(No Model.) 2 Sheets—Sheet 1.

V. H. BAZERQUE.

DEVICE FOR MECHANICALLY APPLYING MUCILAGE.

No. 527,009. Patented Oct. 2, 1894.

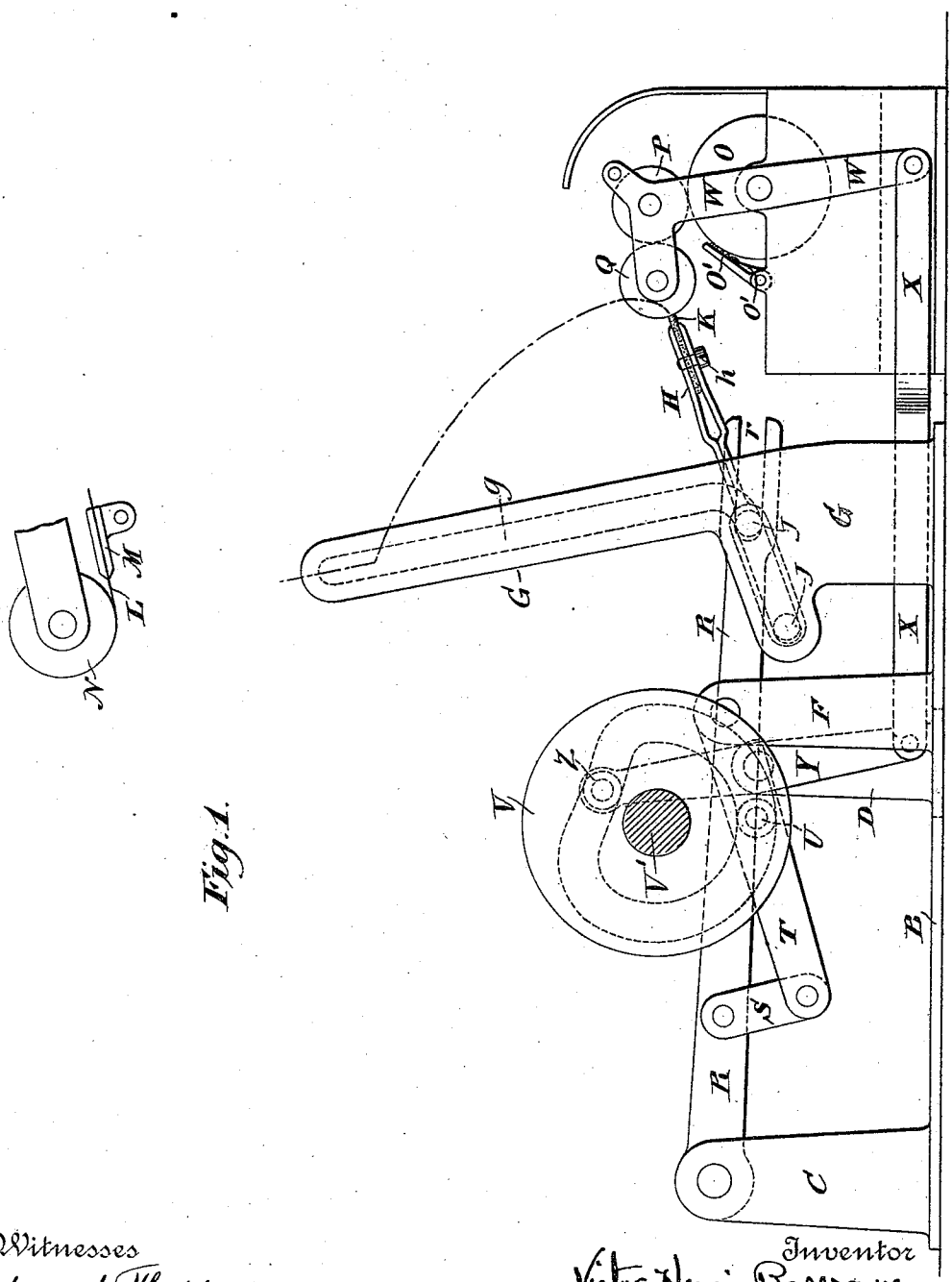

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2

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Fig. 3.

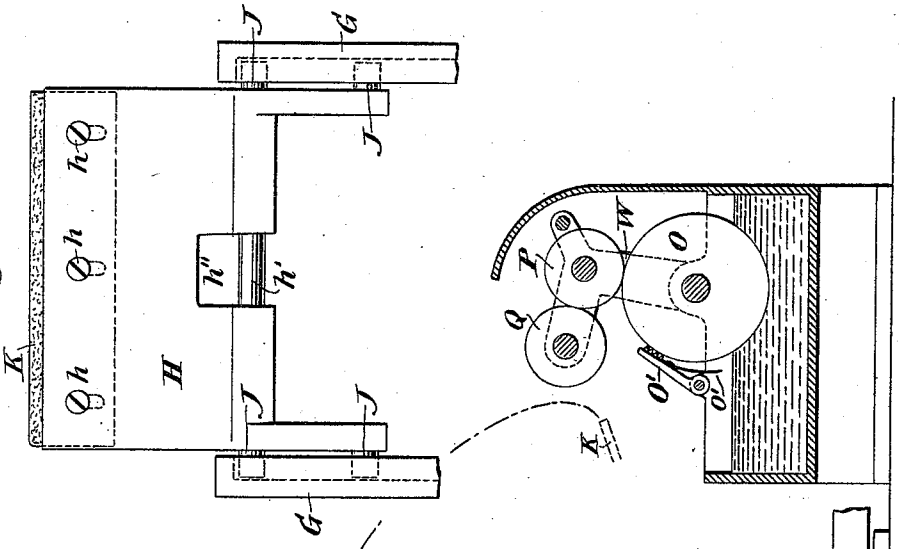
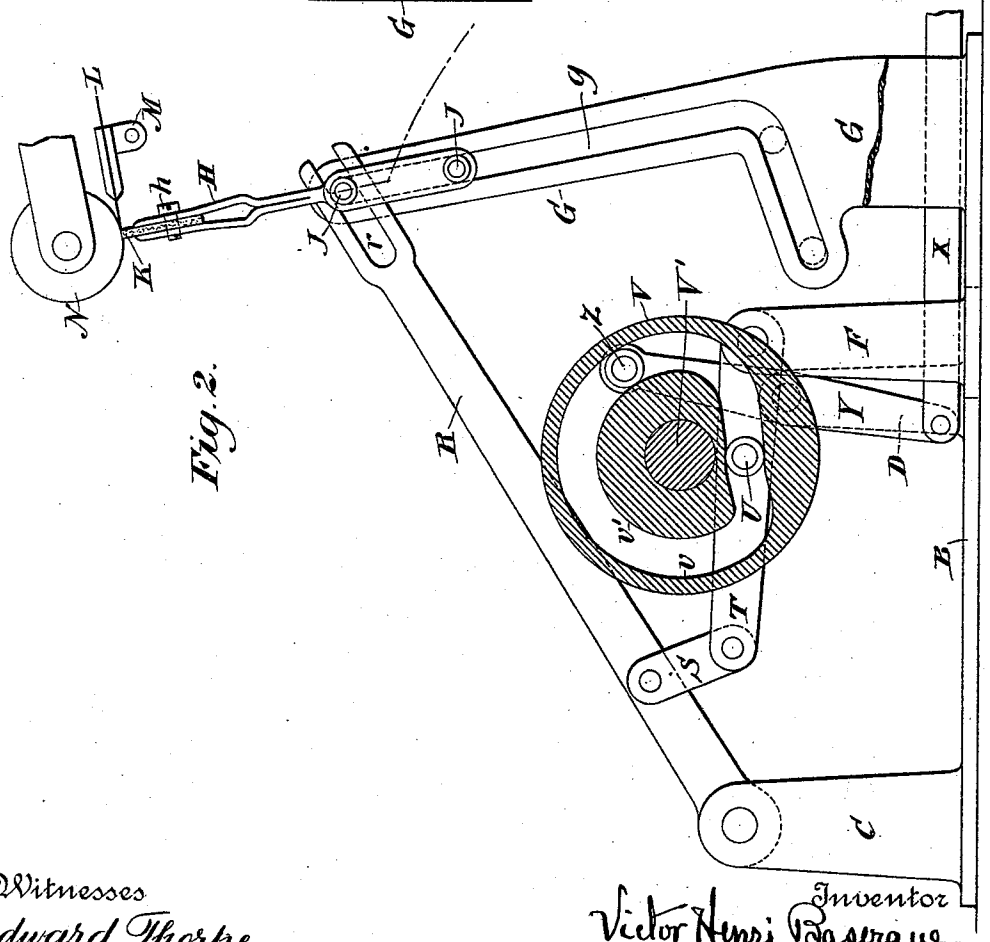


Fig. 2.



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UNITED STATES PATENT OFFICE.

VICTOR HENRI BAZERQUE, OF WASHINGTON, DISTRICT OF COLUMBIA.

DEVICE FOR MECHANICALLY APPLYING MUCILAGE.

SPECIFICATION forming part of Letters Patent No. 527,009, dated October 2, 1894.

Application filed February 14, 1894. Serial No. 500,105. (No model.)

To all whom it may concern:

Be it known that I, VICTOR HENRI BAZERQUE, a citizen of the Republic of France, residing in Washington, in the District of Columbia, have invented certain new and useful improvements in devices for mechanically applying mucilage, gum, glue, or other substances capable of application in a similar manner to various materials suitably prepared and arranged for receiving such substances, but particularly designed for gumming the wrappers of cigarettes, of which the following is a description, referring to the accompanying drawings, which form a part of this specification.

My improved device may be used to apply the mucilage, gum, glue, or other substance, to envelopes, cigarette wrappers, papers, cardboard, canvas, leathers, and many other materials suitably prepared and presented for receiving the mucilage or other substance, and has for its object a more direct and satisfactory operation combined with greater simplicity, durability, and sureness both in action and in effect than has heretofore been obtained. To these and certain other ends and purposes which will hereinafter more fully appear, my invention is embodied in the apparatus and its several parts constructed, arranged, combined, and used substantially in the manner hereinafter described, illustrated, and claimed.

In my improved device a receiver or carrier of the glue or other substance is mounted in a suitable holder which is formed to travel or reciprocate within guideways. The guideways are so formed that at one end of the travel the carrier is brought in proper contact with the material to which the glue or other substance is to be applied, and at the other end of the movement the carrier is brought into position to receive from suitable supplying devices the necessary supply of glue or other substance. The carrier may consist of a brush, felt, or porous pad, of any desired conformation, or in some cases may be a suitably shaped piece of solid soluble glue or mucilage. In the latter case it will receive a supply of moisture during each stroke instead of receiving the glue or mucilage as in other instances. The conformation of the carrier will determine the shape of the trace of glue or other substance to be applied. For cigarettes this trace will be a straight line applied to one edge of the wrapper. In envelopes it will be curved or angular according to the desired conformation of the flaps of the envelopes. For other purposes the trace may be continuous or interrupted, and of various shapes to suit different requirements. The holder which contains the carrier is caused to travel within the guideways at the proper times in order to suitably apply the glue or other substance, and then quickly withdrawn to permit the free play of other parts of the machinery with which the device is used. While withdrawn, the carrier receives its renewed supply of glue by means of a supply device which is actuated while the carrier is at rest, and which comes in contact with the face of the carrier delivering the proper amount of glue or other substance, and is then withdrawn to again permit the action of the carrier. The carrier and its holder is preferably actuated by a cam-driven lever arm, the conformation of the cam being such that the operation of the carrier will be properly timed. The supplying device is similarly actuated, and in the form of my invention shown in the drawings of this application I actuate the supply rollers from the same cam which is employed to operate the carrier.

Such briefly is a general sketch of my improvement.

The details and operation of my invention in its preferred form will be better understood from reference to the accompanying drawings which illustrate it as embodied in an attachment for applying mucilage or glue to the edge of cigarette wrappers, just before they are introduced between the rollers and wrapped around the cigarettes. It must not be understood, however, that my invention is in any way limited to this adaptation, and I have elected to show it in this use merely because it is perhaps one of the simplest forms of my improvement and because it permits the presentation of the various details of the device without making it necessary to show any of the parts of the machine with which it is employed, excepting only the cigarette wrapper held in its clamp or feeding attachment and ready for the application of the mucilage.

Figure 1 is a side view of the apparatus,

partly in section, in its position for receiving the glue upon the face of the carrier. Fig. 2 is a similar view partly in section, showing the carrier in its action of applying the glue to the cigarette wrapper. Fig. 3 is a detail front elevation of the carrier and its holder mounted in the guideways, a portion only of the guideways being shown.

Throughout the drawings like letters of reference indicate like parts.

From the base plate B rise standards C, D, F, for the pivots or axes of the operating levers of my device, and near the end of the plate is a pair of posts G having the slots or guideways which control the travel and direct the movement of my holder. The holder H is provided with a pair of friction rollers J at each side, as clearly seen in Fig. 3, which travel in the guideways and direct the movement and position of the holder. The upper portion of the holder is bifurcated or otherwise formed into a pair of plates or clamps within and between which the mucilage or glue carrier K may be secured by means of set screws *h*. This carrier may be a brush, or a pad of any permeable or absorbent material capable of receiving the supply of mucilage and transferring it by contact to the cigarette wrappers. As already indicated, I may in some cases use a piece of glue or other soluble material and supply moisture at each stroke, so that the moistened face of the mucilage coming in contact with the cigarette wrappers may apply a trace of mucilage. For cigarettes the mucilage is applied in a straight trace along one edge of the wrapper. Therefore, the carrier K will have a straight narrow face as shown in the figures; but for use with envelopes and for other purposes the form of the carrier will be varied in order to produce a trace of any desired conformation, rectilinear, curved, or angular, and in some cases, notably envelopes, two or more separate traces may be applied simultaneously.

The character and shape of the plates or clamps of my holder H enable the same holder to retain various sizes and shapes of carriers, as clearly seen in the drawings.

The cigarette wrapper ready to receive the mucilage is indicated in the drawings at L, held in a clamp or feeding device M. The edge of the wrapper where the mucilage is to be applied, lies against a roller or other suitable backing N, against which it is pressed when the carrier K comes in contact with it. The rollers J traveling within the guideways *g* bring the holder and carrier into the position shown in Fig. 2 and cause the carrier to strike the wrapper squarely on end, and thereby apply the mucilage in a trace corresponding exactly to the shape of the end of the carrier K. This end-on movement and more direct application of the mucilage is one of the great advantages of my construction, and the simplicity with which it is produced is perhaps one of the most notable features of my improvement.

The slots or guideways *g* are curved near their lower ends and terminate in a straight portion at considerable angle to the more nearly vertical portion. When, therefore, the holder is drawn down to the lower limit of its travel, the guide rollers J running in the guides turn the holder to the position shown in Fig. 1, the holder projecting forward, (to the right as seen in the figure) and presenting the face of the mucilage carrier K in convenient position to receive mucilage from the supply rollers O, P, Q.

The holder H is operated by a forked or slotted lever R. The holder is formed with the circular bearing face *h'* and opening *h''*. The circular portion *h'* plays within the slot or form *r* of the lever R, one side of the fork projecting through the opening *h''*, as clearly seen in the figures. The lever R is fulcrumed at one end to the standard C, and receives motion by the link S and lever T pivoted to the standard F. The lever T is provided with the friction roller U which travels between the cam faces *v v'* of a suitably mounted cam V. The cam V is geared and driven with the other parts of the machinery upon which the gluer is used, and makes one complete revolution for each cigarette wrapper supplied by the clamp or feeding device M. The details of the cigarette machine, however, not being part of my present invention, need not be herein described or shown, and for convenience of illustration, I have shown my cam V mounted upon the shaft V' shown in section and terminating in the cam in order that the end of the shaft may not interfere with the vibrations of the levers R and T. The cam is shown in full in Fig. 1 and in section in Fig. 2. In Fig. 2 the conformation of the cam surfaces which form a guideway for the friction roller U may be clearly seen. The cam revolves in right-handed rotation and the lever T is held in its lowest position as in Fig. 1 during about three-quarters of the revolution of the cam, thereby holding the lever R, holder H, and carrier J drawn out of the way and in position for receiving the supply of mucilage, as in Fig. 1. Upon the further rotation of the cam the lever T is drawn quickly up to the position shown in Fig. 2, raising the lever R and bringing the carrier in contact with the cigarette wrapper and applying the trace of mucilage thereto. The carrier is then quickly withdrawn and the parts returned to the position shown in Fig. 1.

I have shown in dotted lines approximately the path followed by the face of the carrier K while the holder H is being turned from a vertical to a nearly horizontal position. The travel of the holder and carrier in applying the mucilage and returning to the position of Fig. 1 occupies about one-quarter of the time of revolution of the cam. During the other three-quarters, while the holder is at rest and withdrawn out of the way of all other parts of the machinery with which my mucilage de-

vice may be employed, the supply device is brought into play to feed mucilage to the face of the carrier. My preferred form of supply device is provided with two or more rollers in contact as shown. The lower of the rollers is partially immersed in a well containing mucilage or other substance and is supported in bearings upon the sides of the tank or well. The rollers P and Q are mounted upon the bent levers or frame W pivoted coaxially with the roller O. The roller P in contact with roller O forms a distributing and conveying roller which in turn delivers mucilage to the roller Q in contact with the roller P. The rollers are driven in any suitable manner, and in this way, a constantly renewed supply of mucilage is had, evenly distributed upon the face of the roller Q. A brush or scraper O′ removes the excess of mucilage from the roller O and allows it to drip from the tongue or plate *o′*. The levers W are connected by a link or bar X with the lever Y pivoted to the standard D. The upper end of this lever Y carries a friction roller Z working between the cam faces *v v′* of the cam V. The roller Z acts at a portion of the cam nearly opposite the roller U, and the levers Y, W, and connecting link X are so proportioned that, when the roller Z is drawn by the cam surface *v* toward the axis of the cam, the supply rollers P Q move to the left, as in Fig. 1, and the roller Q comes in contact with the carrier K, thereby supplying mucilage to the face of the carrier. From the position of the friction rollers U and Z, Fig. 1, it will be seen that this action takes place while the carrier holder H is at rest in its lower position; and it will also be seen that the path of travel of the roller Q is such as to bring it into contact with the face of the carrier in a plane perpendicular to the face and passing through the central line of the carrier. This is a very essential feature as it permits the application of the mucilage or glue to the face of the carrier without excess on either side or lateral face of the carrier, whereas if the roller does not come into contact in the same plane with the holder and perpendicular to the face of the carrier, the mucilage will accumulate on one or the other of the sides of the carrier. After coming in contact with the face of the carrier, the rollers P Q are quickly withdrawn by the action of the cam, to the position shown in Fig. 2, and remain in that position until the carrier has applied the mucilage to the cigarette wrapper and once more returned to rest.

Having now described the operation of each of the parts of my device separately, I will briefly explain the operation of the device as a whole in its application to a cigarette machine.

When the cigarette wrapper has been advanced to the proper position for receiving mucilage, the cam V causes the holder H to travel quickly up, bringing the face of the carrier in contact with the cigarette wrapper and leaving the desired trace of mucilage upon the wrapper. The carrier is then immediately withdrawn and remains as in Fig. 2 until the next wrapper is brought in position for receiving in its turn its trace of mucilage. During the period when the holder and carrier are at rest, the supply rollers P and Q turn upon the pivot of the levers W and renew the supply of mucilage upon the face of the carrier K, withdrawing out of the way in time to allow the carrier to be again actuated for applying the mucilage to the next wrapper. It is the simplicity and directness of this action, both in applying the mucilage to the wrappers and in supplying the mucilage to the carrier which gives to my improvement many of its advantages. It must not be understood, however, that my invention is in any way limited to the precise details shown and described, as these are merely one embodiment of my invention as applicable to certain forms of cigarette-making machinery. It must also be understood that by the term "carrier" I mean to include a brush, pad, or other device capable of retaining the mucilage, glue, or other substance, and also a solid body of the substance; and that the supplying device is intended to feed to the carrier whatever substance is employed, including, (in case the carrier is a piece of soluble substance) the supplying of water or other solvent.

In describing my apparatus, I have shown positive action in all cases. It must of course be understood that springs or other resilient devices will be of advantage in certain parts of the apparatus and that adjusting devices for taking up wear and regulating the action of the various parts may also be added with advantage. I have, however, purposely omitted the enumeration and illustration of such details and additions, as well as the many modifications which may be made without departing from the principles involved, because to set these forth at length would obscure rather than make clear the more essential features of the invention.

Having, however, fully and clearly described and illustrated one embodiment of my invention and the manner in which it may be employed, I claim as my own, and desire to secure by these Letters Patent of the United States, together with all such modifications as may be made by mere skill in the art without departing from the principles of the invention and with only the limitations and restrictions expressed or necessarily implied, the following:

1. In a device for applying mucilage or other substance, a carrier therefor, means for giving travel thereto to bring the said carrier into end-on contact with the material to which such substance is to be applied, and means for applying the said substance to that face only of the said carrier that makes contact with the said material, while the said carrier is stationary, substantially as set forth.

2. In a device for applying mucilage or other substance, curved or angular guideways G, a carrier K, and holder H provided with guides traveling in the said guideways, an actuating cam V, a lever R, connections between the said lever and the said cam and between the said lever and the said holder causing the said cam to give travel to the said holder within the said guideways, and means co-operating with or driven by the said cam V to deliver mucilage or other substance to the said carrier while the holder is at rest, substantially as and for the purposes set forth.

3. In combination with a carrier operating to apply mucilage or other substance, a supply device consisting of one or more rotary rollers mounted in a movable frame and arranged to receive mucilage or other substance, and means for giving motion to the said frame to bring the said roller or rollers into contact with the said carrier from time to time, substantially as and for the purposes set forth.

4. In combination with a carrier operating to apply mucilage or other substance, a supply device consisting of one or more rotary rollers arranged to receive mucilage or other substance, and means for giving motion to the said roller or rollers to bring it into contact with the said carrier from time to time, the path of travel of the said roller or rollers being such as to bring the roller or rollers into contact with the face of the carrier in a plane perpendicular thereto and passing through the axis of the roller and the central line of the carrier substantially as and for the purposes set forth.

5. In combination with a carrier operating to apply mucilage or other substance, a supply device consisting of a tank or well containing the mucilage or other substance, a rotary roller O partially immersed therein, one or more rotary rollers in contact with said roller O and mounted upon a movable frame, and means for actuating the said frame cooperating with the said carrier to bring one of the said rollers in contact with the said carrier at suitable times, substantially as and for the purposes set forth.

6. In combination with a carrier operating to apply mucilage or other substance, a supply device consisting of a tank or well containing mucilage or other substance, a rotary roller O partly immersed therein, one or more rotary rollers in contact with said roller O mounted upon a movable frame, a scraper or brush for removing excess of mucilage or other substance from the said roller O, and means for actuating the said frame cooperating with the said carrier to bring one of the said rollers in contact with said carrier at suitable times, substantially as and for the purposes set forth.

7. In a device for appyling mucilage or other substance, curved or angular guideways G, a carrier K and holder H therefor, provided with guides traveling in said guideways, an actuating lever R for the said holder, an actuating cam V, connections for operating the said lever by the said cam, a supply device consisting of a tank or well containing the mucilage or other substance, a movable frame W, connections for operating the said frame by the said cam, and one or more rotary rollers mounted upon the said frame for supplying the said mucilage or other substance from time to time, from the said tank or well to the said carrier, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand, this 18th day of January, 1894, at the city of Washington, District of Columbia.

VICTOR HENRI BAZERQUE.

Witnesses:

DAVID S. WATERS, Jr.,

R. H. YOUNG.