Claims.

1.- Laminating device for affixing a film (41) on a substrate (42) whereby the film (41) and/or the substrate (42) are provided with a coat of hot-melt adhesive, whereby the laminating device (1) is provided with:

- a base (3) and a plate (8) that is movable vertically with respect to the base (2) and which together with the base (2) forms a space (9) in which the substrate (42), together with the film (41) to be laminated affixed against it, can be introduced;
- means to lift the plate (8) upwards and lower it again to a rest position in which the plate (8) can rest on a substrate (42) with a film (41) to be laminated that is in the space between the plate (8) and the base (3);
- a heating element (25) for heating the plate (8) and/or the base (3) to a temperature that is above the melting temperature of the hot-melt adhesive; and
- an input and output (34) for the entry and exit of the substrate (42) together with the film (41) to be laminated to and from the space (9) between the base (3) and the plate (8),

characterised in that it is provided with a U-shaped slot (52), formed by a base element (8) and two wall elements (53), whereby the base element (8) and/or the wall elements (53) are arranged to be heated.

2.- Laminating device according to claim 1, characterised in that the base element is formed by the plate (8),

whereby the laminating device (1) is equipped with a heating element (25) for heating the plate (8)

3.- Laminating device according to claim 4, characterised in that the wall elements (53) are arranged to be heated by being made of a material that is a good thermal conductor, such as aluminium, and by being in thermal contact with the plate (8).

4.- Laminating device according to any one of the claims 1 to 3, characterised in that at least one of the wall elements (53) can be moved in a direction away from the other wall element (53) and back to thereby change the width of the slot (52).

5.- Laminating device according to claim 4, characterised in that it is provided with a compression spring (55) in order to push a movable wall element (53) in the direction of the other wall element (53).

6.- Laminating device according to any one of the previous claims, characterised in that the plate (8) is large enough to completely cover the substrate (42).

7.- Laminating device according to any one of the previous claims, characterised in that it is provided with a pressure roller (28) mounted at the output (34) that can be moved vertically with respect to the base (3), and pressure means (32) that push the pressure roller (28) in the direction of the base (3) and which, during the exit of the

substrate (42) with the film (41) to be laminated press the film (41) and the substrate (42) against one another.

8.- Laminating device according to claim 7, characterised in that the pressure roller (28) can move vertically independently of the plate (8).

9.- Laminating device according to claim 7 or 8, characterised in that it is provided with means that enable the height of the top surface of the substrate (42) with the film (41) to be laminated to be adjusted or set at a desired level of the underside of the pressure roller (28).

10.- Laminating device according to any one of the previous claims, characterised in that it is provided with a slide (35) for the entry and exit of the substrate (42) and the film (41) to be laminated.

11.- Laminating device according to claim 10, characterised in that the slide (35) is provided with at least two upright ribs (38-39) at a distance (C) from one another that demarcate a space (40) in which the substrate (42) with the film (41) can be introduced, whereby the aforementioned distance (C) is equal to or somewhat greater than the length (D) of the plate (8) measured in the entry direction of the plate (8).

12.- Laminating device according to claim 9 and claim 11, characterised in that the means that enable the height of the top surface of the substrate (42) with the film (41) to be laminated to be adjusted and set at a desired level with

respect to the level of the underside of the pressure roller (28) are formed by a set of thickness plates (43) that pass between the ribs (38-39) of the slide (35).

13.- Laminating device according to claim 11 or 12, characterised in that the height of at least one of the ribs (38-39) of the slide is a gauge for the height adjustment of the top surface of the substrate (42) with the film (41) to be laminated.

14.- Laminating device according to claim 13 and any one of the claims 7 to 9, characterised in that the height of the aforementioned rib (38-39) is such that when the rib (38-39) concerned comes under the pressure roller (28) when sliding the slide (35), this pressure roller (28) is pushed upwards.

15.- Laminating device according to any one of the previous claims, characterised in that it is provided with a housing (2) with the said base (3).

16.- Laminating device according to any one of the previous claims, characterised in that the plate (8) is manufactured from a thermally conductive material and is provided with one or more heating elements (25).

17.- Laminating device according to any one of the previous claims, characterised in that the base (3) is not heated.

18.- Laminating device according to any one of the previous claims, characterised in that the input and output (34) are

together formed by the gap between the base (3) and the pressure roller (28).

19.- Use of a laminating device (1) according to any one of the previous claims for manufacturing a binding cover for binding a bundle of leaves by attaching an outer covering (41) on an element (45) for manufacturing such a binding cover whereby, in places where an attachment of the outer covering (41) to the element (45) is desired, the outside of the element (45) and/or the outer covering (41) is provided with a coat of hot-melt adhesive.

20.- Use according to claim 19, characterised in that the substrate (42) is rigid.

21.- Use according to claim 19 or 20 of a laminating device (1) according to any one of the claims 1 to 5, whereby the element (45) for manufacturing a binding cover is provided with a U-shaped back (46), whereby the outer covering (41) is attached to the back (46) by the outer covering (41) being affixed over the back (46) and then the back (46) with the outer covering (41) affixed thereon being placed in the slot (52).

figures 6 to 10 illustrate the use of a laminating device according to the invention during successive steps of the use.

Figure 11 shows an alternative embodiment of the laminating device according to the invention, according to a view as in figure 1;

Figure 12 shows a side view according to F12 of the part of the laminating device of figure 11 during use, and with a component removed; and

Figure 13 shows the part of figure 12 indicated by F13 on a larger scale.

The laminating device 1 shown in figure 1 comprises a housing 2 consisting of a base 3 with two opposite upright side walls 4 connected by a back wall 5 and of a cap 6 that is provided with an opening 7 through which the materials to be laminated can be put in and taken out.

In the housing 2 at a distance above the base there is a plate 8 of a thermally conductive material, for example aluminium, and this plate has a certain thickness of one to a few centimetres and can move vertically to provide space 9 for the introduction of a substrate with a film to be laminated.

In this case the plate 8 can be adjusted vertically by means of a lever mechanism 10 that comprises a lever 11 on either side edge of the plate 8, whereby each lever 11 is hingeably mounted on bearings by means of a shaft 12 in an opposite side wall 4 and whereby the lever 11, as shown in

Claims

1.- Laminating device for affixing a film (41) on a substrate (42) whereby the film (41) and/or the substrate (42) are provided with a coat of hot-melt adhesive, whereby the laminating device (1) is provided with:

- a base (3) and a plate (8) that is movable vertically with respect to the base (3) and which together with the base (2) forms a space (9) in which the substrate (42), together with the film (41) to be laminated affixed against it, can be introduced;
- means to lift the plate (8) upwards and lower it again to a rest position which is not in contact with the base (3) but in which the plate (8) can rest on a substrate (42) with a film (41) to be laminated that is in the space between the plate (8) and the base (3);
- a heating element (25) for heating the plate (8) and/or the base (3); and
- an input and output (34) for the entry and exit of the substrate (42) together with the film (41) to be laminated to and from the space (9) between the base (3) and the plate (8),

characterised in that it is provided with a U-shaped slot (52), formed by a base element (8) and two wall elements (53), whereby the base element (8) and/or the wall elements (53) are arranged to be heated.

2.- Laminating device according to claim 1, characterised in that the base element is formed by the plate (8),

whereby the laminating device (1) is equipped with a heating element (25) for heating the plate (8)

3.- Laminating device according to claim 4, characterised in that the wall elements (53) are arranged to be heated by being made of a material that is a good thermal conductor, such as aluminium, and by being in thermal contact with the plate (8).

4.- Laminating device according to any one of the claims 1 to 3, characterised in that at least one of the wall elements (53) can be moved in a direction away from the other wall element (53) and back to thereby change the width of the slot (52).

5.- Laminating device according to claim 4, characterised in that it is provided with a compression spring (55) in order to push a movable wall element (53) in the direction of the other wall element (53).

6.- Laminating device according to any one of the previous claims, characterised in that the plate (8) is large enough to completely cover the substrate (42).

7.- Laminating device according to any one of the previous claims, characterised in that it is provided with a pressure roller (28) mounted at the output (34) that can be moved vertically with respect to the base (3), and pressure means (32) that push the pressure roller (28) in the direction of the base (3) and which, during the exit of the

substrate (42) with the film (41) to be laminated press the film (41) and the substrate (42) against one another.

8.- Laminating device according to claim 7, characterised in that the pressure roller (28) can move vertically independently of the plate (8).

9.- Laminating device according to claim 7 or 8, characterised in that it is provided with means that enable the height of the top surface of the substrate (42) with the film (41) to be laminated to be adjusted or set at a desired level of the underside of the pressure roller (28).

10.- Laminating device according to any one of the previous claims, characterised in that it is provided with a slide (35) for the entry and exit of the substrate (42) and the film (41) to be laminated.

11.- Laminating device according to claim 10, characterised in that the slide (35) is provided with at least two upright ribs (38-39) at a distance (C) from one another that demarcate a space (40) in which the substrate (42) with the film (41) can be introduced, whereby the aforementioned distance (C) is equal to or somewhat greater than the length (D) of the plate (8) measured in the entry direction of the plate (8).

12.- Laminating device according to claim 9 and claim 11, characterised in that the means that enable the height of the top surface of the substrate (42) with the film (41) to be laminated to be adjusted and set at a desired level with

respect to the level of the underside of the pressure roller (28) are formed by a set of thickness plates (43) that pass between the ribs (38-39) of the slide (35).

13.- Laminating device according to claim 11 or 12, characterised in that the height of at least one of the ribs (38-39) of the slide is a gauge for the height adjustment of the top surface of the substrate (42) with the film (41) to be laminated.

14.- Laminating device according to claim 13 and any one of the claims 7 to 9, characterised in that the height of the aforementioned rib (38-39) is such that when the rib (38-39) concerned comes under the pressure roller (28) when sliding the slide (35), this pressure roller (28) is pushed upwards.

15.- Laminating device according to any one of the previous claims, characterised in that it is provided with a housing (2) with the said base (3).

16.- Laminating device according to any one of the previous claims, characterised in that the plate (8) is manufactured from a thermally conductive material and is provided with one or more heating elements (25).

17.- Laminating device according to any one of the previous claims, characterised in that the base (3) is not provided with a heating element.

18.- Laminating device according to any one of the previous claims, characterised in that the input and output (34) are together formed by the gap between the base (3) and the pressure roller (28).

19.- Use of a laminating device (1) according to any one of the previous claims for manufacturing a binding cover for binding a bundle of leaves by attaching an outer covering (41) on an element (45) for manufacturing such a binding cover whereby, in places where an attachment of the outer covering (41) to the element (45) is desired, the outside of the element (45) and/or the outer covering (41) is provided with a coat of hot-melt adhesive.

20.- Use according to claim 19, characterised in that the substrate (42) is rigid.

21.- Use according to claim 19 or 20 of a laminating device (1) according to any one of the claims 1 to 5, whereby the element (45) for manufacturing a binding cover is provided with a U-shaped back (46), whereby the outer covering (41) is attached to the back (46) by the outer covering (41) being affixed over the back (46) and then the back (46) with the outer covering (41) affixed thereon being placed in the slot (52).