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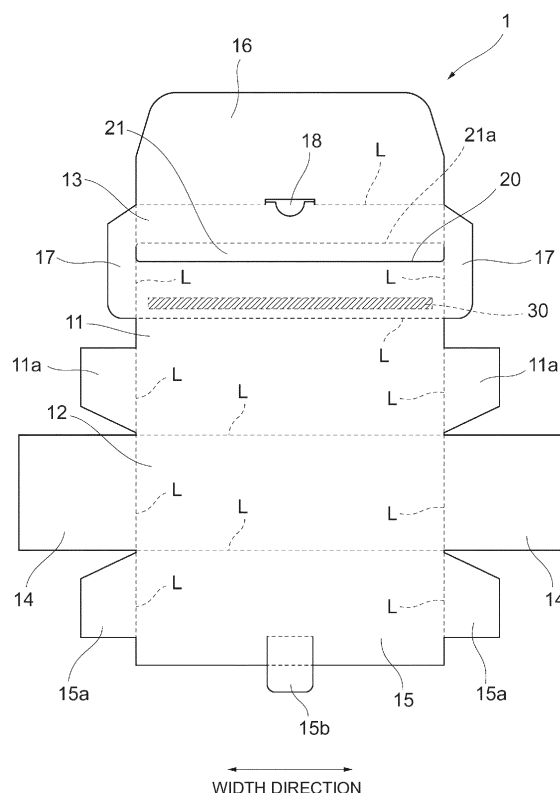
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(54) **FILM STORAGE CONTAINER, FILM, FILM ROLL, AND FILM STORAGE BODY**

(57) A film storage container is provided such that it is possible to handle the container extremely safely, eliminate the burden of sorting in a case where the container is disposed of as waste, and reduce the effort and cost of manufacture. Also provided is a film that is not cut from an end even when tension is applied thereto while enabling a user to start cutting the film stably with a small motion. The film storage container is provided with a container main body that has a storage space for storing a film roll therein and a pull-out opening that is formed in at least a part of the container main body in order to pull the film to the outside of the container main body from the roll stored in the storage space. The container main body has a top plate, a front plate, a bottom plate, a pair of side plates, and a rear plate. A protruding piece for fixing the top plate is inserted into a space inside a main body part formed by the front plate, the bottom plate, the side plates, and the rear plate. The film is provided with a cutting-starting point part that extends in a predetermined flow direction and is provided in a part other than an end part in a width direction that is substantially orthogonal to the flow direction.

FIG. 2



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Description

Patent Document 5: Japanese Patent Application
Laid-Open No. 2014-141262

Technical Field

[0001] The present invention relates to a film storage container, a film, a film roll, and a film storage body.

Background Art

[0002] Film storage containers have been proposed to store a roll formed by winding a wrap film for food packaging, aluminum foil, a cooking sheet, a film for printing/plate making, or the like (hereinafter, collectively referred to as "film") (for example, see Patent Documents 1 and 2).

[0003] As described in Patent Documents 1 and 2, conventional film storage containers are provided with a blade or a sliding cutter for cutting a pulled film, and thus there is still a possibility that a user may be injured by the blade or the sliding cutter. In addition, since the blade or the sliding cutter is made of a material (metal or synthetic resin) different from that of the storage container, sorting is required in a case where the container is disposed of as waste. Moreover, in order to produce such a conventional film storage container, an operation of separately making and attaching a blade or a sliding cutter to a container main body is required, and thus a great effort and cost are required.

[0004] Accordingly, nowadays, techniques of cutting a film without using a blade or the like by providing fine cuts (for example, having a length of approximately 1 mm) at an end part in a width direction of the film and placing the cuts at set intervals in a flow direction are proposed (see Patent Document 3). In addition, in recent years, techniques of exhibiting good cuttability without a cutting tool such as saw teeth by providing specific recessed parts or cuts in a container main body or a lid body of a film storage box and by performing knurling or the like on an end part in a width direction of a film have been proposed (see Patent Documents 4 and 5).

Citation List**Patent Document****[0005]**

Patent Document 1: Japanese Patent Application
Laid-Open No. 2010-247873

Patent Document 2: Japanese Patent Application
Laid-Open No. 03-288845

Patent Document 3: European Patent Publication
No. 1270437

Patent Document 4: Pamphlet of International Publication
No. 2012/157711

Summary**Technical Problem**

[0006] However, there are still the following problems even in a case where the above-described techniques are employed. First, in order to cut a film, having cuts or the like formed at an end part thereof in a width direction, by hand, it is necessary for a user to greatly twist a user's wrist (that is, a large motion is required for cutting). In addition, in a case where cuts or the like are formed at an end part in a width direction of a film, an unexpected situation may occur such as cutting of the film from the end part in the width direction when tension is applied to the film. Furthermore, in a case where cuts or the like are formed at an end part in a width direction of a film, the end part in the width direction of the film may deform when tension is applied thereto, and thus cutting may not be stably started.

[0007] The invention is contrived in view of such circumstances, and an object thereof is to provide a film storage container such that it is possible to handle the container extremely safely, eliminate the burden of sorting in a case where the container is disposed of as waste, and reduce the effort and cost of manufacture. Another object of the invention is to provide a film that is not cut from an end even when tension is applied thereto while enabling a user to start cutting the film stably with a small motion.

Solution to Problem

[0008] In order to achieve the objects, a film storage container according to the invention includes: a container main body that has a storage space for storing a film roll therein; and a pull-out opening that is formed in the container main body in order to pull a film of the roll stored in the storage space to the outside of the container main body, the film is torn in a width direction that is substantially orthogonal to a direction of the pulling from the pull-out opening in a case where a tearing force is applied thereto, the container main body has a top plate, a front plate, a bottom plate, a pair of side plates, and a rear plate, a protruding piece for fixing the top plate is inserted into a space inside a main body part formed by the front plate, the bottom plate, the side plates, and the rear plate, and the pull-out opening is formed in the top plate. Here, a cut part may be formed in the top plate, and the protruding piece may be inserted into the cut part. The film may not be necessarily provided with the cutting-starting point part.

[0009] In a case where such a configuration is employed, it is possible to fix the top plate with respect to the main body part (formed by the front plate, the bottom plate, the pair of side plates, and the rear plate) in a case

where the film is pulled from the pull-out opening formed in the top plate of the container main body. Accordingly, it is possible to prevent rise of the top plate when the film is pulled. In addition, it is possible to prevent sinking of the top plate associated with the use for a long period of time.

[0010] In the film storage container according to the invention, a container main body formed in a substantially rectangular parallelepiped shape may be employed, and a pull-out opening may be formed to extend in the width direction in one of the six surfaces of the container main body. In addition, a temporary holding part may be employed to make an adhesive force or a frictional force act on the film pulled to the outside of the container main body from the pull-out opening so as to temporarily hold the film. In such a case, the temporary holding part may be formed to extend in the width direction near the pull-out opening in one surface of the container main body.

[0011] In a case where such a configuration is employed, it is possible to temporarily hold the film by making an adhesive force or a frictional force act on the film pulled to the outside of the container main body from the pull-out opening by the temporary holding part (the pulling-out of the film from the pull-out opening is temporarily suppressed). In addition, in that state, by applying a tearing force to a part on a downstream side of the part on which the adhesive force or the frictional force acts in the film, it is possible to tear the film in the width direction (in a direction that is substantially orthogonal to the pull-out direction). Accordingly, since it is possible to easily tear the film in the width direction by hand without using a blade or a sliding cutter for cutting the film, it is possible to handle the container extremely safely, eliminate the burden of sorting in a case where the container is disposed of as waste, and reduce the effort and cost of manufacture of the container. Furthermore, near the pull-out opening, it is possible to make an adhesive force or a frictional force act on the film pulled from the pull-out opening formed in one surface of the substantially rectangular parallelepiped-shaped container main body. Accordingly, it is possible to apply a tearing force to the film in a state in which the pull-out direction is not shifted without loosening or distortion, and thus it is possible to clearly tear the film.

[0012] In the film storage container according to the invention, as the temporary holding part, an adhesive part may be employed to make an adhesive force act on the film pulled to the outside of the container main body from the pull-out opening. In this case, an adhesive part formed of a varnish coating layer or a double-faced tape may be employed.

[0013] In a case where such a configuration is employed, it is possible to make an adhesive force act on the film pulled to the outside of the container main body from the pull-out opening by the adhesive part (temporary holding part) formed of a varnish coating layer or a double-faced tape.

[0014] In the film storage container according to the

invention, as the temporary holding part, a friction part may be employed to make a frictional force act on the film pulled to the outside of the container main body from the pull-out opening. In this case, a friction part formed of a rubber material may be employed.

[0015] In a case where such a configuration is employed, it is possible to make a frictional force act on the film pulled to the outside of the container main body from the pull-out opening by the friction part (temporary holding part) formed of a rubber material.

[0016] A film according to the invention includes a cutting-starting point part that extends in a predetermined flow direction and is provided in a part other than an end part in a width direction that is substantially orthogonal to the flow direction.

[0017] In a case where such a configuration is employed, since the cutting-starting point part is provided in a part other than the end part in the width direction of the film, it is possible to easily cut the film by hand. In order to cut a film having a cutting-starting point part formed at an end part in a width direction by hand, it is necessary to greatly twist a wrist (that is, a large motion is required for cutting). However, in a case where a film having a cutting-starting point part formed in a part other than an end part in a width direction as in the invention is employed, it is possible to cut the film with a relatively small motion. In addition, in a case where a cutting-starting point part is formed at an end part in a width direction of a film, an unexpected situation may occur such as cutting of the film from the end part in the width direction when tension is applied to the film. However, in a case where a cutting-starting point part is formed in a part other than an end part in a width direction of a film as in the invention, it is possible to prevent the occurrence of such a situation. In addition, in a case where a cutting-starting point part is formed at an end part in a width direction of a film, the end part in the width direction of the film may deform and may not function as a cutting-starting point part when tension is applied thereto. However, in a case where a cutting-starting point part is formed in a part other than an end part in a width direction of a film as in the invention, it is possible to stably start the cutting due to little deformation of the cutting-starting point part even when tension is applied.

[0018] In the film according to the invention, gel fraction may be set to 10 to 60 wt%.

[0019] In a case where such a configuration is employed, the film is easily cut with a small force of a finger or the like.

[0020] In the film according to the invention, at least one perforation may be employed as the cutting-starting point part. In addition, a part subjected to embossing may be employed as the cutting-starting point part. The cutting-starting point part may be continuously provided in the flow direction near the end part in the width direction or in a substantially central part in the width direction. Particularly, the cutting-starting point part may be provided inside the end part in the width direction by 25 mm or

greater (a position where a through mark is easily formed in the film by poking with a finger).

[0021] The invention also provides a film roll that is formed by winding the film.

[0022] The invention also provides a film storage body including: the film roll; and a container main body that has a storage space for storing the film roll therein.

[0023] In the film storage body according to the invention, the container main body may have a protrusion for assisting the cutting of the film of the film roll. In such a case, a container main body that has a rectangular parallelepiped-shaped storage chamber with an opened upper part that is formed by wall surfaces including a front plate, a bottom plate, a rear plate, and side plates, and a lid body that is formed by wall surfaces including a lid plate that is provided to be connected in such a direction as to cover the storage chamber from an upper edge of the rear plate, a covering lid piece that extends in such a direction as to cover the front plate from a front edge of the lid plate, and side covering lid pieces that are provided on both sides of the covering lid piece may be employed, and the protrusion may be provided at a tip edge part of the covering lid piece.

[0024] In the film storage body according to the invention, the container main body may not have a protrusion for assisting the cutting of the film of the film roll. In such a case, a container main body that has a pull-out opening that is formed in at least a part of the container main body in order to pull a film of the roll stored in the storage space to the outside of the container main body, and a temporary holding part that temporarily holds the film by making an adhesive force or a frictional force act on the film pulled to the outside of the container main body from the pull-out opening may be employed. The film is preferably torn in a width direction that is substantially orthogonal to a flow direction as a pull-out direction from the pull-out opening in a case where a cutting force is applied from the cutting-starting point part as a starting point.

Advantageous Effects of Invention

[0025] According to the invention, it is possible to provide a film storage container such that it is possible to handle the container extremely safely, eliminate the burden of sorting in a case where the container is disposed of as waste, and reduce the effort and cost of manufacture. According to the invention, it is also possible to provide a film that is not cut from an end even when tension is applied thereto while enabling a user to start cutting the film stably with a small motion.

Brief Description of Drawings

[0026]

Fig. 1 is a diagram for explaining a configuration of a film according to an embodiment of the invention.

Fig. 2 is a development view of a film storage container according to the embodiment of the invention.

Fig. 3 is a perspective view of a film storage body according to the embodiment of the invention.

Fig. 4 is a diagram for explaining a protruding piece of the film storage container according to the embodiment of the invention.

Fig. 5 is a diagram for explaining a modification example of the protruding piece of the film storage container according to the embodiment of the invention.

Fig. 6 is a diagram for explaining a method of using the film storage body according to the embodiment of the invention.

Fig. 7 is a diagram for explaining a configuration of a film according to another embodiment of the invention.

Fig. 8 is a diagram for explaining a configuration of a film according to still another embodiment of the invention.

Fig. 9 is a diagram for explaining a configuration of a container main body of a film storage body according to still another embodiment of the invention.

Fig. 10 is a diagram for explaining a configuration of a protrusion of a container main body of a film storage body according to still another embodiment of the invention.

Fig. 11 is a diagram for explaining a configuration of a film storage body according to still another embodiment of the invention.

Fig. 12 is a diagram for explaining a configuration of a film storage body according to still another embodiment of the invention.

Description of Embodiments

[0027] Hereinafter, embodiments of the invention will be described with reference to the drawings. The following embodiments are just preferable examples, and not intended to limit the application scope of the invention.

[0028] First, using Fig. 1, a configuration of a film F according to an embodiment will be described. The film F extends in a predetermined flow direction, and has a cutting-starting point part S provided in a part other than an end part in a width direction that is substantially orthogonal to the flow direction. The film F is torn in the width direction in a case where a cutting force is applied thereto from the cutting-starting point part S as a starting point.

[0029] The cutting-starting point part S is a weaker part than a part therearound, and thus serves as a starting point of cutting. In this embodiment, as illustrated in Fig. 1, a cutting-starting point part S having a predetermined width is formed by continuously forming perforations (through-holes) H in the flow direction near an end part in the width direction of the film F. In a case where the cutting-starting point part S is disposed near the end part in the width direction of the film F as described above, the cutting-starting point part S is more likely to be in contact with a container, and thus it is possible to reduce an influence on drying of the content (for example, food). In a case where a total length in the width direction of the film F is 30 cm, an interval W between the end part in the width direction of the film F and the (central part of) cutting-starting point part S disposed near the end part in the width direction of the film F is preferably set to 25 mm or greater (for example, 30 to 40 mm) since a through mark is easily formed in the film F by poking the film with a finger.

[0030] The perforations H may be formed by cutting with a knife, punching with a heated needle, laser processing, or the like. The width of the cutting-starting point part S is preferably 30 mm or less, and more preferably 10 mm or less. In place of the through-holes, non-through-holes (recessed parts) may be formed.

[0031] As the film F, a wrap film for food packaging that includes a polyolefin-based resin subjected to specific stretching or a specific crosslinking treatment may be employed. The polyolefin-based resin is not particularly limited, and examples thereof include homopolymers of olefins or copolymers of two or more types of olefins such as polyethylene, polypropylene, polybutene, and poly(4-methylpentene), and copolymers of one or more types of olefins and a different type of component other than the olefins. The polyolefin-based resins may be used singly or in combination of two or more types.

[0032] In a case where X-ray scattering is measured, a film F satisfying the following conditions is preferably employed since it is possible to cut the film with high linearity.

[0033] That is, in an azimuthal distribution profile of a scattering intensity at a scattering angle 2θ of 20.9° to 21.8° when X-rays with a wavelength of 0.154 nm are allowed to enter in a normal line direction of the film to measure transmission wide angle X-ray scattering, it is preferable that (i) the azimuthal distribution profile has four scattering peaks, (ii) an interval between neighboring scattering peaks of the four scattering peaks is $90^\circ \pm 10^\circ$, (iii) an alignment component ratio R is 0.01 to 100, and (iv) an average area of the four scattering peaks is 1 to 89. The "normal line direction of the film" is a direction perpendicular to a tangential plane at a point in a surface of the film F.

[0034] The transmission wide angle X-ray scattering of the film F may be measured through the following method. First, X-rays with a wavelength of 0.154 nm are allowed to enter in the normal line direction of the film F

to measure the transmission wide angle X-ray scattering. In this case, a two-dimensional detector is used. In this measurement, air scattering correction is performed. Next, at a scattering angle (2θ) of 20.9° to 21.8° , a scattering intensity profile is obtained with respect to an azimuth ϕ . In this case, the scattering intensity is standardized by Formula (1).

$$I'(\phi) = I(\phi) \times 360 / \int_0^{360} I(\phi) d\phi \quad (1)$$

Here, $I(\phi)$ represents an actually measured scattering intensity, and $I'(\phi)$ represents a standardized scattering intensity.

[0035] The azimuthal distribution profile preferably has four scattering peaks. Intervals between the four scattering peaks are preferably $90^\circ \pm 10^\circ$, more preferably $90^\circ \pm 8^\circ$, and even more preferably $90^\circ \pm 5^\circ$.

[0036] The four scattering peaks are denoted by A, B, C, and D in ascending order of azimuth, and scattering peak areas thereof are denoted by SA, SB, SC, and SD. In a case where a scattering peak is partially shown near an azimuth of 0° , the sum of areas of scattering peaks partially shown near 0° and 359° is denoted by SA. In this case, an area S of each scattering peak is defined by Formula (2).

$$S = \int_{\phi_1}^{\phi_2} I'(\phi) d\phi \quad (2)$$

Here, ϕ_1 and ϕ_2 are integral upper and lower limit values ($\phi_1 < \phi_2$). Further, ϕ at which $I'(\phi)$ is at a minimum value, holding each scattering peak therebetween, is used.

[0037] The alignment component ratio R is defined by Formula (3). The alignment component ratio R is preferably 0.01 to 100, more preferably 0.05 to 50, and even more preferably 0.1 to 10.

$$R = (SA + SC) / (SB + SD) \quad (3)$$

[0038] An average area S' of the four scattering peaks is defined by Formula (4). The average area S' is preferably 1 to 89, more preferably 10 to 79, and even more preferably 20 to 69.

$$S' = (SA + SB + SC + SD) / 4 \quad (4)$$

[0039] The gel fraction in the film F is preferably 10 to 60 wt% since the film is easily cut even with a small force of a finger or the like. The gel fraction is more preferably 15 to 50 wt%, and most preferably 25 to 40 wt%.

[0040] Next, a configuration of a film storage container 1 according to this embodiment will be described using Figs. 2 to 5.

[0041] The film storage container 1 according to this

embodiment is provided with a container main body 10 that has a storage space 10a for storing a film roll R (Fig. 3) formed by winding a film F therein, a pull-out opening 20 that is formed in the container main body 10, and a temporary holding part 30 that temporarily holds the film F pulled to the outside of the container main body 10 from the pull-out opening 20. As described above, the film F of the film roll R stored in the film storage container 1 is configured such that in a case where a cutting force is applied from a cutting-starting point part S as a starting point, the film is torn in a width direction (Fig. 6) that is substantially orthogonal to a direction of the pulling from the pull-out opening 20 (flow direction), and cuts are not formed at an end part in the width direction. A film storage body according to this embodiment includes the container main body 10 of the film storage container 1 and the film roll R.

[0042] The container main body 10 has a front plate 11, a bottom plate 12, a top plate 13, a pair of side plates 14, and a rear plate 15, and is formed in a substantially rectangular parallelepiped shape. As illustrated in Fig. 2, to both end parts of the front plate 11 in the width direction and both end parts of the rear plate 15 in the width direction, paste margin parts 11a and 15a are respectively connected that are pasted on inner surfaces of the side plates 14. As illustrated in Fig. 2, the top plate 13, the front plate 11, the bottom plate 12, and the rear plate 15 are connected in this order.

[0043] To an end part of the top plate 13 on a side opposite to the front plate 11, a rear inserting piece 16 is connected that is inserted to overlap with an inner surface of the rear plate 15. In addition, to both end parts of the top plate 13 in the width direction, side inserting pieces 17 are connected that are inserted to overlap with the inner surfaces of the side plates 14. A cut part 18 into which a protruding piece 15b provided in the rear plate 15 is inserted is formed in a substantially central part in the width direction of a border line L between the top plate 13 and the rear inserting piece 16.

[0044] Mountain folding is performed along the respective border lines L illustrated by broken lines in Fig. 2, and the paste margin parts 11a and 15a of the front plate 11 and the rear plate 15 are pasted on the inner surfaces of the side plates 14 to form a main body part. The rear inserting piece 16 and the side inserting pieces 17 are inserted into a space inside the main body part to overlap with the inner surfaces of the rear plate 15 and the side plates 14, and the protruding piece 15b is inserted into the cut part 18 as illustrated in Fig. 4 to form the container main body 10 (Fig. 3) having a substantially rectangular parallelepiped shape. The protruding piece 15b and the cut part 18 form a mechanism for preventing rise of the top plate 13 from the main body part when the film F is pulled from the pull-out opening 20, and also preventing sinking of the top plate 13 associated with the use for a long period of time. In this embodiment, the container main body 10 is not provided with a protrusion for assisting the cutting of the film F of the film roll R.

[0045] In this embodiment, an example has been shown in which one cut part 18 is provided in a substantially central part in the width direction of the border line L between the top plate 13 and the rear inserting piece 16, and the protruding piece 15b corresponding thereto is provided in the rear plate 15. However, the positions and numbers of the cut part and the protruding piece are not limited thereto. For example, as illustrated in Fig. 5, cut parts 18 may be provided at border lines between a top plate 13 and a pair of side inserting pieces 17, respectively, and protruding pieces 14a corresponding thereto may be provided in side plates 14, respectively.

[0046] The material of the container main body 10 is not particularly limited, and examples thereof include plastic, metal, wood, cardboard, paperboard, and combinations thereof. Among these, a cardboard having a thickness of 2 to 3 mm is preferably employed since it is possible to secure rigidity and strength even in a case where the container main body 10 has a relatively large size.

[0047] The pull-out opening 20 is formed to pull the film F of the film roll R stored in the storage space 10a of the container main body 10 to the outside of the container main body 10. In this embodiment, the pull-out opening 20 is formed to extend in the width direction in one (top plate 13) of the six surfaces of the container main body 10. In this embodiment, a belt-like bending part 21 that bends with a bending line 21a as a center as illustrated in Fig. 3 is formed by making a cut in the top plate 13 of the container main body 10, and the pull-out opening 20 is opened by bending the bending part 21 upward.

[0048] The temporary holding part 30 makes an adhesive force act on the film F pulled to the outside of the container main body 10 from the pull-out opening 20 to temporarily hold the film F. In this embodiment, as illustrated in Figs. 2 and 3, the temporary holding part 30 is formed to extend in the width direction near the pull-out opening 20 on one surface (top plate 13) of the container main body 10. In this embodiment, the temporary holding part 30 is an adhesive part that makes an adhesive force act on the film F pulled to the outside of the container main body 10 from the pull-out opening 20.

[0049] The adhesive part (temporary holding part 30) may be a part that makes an adhesive force act on the film F. For example, the adhesive part may be formed of a varnish coating layer formed by applying and drying crosslinkable curing varnish. As the crosslinkable curing varnish, for example, ultraviolet (UV) curing varnish may be employed. The type of the UV curing varnish is not particularly limited, and for example, a radical polymerization type, an addition polymerization type, a cationic polymerization type, or the like may be employed. In addition, the adhesive part may be formed using various adhesives such as acrylic adhesives and urethane-based adhesives (for example, a UV-crosslinking curable acrylic ester resin). One surface of a belt-like double-faced tape may be adhered to the top plate 13 of the container main body 10 to allow the other surface of the

double-faced tape to function as the adhesive part. A friction part that makes a frictional force act on the film F may be employed as the temporary holding part 30. The friction part may be formed of, for example, a rubber material.

[0050] Next, a method of using the film storage container 1 according to an embodiment of the invention (a method of cutting the film F) will be described using Fig. 6.

[0051] First, a user grips an end part in a pull-out direction of the film F of the film roll R stored in the storage space 10a of the container main body 10 of the film storage container 1 by hand, pulls a predetermined length of the film from the pull-out opening 20 formed in one surface (top plate 13) of the container main body 10, and makes an adhesive force act on a lower surface of the pulled film F by the temporary holding part 30 as illustrated in Fig. 6 to temporarily hold the film F. Accordingly, it is possible to temporarily suppress the pulling-out of the film F from the pull-out opening 20.

[0052] Next, in a state in which tension is applied to the film F by one hand, the user pokes a part of the cutting-starting point part S on a downstream side of the part on which the adhesive force acts in the film F with a finger of the other hand as illustrated in Fig. 6, to form a through mark. Accordingly, the film F is torn in the width direction from the through mark as a starting point.

[0053] In a case where a film having cuts at an end part in a width direction is employed, the film may be cut from the cuts as a starting point at the end part in the width direction when tension is applied thereto during the pulling-out of the film from the pull-out opening 20 or the temporary holding by the temporary holding part 30. In this embodiment, the film F is not cut from the cuts as a starting point at the end part in the width direction even when pull-out or temporary holding tension is applied thereto. In addition, in a case where a film having cuts at an end part in a width direction is employed, the film may be cut only from a place where the cuts are formed, and thus the amount of the film may not be freely determined. However, in this embodiment, the film F has advantages in that it is possible to freely determine a place where the film is to be torn (a location where a through mark is to be formed), and therefore it is possible to freely determine the amount of the film F.

[0054] In the above-described film storage container 1 according to the embodiment, it is possible to temporarily hold the film F pulled to the outside of the container main body 10 from the pull-out opening 20 by making an adhesive force act on the film F by the temporary holding part 30 (the pulling-out of the film F from the pull-out opening 20 is temporarily suppressed). In that state, by applying a tearing force to a part on a downstream side of the part on which the adhesive force acts in the film F, it is possible to tear the film F in the width direction. Accordingly, it is possible to tear the film F in the width direction by hand without using a blade or a sliding cutter for cutting the film F. Therefore, the film storage container 1 is handled extremely safely, and it is possible to elim-

inate the burden of sorting in a case where the container is disposed of as waste, and reduce the effort and cost of manufacture of the container.

[0055] In the above-described film storage container 1 according to the embodiment, near the pull-out opening 20, it is possible to make an adhesive force act on the film F pulled from the pull-out opening 20 formed in one surface (top plate 13) of the substantially rectangular parallelepiped-shaped container main body 10. Accordingly, it is possible to apply a tearing force to the film F in a state in which the pull-out direction is not shifted without loosening or distortion, and thus it is possible to clearly tear the film F.

[0056] In the above-described film storage container 1 according to the embodiment, in a case where the film F is pulled from the pull-out opening 20 formed in the top plate 13 of the container main body 10, it is possible to fix the top plate 13 to the main body part (formed by the front plate 11, the bottom plate 12, the side plates 14, and the rear plate 15). Accordingly, it is possible to prevent rise of the top plate 13 when the film F is pulled, and prevent sinking of the top plate 13 associated with the use for a long period of time. In addition, even in a case where the adhesive force acting on the film F by the temporary holding part 30 is relatively large, it is possible to prevent rise of the top plate 13. Therefore, since it is possible to employ a temporary holding part 30 having high adhesive strength, it is possible to clearly tear the film F by more securely bringing the temporary holding part 30 into close contact with the film F. In addition, it is possible to avoid a situation in which the adhesive force of the temporary holding part 30 is reduced and the film is not easily torn in a case where the container is repeatedly used.

[0057] In the above-described film F according to the embodiment, since the cutting-starting point part S is formed in a part other than an end part in a width direction (near the end part), it is possible to easily cut the film by hand. In order to cut a film having a cutting-starting point part formed at an end part in a width direction by hand, it is necessary to greatly twist a wrist (that is, a large motion is required for cutting). However, the film F having the cutting-starting point part S in a part other than an end part in a width direction as in this embodiment can be cut with a relatively small motion. In addition, in a case where a cutting-starting point part is formed at an end part in a width direction of a film, an unexpected situation may occur such as cutting of the film from the end part in the width direction when tension is applied to the film. However, in a case where the cutting-starting point part S is formed in a part other than the end part in the width direction of the film F as in this embodiment, it is possible to prevent the occurrence of such a situation. In addition, in a case where a cutting-starting point part is formed at an end part in a width direction of a film, the end part in the width direction of the film may deform and may not function as a cutting-starting point part when tension is applied thereto. However, in a case where the cutting-

starting point part S is formed in a part other than the end part in the width direction of the film F as in this embodiment, it is possible to stably start the cutting due to little deformation of the cutting-starting point part S even when tension is applied.

[0058] In the above-described embodiments, an example has been shown in which the cutting-starting point part S is formed by forming the perforations (through-holes) H. However, the configuration of the cutting-starting point part is not limited thereto. For example, as illustrated in Fig. 7, a cutting-starting point part S having a predetermined width may be formed by continuously performing embossing in a flow direction near an end part in a width direction of a film F. In a case where the cutting-starting point part S has a non-through structure as described above, it is possible to prevent a product (for example, food) that is covered with the film F from being dried.

[0059] In addition, scratches may be randomly generated in place of embossing. In this case, the depth of a scratch is preferably set to approximately 1 % to 50% of the thickness of the film F. In addition, a part that becomes weak by scraping with a file-like object may serve as a cutting-starting point part. Furthermore, by performing a chemical treatment or mechanical processing, a belt-like part that has a predetermined width and a set thickness and is thinner than the periphery thereof may be formed near the end part in the width direction of the film F, and this thin belt-like part may be allowed to serve as a cutting-starting point part.

[0060] In the above-described embodiments, an example has been shown in which the cutting-starting point part S is formed near the end part in the width direction of the film F, but a plurality of lines of cutting-starting point parts S (for example, three lines as illustrated in Fig. 8) may be formed.

[0061] In the above-described embodiments, an example has been shown in which the temporary holding part 30 is formed to temporarily hold the film F, in place of a protrusion for assisting the cutting of the film F in the container main body 10. However, the configuration of the container main body 10 is not limited thereto.

[0062] For example, as illustrated in Fig. 9, a container main body 10A having a rectangular parallelepiped-shaped storage chamber 20A with an opened upper part and a lid body 30A that covers the storage chamber 20A may be employed. The storage chamber 20A may be formed by wall surfaces including a front plate 21 A, a bottom plate 22A, a rear plate 23A, and side plates 24A. The lid body 30A may be formed by wall surfaces including a lid plate 31 A that is provided to be connected in such a direction as to cover the storage chamber 20A from an upper edge of the rear plate 23A, a covering lid piece 32A that extends in such a direction as to cover the front plate 21 A from a front edge of the lid plate 31 A, and side covering lid pieces 33A that are provided on both sides of the covering lid piece 32A. The container main body 10A may be provided with a protrusion for

assisting the cutting of the film F of the film roll R in place of the temporary holding part 30.

[0063] The material of the container main body 10A is not particularly limited, and examples thereof include plastic, metal, wood, cardboard, paperboard, and combinations thereof. Among these, a paperboard is preferable in view of ease of use. This paperboard has a thickness of 0.35 to 1.50 mm, and in general, the larger the thickness, the higher the rigidity, strength, and solidity of the container main body 10A. The thickness is more preferably 0.35 to 0.80 mm since bending processing is easily performed.

[0064] Examples of the shape of a protrusion P are illustrated in Figs. 10(a) to 10(g). A position where the protrusion P is to be attached is not particularly limited as long as it is possible to easily cut the film F. For example, the protrusion may be provided at a tip edge part of the covering lid piece 32A of the lid body 30A. The material of the protrusion P is not particularly limited, and examples thereof include ester-based polymers such as aromatic ester polymers and aliphatic ester polymers such as lactic acid-based polymers, polymeric materials such as ethylene-based polymers, propylene-based polymers, styrene-based polymers, and amide-based polymers, vulcanized paper, resin-impregnated hard paper, abrasive grains, abrasive grain fixing paper, and tin. Among these, lactic acid-based polymers are more preferable since these are of a circulating type and are eco-friendly.

[0065] In addition, the film storage container may be provided with both of the temporary holding part 30 and the protrusion P for assisting the cutting of the film F of the film roll R. For example, a film storage container 1 A obtained by slightly deforming the film storage container 1 illustrated in Figs. 3 and 4 (the pull-out opening 20 faces the protruding piece 15b, and the temporary holding part 30 is moved toward the protruding piece 15b: see Fig. 11) may be employed, and a protrusion P may be disposed at two places on the left and right of the protruding piece 15b. A tin saw blade having a length of approximately 2 to 4 cm may be employed as the protrusion P. For example, as illustrated in Fig. 11, a protrusion P may be disposed at two places on the left and right of the protruding piece 15b in a manner such that the protrusion P is fixed to two places on left and right sides in an upper end part of thick paper 40 having a cutout part 41 formed by cutting out a part corresponding to the protruding piece 15b, and the thick paper 40 is inserted into the film storage container 1A (between the plate 15 and the inserting piece 16).

[0066] In addition, as illustrated in Fig. 12, a film storage container 1 B may be employed in which cut parts 18 are provided at border lines between a top plate 13 and a pair of side inserting pieces 17, respectively, and protruding pieces 14a corresponding thereto are provided in side plates 14, respectively. In such a case, as illustrated in Fig. 12, a protrusion P (for example, a tin saw blade) may be disposed over the entire width of an

upper end part of a plate 15. In this case, as illustrated in Fig. 12, the protrusion P may be disposed over the entire width of the upper end part of the plate 15 in a manner such that the protrusion P is fixed to an upper end part of thick paper 50 having substantially the same shape as the plate 15, and the thick paper 50 is inserted into the film storage container 1 B (between the plate 15 and the inserting piece 16).

[0067] In the above-described embodiments, an example has been shown in which the invention is applied to a wrap film for food packaging, but the invention may be applied to films for other use (for example, films for medical use, agricultural use, or packing use). In a case where the invention is applied to films for the above-described three examples, the container main body 10 (10A) for storing the film roll R may be omitted.

[0068] The invention is not limited to the above-described embodiments, and appropriate modifications of the embodiments in design made by a person skilled in the art are also included in the scope of the invention as long as these have the characteristics of the invention. That is, the respective elements of the embodiments, and positions, materials, conditions, shapes, sizes, and the like thereof are not limited to the examples and may be appropriately modified. In addition, the respective elements of the embodiments may be combined as long as the combination is technically possible, and combinations of the elements are also included in the scope of the invention as long as these have the characteristics of the invention. Reference Signs List

[0069]

1, 1A, 1B: FILM STORAGE CONTAINER

10, 10A: CONTAINER MAIN BODY

10a: STORAGE SPACE

11: FRONT PLATE

12: BOTTOM PLATE

13: TOP PLATE (ONE SURFACE OF CONTAINER MAIN BODY)

14: SIDE PLATE

14a: PROTRUDING PIECE

15: REAR PLATE

15b: PROTRUDING PIECE

16: REAR INSERTING PIECE

18: CUT PART

20: PULL-OUT OPENING

20A: STORAGE CHAMBER

21 A: FRONT PLATE

22A: BOTTOM PLATE

23A: REAR PLATE

24A: SIDE PLATE

30: TEMPORARY HOLDING PART

30A: LID BODY

31 A: LID PLATE

32A: COVERING LID PIECE

33A: SIDE COVERING LID PIECE

F: FILM

H: PERFORATION

P: PROTRUSION

R: FILM ROLL

S: CUTTING-STARTING POINT PART

Claims

1. A film storage container comprising:

a container main body that has a storage space for storing a film roll therein;
and
a pull-out opening that is formed in the container main body in order to pull a film of the roll stored in the storage space to the outside of the container main body,
wherein the film is torn in a width direction that is substantially orthogonal to a direction of the pulling from the pull-out opening in a case where a tearing force is applied thereto,
the container main body has a top plate, a front plate, a bottom plate, a pair of side plates, and a rear plate,
a protruding piece for fixing the top plate is inserted into a space inside a main body part formed by the front plate, the bottom plate, the side plates, and the rear plate, and
the pull-out opening is formed in the top plate.

2. The film storage container according to claim 1, wherein:

the container main body is formed in a substantially rectangular parallelepiped shape,
the pull-out opening is formed to extend in the width direction in one of the six surfaces of the container main body,
a temporary holding part is provided to make an adhesive force or a frictional force act on the film pulled to the outside of the container main body from the pull-out opening so as to temporarily hold the film, and
the temporary holding part is formed to extend in the width direction near the pull-out opening in the one surface of the container main body.

3. The film storage container according to claim 2, wherein a cut part is formed in the top plate, and the protruding piece is inserted into the cut part.

4. The film storage container according to claim 2 or 3, wherein the temporary holding part is an adhesive part that makes an adhesive force act on the film pulled to the outside of the container main body from the pull-out opening.

5. The film storage container according to claim 4, wherein the adhesive part is formed of a varnish coat-

ing layer.

6. The film storage container according to claim 4, wherein the adhesive part is formed of a double-faced tape. 5
7. The film storage container according to claim 2 or 3, wherein the temporary holding part is a friction part that makes a frictional force act on the film pulled to the outside of the container main body from the pull-out opening. 10
8. The film storage container according to claim 7, wherein the friction part is formed of a rubber material. 15
9. A film comprising a cutting-starting point part that extends in a predetermined flow direction and is provided in a part other than an end part in a width direction that is substantially orthogonal to the flow direction. 20
10. The film according to claim 9, wherein gel fraction is 10 to 60 wt%. 25
11. The film according to claim 9 or 10, wherein the cutting-starting point part is at least one perforation. 30
12. The film according to claim 9 or 10, wherein the cutting-starting point part is a part subjected to embossing. 35
13. The film according to any one of claims 9 to 12, wherein the cutting-starting point part is continuously formed in the flow direction. 40
14. The film according to any one of claims 9 to 13, wherein the cutting-starting point part is formed inside the end part in the width direction by 25 mm or greater. 45
15. The film according to any one of claims 9 to 13, wherein the cutting-starting point part is formed in a substantially central part in the width direction. 50
16. A film roll that is formed by winding the film according to any one of claims 9 to 15. 55
17. A film storage body comprising:
 - the film roll according to claim 16; and
 - a container main body that has a storage space for storing the film roll therein,
 - wherein the container main body has a protrusion for assisting the cutting of the film of the film roll.

wherein the container main body has: a rectangular parallelepiped-shaped storage chamber with an opened upper part that is formed by wall surfaces including a front plate, a bottom plate, a rear plate, and side plates; and a lid body that is formed by wall surfaces including a lid plate that is provided to be connected in such a direction as to cover the storage chamber from an upper edge of the rear plate, a covering lid piece that extends in such a direction as to cover the front plate from a front edge of the lid plate, and side covering lid pieces that are provided on both sides of the covering lid piece, and the protrusion is provided at a tip edge part of the covering lid piece.

19. A film storage body comprising:

the film roll according to claim 16; and
a container main body that has a storage space for storing the film roll therein,
wherein the container main body does not have a protrusion for assisting the cutting of the film of the film roll.

20. A film cutting method comprising:

forming a through mark by poking a part of the cutting-starting point part of the film according to any one of claims 9 to 15 with a finger; and
tearing the film in the width direction from the through mark as a starting point.

18. The film storage body according to claim 17,

FIG. 1

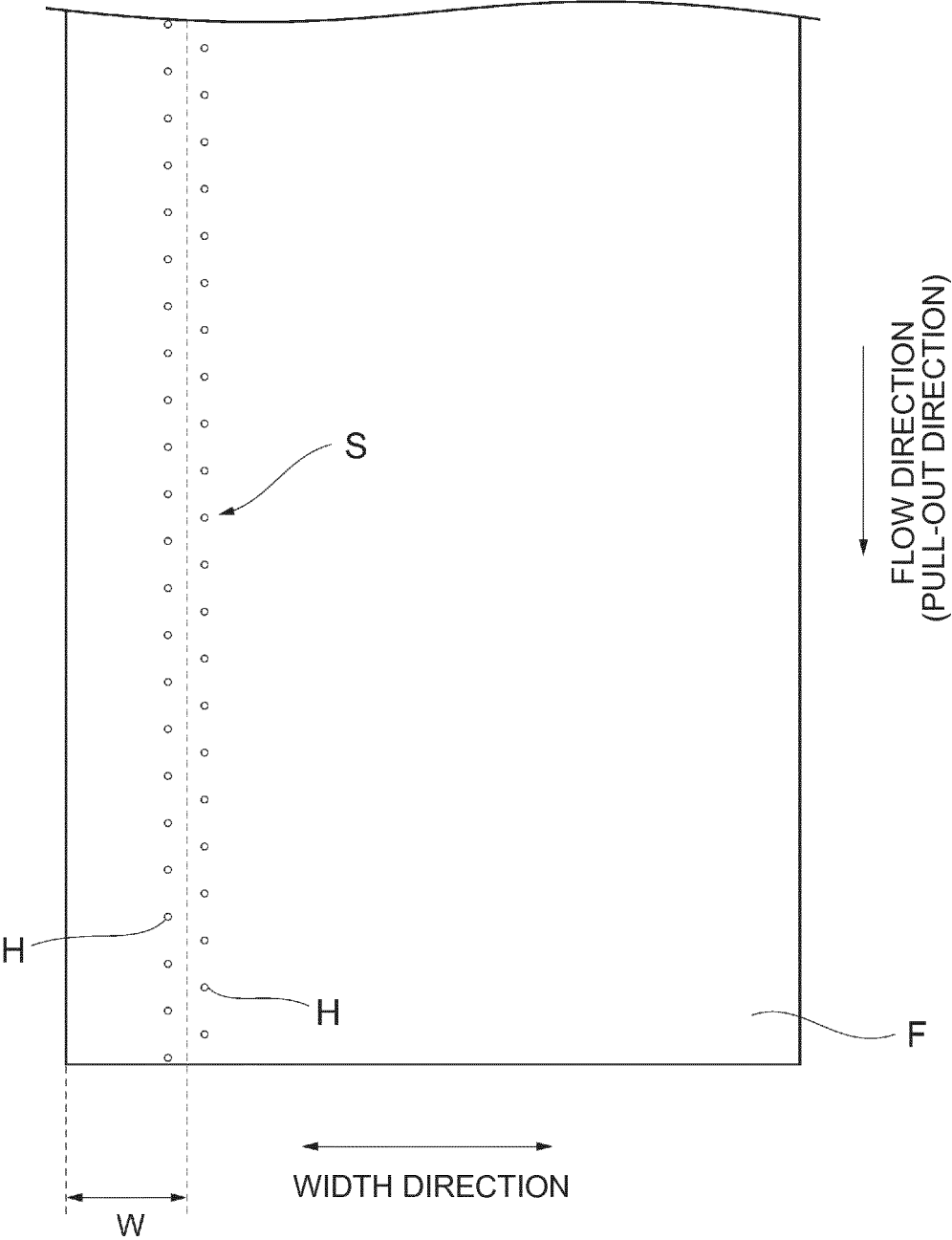
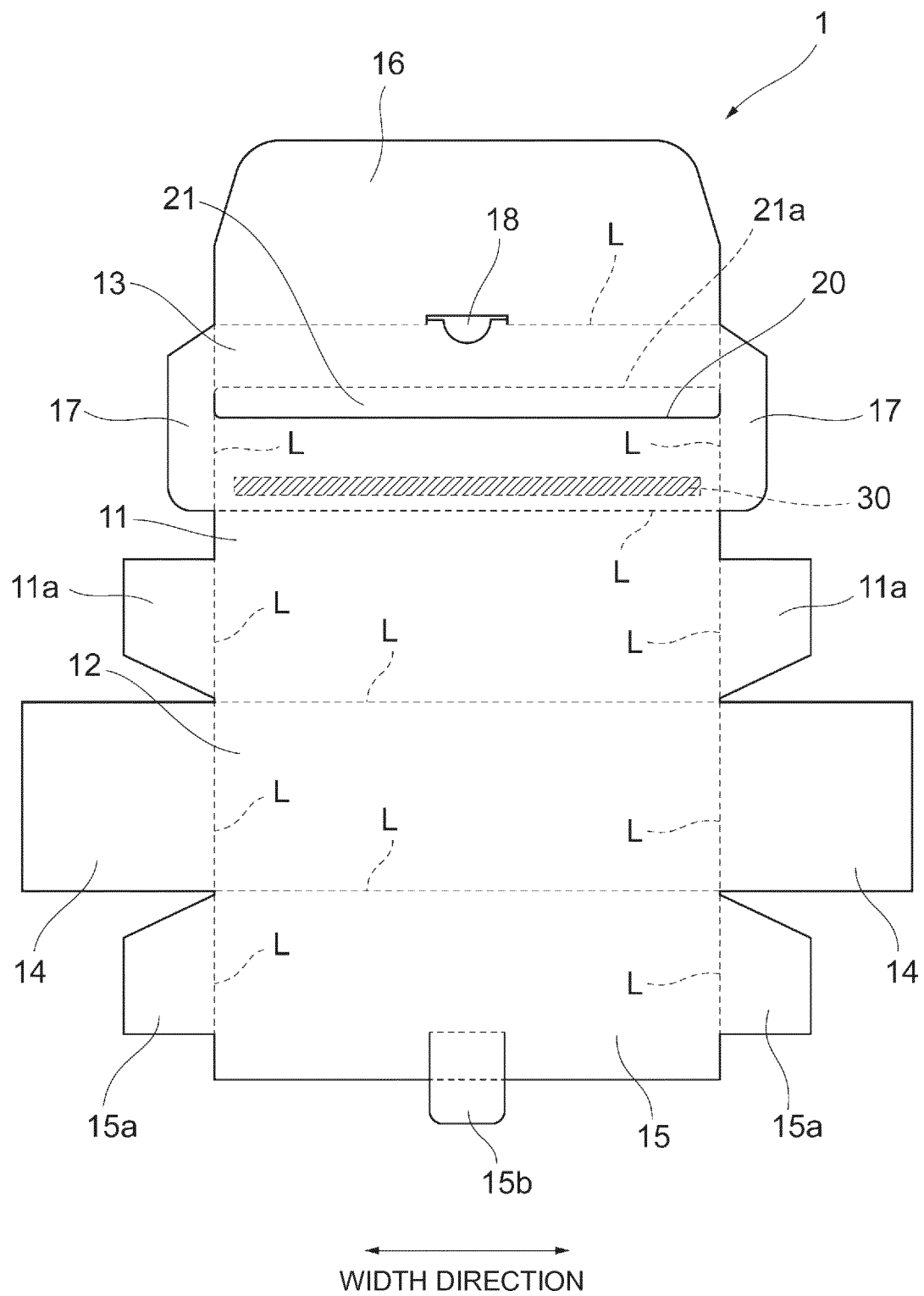


FIG. 2



3
G.
F

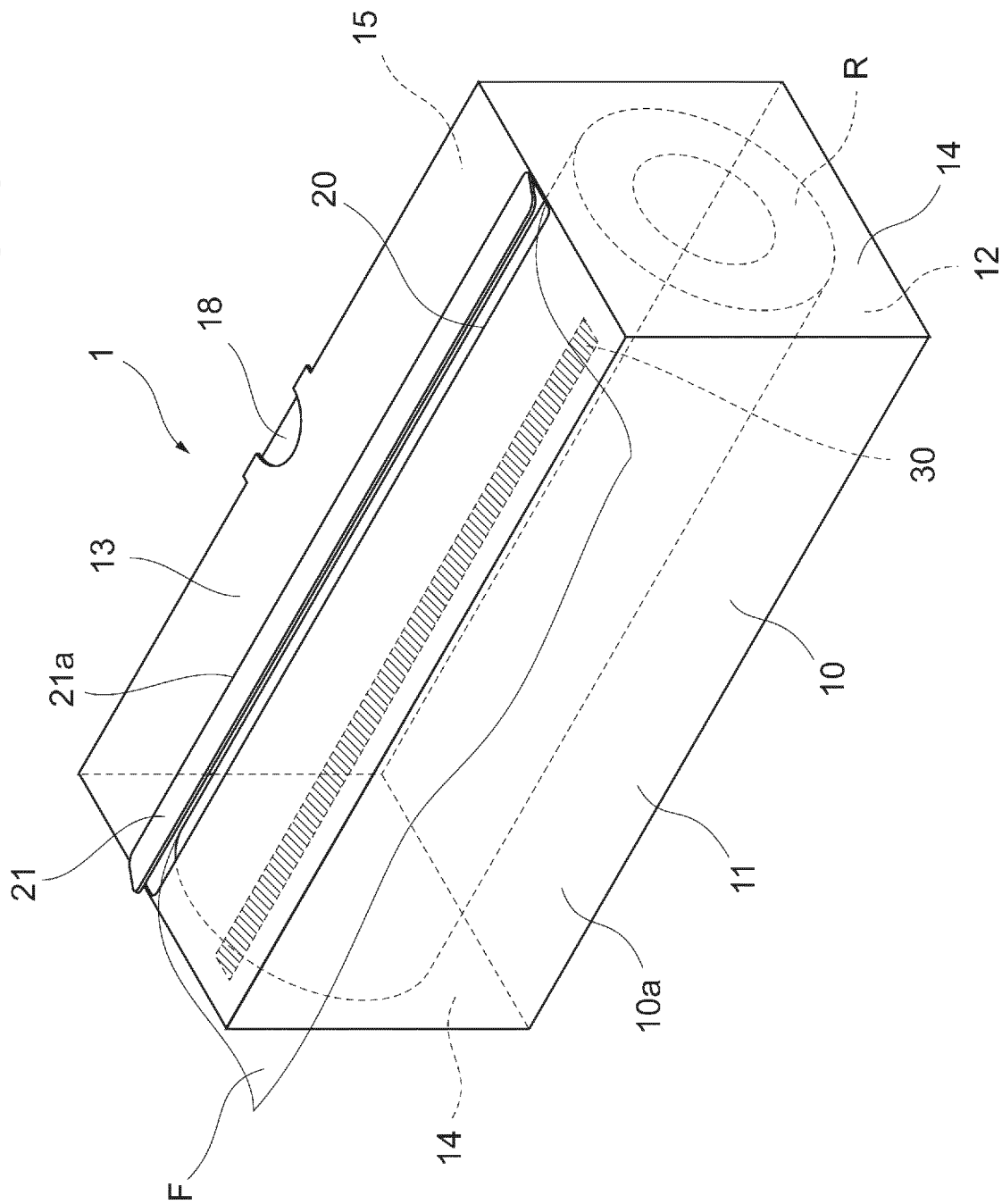
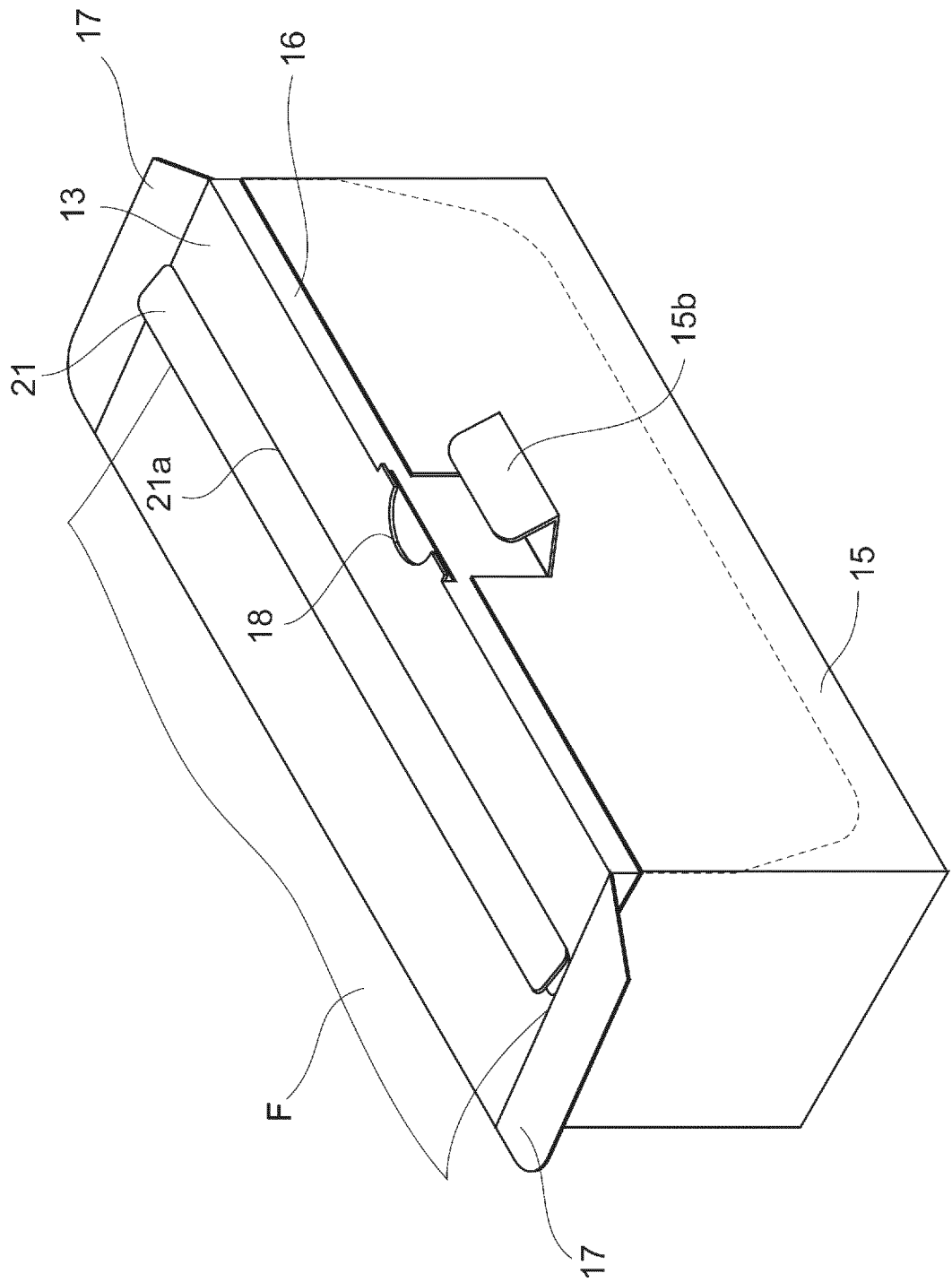
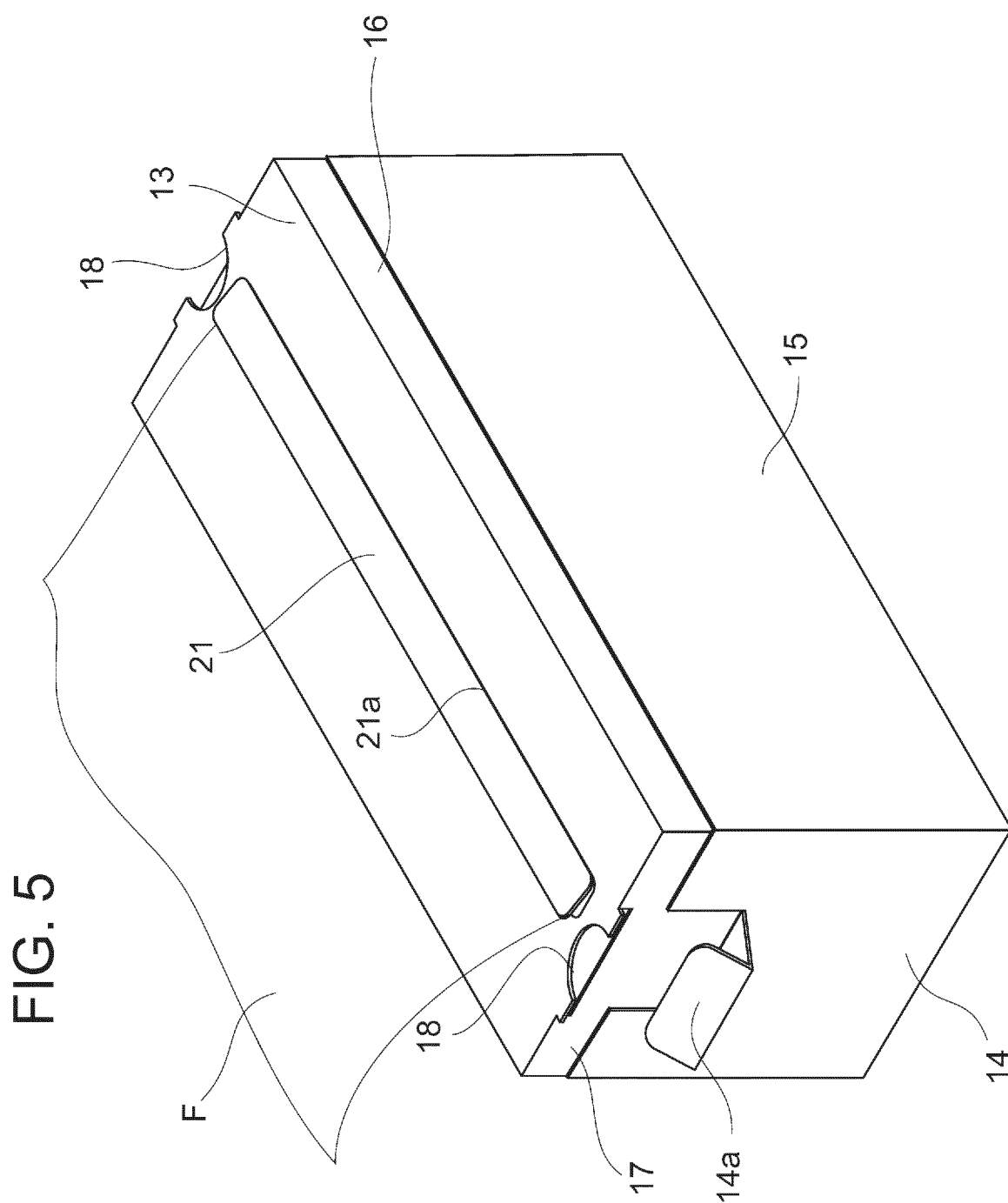


FIG. 4





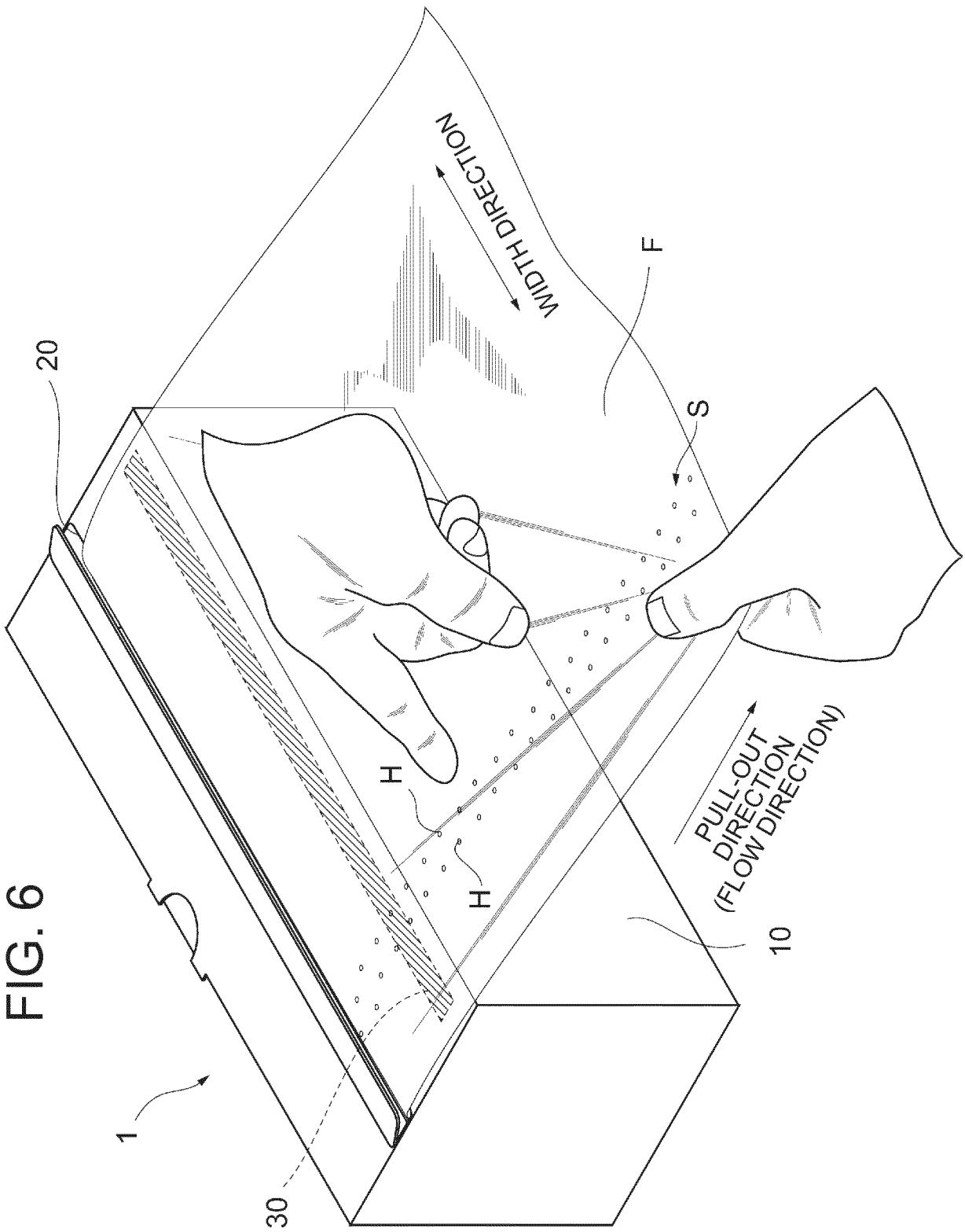


FIG. 7

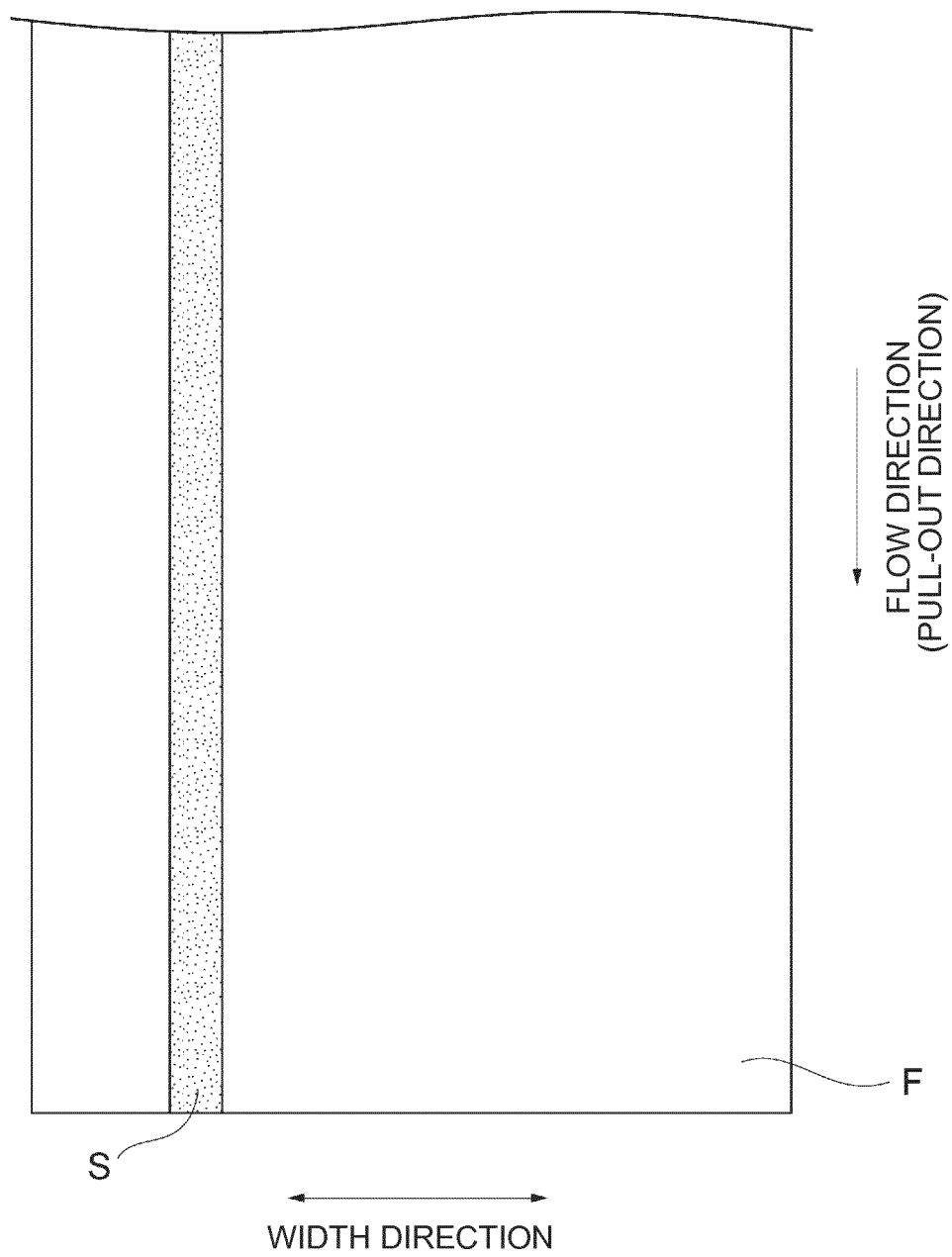


FIG. 8

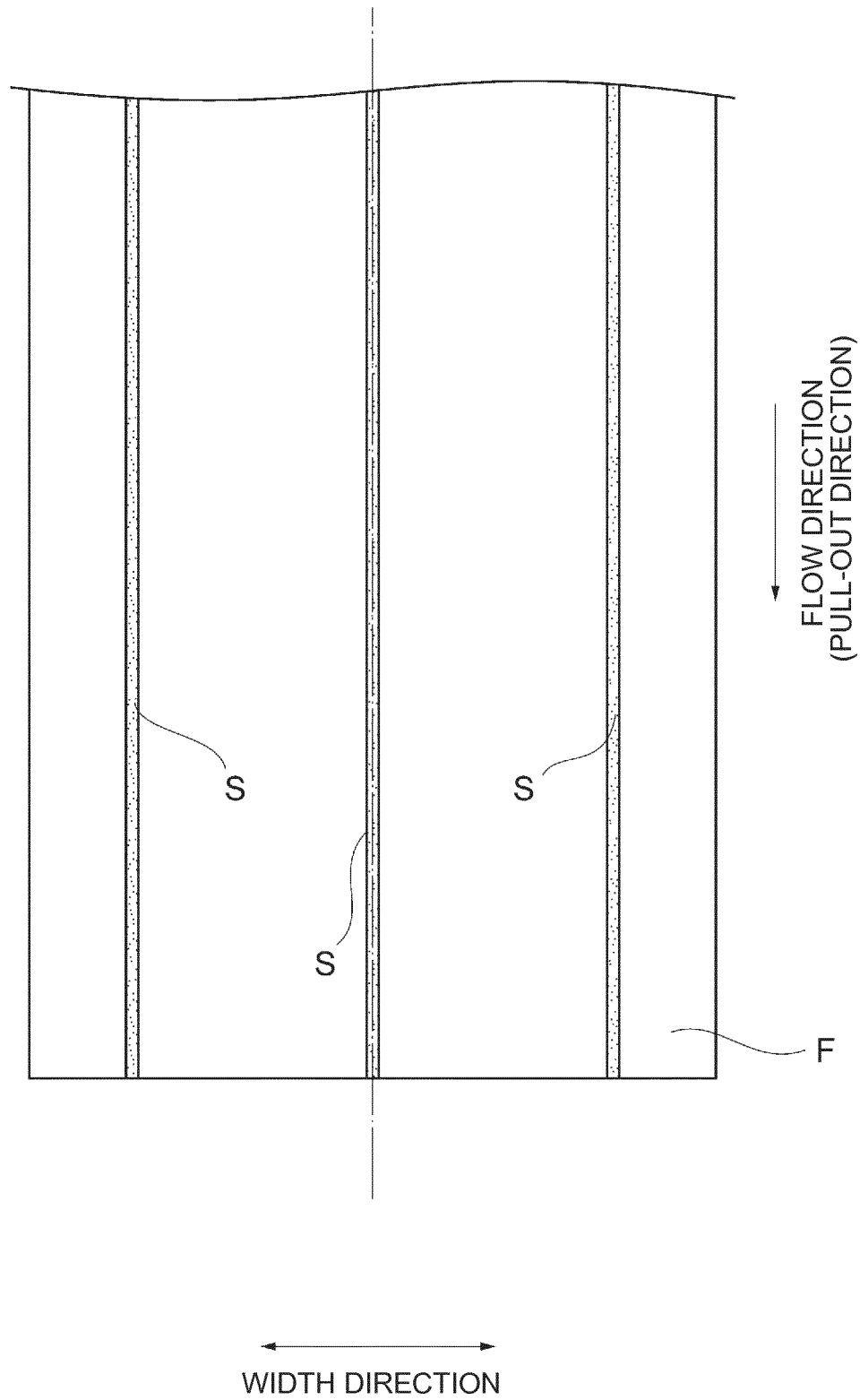


FIG. 9

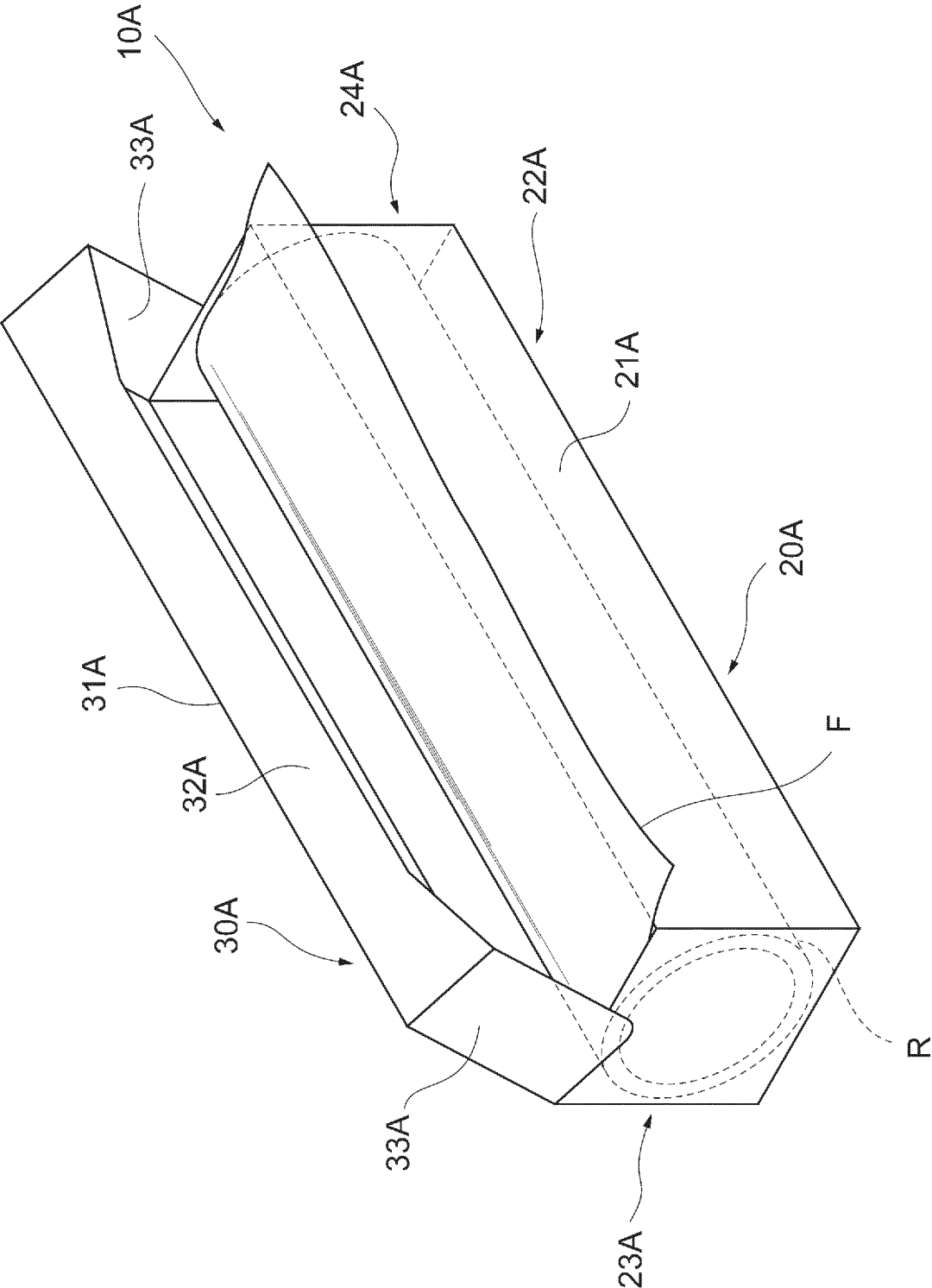


FIG. 10

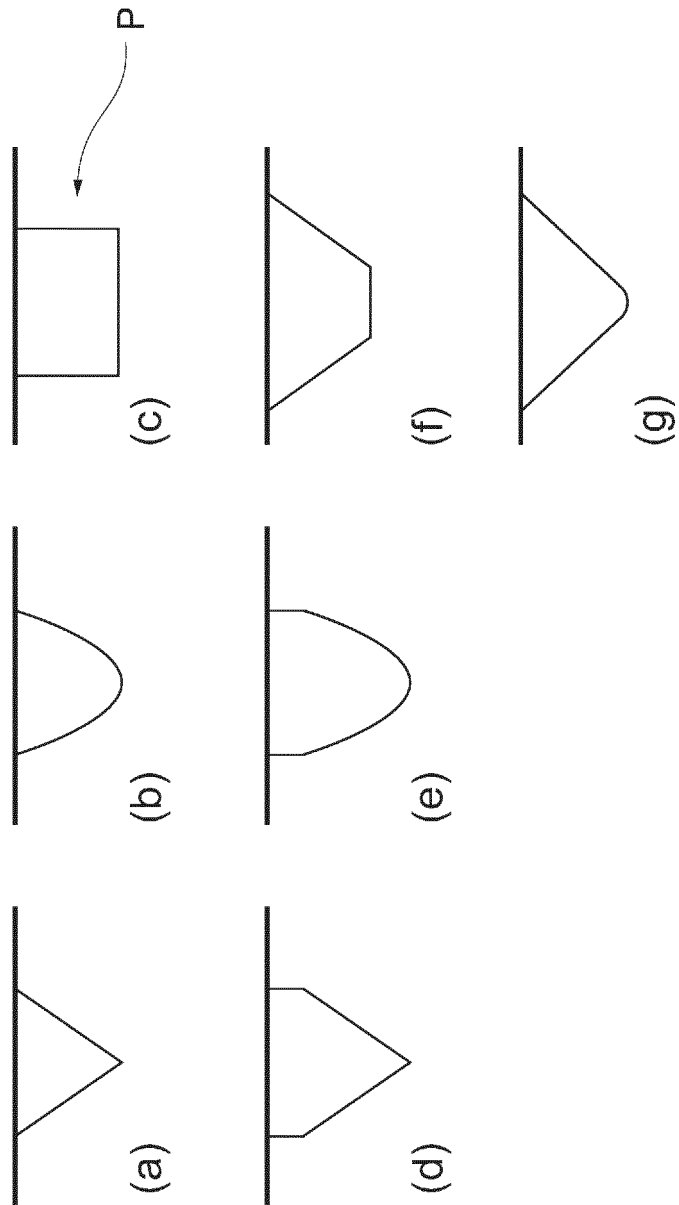
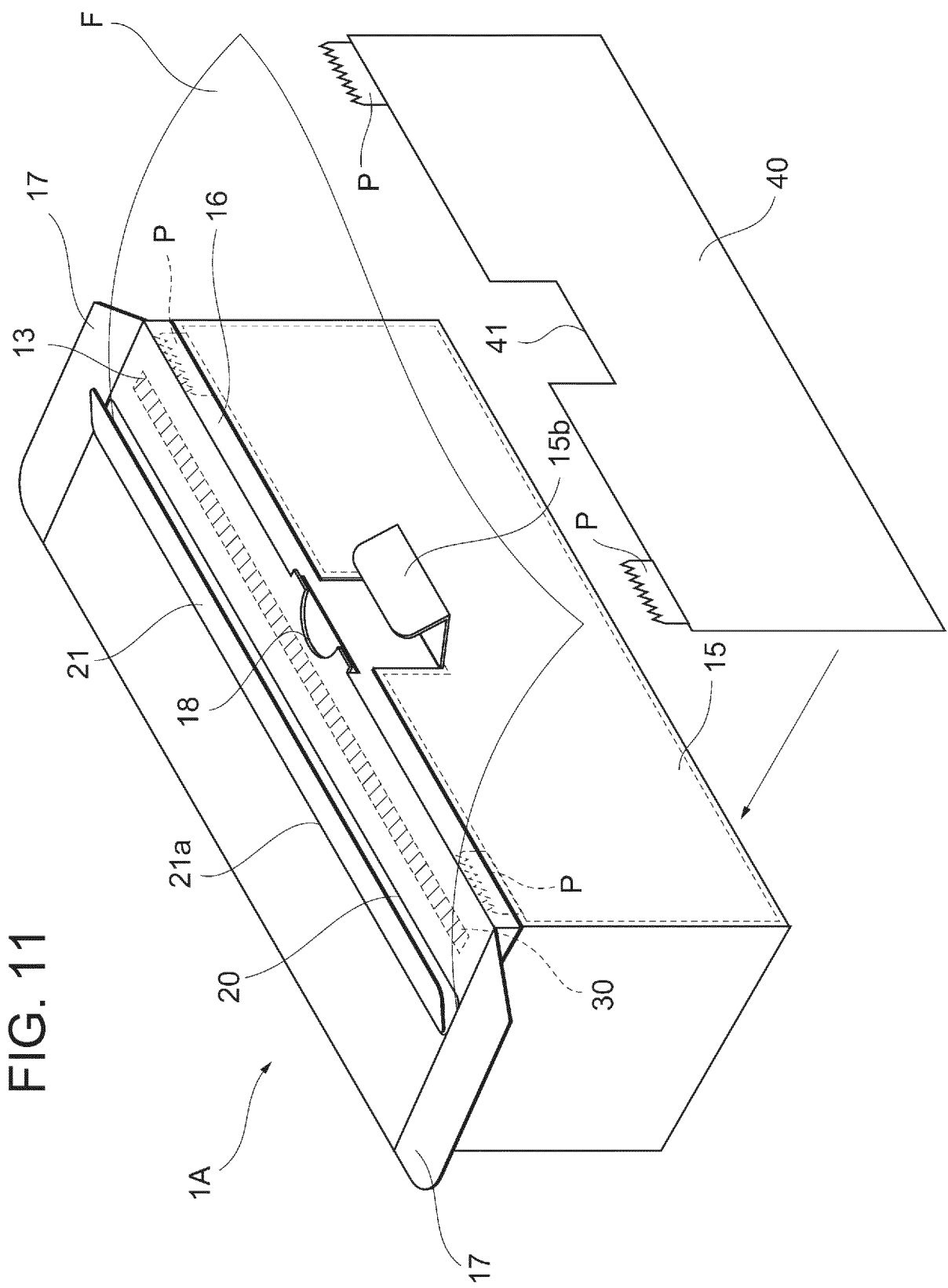
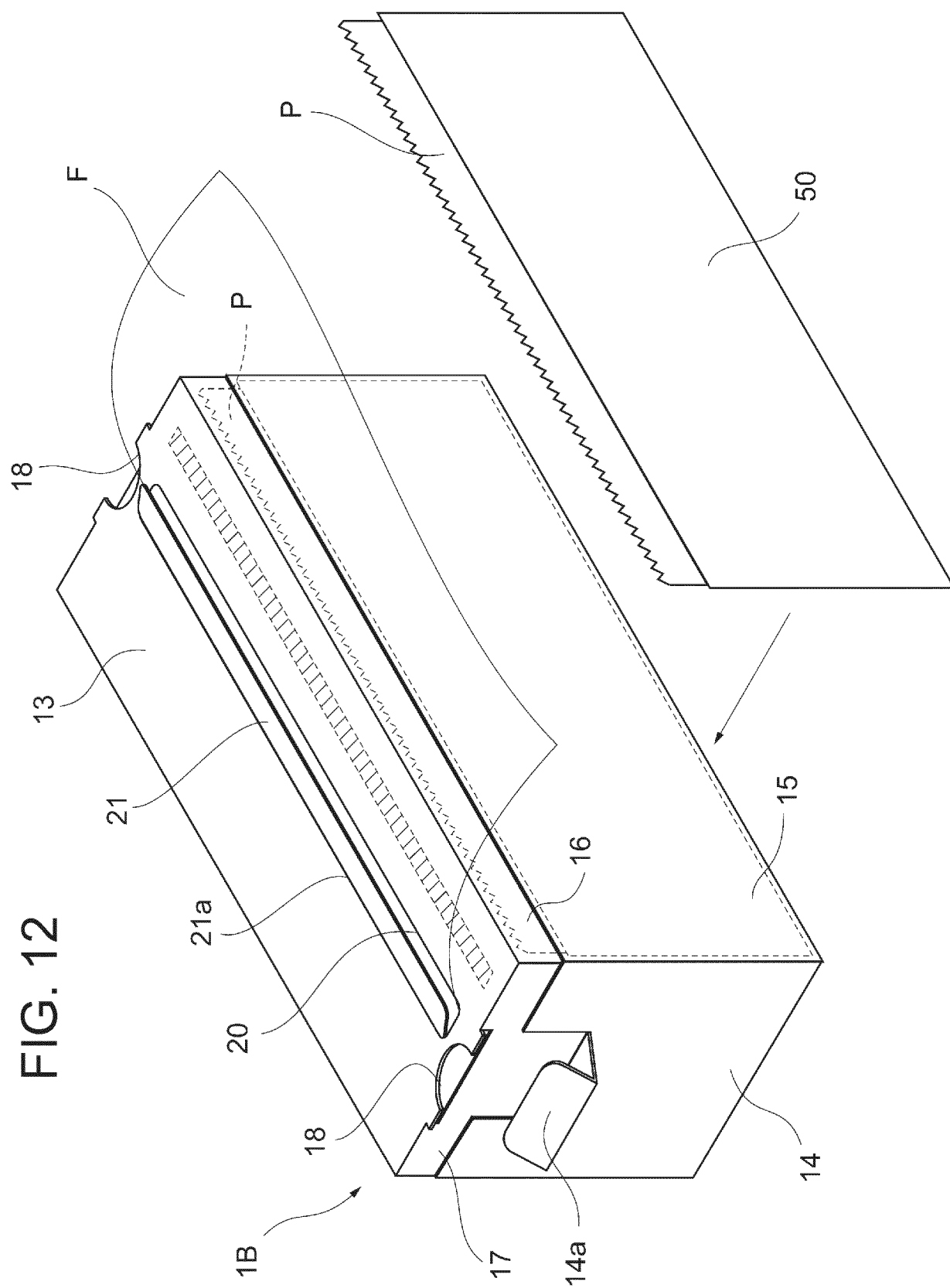


FIG. 11





INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2016/064291

A. CLASSIFICATION OF SUBJECT MATTER

B65D25/52(2006.01)i, B65D5/72(2006.01)i, B65D85/671(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D25/52, B65D5/72, B65D85/671

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2016

Kokai Jitsuyo Shinan Koho 1971-2016 Toroku Jitsuyo Shinan Koho 1994-2016

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 124935/1984 (Laid-open No. 40317/1986) (Kabushiki Kaisha Nippon Engineering Service), 14 March 1986 (14.03.1986), page 6, line 14 to page 12, line 18; fig. 1, 5 (Family: none)	1-8
Y	JP 2007-176592 A (Daio Paper Corp.), 12 July 2007 (12.07.2007), paragraph [0040]; fig. 7 (Family: none)	1-8

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search
25 July 2016 (25.07.16)Date of mailing of the international search report
02 August 2016 (02.08.16)Name and mailing address of the ISA/
Japan Patent Office
3-4-3, Kasumigaseki, Chiyoda-ku,
Tokyo 100-8915, Japan

Authorized officer

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2016/064291

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2014-5079 A (Kureha Corp.), 16 January 2014 (16.01.2014), claim 1; paragraphs [0012], [0015]; fig. 1, 3 & CN 103449233 A & TW 201348081 A	4-6, 17, 18, 20
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 174794/1979 (Laid-open No. 94727/1981) (Saburo SAKURAI), 28 July 1981 (28.07.1981), page 6, lines 7 to 13; fig. 1 to 2 (Family: none)	6
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Y	JP 2001-246707 A (Asahi Kasei Corp.), 11 September 2001 (11.09.2001), claim 1; paragraph [0020] (Family: none)	10-20
Y	EP 1270437 A2 (NUOVA POLIVER DI ODDONE COLOMBA), 02 January 2003 (02.01.2003), paragraph [0022]; fig. 1 to 2 & US 2003/0001034 A1 & IT TO20010110 U & AT 400511 T & ES 2309120 T & CA 2385197 A	19

Form PCT/ISA/210 (continuation of second sheet) (January 2015)

REFERENCES CITED IN THE DESCRIPTION

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- JP 3288845 A [0005]
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