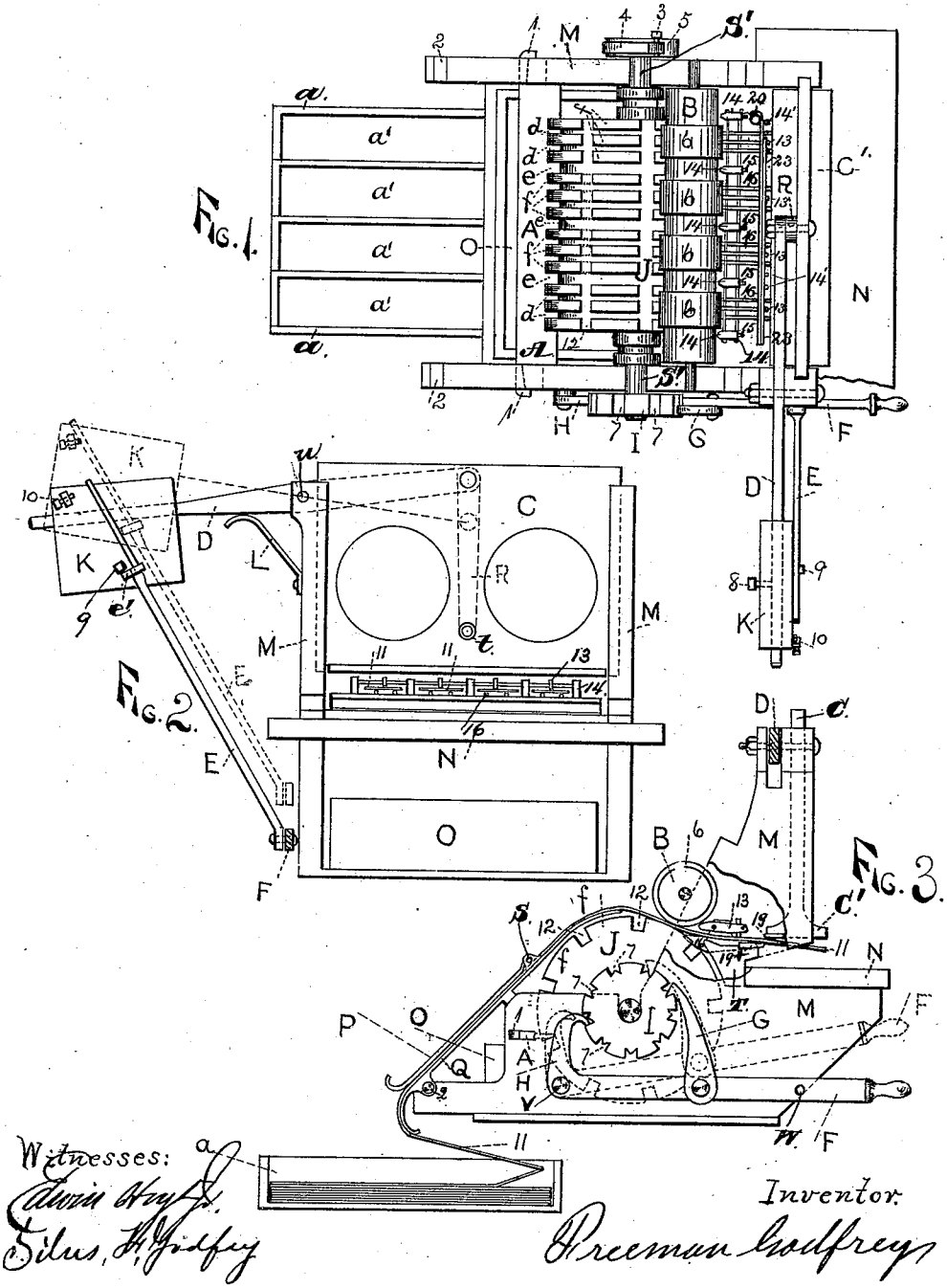
(No Model.) 2 Sheets—Sheet 1.

F. GODFREY.

GUMMING AND STICKING MACHINE.

No. 357,080. Patented Feb. 1, 1887.



Witnesses:
Edwin Gray
Silas T. Godfrey

Inventor
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(No Model.) 2 Sheets—Sheet 2.

F. GODFREY.

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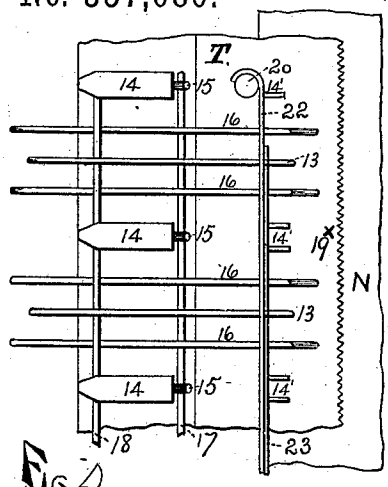


Fig. 4.

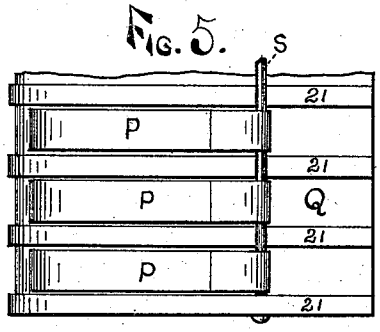


Fig. 5.

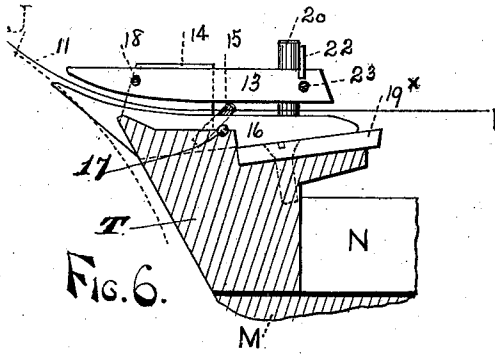


Fig. 6.

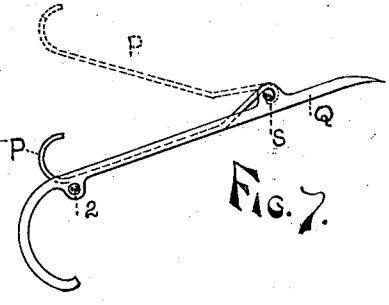


Fig. 7.

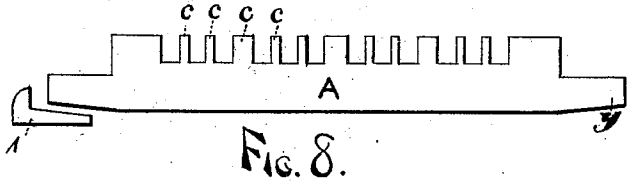


Fig. 8.

Witnesses:
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UNITED STATES PATENT OFFICE.

FREEMAN GODFREY, OF GRAND RAPIDS, MICHIGAN.

GUMMING AND STICKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 357,080, dated February 1, 1887.

Application filed March 27, 1885. Renewed January 10, 1887. Serial No. 223,924. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN GODFREY, of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in a Gumming and Sticking Machine, of which the following is a specification.

My invention relates to apparatus for gumming, cutting, and sticking a series of labels, samples, and similar articles upon a suitable card, strip, or base; and it consists in the features more particularly hereinafter described, and pointed out in the claims.

In the preparation of sample-cards for displaying samples of colors, fabrics, designs, labels, &c., it is often necessary to use quite a number of samples, which hitherto, so far as I have been able to ascertain, have been separately attached to the base. In my invention the entire number or series desired to be displayed upon the one base are simultaneously fed to the machine, gummed, cut from the webs, and stuck upon the base. Suitable apparatus for carrying into practice my invention for accomplishing this result is shown in the accompanying drawings, wherein like letters of reference indicate similar parts, and in which—

Figure 1 is a top view of the machine with the table removed. Fig. 2 is a front elevation. Fig. 3 is a side view with the framing partially removed. Figs. 4, 5, and 8 are enlarged plan views of certain details of construction. Figs. 6 and 7 are enlarged side views of certain details of construction.

In the drawings, M represents the framing by which the operative parts of the apparatus are sustained and held in position. Between the side plates of the framing and at or near the base of the machine is located the paste tank or vat O, the paste used being any desired kind, though preferably gum or mucilage. Supported in bearings in the frame is a shaft, S', carrying the gumming or pasting roller J, arranged above the tank O, and so that its periphery may dip into the paste in the tank. The surface of this roller is by comparatively wide grooves *e*, whose width approximates the distance apart desired to be left between the samples, labels, &c., divided circumferentially into a number of gumming-blocks, the number being equal to the greatest number of samples, &c., it is desired to have operated on simultaneously by the machine. In this illustration there are three such grooves *e*, making four circumferential gumming-blocks. Each of these blocks is again divided circumferentially by narrow or comparatively narrow grooves *d d*, so that each circumferential gumming-block is composed of several—in this instance three—projecting ribs, *f f*. The width of these grooves *d d* between the ribs *f f* is not so great but that the pressure applied to a gummed piece in sticking it upon its bases may cause the gum to spread and fill the spaces otherwise left ungummed by the grooves *d*. These grooves are formed to receive the ends of fingers 16, for a purpose hereinafter specified. These circumferential ribs or blocks *f* are divided longitudinally by grooves or cuts 12, so that each circumferential series of blocks is divided into a number of blocks, each composed of sections of the circumferential ribs or blocks *f*, so that by one rotation of the gumming-cylinder J the gum may be applied successively to a number of samples or labels, the line of division being left ungummed for the purpose of severance of the several samples or labels. The total space or width and length occupied by the sections of the ribs *f* of a gumming-block is slightly less than the area of the piece to be gummed and stuck, the pressure necessary to sticking forcing the gum to the edges. This ungummed edge is left, in order that the strip may be readily moved forward, and also cut in an ungummed space, as more fully hereinafter explained.

Secured in slots in the side pieces of the framing M is a scraper, A, located above the paste in the vat O. This scraper A has teeth, *c c*, corresponding to and adapted to take into the grooves *d e*, to remove the paste therefrom, while the lands between and at the base of the teeth are adapted to determine the amount of thickness of the layer of paste or gum which it is desired to have the ribs *f f* carry to the article to be gummed. To render this adjustable, the ends of A, which rest in the slots in the framing, are inclined or beveled, as at *y*, and a key, 1, beveled or inclined on an edge, is used therewith to lock A into the framing.

The wedge action of the key and incline *y* determine A's position to or from the roller J.

At one end of the apparatus is located a casing, *a*, for the webs of material to be gummed, cut, and stuck. This casing is divided into compartments *a'*, equal in number to and in line with the series of pasting-blocks composed of the ribs *f f*, the divisions between the compartments *a'* being opposite to and in line with the grooves *e e*. The width and length of the compartments should be slightly greater than the width and length of the folded webs 11 to be placed therein, in order that the same may be readily taken therefrom.

The material passes from the compartments *a'* over an inclined table, Q, pivoted to the framing at 2. At its lower or entrance end this table is curved, as shown more clearly in Fig. 7, to afford an easy path for the material to pass thereon. In line with the divisions between the compartments *a'* and with the grooves *e* are ribs 21, formed or secured on the table Q, for properly guiding the material. In each trough or passage-way formed by these ribs 21 is a presser, P, curved upwardly at its lower end and pivoted at its upper end to a rod, S, secured in bearings or lugs upon the outer ribs, 21, of the table Q, each presser being thus independently pivoted. These pressers make a slight friction upon the material as it is fed forward to the pasting-roll J, keeping it taut and smoothing out any creases or fold-marks occurring in the material.

Beyond the end of the feed-table Q is located a presser-roller, B, whose axis is journaled in the side pieces of framing M, so as to be capable of rotation. Upon it are secured bands 6, of rubber or other slightly-yielding material, of a width slightly less than the width of a gumming-block, but arranged to press the material thereupon, so as to insure the transfer thereto from the block of the gum or paste, while this pressure, gripping the material between the faces of *f f* and 6 6, causes it to be drawn or fed forward as B and J are rotated. This rotation and the consequent feed of the material is accomplished in the following manner: Upon one end of the shaft S', projecting outside of the framing M, is secured a ratchet-wheel, I, having ratchet-teeth 7, a distance apart slightly greater than the length of the circumferential sections of gumming-blocks *f*, and equal to the length of the section of material to be acted on to form one sample or label.

F is a right-angle or bell-crank lever, pivoted at its angle, as shown at *v*, its forward end being formed, as shown, into a handle for manual operation; or it may be formed so as to be attached to any suitable motive power. Its rear end or upright arm, H, is formed into a stop-pawl adapted, when the lever is in the position shown in full lines in Fig. 3, to take into a ratchet and prevent any backward movement of the wheel I and cylinder J. At a proper point between the pivot and the free end of the lever F a pawl, G, is pivoted, whose free end is formed into a hook which is adapted to take upon the side of a ratchet-tooth, while its upper edge is inclined or beveled so as to slide thereon, as shown in Fig. 3. The lever F being raised upon its pivot *v* to the position shown in dotted lines, the arm H is removed from engagement with a ratchet, while the pawl G is moved upward from one ratchet over intervening space to the next ratchet, with which it falls into engagement. If, now, the lever be depressed or restored to original position, it pulls the ratchet-wheel I around the space between the two teeth, the arm H being out of engagement, causing the cylinder J to rotate the distance of a circumferential section of the gumming-blocks, operating on the material between J and B, and causing its feed to the same extent. In order to prevent any backlash or motion of cylinder J while pawl H is out of engagement with the wheel I, a brake may be used. For instance, upon the other end of shaft S' a brake-wheel, 5, is secured, upon whose periphery bears the free end of a spring, 4, attached at its other end to a set-screw, 3, passing into the framing, the turning of set-screw 3 regulating the bearing-friction of the spring upon the wheels.

At the forward end of the machine is a sticking-table, N, attached to and supported by the framing M. At its rear end, attached to or forming part thereof, is a bed-piece, T, of the configuration in cross-section shown in Fig. 6, having its rear extending upwardly toward presser-rolls B. Upon its forward-extended edge is arranged a cutting-blade, $19^{\times}$, preferably serrated, its cutting-edge extending upwardly and over the table N, that the sections there severed from the web may be carried down to the bases upon which they are to be secured, which bases are placed for this purpose in proper position upon the table N.

Upon the cross-bed T are secured fingers 16 at distance apart corresponding to and in line with the groove *d d* of the circumferential gumming-blocks. Cross-rods 17, taking into both the fingers 16 and into bed-piece T, are secured to the latter by pins 15, which aid in maintaining them in position. The rearward ends of these fingers are curved upwardly on their under edge, and are arranged as shown, to take in the grooves *d d* of cylinder J, and thereby lift the gummed strips of material therefrom. The forward ends of these fingers extend nearly to the edge of the cutting-blade $19^{\times}$. As these fingers coincide with the portions left ungummed by the grooves *d d*, the material moves thereover without being retarded by the gum, while, as they deliver it to the edge of the cutting-blade, the fingers do not become smeared, so as to cause the material to stick. Upon bed T are also secured guide-blocks 14, in line with the guides 21, and grooves *e*, separating the gumming-blocks for keeping the strips separate and properly guiding them. These blocks 14 also support a

transverse bar, 18, at a point permitting space for the passage of the material beneath it. From bed T on either end rise posts 20, to which is attached a transverse bar or plate, 22, from which depend guide-pins 14', corresponding in function and in position to the guide-blocks 14. From 22 also is supported a transverse bar or rod, 23. Upon these transverse rods 18 and 23 are supported fingers 13, intermediate of the fingers 16 and above the material, to prevent its warping or buckling in its forward passage over fingers 16.

At the forward end of the machine is a gate, C, arranged to reciprocate vertically in guide-ways in the side pieces of the framing M. At its base this gate is enlarged to form a head, which may be termed the "sticking-platen" C', the rear edge of which is furnished or formed into a cutting-edge, 19, to act in conjunction with knife $19^{\times}$, to cut the slips from the webs of material. At the point *t* an arm, R, is pivoted to the gate C, a lever, D, being pivoted to the other end of the arm R. This lever D in turn is pivoted at *u* to a lug or projection of the framing M, and carries at its outer end a weight, K, overbalancing the gate C, so as to normally raise the latter from the table N. Loosely connected to the lever F at the point W is a rod, E, formed with a shoulder, *e'*, toward its upper end. This rod inclines outwardly by its gravity, and the shoulder *e'* tends normally, therefore, to take under a pin or projection, 9, near the lower edge of weight K. Diagonally from projection 9 and in the outer upper corner of K is an adjustable stop-screw, 10, against which the outer end of lever E may take.

With this construction, the various webs having been fed forward, gummed, and brought over the fingers 16, the operation of gumming and sticking is as follows: The cards, slips, or bases to which the samples, labels, or slips are to be attached are placed as needed in proper position on the table N. As the lever F is raised to make fresh engagement with ratchet I, for the feeding and gumming of another section of the webs, the rod E is raised therewith, and as its shoulder *e'* takes under lug 9 the weight K and the outer end of D are carried upwardly with it, depressing the gate C, carrying its cutting-edge past cutting-edge $19^{\times}$ and then severing the projecting ends of the webs, which are carried downwardly to and smoothly pressed upon the bases lying on table N. The stop-screw 10 has been so adjusted that at this moment of pressing the slips upon the bases the outer end of rod E has been impinged against 10, whereby it is forced inwardly and the shoulder *e'* carried from under 9. Thereupon the weight K falls, raising the gate. When lever F is brought back to its normal position after the accomplishment of the feeding and gumming of another section or length of the webs, the lever E falls naturally into its normal position with its shoulder *e'* in position for another operation of the gate and sticking-platen head. It will be seen, therefore, that the material from a web or series of webs is fed intermittently to the gumming-cylinder and gummed while in motion, but that the cutting and sticking are performed while the material is at rest during the intervals between the intermittent feeds, the feeding and gumming operations and the cutting and sticking operations alternating. This method of operation is not herein claimed, as I propose to make proper claim therefor in a separate application.

If desired for some purpose, the transverse grooves 12, dividing the circumferential gumming-blocks into sections, may be dispensed with, in which case a continuous line of gumming would be formed. This is not preferable, however, when slips are to be cut, as the cutting through the wet gum or paste tends to clog the cutting-knives.

It is evident that the webs of material to be gummed and cut may be rolled instead of folded. It is also evident that the invention is not confined to any particular number of circumferential series of gumming blocks or compartments for webs of materials to be acted on, but that any desired number thereof may be used, and that the proportions of the parts may be varied so as to operate upon material of any width or desired length of slips, samples, or labels.

By my invention, as thus constructed, sample-cards, for instance, containing or bearing a large number of slips or pieces or labels displaying different colors, tints, or designs, may be readily and economically prepared, any desired number within the capacity of a given machine in a single column being simultaneously and rapidly secured to a common base.

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

1. In a gumming and sticking machine, as described, the combination, with a gumming-cylinder having gumming blocks or faces formed in transverse and circumferential series by corresponding grooves, as *d e* 12, of a presser-cylinder having its circumferential face divided into pressing and feeding surfaces 6, to correspond with the block on the gumming-cylinder, and a single actuating mechanism, substantially as described, arranged to intermittently operate the feeding and gumming devices, as set forth.

2. A gumming-cylinder, as J, having its face formed into divided gumming-blocks *f* by circumferential grooves *e* and subdividing grooves *d*, and further divided into series by grooves 12, which run parallel with the axis of the cylinder, combined and adapted to serve with a presser-cylinder having corresponding circumferential bearing-faces, as 6, as and for the purposes set forth.

3. In a gumming and sticking machine, the combination of a gumming-cylinder having its periphery divided into a number of series of gumming spaces or blocks, a pawl acting therewith, and a cylinder having presser and

feed faces equal in number to the gumming faces or blocks, a single actuating mechanism, substantially as described, a series of guides for guiding the webs of material to the cylinder, and a series of guides for guiding it therefrom, whereby a number of series or portions of different webs of material may be simultaneously fed and gummed, substantially as described.

4. In a gumming and sticking machine, the combination of a gumming-cylinder divided circumferentially into a number or series of gumming faces or blocks, *f*, a pressure and feed roll having yielding surfaces 6, one for and adapted to bear upon each circumferential gumming face or block, series of guides for the material to and from the gumming-cylinder, a severing apparatus, a sticking-platen head, and a single actuating mechanism, substantially as described, whereby strips or portions of a number or series of separate webs may be simultaneously fed, gummed, severed, and pasted upon a common base, substantially as described.

5. In a gumming and sticking machine, the combination, with the gumming-cylinder and feed-cylinder, substantially as described, and adapted to operate simultaneously upon slips of a number or series of separate webs of material, of the cutting and sticking head, the single lever F, for controlling the operation of all the parts, the pawl G, attached thereto for intermittently moving the cylinder, and the rod E and its connections for intermittently operating the cutting and sticking head, the arrangement being such that the lever F throws such head into action while the gumming and feed cylinders are at rest, substantially as described.

6. In a gumming and sticking machine, the combination, with the gumming-cylinder, the feed and pressure roll, the cutting and sticking head, and the actuating-lever F, of the pawl G, attached to F, and ratchet I, attached to the shaft of the gumming-cylinder, the rod E, attached to actuating-lever F, the counterbalance-weight K and lever D, connecting the gate C and cutting and sticking head to the lever F, whereby the cutting and sticking head is brought into operation when the gumming-cylinder is out of operation and the material to be cut and stuck is at rest, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FREEMAN GODFREY.

Witnesses:

EDWIN HOYT, Jr.,

SILUS F. GODFREY.