card stock therebeneath is exposed to light, and information will be photographically printed on the card stock. The card number one will now have been completely exposed, or in other words, the printing operation as to card number one is completed. While card number one is in position to print the general information, the heading strip of the master sheet had been moved lengthwise to exhibit through the first mask the proper heading for the second card and the exposure of the second card heading would take place while the printing of the main subject-matter on the first card is taking place. Then, the card stock would move forward another card length and the card number two would receive the main subject-matter imprint while card number three was being exposed to a third heading which had moved up to the heading printing point.

During this printing process, it will be observed that the heading column strip of the master sheet is advanced step by step as each card is printed to present a new heading at the opening in the mask, whereas the strip of the master sheet carrying the body subject matter remains stationary until all of the whole series of cards is completed. The movement of the heading strip of the master sheet while the body strip of the master sheet remains stationary may be effected because of the slitting of the master sheet into two columnar strip members and while the one strip is moving step by step, the other strip merely bows or folds to permit the main body subject-matter, being repeatedly printed, to remain stationary. When a complete series or group of cards is finished, then both strips of the master sheet move forward to the designations required for another group of cards, and the operation is continued until all the cards desired are completed.

Preferably, the sensitized exposed card stock is developed in the machine in any well known manner. A suitable cutting mechanism is provided to divide the sensitized card stock into indi-

vidual card members. The cutting operation may occur either before or after the developing operation. Preferably the cards are cut before being developed so that the developing takes place on the individual cards.

Fig. 1 is a plan view of the preferred form of an apparatus carrying out the present invention.

Fig. 2 is an elevational view of the apparatus shown in Fig. 1 looking in the direction of the arrow A Fig. 1.

Fig. 3 is an elevational view of the apparatus shown in Fig. 1 looking in the direction of the arrow B Fig. 1.

Fig. 4 is an elevational view of the apparatus shown in Fig. 1 looking in the direction of the arrow C Fig. 1.

Fig. 5 is a diagrammatical sectional view corresponding to Fig. 4 on the section line 5-5 of Fig. 1.

Fig. 6 is a diagrammatical sectional view taken on line 6-6 Fig. 1 and corresponding to the position illustrated in Fig. 2.

Fig. 7 is a view illustrating parts in section of the operating mechanism for the master sheet advance rolls on line 7-7 Fig. 4.

Fig. 8 is a perspective detail view showing parts in section illustrating the control of the clutch mechanism which operates the master sheet advance rolls.

Fig. 9 is a detail view showing parts in section of the magnetically operated clutch shown in Fig. 8.

Fig. 10 is a detail view of a section of the adjacent inner ends of the master sheet control rolls.

Fig. 11 illustrates the driving connection between the sections of the master control rolls.

Fig. 12 illustrates a portion of the master sheet before it is slitted, and dotted line indicates the path of slit.

Fig. 13 illustrates a completed card.

Referring to the drawings and more especially to Figs. 1, 2, 3, and 4, illustrating the preferred form of a contact printing type of apparatus for carrying out the present invention which comprises a main drive shaft 1 journaled in the main frame 2 and provided with a suitable driving pulley 4. This main shaft 1 carries an interrupted gear 5 which meshes with an interrupted pinion 6 on a secondary drive shaft 7. The relation of the interrupted gear 5 and pinion 6 is such that the interrupted pinion 6 makes one complete revolution each time the interrupted gear 5 makes one complete revolution, but the complete revolution of the interrupted pinion 6 is made during a time interval corresponding to a portion of the time interval of a complete rotation of the main drive shaft 1. During the remaining time interval of the revolution of the main shaft 1, the interrupted pinion 6 and the secondary drive shaft 7 are stationary. A bevelled pinion 8 is mounted on the opposite end of the secondary drive shaft 7 from the interrupted pinion 6 and this bevelled pinion 8 engages a bevelled pinion 9 on the short shaft 10 mounted in bearings in the main frame 2 to extend at substantially right angles to the secondary drive shaft 7. A bevelled pinion 11 is carried by the other end of the short shaft 10 and engages a bevelled pinion 12 on an operating shaft 14 extending across the machine frame substantially parallel to the main shaft 1. This operating shaft 14 carries a gear 15 that meshes with a gear 16 which is rotatably mounted on a master sheet roll shaft 17.

A positive clutch member 18 is integral with the gear 16 and normally rotates idly with the gear 16 on roll shaft 17 until the clutch member 18 is engaged by the pawl 19 carried by the circular flange 20 which is fixedly secured to the roll shaft 17. The pawl 19 comes into contact with the clutch 18 at the end of an active period of the shaft 17, so that the pawl 19 drives the clutch 18 when the next active cycle of the shaft 17 takes place. The operating shaft 14 carries an eccentric 21 fixedly mounted on the shaft to rotate therewith. A forked arm 22 extends on each side of the eccentric 21 and is oscillated by the eccentric 21 when the operating shaft 14 rotates. A pawl 24 is mounted on the forked arm and is spring pressed by spring 25 into engagement with a ratchet wheel 26 that is fixedly mounted on a master sheet heading strip roll 27 which is loosely mounted to rotate on the roll shaft 17. A holding pawl 28 is mounted on the machine frame and is spring pressed by spring 29 into engagement with a ratchet wheel 26. The construction and arrangement of the parts specified are such that as the forked arm 22 oscillates, the master sheet title roll 27 is advanced step by step.

The heading strip roll shaft 17 carries the body strip roll 30 which is fixedly secured to the shaft 17, so that each time the pawl 19 engages the clutch member 18 the master sheet body strip roll 30 is advanced one step. A pair of idler rollers 31 and 32 are mounted to rotate idly on shaft 34 journaled in the machine frame. The idler roller 31 cooperates with the heading strip roll 27 and the idler roll 32 cooperates with the body strip roll 30.

The master sheet 38 illustrated in Fig. 12, after having the designations desired placed thereon, is rolled up to comprise a master sheet supply roll 39, which is mounted in the machine frame and extends lengthwise of the bed 40 of the machine beneath a mask 41 which is provided with a heading exposure opening 42 and a body exposure opening 44. These strips extend beyond the mask and pass downward between the rolls 27, 30, and the cooperating idler rolls 31, 32 which clamp the strips tightly so that they are under control of the heading strip roll 27 and the body strip roll 30 to advance the strips each time these rolls 27 and 30 are actuated.

The main shaft 1 carries a circular slitting knife 45 which slits the master sheet into the two strips before the master sheet reaches the mask 41. A pair of idler rolls 46 and 47 each extend entirely across strips of the slitted master and grip the same before the strips reach the mask 41. Therefore, when either of the strips 48 and 49 of the master sheet are advanced, both strips advance side by side between the idler rolls 46 and 47. Since the body strip 49 is held stationary during a part of the time when the heading strip 48 is moving, the stationary body strip 49 bows upwardly (Fig. 5) between the rolls 46, 47 and the mask 41.

The card stock is mounted in a supply roll 50 on a shaft 51 which is journaled into machine frame 2. This card stock extends transversely across the machine and beneath both the strips 48 and 49 of the master sheet and in a position directly below the openings 42 and 44 in the mask 41. The short shaft 10 carries a card stock control roll 52 which cooperates with an idler roll 54 journaled in the machine frame. The circumference of the card stock roll 52 is preferably equal to the length of a finished card so

that each time the short shaft 10 makes a complete rotation, the card stock 55 is advanced an amount equal to the length of a single card.

The main shaft 1 carries on its outer end a cam 56 which operates on an arm 57 secured to a sleeve 58 which carries a circular punch 59 and a cut-off knife 60. Therefore, each complete rotation of the main shaft 1 causes the operation of the cut-off knife 60 and the punch 59. The cut-off knife 60 severs the card stock 55 into individual cards 61 and the punch 59 simultaneously punches a filing opening 62 in the edge of the card stock which will be centrally located in the bottom portion of the individual card 61 when it is severed by the knife 60. A suitable spring 64 holds the arm 57 into contact with the cam 56, thereby holding the punch 57 and the cut-off knife 60 raised in inoperative position until the cam 60 opposes the tension of the spring and brings the punch and knife into operation.

When the heading 65 and the body 66 have been placed on the master sheet, (Fig. 12) control openings 67 are punched in the master sheet 38 preferably opposite the last title in a row of headings or the last line of a group of body subject-matter. An electrical spring contact 68 (Figs. 1 and 7) is adjustably mounted over the path of the control openings 67, so that when an opening 67 passes beneath the contact, an electrical circuit is established through the adjustable contact 68. The electrical spring contact 68 is provided with a shoe 69 which bears upon a broken insulation ring 70 mounted on the master title roll 27. The space 71 between the ends of the insulation ring 70 is a contact surface which will complete an electrical circuit through the shoe 69. The electrical circuit specified is provided with a suitable electrical energy supply (not shown) and leads to and includes an electro-magnet 72 which cooperates with a spring pressed arm 74 that bears against the pawl 19 in opposition to the spring 75. This arm 74 extends through a slot 73 in the circular flange 20. The end of the arm 74 while in the slot 73 acts to hold the body strip 49 in register at the printing point. A spring 76 for the arm 74 is of greater power than the spring 75 for the pawl 19 so that the pawl 19 is normally out of engagement with the clutch 18 until the electro-magnet 72 is energized either through the connection made by the contact 68 or the shoe 29. As soon as the electrical contact is made, the power of the spring 76 is overcome and the spring 75 forces the dog 19 into position to engage with the clutch 18, and the arm 74 is withdrawn from the slot 73 and the flange 20 is free to revolve. This operation connects the gear 16, (through the clutch member 18 and pawl 19 when these two parts come into engagement) with the circular flange 20 on the roll shaft 17 so that the gearing 15 and 16 is effective to rotate the master body roll 30.

This master body roll 30 is provided on its inner end with a broken circular recess 77 (Fig. 11) into which a drive pin 78 carried by the heading roll 27 extends. The operation of the heading strip roll 27 by the forked arm 22 gradually advances the position of the drive pin 78 in the circular recess 77, toward the end of this recess. When a control opening 67 completes the contact to operate the electro-magnet 72 to render the drive mechanism effective through the gears 15 and 16 to rotate the body strip roll 30, the rotation of this roll 30 picks up the heading strip roll 27 as drive pin 78 contacts with the end of the circular recess 67 so that the two strips 48

and 49 of the master sheet 38 are now advanced side by side in unison until the slack is taken up in both strips 48 and 49, and these strips are advanced to position to start a new series of cards. The purpose of the contact portion 71 between the ends of the insulating ring 70 is to insure the simultaneous advancement of the strips 48 and 49 to start a new series of cards, should the contact 68 through the control opening 67 fail to operate for any reason. It also obviates any difficulty which might arise by the failure of the operator to punch control openings 67 in the side of the master sheet when this master sheet is being prepared.

Preferably, the present apparatus operates through photographic material and to this end a suitable source of light such as electric lamp 79 is mounted above the machine with a light shutter 80 beneath the lamp 79. This light shutter 80 is mounted on a vertical shaft 81 which is driven by a pair of spiral gears 82, 84, one of which is carried by the cross shaft 85 which in turn is driven by spiral gears 86 and 87, one of which is mounted on the main shaft 1. The ratio of the spiral gears is such that as the main shaft rotates, the light shutter 80 makes one complete revolution each time the main shaft makes a complete revolution. The shutter is open while the strip portions are at rest and is closed when either or both the strips advance. The electric lamp 79 is mounted in such proximity to the light shutter 80 that the cone of rays from this lamp is completely interrupted when the shutter is closed to prevent exposure of the card stock through the title opening 42 and the subject-matter opening 44.

It is to be understood that the entire light sensitive portion of the machine is enclosed in a light tight housing, which has been omitted from the drawings for the purpose of clearness. It is also to be understood that the sensitized card stock after it has been exposed to light to print the designations of the master sheet thereon is suitably developed. This developing operation may occur either before or after the card stock is separated into individual cards. Preferably, the developing occurs after the separation. When the card stock is cut and developed, a complete printed card is provided for each operation of the machine.

It will be noted that the exposure opening 42 for the headings is positioned beyond the exposure opening 44 for the body subject matter. It will also be noted preferably the first heading on the master sheet is preferably located exactly opposite the first line of the body subject-matter which is to be common to all the cards. It is desirable, in many cases, to provide a card with the subject-matter printed thereon but with a blank space for the title. Therefore, in the normal operation of the machine, it will be observed that the first card of a series which is printed does not have any title heading printed thereon, whereas each succeeding card of the series will have some title heading.

Occasions may arise where it is desirable to have several more than one card with blank headings. This operation may be accomplished in different ways. For example, it may be accomplished by setting the first heading several line spaces below the first line of the body subject-matter. In this case as the machine operates, the heading strip 48 will be advanced step by step and each advance will be a blank until the first line of headings reaches the heading

exposure opening 42. Extra card blank head cards may also be made by adjusting the contact member 88 so that the heading strip 48 is advanced one step for each blank card desired before the contact 68 drops through a hole 67; or the hole 67 may be placed several line spaces below the last line of headings on the strip 48. Where this later arrangement is made, the strip 48 advances the last heading beyond the exposure opening 42 and thus exposes a blank portion of the strip during each intermittent advance of the strip after the headings have been passed, and a blank headed card for each such step is thereby produced. Fig. 12 illustrates a completed card in which the heading 90 is the top line and the body subject-matter 91 follows the heading 90 and ordinarily would fill the major portion of the card 61.

It will also be observed that the relation of the exposure openings 42 and 44 to the width of the card stock, is such that after a card has passed the machine, the entire area of the card has been exposed. This obviates an unexposed border which in some cases might be undesirable.

In the operation of the device, the master sheet 38, Fig. 12, is prepared by placing thereon, preferably by typewriting, the column of headings 65 and the column of body subject-matter 66. This master sheet is then wound into the roll 39 which is set in place in the machine. The main shaft 1 is driven continuously and in so doing, the slitting knife 45 slits the master sheet into the column portions 48 and 49 which extend beneath the mask 41. As the main shaft 1 rotates continuously, the gears 5 and 6 impart an intermittent rotation to the secondary drive shaft 7. This drive shaft operates through connected parts to cause the eccentric 21 on the shaft 14 to oscillate the forked arm which through the ratchet mechanism advances the column portion 48 of the master sheet carrying titles 65, step by step.

During each rotation of the main shaft, the shutter 80 makes one rotation so that the clear portion of the shutter admits the light from the lamp 79 to the exposure openings 42 and 44, thereby exposing a heading and a body subject-matter for a card. The secondary drive shaft 7 intermittently operates and at each operation of the shaft 7, the card stock control roll 52 makes one rotation which feeds the card stock out of the machine and fresh stock beneath the mask. This intermittent rotation of the roll 52 occurs at a time when the shutter 80 is closed thereby interrupting the light from the lamp 79. The continued operation of the main shaft 1 operates the punch 59 and the knife 60 once during a cycle of the operations. This operation punches a hole in the card stock 55 and cuts an individual card 61 from the supply of card stock. The cycle of operations of the machine are repeated for each card until a control opening 67 in the title columnar member of the master sheet permits the contact 68 to complete the electrical circuit. As soon as this occurs, the magnet 72 is energized and the dog 19 engages the clutch 18 so that the gear 16 which has been driven idly now rotates the master subject-matter master roll 30 which operates to take up the slack or the bow which has been formed in the body strip of the master sheet while the heading strip has been moved up step by step to print titles. As soon as this slack or bow is taken up, the end of the interrupted circular groove 77 on the heading strip roll 30 engages the pin 78 on the body strip roll

27, and both strips 48 and 49 are advanced side by side. As soon as the control opening 67 has moved from beneath the contact 68, the circuit is broken so that the spring 76 has raised the arm 74 to rise through the slot 73 and into the path of the pawl 19 and the pawl is disengaged from the clutch 18 at exactly the right time to register the body subject-matter at the printing point. The combined rotation of the rolls 27 and 30 is now stopped and a new body subject-matter is exposed through the exposure opening 44. The shutter has reached a position to begin to expose the opening 42 and 44 to light so that a card is exposed without a title heading. The ratchet mechanism for operating the heading strip sheet roll 27 again comes into operation while the body strip roll 30 remains stationary. The result is that the heading strip 48 is again advanced step by step to print headings for the second group of cards. It is to be understood that the operation of driving both rolls 27 and 30, through the clutch mechanism comprising the pawl 19 and the clutch member 18 to advance both columns of the master sheet, takes place when one set of cards has been finished. This special movement of the master sheet is equivalent in time to a step advance produced by the forked arm 22, so that each cycle of operation either advances the heading strip portion 48 step by step or makes a combined advance of the heading strip 48 and the body strip 49. In each case, these movements are both one step in the cycle of operations and occur during one complete revolution of the main shaft, so that a card is completely printed and a card is severed from the card stock each time the main shaft makes one complete revolution.

The operation of the device may be considered and divided into cycles, which may be designated as a normal cycle and a periodic cycle. In either case, each revolution of the drive shaft comprises one cycle. Each cycle may be divided into two phases which may be designated as the active phase and the rest phase. The normal cycle of the machine is the cycle wherein a series of cards are being printed, and the heading strip 48 is moved forward step by step. The periodic cycle is the cycle wherein the contact arm 68 has dropped through a hole 67 and causes the body strip 49 to be advanced.

The movement occurring during the various intervals may be analyzed as follows, namely, in the normal cycle, active phase, the body strip 49 remains stationary. The shutter is closed and the heading strip 48 moves forward the length of one step or interval to position a proper heading at the exposure opening 42. The card stock advances one card length to the cut-off.

In the normal cycle, rest phase, the shutter opens and both strips 48 and 49 remain stationary to expose on the card stock. The body subject-matter is printed on card number 3 and the heading is printed on card number 4. The knife operates to cut off card number 1 and the punch operates to punch card number 2, and then the shutter closes.

In the periodic cycle, active phase, the magnet operates to withdraw the arm 74 from the slot 73 to permit the pawl 19 to be moved into position to engage the clutch 18 (the electric contact 68 having dropped through an opening 67 at the end of the preceding normal active phase). The body strip moves forward until the pin 78 engages the end of recess 77 to move forward the heading strip 48 with the body strip 49. This advance of the strips is made through gears 5 and 6. The

electric contact 68 is now interrupted and both strips continue to move forward until the arm 74 drops into the slot 73 in the circular flange 20. This releases the pawl 19 from the clutch 18, and at this time, the body subject-matter is stopped and locked in printing position and the card stock is moved forward one length. During this phase the shutter has remained closed.

The periodic cycle, rest phase, is the same as the normal cycle rest phase. During this periodic cycle, rest phase, the body portion of the first of a new series of cards is printed and a heading, or blank, for card number two of the new series is printed, when the light shutter is opened.

It is, of course, to be understood that all light sensitive material in the machine is enclosed within a light tight casing, which has been omitted from the drawings to avoid unnecessary illustration and complication of the showing of the device.

It is to be understood that the present invention contemplates carrying out the methods specified by other apparatus than that shown, for example, by photography, hechtographs, printing transfer systems, or other mechanisms utilizing a stencil like a mimeograph or printing plates like an addressograph may be used to carry out the invention.

Having described my invention, I claim:—

1. A machine of the class described comprising a master printing sheet provided with parallel columns of printing material, means to divide said sheet into a plurality of individual printing members, means to establish a plurality of printing points, mechanism to move one of said printing members step by step relative to its corresponding printing point, devices to transfer printing from all of said printing members to a printing receiving member, and mechanism to move said printing receiving member step by step after each transferring operation.

2. A machine of the class described comprising a pair of printing members arranged side by side, a printing point for each of said members, means to move one of said member step by step relative to its respective printing point, devices to move the other of said printing members one step after a predetermined number of step by step movements of the first mentioned printing member, mechanism to move a printing receiving member from the printing point of one printing member to the printing point of the other printing member, and devices to transfer printing from said printing members to said printing receiving member.

3. In a machine of the class described, a body printing member carrying subject-matter for the body of a card, a heading printing member carrying headings for a plurality of cards, means to move the heading printing member step by step, means to transfer printing to card stock from the body printing member and from the heading printing member, means to move the body printing member after a predetermined number of step by step movements of the heading printing members, and devices to move said card stock from one printing member to the other to receive the heading printing and the body printing as successive steps to form a card carrying the body subject-matter and an appropriate heading.

4. A machine of the class described comprising a body printing member adapted to print the

body of a card, a heading printing member adapted to print a series of headings appropriate to a group of cards carrying the same body, means to move card stock from one printing member to the other printing member to associate different heading printings from the heading printing member with the same body printing from the body printing member, means to move the heading printing member step by step to change the heading for each card printed, and means under control of said heading printing member to move the body printing member to change the body subject-matter when a predetermined number of cards has been completed, and driving mechanism for all of said means.

5. A machine of the class described comprising a body printing member carrying thereon body subject-matter for a group of cards, a heading printing member carrying thereon headings for said group of cards to be associated with said body subject-matter, mechanism to move card stock from one printing member to the other printing member, means to move the heading printing member step by step while retaining the body printing member stationary, means controlled by the movement of the heading printing member to cause the body printing member to move to present a different body subject-matter at the printing point when the said group of cards has been printed, and driving mechanism for all of said means.

6. A machine of the class described comprising a master printing sheet, means to divide a portion of the master sheet into a plurality of printing members, means to advance one of said printing members step by step while retaining another of the printing members stationary, control means on the printing member that is moved step by step to determine when the stationary printing member shall move, means to move the stationary printing member when said control means becomes effective, and driving mechanism for all of said means.

7. A machine of the class described comprising a body printing member adapted to print the body of a plurality of cards, a heading printing member adapted to print individual headings on said cards, mechanism to move card stock from one printing member to the other printing member, means to move the heading printing member step by step until a predetermined group of cards has been completed, control means on the heading printing member to control the movement of said body printing member, and means to move the body printing member from one body subject-matter to another when the said control means becomes effective, and driving mechanism for all of said means.

8. A device of the class described comprising a single master sheet carrying a series of groups of printing members, means to move said master sheet, means to slit a portion of said master sheet into a pair of individualistic printing members when the master sheet is moved, means to move one of said individualistic printing members step by step while the other of said individualistic printing members is stationary, means to move printing receiving stock from one of said printing members to the other of said printing members, and driving mechanism to drive all of said means.

ARNOLD W. FUPKE.