Feb. 7, 1956 R. G. SCHMITT ET AL 2,733,751

MACHINE FOR MAKING FIBROUS BADGES HAVING AN ADHESIVE SECURING PORTION

Filed Feb. 19, 1954 3 Sheets-Sheet 1

Fig. 1

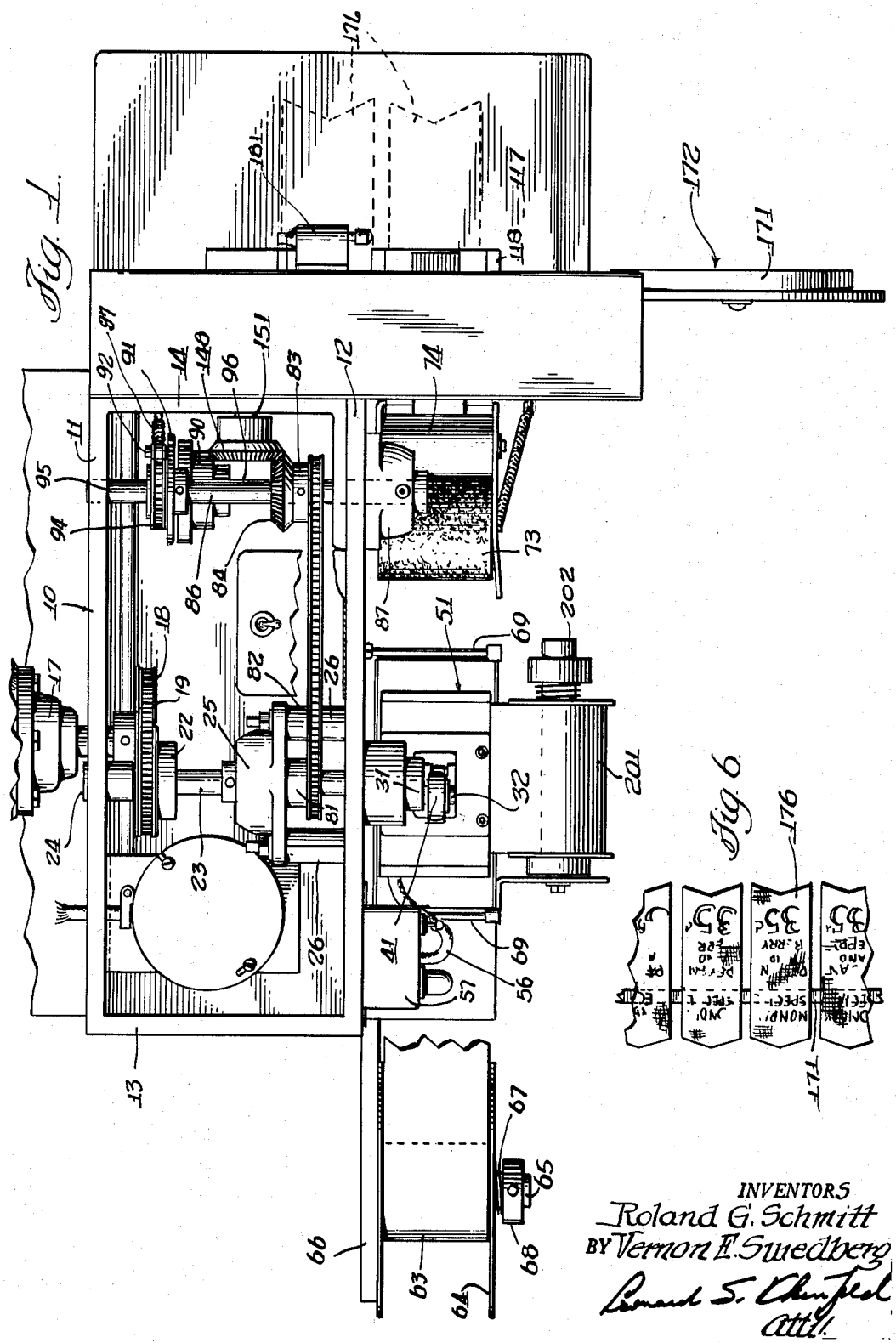


Fig. 6

INVENTORS
Roland G. Schmitt
BY Vernon F. Swedberg
Leonard S. Churfield
Attys.

Feb. 7, 1956 R. G. SCHMITT ET AL 2,733,751

MACHINE FOR MAKING FIBROUS BADGES HAVING AN ADHESIVE SECURING PORTION

Filed Feb. 19, 1954 3 Sheets-Sheet 2

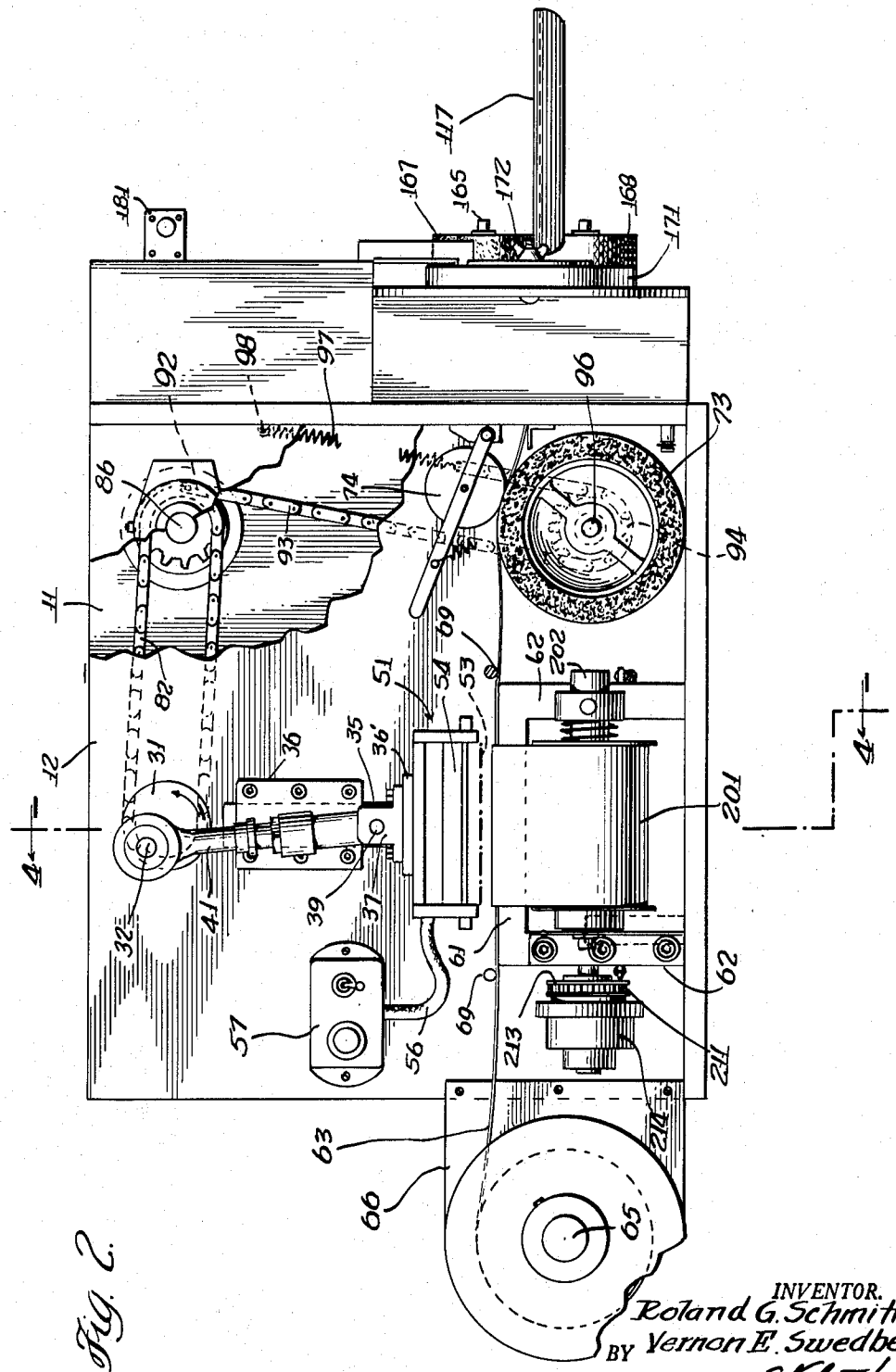


Fig. 2.

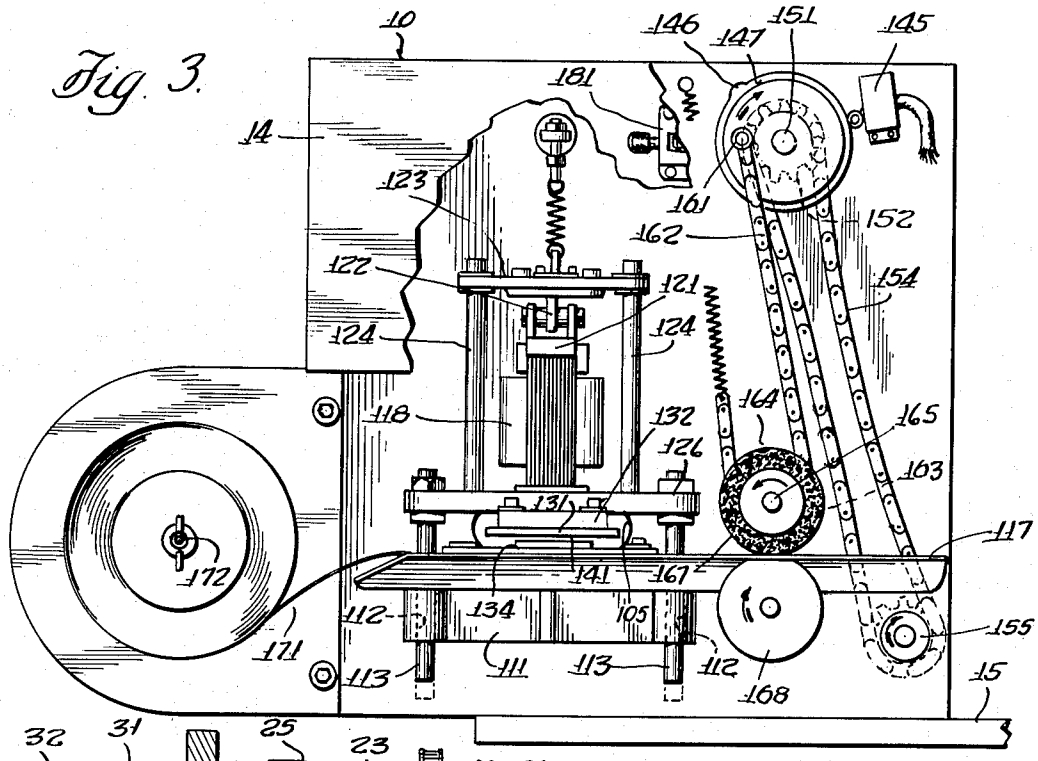
INVENTOR.
Roland G. Schmitt
BY Vernon E. Swedberg
Everard S. Schmitt
Atty.

Feb. 7, 1956 R. G. SCHMITT ET AL 2,733,751

MACHINE FOR MAKING FIBROUS BADGES HAVING AN ADHESIVE SECURING PORTION

Filed Feb. 19, 1954 3 Sheets-Sheet 3

Fig. 3.



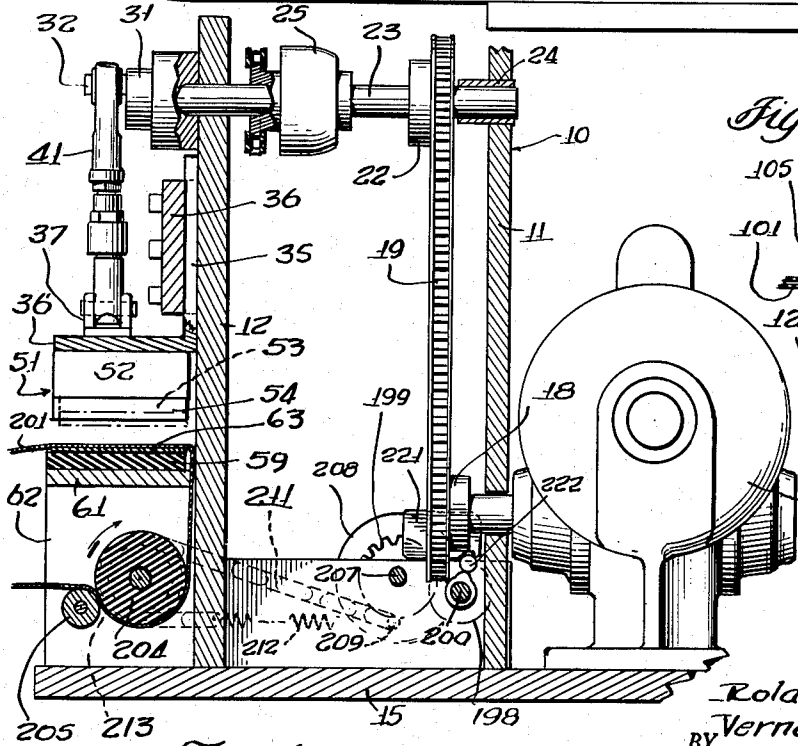
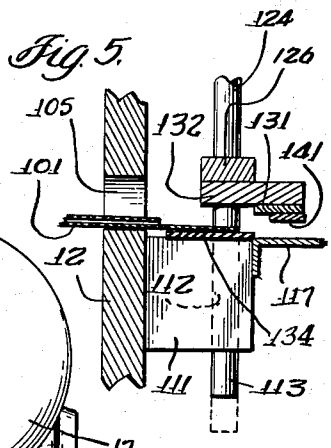


Fig 4.

Fig. 5.



INVENTOR.
Roland G. Schmitt
BY Vernon E. Swedberg
Atty.

United States Patent Office 2,733,751 Patented Feb. 7, 1956

2,733,751

MACHINE FOR MAKING FIBROUS BADGES HAVING AN ADHESIVE SECURING PORTION

Roland G. Schmitt and Vernon E. Swedberg, Chicago, Ill., assignors to Walgreen Co., Chicago, Ill., a corporation of Illinois

Application February 19, 1954, Serial No. 411,497

1 Claim. (Cl. 154—1)

This invention relates to a machine for making badges of cloth, paper or other suitable material wherein the badge proper is imprinted, blanked, and then provided with an adhesive securing portion, and wherein such securing portion is initially in tape form to serve the specific function during operation of the machine of carrying the badges away from the blanking station, whereafter the tape is severed. The invention also contemplates the novel product as produced, for example, on the machine as well as the process by which the same are produced in commercially convenient form.

In retail stores badges are frequently employed in a promotional manner to carry a special advertising message to the customer. The procedure generally takes the form of imprinting the then-current message upon an inexpensive cloth or paper badge which is preferably affixed to the salesperson's coat or uniform by an adhesive bond of a character calculated not to injure the clothing. Safety pins or other penetrating types of fastenings are obviously undesirable. Furthermore, the advertising message is preferably changed at least daily to excite the customer's interest with a fresh feature at frequent intervals. In this way the customer develops anticipation for the daily message and the possible bargain it may represent.

In order that the storekeeper may be supplied at the desired frequent intervals ordinary commercial sources of supply are ruled out as these are not generally capable of, or equipped for producing daily a small supply of badges each lot of which bears a different message.

Accordingly, this invention has, for its principal object, the provision of a simple, inexpensive machine for the production of badges of the character outlined which is capable of being safely operated by a relatively unskilled attendant.

Another object is to provide a machine as aforesaid adapted for rapid changing of the type matter.

A further object is to provide a machine in accordance with the foregoing which is adapted to receive blank stock of cloth, paper, plastic composition or other material suitable for the purpose both in roll and strip form.

Still another object is to provide a machine including means for blanking the article and securing the separate badges temporarily pending ultimate use thereof, and which securing medium is also usable subsequently for adhesively attaching the badge to the wearer's clothing.

Other objects will appear from the following description which, taken with the accompanying drawings, will disclose a preferred mode of carrying the invention into practice.

In the drawings:

Fig. 1 shows a top plan view of the machine;

Fig. 2 is a left side elevational view thereof;

Fig. 3 is a front elevational view thereof;

Fig. 4 shows a vertical cross section substantially on the line 4—4 of Fig. 2;

Fig. 5 is a view to show more clearly details of the shearing means; and

Fig. 6 is a detail to show the nature of the product as it leaves the machine.

Broadly regarded the invention comprehends a power driven machine arranged to feed a continuous strip of suitable material between a printing die and platen which are arranged for relative movement. Following such printing station there is arranged a punch and die set for severing the strip into individual badges of any desired contour. Means are provided for feeding the individual badges transversely to the previous direction of travel to another station by means of a strip of adhesive material to which they are severally secured. The badges and strip as thus grouped are then capable of being shipped as a plurality for separation at the point of ultimate use or, if preferred, separated at the point of departure from the machine. Preferably a two-sided adhesive strip is employed whereby one face may be adhered to the badge and the other face, after removal of a layer of temporary protective material, may subsequently be secured to the wearer's clothing, the adhesive being of a non-injurious character.

Referring to the drawings there is shown a framework 10 including a right side wall 11, a left side wall 12, a rear wall 13, a front wall 14 and a base 15, all whereof are mutually joined as a rigid unit in any conventional fashion.

An electrical power unit 17 of the gear reduction-motor driven type is provided with a sprocket 18 connected by a chain 19 to another sprocket 22 keyed to a jack shaft 23. Such shaft is journalled in an outboard sleeve bearing 24 in the frame part 11 and in an inboard ball bearing 25 supported on the rigid posts 26—26 outstanding from the frame part 12.

At the forward end of the shaft 23 there is provided a crank pin 32 which is effective to convert the rotation of the shaft 23 into reciprocating motion of the printing mechanism. To this end a crosshead 35 is supported for sliding movement in a guide 36 held on the plate 12. Such crosshead carries a horizontally extending bracket 36 to which is secured a pillow block 37 having a pin 39 for accommodating the connecting rod 41. Thus energization of the motor is effective to reciprocate the crosshead and its thereto-attached printing head 51.

Inasmuch as the exemplification embodiment shown and described herein is designed to imprint from foil by the action of heat the head 51 is shown as carrying an electrical heating unit 52 and an interchangeable printing plate 53 carried in a holder 54. Current for the heater is shown as supplied through a cord 56 and switch box 57 and may be thermostatically controlled, all in a well-known manner. Obviously the type-matter may be hand set or plates and carried in a suitable chase, as is commonly understood. The platen 59 may be rubber carried on a bridge 61 supported on pedestals 62—62 bolted to the base plate 15.

In the illustrated case material for the badges is in the form of a roll of cloth or other flexible material 63 and fed from on a spool 64 which is arranged for relatively free rotation on a spindle 65 outstanding from an arm 66 secured to the plate 12. Friction means of common form represented by a compression spring 67 and retaining collar 68 may be provided.

Upon leaving the spool, the strip 63 is fed under a pair of positioning rollers 69—69 so located as to insure flat lay and tautness of the strip over the platen 59, and a consequent uniform impression thereon. Intermittent advancement of the strip is effected by a rubber-faced feed roller 73 cooperating with a spring-pressed idler roller 74 and arranged to be driven by means now to be described.

Shaft 23 carries a sprocket 81 which, through a chain 82, serves to rotate a second sprocket 83 integral with a miter gear 84 which is keyed to a stub shaft 86 rotatably supported in a pillow block 87 carried on the plate 12. Toward the rear of the shaft 86 is secured

a disc **91** bearing a crank pin **92** to which is linked one end of a roler chain **93**. This latter passes over a sprocket **94** keyed to a shaft **95** journalled in suitable bearings carried on the frame parts **10** and **11**, and its other end is secured to a tension spring **97** hooked to a spring post **98**. A unidirectional clutch **90** is interposed between the shaft **95** and a shaft **96** to which the feed roller **73** is keyed for mutual rotation. Thus circular motion of the pin **92** is effective to impart partial rotation to the sprocket **94** depending upon the ratio between the throw of the pin and the pitch diameter of the sprocket. By proper selection of such ratio with respect to the periphery of the roller **73** the strip **63** may be advanced the required amount at each cycle of operation. By employment of the clutch **90** the chain **93** is allowed to be restored to its initial position under urging of the spring **97**.

Following imprinting the strip **63** is fed through a guide **101** cut into an opening **105** in the wall **12** (Figs. 3 and 5) for the blanking of the badges and their incorporation with the adhesive material as will now be described.

A support and guide block **111** is secured to the wall **12** and and is bored at **112—112** to receive slidably a pair of guide rods **113—113** and which, upon its front surface, supports a platform **117**. A solenoid **118** is secured to the plate **12** and includes a plunger **121** linked at **122** to a yoke comprising parts **123** and **124—124**, and which latter are attached to a cross bar **126** to which the guide rods **113—113** are bolted.

The punch which, with its cooperating die, severs the strip **63** into the selected length for the badge and simultaneously provides any desired marginal configuration therefor is indicated at **131**, and may be carried on a shoe **132** forming an extension of the cross bar **126**. The corresponding die is shown at **134** and is mounted on the guide block **111**. In the illustrative case the strip **63** is severed in a manner to provide badges having end margins as shown in Fig. 6 although obviously the contour is capable of wide variation within the scope of the invention. Desirably, and in accordance with the usual practice, a presser foot **141** in the form of a rubber pad cemented to the punch **131** may be employed to restrict shifting of the strip **63** during severance thereof.

Intermittent operation of the punch and die is accomplished in synchronism with the printing mechanism by opening and closing of a switch **145** mounted on the wall **14** and actuated by a cam **146** formed on a disc **147**. Disc **147** is driven via a miter gear **148** keyed to a shaft **151** and in mesh with the miter gear **84**. Disc **147** is carried at the outer end of the shaft **151** which also carries a sprocket **152** to drive, through a chain **154**, another sprocket **155** for a purpose later to appear.

Disc **147** also carries a crank pin **161** to which one end of a chain **162** is linked and which latter passes over a sprocket **163** keyed to a shaft forming the input of a uni-directional clutch **164**, the output whereof is represented by a shaft **165** carrying a rubber-faced feed roller **167**. A knurled-face idler roller **168** protrudes through a slot in the platform **117** for gripping and feeding of the adhesive tape **171** and the thereto-secured cut badges. The adhesive material is preferably a paper strip coated on both sides with a pressure-sensitive adhesive, one face being protected by a strippable protective strip of paper so arranged, by slitting or otherwise, as to be easily peeled off when the badge is to be applied to the wearer's clothing. The opposite face of the tape is exposed as it leaves its supply roll and is therefore partially pressed into contact with the lower face of the badges (Fig. 6) as the badge is severed from the advancing strip and fully pressed into contact by the rolls **167** and **168**. Accordingly a roll of the material is supported on means **172** which may be similar in form and function to the means employed for the ribbon **63**, wherefrom it is fed below the advancing ribbon and in such position relative thereto as to result in the assembled arrangement of Fig. 6 just described.

From the preceding description it will have become clear that, simultaneously with the severance of the strip **63** into individual badges the concurrent downward travel of the foot **141** will cause the separated portion, e. g., **176**, to adhere to the unprotected, i. e., upper face of the adhesive tape **171**, each portion or badge **176** advancing from blanking position upon the tape **171** acting as a conveyor. Additionally the working face of the presser foot **141** is made coextensive with the area formed by the intersection of the cut badge and the securing strip **171**. Otherwise if the presser foot is permitted to contact the upper adhesive surface of the strip **171** it would simply lift the same with it and cause misfunction. By this procedure the badges leave the machine in an orderly manner lending itself to subsequent simple packaging and dispensing. For example, and by utilizing a counting mechanism **181**, the attendant may simply allow a predetermined plurality of badges to leave the machine, whereupon the tape **171** may be cut by hand at that point, and a shipping carton into which the badges have been permitted to accumulate, removed and another substituted. If desired automatic means may be used for separating the badges singly as they exit from the blanking station. It will be understood that, by suitable design and adjustment of the machine, the spacing of the successive badges along the tape **171** may be made as close as desired. Thus one cut will separate the same without leaving an unsightly, excessive overrun of tape on the lateral margins of the badges.

When imprinting from metallic or other foil which is generally supplied commercially in rolls means are provided to feed the same intermittently between the type face and ribbon. In the embodiment shown a roll of foil **201** is supported for rotation, subject to the customary mild braking force, on a spindle **202** and thence passes over the strip **63** whereat it is utilized during the printing step in a manner now believed to be apparent. Thereafter the exhausted foil is drawn downwardly and between a power-driven roller **204** and an idler roller **205**. Suitable intermittent rotation of the roller **204** is provided by means similar to that heretofore detailed. Such means includes the sprocket **155**, heretofore mentioned, keyed to a shaft **200** which, through gears **198** and **199**, drives a shaft **207** which also carries a disc **208** having a crank pin **209**. The chain **211**, spring **212** and sprocket **213** function in a manner now believed to be apparent, to operate the roller **204** through a unidirectional clutch **214**.

In order to assure current to the driving motor until the printing head has returned to its upper, or normal rest position a micro-switch **221** is arranged to be operated by a pin **222** carried on shaft **207**. The circuitry is such that the switch **221** is connected in parallel across the main motor switch (not shown). Therefore, notwithstanding opening of the latter, the motor circuit is held closed until the printing head is at its uppermost position, and at which time, the pin **222** opens the switch **221**.

It will be comprehended that the badges may be simply blanked from a continuous ribbon upon which the printing has already been done. In such case feeding of the ribbon intermittently and synchronously with the movement of the punch may be accomplished in any well-known manner, as for example, by the use of a marker associated with each printed impression cooperative with photocell-actuated ribbon-feeding mechanism.

While we have shown a particular embodiment of our invention, it will be understood, of course, that we do not wish to be limited thereto since many modifications may be made, and we therefore contemplate by the appended claims to cover any such modifications as fall within the true spirit and scope of our invention.

We claim:

A machine for manufacturing from a strip of material badges having at least one dimension equal to the width of the strip and a separate, adhesively secured element for securing the badge to the wearer's clothing, the element extending continuously across the badge in the direction of said dimension and having a width in the perpendicular direction substantially less than said first direction which comprises means for advancing said strip intermittently past a severing station, means at said station for severing the strip across its width to provide individual badges, means for intermittently advancing a strip of adhesive material perpendicularly to the direction of advance of the first strip in a path adjacent said severing means, and closely adjacent the path of the advancing first strip, a presser foot carried on said severing means for action substantially simultaneously therewith, said presser foot having a working face co-

extensive with the area of intersection of the two strips, whereby said presser foot presses the severed badge into adhesive contact with the second strip substantially simultaneously with the severing operation and said second strip is thereafter effective to convey its thereto-attached badges away from the severing station as a completed product, and means for synchronizing the intermittent advance of said two strips and severing and presser foot means for simultaneous dwell thereof during the cutting and pressing operations.

References Cited in the file of this patent

UNITED STATES PATENTS

2,511,559	Banff et al.	June 13, 1950
2,569,101	Hoppe	Sept. 25, 1951
2,642,116	Fisher et al.	June 16, 1953