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Proprietor: Colibri’ System S.p.A.
20129 Milano (IT)

Inventor: FARNETI, Aldo
I-20162 Milano (IT)

Representative: Mittler, Enrico et al
Mittler & C. S.r.l.
Viale Lombardia, 20
20131 Milano (IT)

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Description

[0001] The present invention relates to an electrically operated machine for covering book covers and sealing envelopes and articles of various kind.

[0002] Machines are known for making book covers and sealing envelopes by means of specific sheets of flexible plastic material, which are supplied in single piece or unwindable from a continuous roll. A machine of this kind, which is very suitable for offices, libraries, stationary shops and the like, is described in EP 1 404 528 B1 and comprises a heat soldering assembly which cooperates with a work surface. The assembly comprises a fixed lower base suitable for laying a sheet of flexible plastic material, and an upper part movable towards said base to execute, by means of an electrically heated blade, the soldering of the overlapped ends of the plastic material sheet along the edges of the book. The excess material is then removed.

[0003] In the aforesaid machine, the approaching of the upper part to the laying base is carried out manually by pressing a pair of levers applied at the ends of said upper part and holding them downwards.

[0004] This results in the operator simultaneously using both hands and the impossibility of simultaneously carrying out other movements which could be useful.

[0005] US 3 869 842 A discloses a machine suitable for covering book covers and sealing envelopes or articles of various kind. The machine comprises a fixed lower base suitable for laying a sheet of flexible plastic material, single or winding from a roll, for an article to be covered, an upper part and a heatable blade housed in said upper part to execute the soldering of the overlapped ends of the plastic material sheet along the edges of said article when said heatable blade is approached to said lower base. The machine further comprises an electric motor, a control member for operating said electric motor and movement transmission means acting on the sides of said upper part to cause at every activation of said electric motor determined by said control member an approach of said heatable blade to said lower base for executing the soldering of the ends of the plastic material sheet.

[0006] US 3 479 485 A discloses a heat sealing apparatus having a base, a sealer block and an opposed heater arm mounted on the base. The heater arm is provided with a resistance heater element. The heater arm is movable relative to the sealer block by a motor driven cam. A control circuit is provided for the apparatus, which includes a motor for driving the cam and a material-actuated start switch for starting the motor. The motor is provided with a dynamic breaking circuit to terminate rotation of the cam at the completion of one cycle.


[0008] It was the object of the present invention to make a machine for covering book covers and sealing envelopes of articles of various kind, which is easy and quick to operate using one single hand, thus leaving the operator free to carry out further interventions with the other hand.

[0009] In accordance with the present invention, such an object is achieved means of a machine as defined in claim 1, which differs from US 3869842 A in that the control member is accessible from the outside of the machine.

[0010] Thus a simple intervention of the operator on an external control member (e.g. a button or a pedal-operated member) is sufficient to obtain the wanted result.

[0011] The features and advantages of the present invention will become apparent from the following detailed description of an embodiment thereof, shown by way of non-limiting example in the accompanying drawings, in which:

- figure 1 is a prospective view, in resting position, of a machine for covering articles according to the present invention;
- figure 2 is top view from above, of the machine in figure 1;
- figure 3 is a top view from below, with covers removed, of the machine in figure 1;
- figure 4 is a sectional view according to line IV-IV, of the machine in figure 2;
- figure 5 is a sectional view according to line V-V, of the machine 1 in figure 2;
- figure 6 is a sectional view according to line VI-VI, of the machine in figure 3;
- figure 7 is a sectional view according to line VII-VII, of the machine in figure 3;

[0012] The drawings show a machine according to the present invention, for covering books or other articles with sheets of flexible plastic material.

[0013] The machine shown in figures 1, 2 and 3 comprises a lower base 1, which defines a laying surface 2 for the sheet, single or unwindable from a roll, used to cover or seal the article, and an upper part 3 movable towards said base starting from a resting position towards which it is urged by a pair of helical springs 4 interposed between respective ends of base 1 and of the upper part 3 (figures 4-7).

[0014] The lower base 1 provides a foldable extension 5, which facilitates the covering operations and at the same time allows a smaller volume of the machine when it is not operating. Base 1, close to the upper part 3, also provides a receptacle 6 (figure 3), which is closed by a removable cover, in which two electric motors 8 and 9 and an electric circuitry 10 are accommodated.

[0015] The upper part 3 consists of two sides 11 connected by a crosspiece 12. A space 13 defined between base 1 and the upper part 3 allows introducing the plastic sheet ends to be soldered, while the article is abutted against the front of crosspiece 12.

[0016] Crosspiece 12 carries a soldering blade 7 which
collaborates with a fixed counter-blade 14 restrained to base 1 and is heatable by means of an electric resistance (not shown) fed through the electric circuitry 10.

[0017] Crosspiece 12 also carries a rubber roller 15 which is rotatibly operable by the electric motor 8 by means of a movement transmission system comprising a drive wheel 16 and a belt 17. With the upper part 3 brought close to base 1, the rubber roller 15 cooperates with an idle roller 18 which is freely pivotally carried by base 1.

[0018] The approaching of the upper part 3 to base 1 may be forced by hand, by acting on the extensions 19 of the sides 11 or by pressing an electric button 20 arranged above the upper part 3 and connected to the electric circuitry 10 or again, by means of a pedal-operated control (not shown) in turn connected to the electric circuitry 10.

[0019] In the last two cases, an electric control is given to the electric motor 9, which acts on a capstan 21 arranged close to a side 11 of the upper part 3 to wind a metallic cable 22 thereon which, through an idle return 23 arranged on a side 11 of the upper part 3 and two idle returns 24 and 25 arranged at the ends of the part below base 1, attaches to a fixing point 26 of the other side 11 after having travelled the complete width of base 1 (figures 3-5).

[0020] Therefore, the machine shown in the drawings operates as follows.

[0021] Once the covering or sealing sheet is arranged with the article inserted above the laying plane defined by base 1 and by extension 5, the excess sheet ends are inserted into space 13 while the article is positioned against the front of crosspiece 12. By pressing the electric button 20 (or alternatively by acting on a pedal-operated electric control), the electric circuitry 10 controls the motor 9 to operate the winding the metallic cable 22 on the capstan 21 with subsequent approaching action by the sides 11, and hence by the complete upper part 3, to the lower base 1.

[0022] Then the electrically warmed soldering blade 7 engages the counter-blade 14 with interposed excess ends of the covering sheet of the article thus inducing the soldering of the ends along the edge of the article.

[0023] Right after, with deactivated electric resistance, the electric motor 8 controls the rubber roller 15 to operate together with the cooperating roller 18 to remove the plastic sheet ends exceeding the soldering line.

Claims

1. Machine for covering book covers and sealing envelopes or articles of various kind, comprising a fixed lower base (1) suitable for laying a sheet of flexible plastic material, single or winding from a roll, for an article to be covered, an upper part (3) movable towards said base (1) and a heatable blade (7) housed in said upper part (3) to execute the soldering of the overlapped ends of the plastic material sheet along the edges of said article when said upper part (3) is approached to said lower base (1), said machine comprising an electric motor (9), a control member (20) accessible from the outside of the machine for operating said electric motor (9) and movement transmission means (21-26) acting on the sides (11) of said upper part (3) to cause at every activation of said electric motor (9) determined by said control member (20) an approaching movement of said upper part (3) to said lower base (1) for executing the soldering of the ends of the plastic material sheet.

2. Machine according to claim 1, characterized in that said movement transmission means (21-26) comprise a small capstan (21) housed in one side (11) of said upper part (3) and driven by said electric motor (9), a metallic cable (22) windable on said small capstan (21) and transmission elements (24-25) housed in said lower base (1) to connect said metallic cable (22) to the other side (11) of said upper part (3) through a passage (27) inside said lower base (1).

Patentansprüche

1. Maschine zum Umhüllen von Bucheinbänden und Versiegeln von Umschlügen oder Artikeln verschiedener Art, mit einer feststehenden unteren Basis (1), auf der eine Lage eines flexiblen Kunststoffmaterials einzeln oder abgerollt von einer Rolle für einen zu umhüllenden Artikel ausgelegt werden kann, einem zur Basis (1) hin beweglichen oberen Teil (3) und einer im oberen Teil (3) aufgenommenen beheizbaren Klinge (7) zum Ausführen eines Schweißvorgangs der sich überlappenden Enden der Kunststoffmateriallage entlang den Rändern des Artikels, wenn das obere Teil (3) der unteren Basis (1) angenähert wird, wobei die Maschine aufweist:

   einen Elektromotor (9);
   ein von außerhalb der Maschine zugängliches Steuerelement (20) zum Bedienen des Motors (9); und
   eine Bewegungsübertragungseinrichtung (21 - 26), die auf die Seiten (11) des oberen Teils (3) einwirkt, um bei jeder durch das Steuerelement (2) bestimmten Aktivierung des Elektromotors (9) eine Annäherungsbewegung des oberen Teils (3) zur unteren Basis (1) zu veranlassen, um den Schweißvorgang der Enden der Kunststoffmateriallage auszuführen.

2. Maschine nach Anspruch 1, dadurch gekennzeichnet, dass die Bewegungsübertragungseinrichtung (21 - 26) aufweist: eine kleine Antriebsrolle (21), die in einer Seite (11) des oberen Teils (3) angeordnet...
ist und durch den Elektromotor (9) angetrieben wird, ein auf die kleine Antriebsrolle (21) aufrollbares Metallkabel (22) und in der unteren Basis (1) aufgenommene Übertragungselemente (24-25) zum Verbinden des Metallkabels (22) mit der anderen Seite (11) des oberen Teils (3) über einen Durchlass (27) im Inneren der unteren Basis (1).

Revendications

1. Machine destinée à recouvrir des couvertures de livres et à sceller des enveloppes ou articles de toute sorte, comprenant une base inférieure fixe (1) adaptée au couchage d’une feuille de matière plastique souple, volante ou déroulée d’un rouleau, pour un article devant être recouvert, une partie supérieure (3) apte à être déplacée vers ladite base (1) et une lame pouvant être chauffée (7) logée dans ladite partie supérieure (3) pour réaliser le soudage des extrémités en chevauchement de la feuille de matière plastique le long des bords dudit article lorsque ladite partie supérieure (3) est approchée de ladite base inférieure (1), ladite machine comprenant un moteur électrique (9), un organe de commande (20) accessible depuis l’extérieur de la machine pour actionner ledit moteur électrique (9) et des moyens de transmission de mouvement (21 à 26) agissant sur les côtés (11) de ladite partie supérieure (3) afin de provoquer, à chaque actionnement dudit moteur électrique (9) déterminé par ledit organe de commande (20), un mouvement d’approche de ladite partie supérieure (3) en direction de ladite base inférieure (1) afin de réaliser le soudage des extrémités de la feuille de matière plastique.

2. Machine selon la revendication 1, caractérisée en ce que ledits moyens de transmission de mouvement (21 à 26) comprennent un petit cabestan (21) logé dans un côté (11) de ladite partie supérieure (3) et entraîné par ledit moteur électrique (9), un câble métallique (22) pouvant être enroulé sur ledit petit cabestan (21) et des éléments de transmission (24-25) logés dans ladite base inférieure (1) afin de relier ledit câble métallique (22) à l’autre côté (11) de ladite partie supérieure (3) par le biais d’un passage (27) à l’intérieur de ladite base inférieure (1).
REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1404528 B1 [0002]
- US 3869842 A [0005] [0009]
- US 3479485 A [0006]
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