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(54) **Mark transfer tool and mark transfer tape**

(57) A mark transfer tool making use of a coat film transfer technology about various marks composed of characters, codes, patterns or their combination. A mark transfer tape (T) is composed of pressure-sensitive adhesive transfer marks (M) disposed and held on the surface of abase tape (15) continuously and peelably at

specific intervals. Therefore, various marks can be used in a completely different method from the conventional mode of impressing use in the form of a stamp or adhering use in the form of a mark seal and the like, so that diversified preferences of general users can be satisfied effectively.

Fig.5A

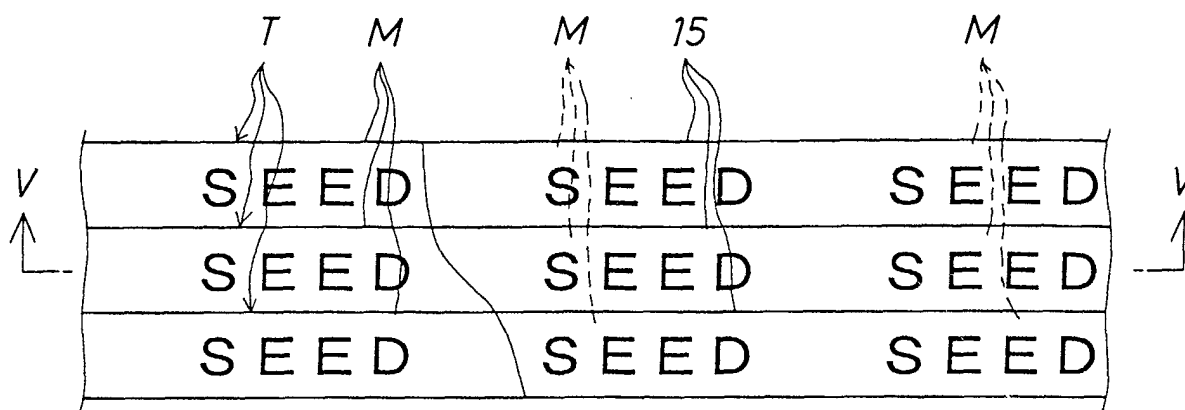


Fig. 5B

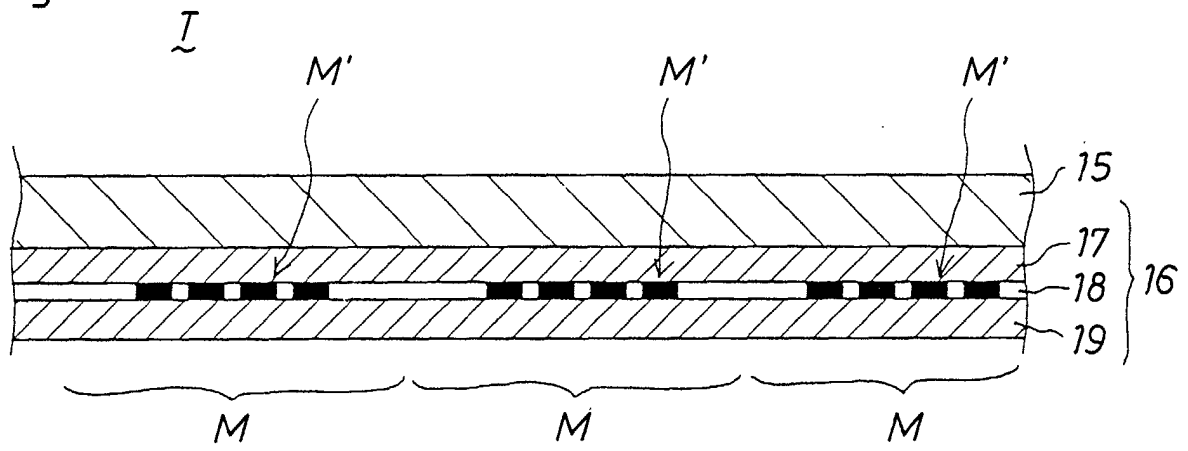
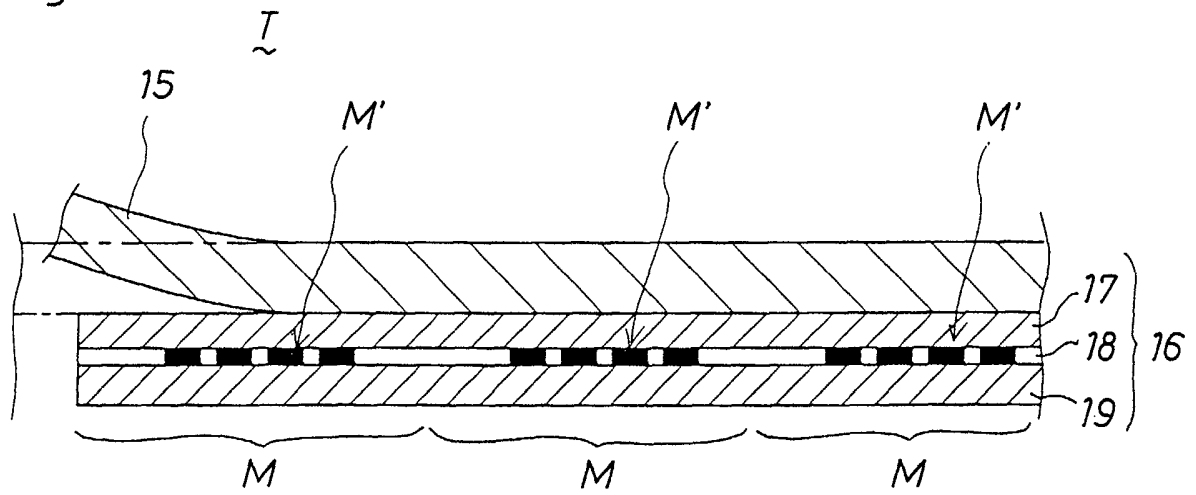


Fig. 5C



Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a mark transfer tool and a mark transfer tape, and more particularly to a mark transfer technology for transferring a transfer mark in a thin film composed of characters, codes, patterns or their combination arranged and formed on a mark transfer tape, to a sheet of paper or the like.

Description of the Related Art

[0002] Generally, various marks composed of characters, codes, patterns or their combination are prepared as stamps and impressed on a sheet of paper or other object surface through ink, or prepared as mark seals and adhered to a sheet of paper or the like.

[0003] In the background of the recent technical innovation and diversification of users' preferences, widening of product variety is needed in various technical fields, and such trend is not exceptional in the stationery field handling various marks.

BRIEF SUMMARY OF THE INVENTION

[0004] It is hence a primary object of the invention to present a novel mark transfer tool and mark transfer tape solving the problems of the prior art.

[0005] It is other object of the invention to present a novel mark transfer technology completely different from the conventional mark using technology, about various marks composed of characters, codes, patterns or their combination, by making use of coat film transfer technology.

[0006] It is another object of the invention to present a mark transfer tool effectively applicable to diversified preferences of general users, by employing a method of transferring a transfer mark on a mark transfer tape on a sheet of paper or the like.

[0007] It is a further object of the invention to present a mark transfer tool using the transfer mark composed of various marks and blank spaces for overwriting, in which various characters can be written over by a writing tool in the blank spaces for overwriting after transfer of transfer marks.

[0008] A mark transfer tool of the invention comprises a hand-held case, a pay-out reel containing a mark transfer tape, being rotatably installed in the case, a take-up reel for collecting the used mark transfer tape, being rotatably installed in the case, and a transfer head for pressing and transferring the mark transfer tape being paid out from the pay-out reel onto the transfer area, being disposed at the leading end of the case, in which the mark transfer tape has pressure-sensitive adhesive transfer marks disposed and held continuously at spe-

cific intervals peelably on the surface of a base tape.

[0009] In preferred embodiments, the transfer mark is either composed of marks alone, or composed of marks and blank spaces for overwriting, and in the latter case, at least, the surface forming portion of blank spaces for overwriting is made of a material allowing overwriting by a writing tool.

[0010] The basic composition of operation of the mark transfer tool is either a refill type of a tape cartridge comprising at least the pay-out reel and take-up reel detachably disposed in the case so that the mark transfer tape may be exchanged, or a onetime or disposable type having the pay-out reel and take-up reel disposed in the case, with the transfer head provided at the leading end of the case.

[0011] The mark transfer tape of the invention is preferably disposed and used in the mark transfer tool, in which pressure-sensitive adhesive transfer marks are disposed and held continuously at specific intervals peelably on the surface of a base tape.

[0012] In a preferred embodiment, the mark transfer tape of the invention is composed of a transfer mark layer comprising multiple transfer marks adhered and held to the surface side of the base tape of which back side is processed to be peelable, peelably or peelably and detachably in pieces, and more specifically the following lamination structure is employed.

i) The transfer mark layer is composed by integrally laminating a pressure-sensitive adhesive layer composed of a pressure-sensitive adhesive transparent material, and a mark array layer composed of multiple marks arranged continuously at specific intervals in the running direction of the base tape, and this transfer mark layer is adhered and held on the peelably processed surface of the base tape peelably and detachably in pieces through the pressure-sensitive adhesive layer.

ii) The transfer mark layer is composed by integrally laminating a mark forming layer composed of an adhesive transparent material, a mark array layer composed of multiple marks arranged continuously at specific intervals in the running direction of the base tape, and a pressure-sensitive adhesive layer composed of a pressure-sensitive adhesive transparent material, and this transfer mark layer is adhered and held on the peelably processed surface of the base tape peelably and detachably in pieces through the mark forming layer.

iii) The transfer mark layer is composed by integrally laminating a mark array layer composed of multiple marks arranged continuously at specific intervals in the running direction of the base tape, and a pressure-sensitive adhesive layer composed of a pressure-sensitive adhesive transparent material, and this transfer mark layer is adhered and held on the peelably processed surface of the base tape peelably and detachably in pieces through the mark array

layer.

iv) The transfer mark layer is composed by integrally laminating a mark array layer composed of multiple marks arranged continuously at specific intervals in the running direction of the base tape, and a pressure-sensitive adhesive layer composed of a pressure-sensitive adhesive transparent material, and this transfer mark layer is adhered and held on the adhesively processed surface of the base tape peelably and detachably in pieces through the mark array layer.

[0013] Further, the transfer mark is either composed of marks alone, or composed of marks and blank spaces for overwriting, and in the latter case, the surface forming portion of the blank spaces for overwriting is made of a material allowing overwriting by a writing tool.

[0014] To transfer the transfer mark on the mark transfer tape on a desired transfer area of a sheet of paper by the mark transfer tool of the invention, the case is held by hand, the leading end pressing portion of the transfer head is pressed tightly to the transfer area, and the case is moved along the sheet of paper in this state, so that the transfer mark is transferred on the transfer area. The used mark transfer tape after the transfer mark is separated, that is, the base tape is taken up and collected on the take-up reel.

[0015] Further, in the case of the transfer mark composed of marks and blank spaces for overwriting, after transfer, anything can be overwritten by a writing tool on the blank space for overwriting.

[0016] These and other objects and features of the invention will be more clearly understood by reading the following detailed description taken in conjunction with the accompanying drawings and novel facts disclosed in the claims thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] Fig. 1 is a perspective view showing a mark transfer tool in embodiment 1 of the invention.

[0018] Fig. 2 is a front view showing the inside of a case main body of the mark transfer tool.

[0019] Fig. 3 is a perspective exploded view of the mark transfer tool.

[0020] Fig. 4A is a perspective view showing essential parts of transfer head of the mark transfer tool.

[0021] Fig. 4B is a plan showing essential parts of transfer head of the mark transfer tool.

[0022] Fig. 5A is a plan of mark transfer tool of the mark transfer tool, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0023] Fig. 5B is a sectional view along line V-V in Fig. 5A of the mark transfer tape.

[0024] Fig. 5C is a sectional view showing a peeling state of base tape and transfer mark layer of the mark transfer tape.

[0025] Figs. 6A-6C are magnified front views showing

a partial section of rotating structure of transfer head for the mark transfer tool respectively.

[0026] Fig. 7A is a perspective view of state of use of the mark transfer tool, showing a state of use of lateral pull by the right hand.

[0027] Fig. 7B is a perspective view of state of use of the mark transfer tool, showing a state of use of lateral pull by the left hand.

[0028] Fig. 7C is a perspective view of state of use of the mark transfer tool, showing a state of use of vertical pull by the right hand.

[0029] Fig. 8A is a plan of mark transfer tool of a mark transfer tool according to embodiment 2 of the invention, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0030] Fig. 8B is a sectional view along line VIII-VIII in Fig. 8A of the mark transfer tape.

[0031] Fig. 8C is a sectional view showing a peeling state of base tape and transfer mark layer of the mark transfer tape.

[0032] Fig. 9A is a plan of mark transfer tool of a mark transfer tool according to embodiment 3 of the invention, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0033] Fig. 9B is a sectional view along line IX-IX in Fig. 9A of the mark transfer tape.

[0034] Fig. 9C is a sectional view showing the pressing width of the leading end pressing portion of the transfer head of the mark transfer tool in relation to the mark transfer tape.

[0035] Fig. 10A is a plan of mark transfer tool of a mark transfer tool according to embodiment 4 of the invention, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0036] Fig. 10B is a sectional view along line X-X in Fig. 10A of the mark transfer tape.

[0037] Fig. 10C is a sectional view showing the pressing width of the leading end pressing portion of the transfer head of the mark transfer tool in relation to the mark transfer tape.

[0038] Fig. 11A is a plan of mark transfer tool of a mark transfer tool according to embodiment 5 of the invention, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0039] Fig. 11B is a magnified plan of transfer mark of the mark transfer tape.

[0040] Fig. 11C is a sectional view along line XI-XI in Fig. 11A.

[0041] Fig. 12A is a perspective view showing overwriting state by writing tool after transfer mark of the mark transfer tool.

[0042] Fig. 12B is a plan showing a modified example of the transfer mark.

[0043] Fig. 12C is a plan showing other modified example of the transfer mark.

[0044] Fig. 13 is a perspective exploded view of a mark transfer tool according to embodiment 6 of the invention.

[0045] Fig. 14A is a plan of mark transfer tool of a mark transfer tool according to embodiment 7 of the invention, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0046] Fig. 14B is a sectional view along line XIV-XIV in Fig. 14A of the mark transfer tape.

[0047] Fig. 14C is a sectional view showing a peeling state of base tape and transfer mark layer of the mark transfer tape.

[0048] Fig. 15A is a plan of mark transfer tool of a mark transfer tool according to embodiment 8 of the invention, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0049] Fig. 15B is a sectional view along line XV-XV in Fig. 15A of the mark transfer tape.

[0050] Fig. 15C is a sectional view showing a peeling state of base tape and transfer mark layer of the mark transfer tape.

[0051] Fig. 16A is a plan of mark transfer tool of a mark transfer tool according to embodiment 9 of the invention, showing a partially cut-away view of the mark transfer tape in the manufacturing process.

[0052] Fig. 16B is a sectional view along line XVI-XVI in Fig. 16A of the mark transfer tape.

[0053] Fig. 16C is a sectional view showing a peeling state of base tape and transfer mark layer of the mark transfer tape.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0054] Referring now to the drawings, preferred embodiments of the invention are described in detail below.

[0055] Fig. 1 through Figs. 14A-14C show the mark transfer tool according to the invention, and same reference numerals indicate same constituent members or elements throughout the entire drawings.

Embodiment 1

[0056] The mark transfer tool according to this embodiment is shown in Fig. 1 to Figs. 7A-7C. This mark transfer tool 1 is, specifically, to transfer marks (in the shown embodiment, only a mark composed of alphabetic letters "SEED") M, M, ... in a thin film composed of characters, codes, patterns or their combination arranged and formed on a mark transfer tape T, to a sheet of paper or the like, and it is a refill type having a cartridge structure allowing to exchange the mark transfer tape T as a consumable part.

[0057] That is, the mark transfer tool 1 comprises a case 2 having an appearance as shown in Fig. 1, and a tape cartridge C having a transfer head H as shown in Fig. 2 and Fig. 3.

[0058] The case 2 is held and manipulated by one hand, and is a flat box having a front contour shape and dimension and width enough to incorporate the tape cartridge C, and its confronting pair of flat face and back

sides 2a, 2b are standard gripping sides when holding and manipulating by one hand. The case 2 is a plastic structure integrally formed by injection molding or the like, and a case main body 4 and a cap body 5 are separate, and the tape cartridge C is detachably inserted in the case main body 4. At the leading end of the case 2, a head inserting portion 6 for inserting the transfer head H in and out is formed.

[0059] The tape cartridge C is an exchangeable consumable part. The tape cartridge C consists of a pay-out reel 11 on which a mark transfer tape T is wound, and a rotatable take-up reel 12 for collecting the mark transfer tape T after use, which are rotatably installed in a cartridge case 10, and further a transfer head H for pressing and transferring the mark transfer tape to the transfer area is installed rotatably about the head axial center.

[0060] Although not specifically shown in the drawing, the tape cartridge C further includes a tape interlocking unit for mutually interlocking the pay-out reel 11 and take-up reel 12, a clutch mechanism for synchronizing the pay-out speed and take-up speed of the mark transfer tape T in the pay-out reel 11 and take-up reel 12, and other principal and basic components, which are assembled as a unit.

[0061] The cartridge case 10 is made of synthetic resin in a form of a cartridge case for accommodating the both reels 11, 12, and its shape and dimensions are set to be lightweight and compact in a range of having holding functions of both reels 11, 12, and more specifically it is a skeletal structure mainly composed of thin skeletal members.

[0062] The mark transfer tape T is to supply transfer marks M, M, ... continuously, and pressure-sensitive adhesive transfer marks M, M, ... are disposed and held on the surface of a base tape 15 continuously and peelably at specified intervals.

[0063] In the shown embodiment, the mark transfer tape T has a sectional structure as shown in Figs. 5A-5C, and on the surface of the base tape 15 (the lower side in Fig. 5B and Fig. 5C), a transfer mark layer 16 composed of multiple transfer marks M, M, ... is peelably adhered and held. Since the drawings are intended to help understanding, they are schematic and magnified in the thickness direction, but actually the mark transfer tape T is a thin film, and the boundary of layers is not so clear as illustrated.

[0064] The base tape 15 has its both face and back sides processed to be peelable, that is, it is a film tape made of plastic or paper material, having the surface treated to be separable or peelable from the adjacent layers or materials, and a non-stretchable flexible film is preferably used.

[0065] The transfer mark layer 16 is a laminate structure integrally laminating a mark forming layer 17, a mark array layer 18, and a pressure-sensitive adhesive layer 19. The transfer mark layer 16 is continuous over the overall length of the base tape 15, that is, the transfer

marks M, M, ... are continuously formed over the overall length of the base tape 15, and are properly cut off by transfer operation of the transfer head H at the time of mark transfer.

[0066] Herein, required quality characteristics of the transfer mark layer 16 include, for example:

- 1) Transfer performance: Ease of transfer on the transfer area at the position of the transfer mark layer 16 pressed by the transfer head H;
- 2) Cutting performance: Ease of transferring and cutting of the transfer mark layer 16 only at the position thereof pressed by the transfer head H (if the cutting performance of the transfer mark layer 16 is poor, a part of the transfer mark layer 16 not intended to be transferred may be also transferred);
- 3) Non-peeling performance: Hardness of peeling of transfer mark layer 16 from the transfer area;
- 4) Writing performance: Ease of writing by writing tool such as pencil and ball-point pen on the transferred transfer mark layer 16;
- 5) Aging stability: Fastness of ink written by the writing tool on the transferred transfer mark layer 16; and
- 6) Smoothness: Smooth surface without undulation of the transfer mark layer 16 after transfer.

[0067] In order to achieve these quality characteristics depending on the purpose of the transfer mark layer 16, various blending compounds are combined.

[0068] The mark forming layer 17 has a function of facilitating formation (specifically printing) of the mark array layer 18, and a function of adhering and holding the transfer mark layer 16 on the surface of the base tape 15, and forms a surface layer of the transfer mark M after transferred.

[0069] The mark forming layer 17 is made of an adhesive transparent material. That is, the mark forming layer 17 is preferably made of a transparent see-through resin material of dry type suited to surface layer after parted, having a proper adhesion holding property on the parted surface of the base tape 15.

[0070] The mark forming layer 17 may be also made of synthetic resin or natural resin, further may properly contains surface active agent, aging retarding agent, light stabilizer, filler for enhancing the writing performance, etc. Usable examples of the synthetic resin or natural resin include acrylic resin, vinyl resin, polyester resin, urethane resin, epoxy resin, polyamide resin, olefin resin, rubber, styrene-butadiene copolymer, cellulose resin, cumarone resin, etc., and they may be used either alone or in combination of two or more type for satisfying the required quality characteristics.

[0071] The mark array layer 18 is composed of multiple marks M', M', M', ... (in the shown embodiment, only a mark composed of alphabetic letters SEED) arranged continuously and peelable at specific intervals in the running direction of the base tape 15, and is specifically

formed on the mark forming layer 17 by a known printing technology.

[0072] The printing method of the mark array layer 18 includes various known printing techniques, specifically, typographic (relief) printing, offset printing, gravure (intaglio) printing, silk screen printing, tampon printing and other traditional printing techniques, and also reverse roll coater, direct coater, other coaters, spray painting, electrostatic painting, pour painting, roller painting, immersion painting, and further novel printing techniques such as laser printer, heat transfer, and ink jet printer systems, which may be properly selected depending on the properties of the forming object area (in the shown case, the mark forming layer 17).

[0073] The pressure-sensitive adhesive layer 19 is used to press and adhere the transfer mark layer 16 to the transfer area, and to form a surface layer of mark transfer tape T before transfer, and this pressure-sensitive adhesive layer 19 is made of a pressure-sensitive transparent material. That is, the pressure-sensitive adhesive layer 19 is preferably made of a transparent see-through adhesive material of dry type suited to a surface layer before parting, having a pressure-sensitive adhesion to the transfer area.

[0074] The pressure-sensitive adhesive layer 19 is made of an adhesive component, and may further contain adhesion regulator, aging retarder, or leveling agent properly. Usable adhesives include acrylic resin, rosin, rubber, vinyl ether, polyurethane, styrene, and polyisobutylene.

[0075] Such laminated transfer mark layer 16 is, as shown in Figs. 5A-5C, adhered and held on the surface (the lower side in Fig. 5B and Fig. 5C) of the base tape 15 processed for parting, peelably and separably through the mark forming layer 17.

[0076] The mark transfer tape T in the shown embodiment is manufactured as a band having a tape width corresponding to plural mark transfer tapes T, T, ... as shown in Fig. 5A, and cut and formed in a width of one tape T by slitter or other cutting device.

[0077] According to a specific forming method of the transfer mark layer 16, the mark forming layer 17 is applied and formed on the surface of the base tape 15, the mark array layer 18 is printed and formed on the surface of the mark forming layer 17, and the pressure-sensitive adhesive layer 19 is applied and formed thereon.

[0078] The transfer head H presses the mark transfer tape T to a correction area on a sheet of paper, and it is disposed at the leading end of the cartridge case 10, and has a function of guiding the mark transfer tape T and a function of pressing it.

[0079] A specific structure of the transfer head H comprises a head main body 30, a head holding portion 31 and a rotary operation portion 32, and is a so-called rotary head structure that the head main body 30 is held rotatably about its axial center.

[0080] The head main body 30 is for pressing and transferring the mark transfer tape T, and is shaped to

be suited to transfer accurately to a desired transfer position, that is, is shaped in a peak or pointed form of having a tip pointed in a certain measure.

[0081] The head main body 30 in the shown example is a thin plate having a rectangular shape slightly wider than the mark transfer tape T, and has a taper section, being pointed in a side view so as to be gradually thin toward the leading end.

[0082] The head main body 30 has flat both side surfaces 30a, 30b, which form tape running surfaces, and a leading edge 25 is a leading end pressing portion for pressing the mark transfer tape T as mentioned above. This leading end pressing portion 25 is a straight edge orthogonal to the tape running direction in the tape running surfaces 30a, 30b. At both side edges of the head main body 30, guide flanges 33, 33 are formed for guiding running of mark transfer tape T.

[0083] If the thickness of the plate for composing the head main body 30 is relatively small, tapering as shown in the drawing is not always necessary, but the plate thickness may be uniform throughout the longitudinal direction, and anyway the structure is not particularly specified as far as the leading end of the pressing portion 25 of the head main body 30 has a thickness (a point) enough to position and indicate the transfer position accurately.

[0084] At the base end side portion of the head main body 30, further, a borne portion 35 is integrally formed as a main body support.

[0085] The head holding portion 31 supports the head main body 30 rotatably about its axial center, and specifically comprises the borne portion 35 as the main body support, and a bearing portion 36 provided in the cartridge 10.

[0086] As shown in Figs. 6A-6C, the borne portion 35 is a cylindrical portion provided concentrically and integrally with the head main body 30, and more specifically it is formed in an arc section having a setting opening 30a of mark transfer tape T to the head main body 30 in a part thereof.

[0087] The bearing portion 36 is disposed integrally at the leading end portion of the cartridge case 10. As shown in Figs. 6A-6C, the bearing portion 36 is tubular having an inner circumference corresponding to the outer circumference of the borne portion 35, and same as the borne portion 35, it is formed in an arc section having a setting opening 36a of mark transfer tape T to the head main body 30 in a part thereof. The borne portion 35 is slidably supported on the bearing portion 36, and the head main body 30 is freely rotatable about the axial center in a specified rotating angle range described below.

[0088] The rotary operation portion 32 is to determine the rotating direction position of the head main body 30, and also serves as head position indicator to show the tape pressing and transferring position of the head main body 30.

[0089] The rotary operation portion 32 is a circular bar,

and has an operation lever 45 including an operation knob 45a disposed at its leading end as a principal unit. The operation lever 45 is extended linearly outward in the radial direction from the axial center of the borne portion 35, and projects to the outside of the case 2, through a slit inserting portion 46 and an operation guide portion 47 disposed at corresponding positions in the bearing portion 36 and case 2. In this case, the inserting portion 45 of the bearing portion 36 functions as a locking portion of the head main body 30 to prevent it from slipping out in the axial direction.

[0090] The location of the operation lever 45 in the rotating direction with respect to the head main body 30 is set in relation to the tape pressing and transferring position of the head main body 30, and the slit inserting portion 46 and operation guide portion 47 are extended in the peripheral direction so as to allow moving of the operation lever 45 in the rotating direction of the head main body 30. In particular, the operation guide portion 47 of the case 2 defines the operating range in the rotating direction of the operation lever 45, and is configured to control the tape pressing and transferring position of the head main body 30.

[0091] The relation of the operation lever 45 and the tape pressing and transferring position of the head main body 30 is explained with respect to the operation guide portion 47. In the shown embodiment, the configuration of the operation guide portion 47 as the operation range defining portion in the rotating direction is set follows, referring to Figs. 6A-6C.

(a) When the operation lever 45 is in contact with one end 47a of the operation guide portion 47, that is, in the vertical downward position (first defined position A shown in Fig. 6A), the head main body 30 of the transfer head H is located at an angular position for guiding its leading end pressing portion 25 so that the mark transfer tape T may be nearly opposite to the gripping surfaces 2a, 2b of the case 2, that is, the face and back sides of the mark transfer tape T may be directed nearly in the same direction as (parallel to) the gripping surfaces 2a, 2b.

In this case, the new mark transfer tape T rolled out from the pay-out reel 11 is at the lower side of the head main body 30, and is in a state suited to use by lateral pull by a right-handed user (see Fig. 7A).

(b) When the operation lever 45 is at an intermediate position between both ends 47a, 47b of the operation guide portion 47, that is, in the horizontal downward position (second defined position B shown in Fig. 6B), the head main body 30 of the transfer head H is located at an angular position for guiding its leading end pressing portion 25 so that the mark transfer tape T may remain in wound state on the pay-out reel 11 and take-up reel 12, that is, the face and back sides of the mark transfer tape T may be directed nearly in a nearly vertical direction

(orthogonal) to the gripping surfaces 2a, 2b.

In this case, the new mark transfer tape T rolled out from the pay-out reel 11 is at the left side of the head main body 30, and is in a state suited to use by vertical pull (see Fig. 7B).

(c) When the operation lever 45 is in contact with other end 47b of the operation guide portion 47, that is, in the vertical upward position (third defined position C shown in 16C), the head main body 30 of the transfer head H is located at an angular position for guiding its leading end pressing portion 25 so that the mark transfer tape T may be nearly opposite to the gripping surfaces 2a, 2b of the case 2, in the upside down state of the case (a) above.

[0092] In this case, the new mark transfer tape T rolled out from the pay-out reel 11 is at the upper side of the head main body 30, and is in a state suited to use by lateral pull by a left-handed user (see Fig. 7C).

[0093] As clear from the description above, the direction of the operation lever 45 directly and visually shows the opposite direction of the new mark transfer tape T (function as head position indicator), and the user can confirm the tape pressing and transferring position of the head main body 30 by referring to the direction of the operation lever 45.

[0094] The rotating direction operating range of the operation guide portion 47 (nearly 180° at maximum in shown example) can be set in various desired values from a small angle range to a large angle range in consideration of relation between the operation lever 45 and the tape pressing and transferring position of the head main body 30.

[0095] Using the mark transfer tool 1 having such configuration, to transfer the transfer mark on the mark transfer tape onto a desired transfer area 50 on a sheet of paper or the like, whether the user is right-handed or left-handed as mentioned above, the operation lever 45 can be rotated according to the purpose, and an optimum tape pressing and transferring position of the head main body 30 of the transfer head H (typically, first defined position A shown in 16A, second defined position B shown in 16B, or third defined position C shown in 16C) can be selected and set, and corresponding to this position, the case 2 can be gripped by fingers on the gripping surfaces (standard gripping surfaces are face and back sides 2a, 2b of the case 2, but proper positions or sides of the case 2 may be gripped depending on the purpose), so that various methods of use, for example, as shown in Fig. 7A to Fig. 7C may be possible.

[0096] That is, in any method of use, the gripping surfaces of the case 2 are held like holding a writing tool, and the leading end pressing portion 25 of the transfer head H is pressed tightly to the transfer start end of the transfer area 50 on a sheet of paper or the like, and the case 2 is moved along the sheet of paper by a specified distance and stopped.

[0097] More specifically, in a complete state of previ-

ous mark transfer move, the transfer head H is pressed tightly to the transfer start end on the transfer area 50, and the case 2 is directly moved along the sheet of paper, and stopped when transfer of one (or plural) transfer marks M is over, and the transfer head H is lifted and separated from the transfer area 50.

[0098] By this operation, the transfer mark M of the mark transfer tape T in the leading end pressing portion 25 of the transfer head H is peeled from the base tape 15, and transferred onto the correction area 50, and the used mark transfer tape T after the transfer mark M is peeled off, that is, the base tape 15 is taken up and collected on the take-up reel 12.

[0099] Since the mark transfer tool 1 of the embodiment has a cartridge structure for exchanging the mark transfer tape T, various transfer marks M, M, ... depending on the purpose of use can be transferred and used by preparing a plurality of tape cartridges C having mark transfer tapes T of plural types of transfer marks M, M,

Embodiment 2

[0100] This embodiment is shown in Figs. 8A-8C, in which the structure of the mark transfer tape T in embodiment 1 is modified.

[0101] That is, in the mark transfer tape T of embodiment 1, the transfer mark layer 16 is formed continuously in the overall length of the base tape 15, but in the mark transfer tape T of this embodiment, as shown in Figs. 8A-8C, transfer marks M, M, ... for composing the transfer mark layer 16 are adhered and held on the surface of the base tape 15 independently and peelably at specific intervals.

[0102] In such configuration, same as in the transfer operation explained in embodiment 1, in a complete state of previous mark transfer move, the transfer head H is pressed tightly to the transfer start end on the transfer area 50, and the case 2 is directly moved along the sheet of paper, and stopped when transfer of one (or plural) transfer marks M is over, and the transfer head H is lifted and separated from the transfer area 50.

[0103] By this operation, only one transfer mark M on the mark transfer tape T is peeled securely from the base tape 15, and transferred onto the correction area 50.

[0104] The other configuration and operation are same as in embodiment 1.

Embodiment 3

[0105] This embodiment is shown in Figs. 9A-9C, in which the structure of the mark transfer tape T in embodiment 1 is modified.

[0106] That is, in the mark transfer tape T of this embodiment, same as in the mark transfer tape T of embodiment 1, although the transfer mark layer 16 is formed continuously in the overall length of the base

tape 15, as shown in Figs. 9A-9C, at least two cut lines 55, 55 are formed at a specified interval between transfer marks M, M of the transfer mark layer 16, so that it is easier and secure to cut when transferring the transfer marks M.

[0107] In the shown embodiment, two cut lines 55, 55 are provided in the middle of the transfer marks M, M at a specific interval. These cut lines 55, 55 are formed as being extended straightly in the longitudinal direction of the transfer tape T in the over all length of the transfer mark width 16. The interval L of the cut lines 55, 55 is set larger than the pressing width 1 of the leading end pressing portion 25 of the transfer head H ($L > 1$).

[0108] In such configuration, same as in the transfer operation explained in embodiment 1, in a complete state of previous mark transfer move, the transfer head H is pressed tightly to the transfer start end on the transfer area 50, and the case 2 is directly moved along the sheet of paper, and stopped when transfer of one (or plural) transfer marks M is over, and the transfer head H is lifted and separated from the transfer area 50. In this case, the stopping position of the mark transfer tool 1 is at a position where the leading end pressing portion 25 of the transfer head H is between the two cut lines 55, 55.

[0109] By this operation, only one transfer mark M on the mark transfer tape T is peeled securely from the base tape 15 at the cut line 55, and transferred onto the correction area 50, and the cut-off line is straight.

[0110] The other configuration and operation are same as in embodiment 1.

Embodiment 4

[0111] This embodiment is shown in Figs. 10A-10C, in which the structure of the mark transfer tape T in embodiment 3 is modified.

[0112] That is, in the mark transfer tape T of embodiment 3, although two cut lines 55, 55 are formed at a specified interval only between transfer marks M, M of the transfer mark layer 16, but in the mark transfer tape T of this embodiment, multiple cut lines 5, 5, ... are provided in the transfer mark layer 16 over the entire length at specific intervals.

[0113] In this configuration, in the manufacturing process of the mark transfer tape T, cut lines 5, 5, ... can be formed more easily and securely than in embodiment 3.

[0114] In transfer operation, only one transfer mark M on the mark transfer tape T is transferred onto the correction area 50, and the cut-off line is straight, same as in embodiment 3, but in this case, moreover, the stopping position condition of the mark transfer tool 1 is less strict than in embodiment 3, and by lifting the mark transfer tool 1 when the leading end pressing portion 25 of the head H is at an arbitrary position between the transfer marks M, M, the transfer mark M is securely peeled from the base tape 15 at the cut line 55 position, and

transferred on the correction area 50, so that it is easier and secure to cut off when transferring the transfer mark M.

[0115] The other configuration and operation are same as in embodiment 3.

Embodiment 5

[0116] This embodiment is shown in Figs. 11A-10C and Figs. 12A-12C, in which the specific structure of the mark transfer tape T in embodiment 1 is slightly modified.

[0117] That is, in the mark transfer tape T of embodiments 1 and 2, the transfer mark M is composed of marks only (in the shown example, only a mark composed of alphabetic letters "SEED"), whereas in the mark transfer tape T of the embodiment, as shown, the transfer mark M is composed of marks Ma and blank spaces Mb for overwriting.

[0118] More specifically, as shown in Fig. 11B, mark Ma is a designed mark "FAXED", and blank space Mb for overwriting is a blank space of specified shape and dimension (inside of elliptical frame) combined with mark Ma "FAXED", this blank space Mb is for writing the date.

[0119] The mark Ma and blank space Mb form a mark array layer 18 of transfer mark layer 16 same as in embodiment 1.

[0120] That is, as shown in Fig. 11A, the mark array layer 18 is composed of multiple marks (marks "FAXED" and elliptical blank spaces for overwriting) M', M', M', ... arranged continuously and peelably at specified intervals in the running direction of the base tape 15, and these marks M', M', M', ... are formed on the mark forming layer 17 by known printing technology as mentioned above.

[0121] The mark forming layer 17 has not only basic functions mentioned above (forming function of mark array layer 18 and adhering and holding function of transfer mark layer 16), but also a function of allowing overwriting by a ball-point pen or other writing tool 60 on the blank space Mb as surface forming portion of the transfer mark layer 16 after transfer of transfer mark M.

[0122] For this purpose, the mark forming layer 17 is made of a material capable of exhibiting such functions. The mark forming layer 17 of the embodiment is preferably made of a transparent resin material of dry type suited to the surface layer after parting and allowing to overwrite by writing tool 60, and having a certain adhesion holding property on the surface of the base tape 15 treated to be peelable.

[0123] In the mark transfer tool 1 having such configuration, by the same transfer operation as explained in embodiment 1, after the transfer mark M on the mark transfer tape T is transferred on the transfer area 50, a desired character (in the shown case, the date) can be written by writing tool 60 on the blank space Mb of the transfer mark M.

[0124] Thus, the transfer mark M is composed of mark Ma and blank space Mb for overwriting, and therefore it is possible to write on a material not to be written directly by writing tool 60 or on a material not to be erased cleanly if once written.

[0125] The other configuration and operation are same as in embodiment 1.

[0126] Other specific examples of transfer mark M (mark Ma and blank space Mb) are shown in Fig. 12B and Fig. 12C.

[0127] In Fig. 12B, same as shown above, the mark Ma and blank space Mb are combined, in which ① is a mark composed of a mark Ma "RECEIVED/with thanks/SEED" enclosed in a rectangular frame, and a rectangular writing space Mb made beneath the mark Ma "RECEIVED/with thanks/SEED", and this blank space for overwriting Mb is to be filled with the date.

[0128] In ②, mark Ma is a rectangular frame having seven rectangular cells formed of thick lines and fine lines, as blank spaces for overwriting Mb, formed within the frame, and the seven cells of the blank spaces Mb are filled with the Japanese postal code number (consisting of seven numerals).

[0129] In Fig. 12C, on the other hand, mark Ma and blank space Mb are set side by side, in which ① is a mark Ma "Tel:" followed by a blank space Mb for writing a telephone number.

② is a mark Ma "Fax:" followed by a blank space Mb for writing a facsimile number.

③ is a mark Ma "Email:" followed by a blank space Mb for writing an e-mail address.

Embodiment 6

[0130] This embodiment is shown in Fig. 13, in which the basic structure of the mark transfer tool 1 is modified.

[0131] That is, in the mark transfer tool 1 of the foregoing embodiments, the mark transfer tape T as a consumable part is an exchangeable cartridge type, that is, refill type, whereas this embodiment presents a one-time disposable type, that is, all component parts including the mark transfer tape T are consumable parts.

[0132] In the mark transfer tool 1 of the embodiment, in a hand-held case 2, a pay-out reel 11 on which a mark transfer tape T is wound, and a take-up reel 12 for collecting the mark transfer tape T after use are installed, and a transfer head H is disposed at the leading end of the case 2 so as to be rotatable about its head axial center. The specific structure of the transfer head H is same as in embodiment 1, except for its mounting position.

[0133] Although not shown specifically, in the case main body 4 of the case 2, aside from the pay-out reel 11 and take-up reel 12, a tape interlock unit for mutually interlocking these reels 11, 12, a clutch mechanism for synchronizing the pay-out speed and take-up speed of the mark transfer tape T by the pay-out reel 11 and take-up reel 12, and other principal and basic mechanical

parts are also assembled in a unit.

[0134] The other configuration and operation are same as in embodiment 1.

5 Embodiment 7

[0135] This embodiment is shown in Figs. 14A-14C, in which the structure of the mark transfer tape T is modified.

10 **[0136]** That is, in the mark transfer tape T of this embodiment, as shown in Figs. 14A-14C, a transfer tape layer 16 to be adhered and held on the surface side (lower side in Fig. 14B and Fig. 14C) of a base tape 15 is an integral laminate structure consisting of a pressure-sensitive adhesive layer 19 and a mark array layer 18.

15 **[0137]** In the embodiment, the pressure-sensitive adhesive layer 19 also functions as the mark forming layer 17 in embodiment 1, and the mark array layer 18 is printed and formed on the surface of this mark forming layer 17.

20 **[0138]** Thus laminated transfer mark layer 16 is, as shown, adhered and held on the surface of the base tape 15 treated for parting (the lower side in Fig. 14B and Fig. 14C) peelably and separably through the pressure-sensitive adhesive layer 19.

25 **[0139]** In a specific forming method of the transfer mark layer 16, the pressure-sensitive adhesive layer 19 is applied and formed on the surface of the base tape 15, and the mark array layer 18 is printed and formed on the surface of the pressure-sensitive adhesive layer 19.

30 **[0140]** The other configuration and operation are same as in embodiment 1.

35 Embodiment 8

[0141] This embodiment is shown in Figs. 15A-15C, in which the structure of the mark transfer tape T is modified.

40 **[0142]** That is, in the mark transfer tape T of this embodiment, as shown in Figs. 15A-15C, a transfer tape layer 16 to be adhered and held on the surface side (lower side in Fig. 15B and Fig. 15C) of a base tape 15 is an integral laminate structure consisting of a mark array layer 18 and a pressure-sensitive adhesive layer 19, and the mark forming layer 17 in the mark transfer tape T in embodiment 1 is omitted.

45 **[0143]** In other words, the mark array layer 18 is directly printed and formed on the parting treated surface of the base tape 15, and when transferring a mark, therefore, the mark array layer 18 is peeled from the surface of the base tape 15, and directly forms the surface layer.

50 **[0144]** The other configuration and operation are same as in embodiment 1.

Embodiment 9

[0145] This embodiment is shown in Figs. 16A-16C, in which the structure of the mark transfer tape T is slightly modified.

[0146] That is, in the mark transfer tape T of this embodiment, as shown in Figs. 16A-16C, the surface side (lower side in Fig. 16B and Fig. 16C) of a base tape 15 is treated to be adhesive 110, and a mark array layer 18 is directly printed and formed on this surface. When transferring a mark, therefore, the mark array layer 18 is peeled from the surface of the base tape 15, and directly forms the surface layer.

[0147] The other configuration and operation are same as in embodiment 8.

[0148] The foregoing embodiments 1 to 9 are only preferred embodiments for carrying out the invention, and the invention is not limited by them, but can be changed and modified in various forms within its scope.

[0149] For example, the mark transfer tool 1 may be realized by other specific structure. The transfer head H in the shown embodiments has a so-called rotary head structure having the head main body 30 held rotatably about its axial center, and can be used in various tape pressing and transferring positions as shown in Fig. 7A to Fig. 7C, but it may be also realized by a so-called fixed head structure which is permitted to be used only in one of these tape pressing and transferring positions.

[0150] As described herein, the mark transfer tool of the invention is a mark transfer tool for transferring a transfer mark on a mark transfer tape on a sheet of paper or the like, comprising a hand-held case, a pay-out reel containing a mark transfer tape, being rotatably installed in the case, a take-up reel for collecting the used mark transfer tape, being rotatably installed in the case, and a transfer head for pressing and transferring the mark transfer tape being paid out from the pay-out reel onto the transfer area, being disposed at the leading end of the case, in which the mark transfer tape has pressure-sensitive adhesive transfer marks disposed and held continuously at specific intervals peelably on the surface of a base tape, and therefore various marks composed of characters, codes, patterns or their combination can be transferred by a completely new mark transfer technology different from the conventional mark transfer technology such as stamp impression or mark seal adhesion, so that diversified preferences of general users can be effectively satisfied.

[0151] That is, when transferring a transfer mark on the mark transfer tape on a desired transfer area of a sheet of paper or the like by using the mark transfer tool of the invention, the case is gripped by fingers, and the leading end pressing portion of the transfer head is tightly pressed to the transfer area, and is moved along the sheet of paper, so that the transfer mark is transferred. That is, the mark transfer tape after use from which the transfer mark is peeled, that is, the base tape is taken up and collected on the take-up reel.

[0152] When the transfer mark is composed of marks and blank spaces for overwriting, after transferring the transfer mark, characters can be written over the blank space by writing tool.

[0153] Further, when blank spaces for overwriting are provided in the transfer marks, it is possible to write on a material not to be written directly by writing tool or on a material not to be erased cleanly if once written.

[0154] Exemplary embodiments presented in the detailed description of the invention above are intended to disclose the technical features of the invention, and it is to be understood that the invention is not limited to those illustrated embodiments alone but is interpreted in a wider sense of meaning, and that various changes and modifications may be effected without departing from the scope or true spirit of the invention.

Claims

1. A mark transfer tool for transferring a transfer mark on a mark transfer tape on a sheet of paper or the like, comprising:

a hand-held case,
a pay-out reel containing a mark transfer tape, being rotatably installed in the case,
a take-up reel for collecting the used mark transfer tape, being rotatably installed in the case, and
a transfer head for pressing and transferring the mark transfer tape being paid out from the pay-out reel onto the transfer area, being disposed at the leading end of the case,

wherein said mark transfer tape has pressure-sensitive adhesive transfer marks disposed and held continuously at specific intervals peelably on the surface of a base tape.

2. The mark transfer tool of claim 1, wherein a transfer mark layer composed of multiple transfer marks is adhered and held peelably at the surface side of the base tape of which back side is treated for parting.

3. The mark transfer tool of claim 1, wherein a transfer mark layer composed of multiple transfer marks is adhered and held peelably and separably at the surface side of the base tape of which back side is treated for parting.

4. The mark transfer tool of claim 3, wherein at least two cut lines are provided at a specific interval between the transfer marks of the transfer mark layer, and these cut lines are extended and formed straightly over the entire width of the transfer mark layer.

5. The mark transfer tool of claim 3,
 wherein multiple cut lines are provided at a specific interval over the entire length of the transfer mark layer, and these cut lines are extended and formed straightly over the entire width of the transfer mark layer. 5
6. The mark transfer tool of claim 4 or 5,
 wherein the disposing interval of the cut lines is set larger than the pressing width of the leading end pressing portion of the transfer head. 10
7. The mark transfer tool of claim 1,
 wherein said transfer mark is composed of various marks only. 15
8. The mark transfer tool of claim 1,
 wherein said transfer mark is composed of various marks and blank spaces for overwriting. 20
9. The mark transfer tool of claim 8,
 wherein at least the surface forming portion of the blank space for overwriting in the transfer mark is made of a material allowing to overwrite by a writing tool. 25
10. A mark transfer tape loaded and used in a mark transfer tool for transferring a transfer mark on a sheet of paper or the like,
 wherein pressure-sensitive adhesive transfer marks are disposed and held on the surface of a base tape continuously and peelable at a specified interval. 30
11. The mark transfer tape of claim 10,
 a transfer mark layer composed of multiple transfer marks is adhered and held peelably at the surface side of the base tape of which back side is treated for parting. 35
12. The mark transfer tape of claim 10,
 wherein a transfer mark layer composed of multiple transfer marks is adhered and held peelably and separably at the surface side of the base tape of which back side is treated for parting. 40
13. The mark transfer tape of claim 12,
 wherein at least two cut lines are provided at a specific interval between the transfer marks of the transfer mark layer, and these cut lines are extended and formed straightly over the entire width of the transfer mark layer. 50
14. The mark transfer tape of claim 12,
 wherein multiple cut lines are provided at a specific interval over the entire length of the transfer mark layer, and these cut lines are extended and formed straightly over the entire width of the transfer mark layer. 55
15. The mark transfer tape of claim 13 or 14,
 wherein the disposing interval of the cut lines is set larger than the pressing width of the leading end pressing portion of a transfer head of the mark transfer tool.
16. The mark transfer tape of claim 13 or 14,
 wherein said transfer mark layer is formed by integrally laminating a pressure-sensitive adhesive layer made of a pressure-sensitive adhesive transparent material, and a mark array layer having multiple marks arranged continuously at specific intervals in the running direction of the base tape, and the transfer mark layer is adhered and held peelably and separably on the parting treated surface of the base tape through the pressure-sensitive adhesive layer.
17. The mark transfer tape of claim 13 or 14,
 wherein said transfer mark layer is formed by integrally laminating a mark forming layer made of an adhesive transparent material, a mark array layer having multiple marks arranged continuously at specific intervals in the running direction of the base tape, and a pressure-sensitive adhesive layer made of a pressure-sensitive adhesive transparent material, and this transfer mark layer is adhered and held peelably and separably on the parting treated surface of the base tape through the mark forming layer.
18. The mark transfer tape of claim 13 or 14,
 wherein said transfer mark layer is formed by integrally laminating a mark array layer having multiple marks arranged continuously at specific intervals in the running direction of the base tape, and a pressure-sensitive adhesive layer made of a pressure-sensitive adhesive transparent material, and this transfer mark layer is adhered and held on the parting treated surface of the base tape peelably and separably through the mark array layer.
19. The mark transfer tape of claim 13 or 14,
 wherein said transfer mark layer is formed by integrally laminating a mark array layer having multiple marks arranged continuously at specific intervals in the running direction of the base tape, and a pressure-sensitive adhesive layer made of a pressure-sensitive adhesive transparent material, and this transfer mark layer is adhered and held on the adhesion treated surface of the base tape peelably and separably through the mark array layer.
20. The mark transfer tape of any one of claims 10 to 14,
 wherein said transfer mark is composed of various marks only.

21. The mark transfer tape of any one of claims 10 to 14,
wherein said transfer mark is composed of
various marks and blank spaces for overwriting,
and the surface forming portion of the transfer mark
is made of a material allowing to overwrite by a writ- 5
ing tool.

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Fig. 1

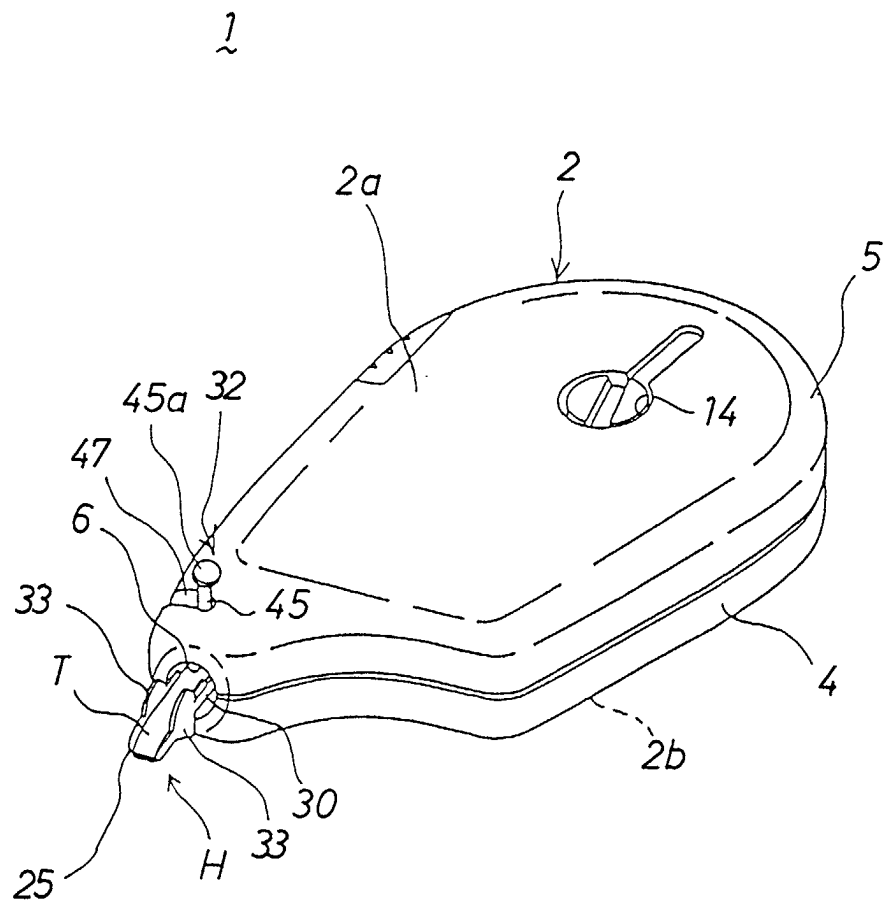


Fig. 2

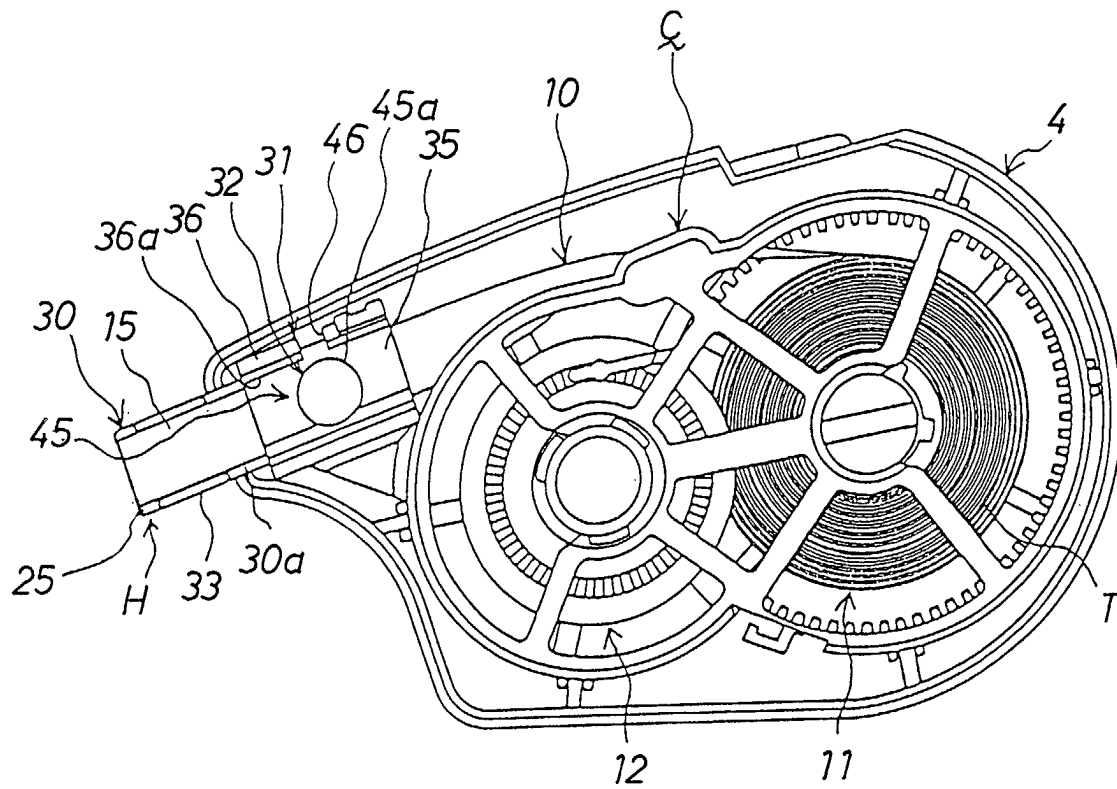


Fig. 3

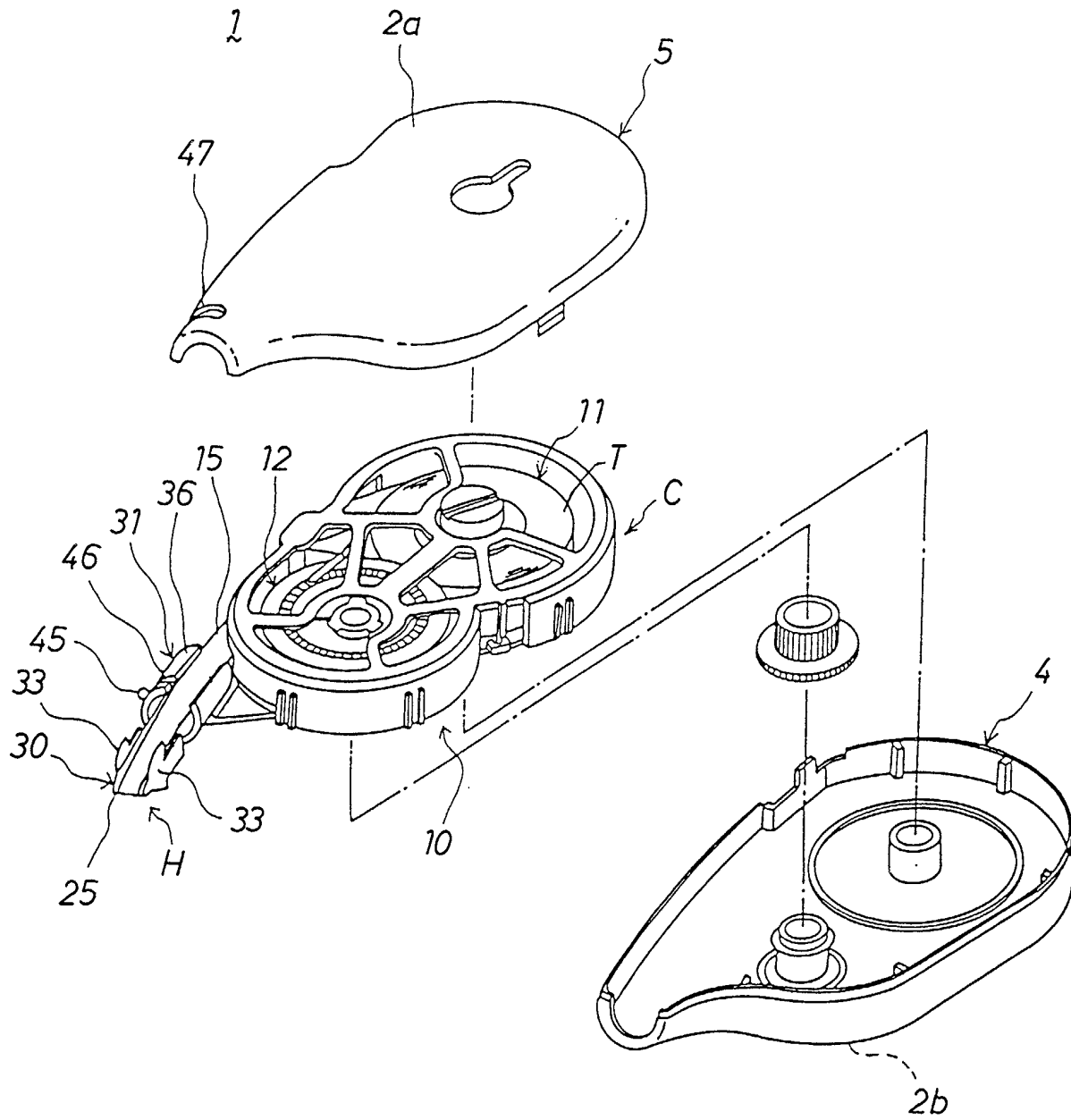


Fig.4A

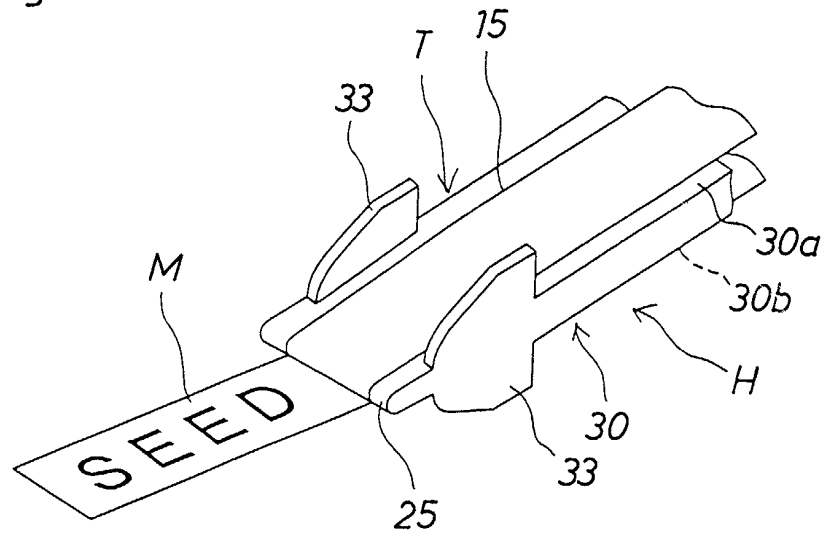


Fig.4B

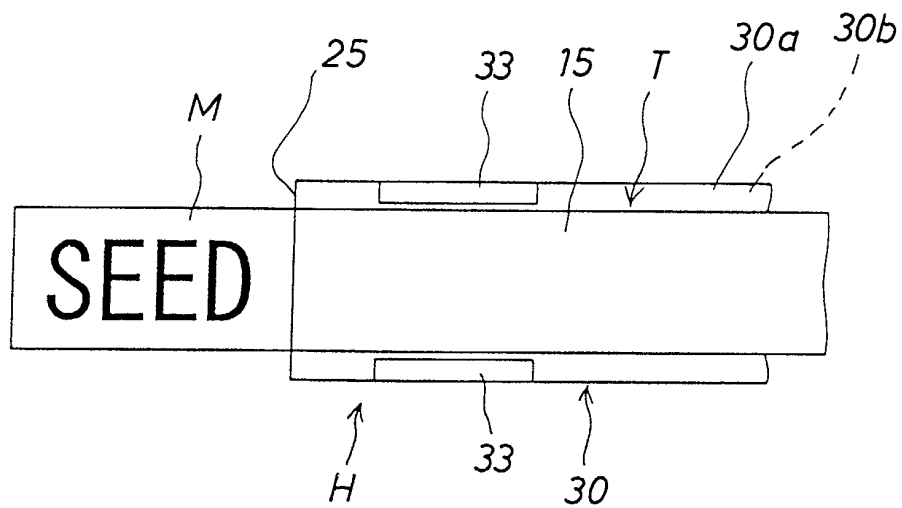


Fig.5A

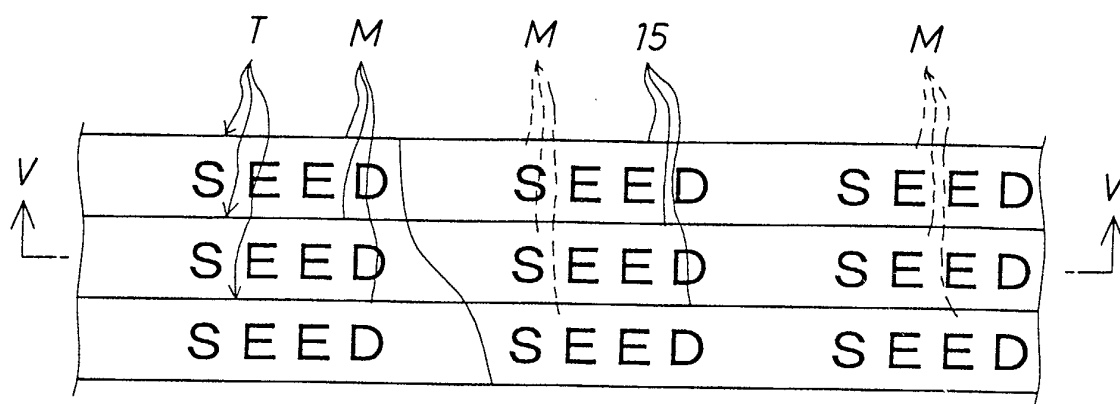


Fig. 5B

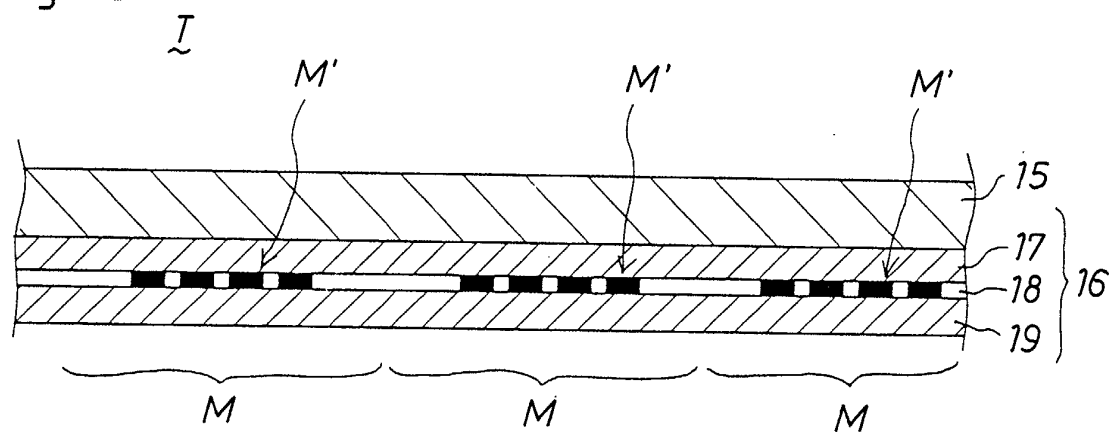


Fig.5C

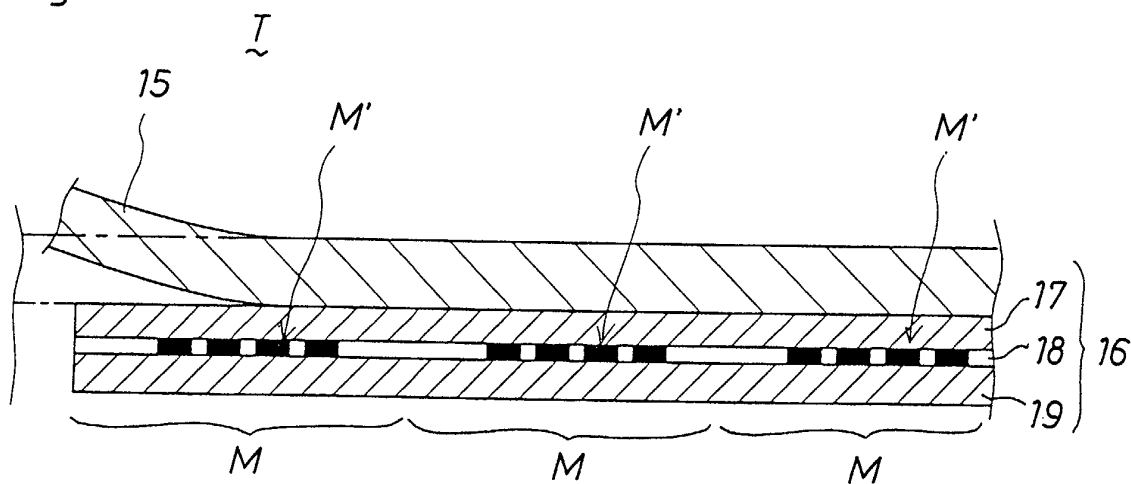


Fig.6A

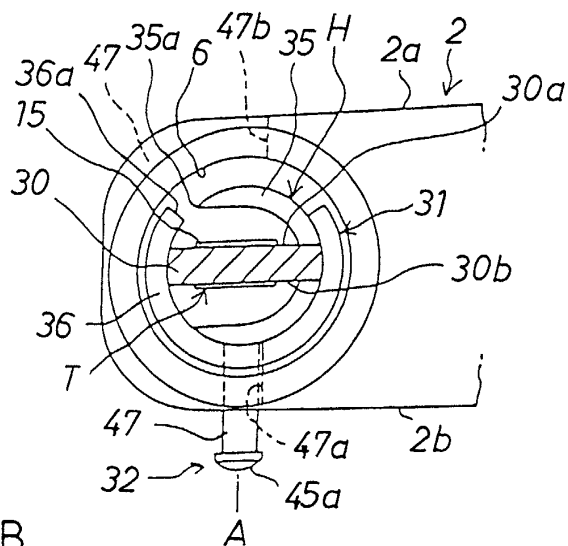


Fig.6B

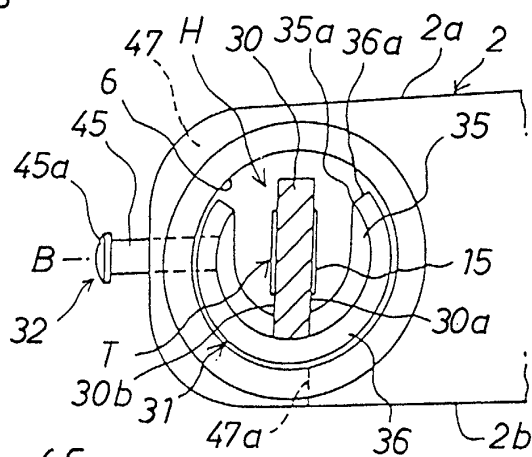


Fig.6C

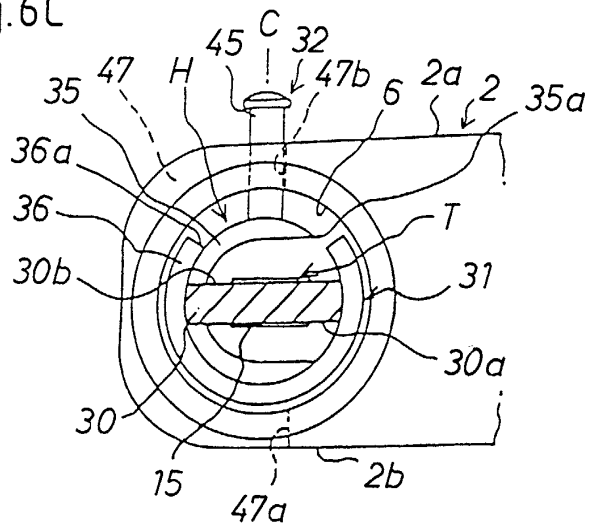


Fig. 7A

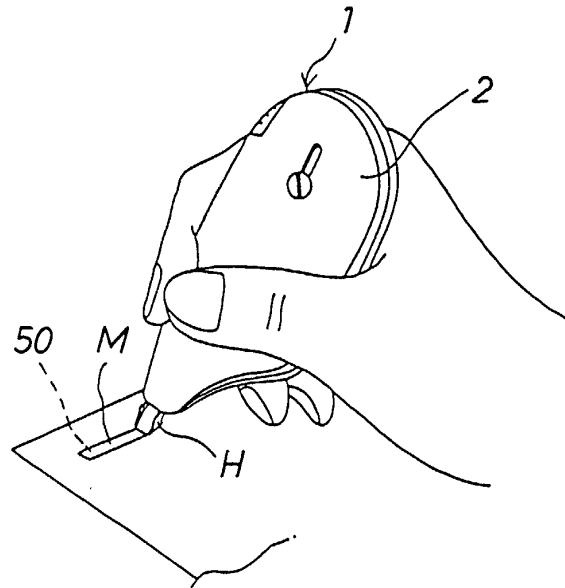


Fig. 7B

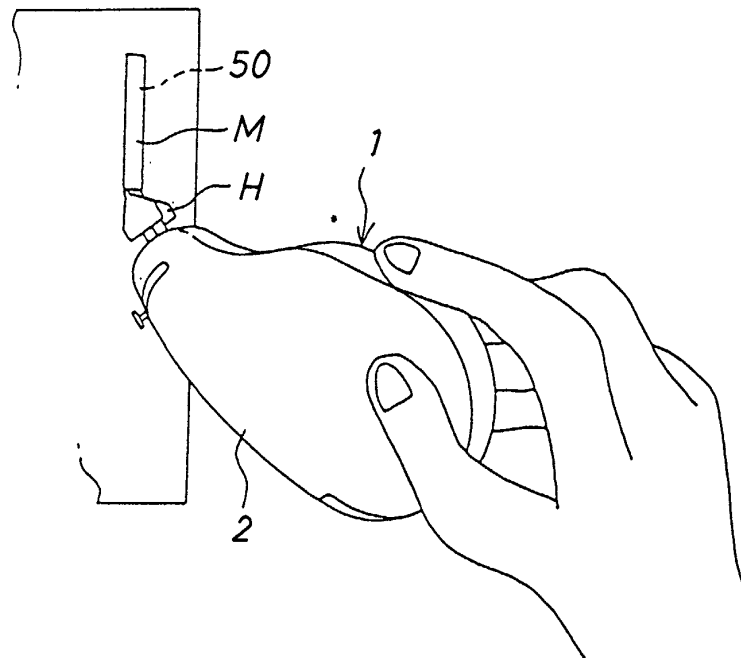


Fig. 7C

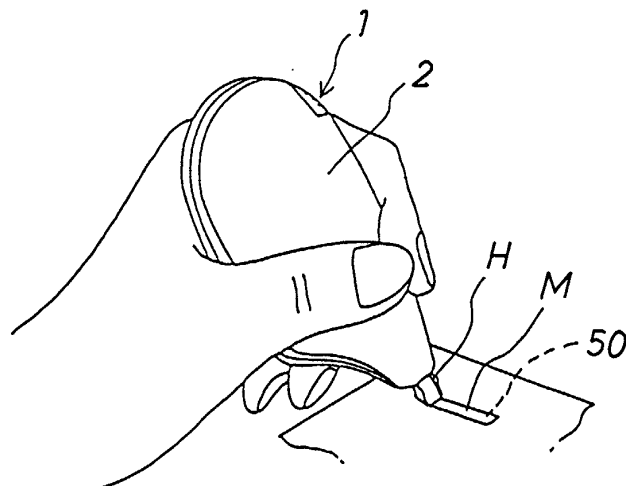


Fig.8A

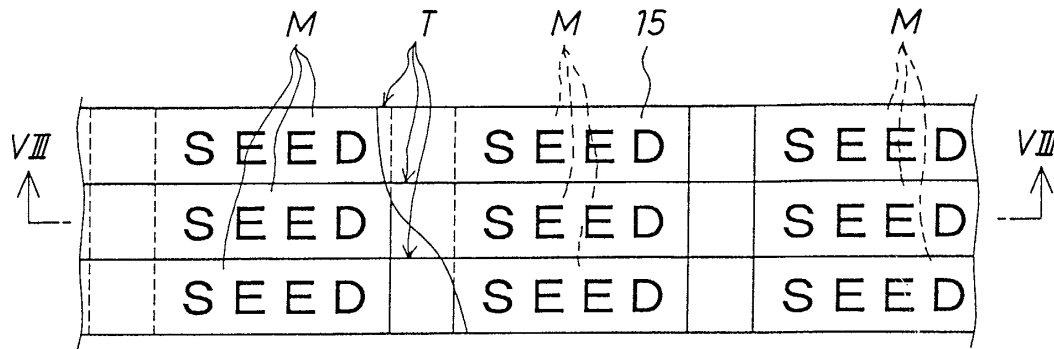


Fig. 8B

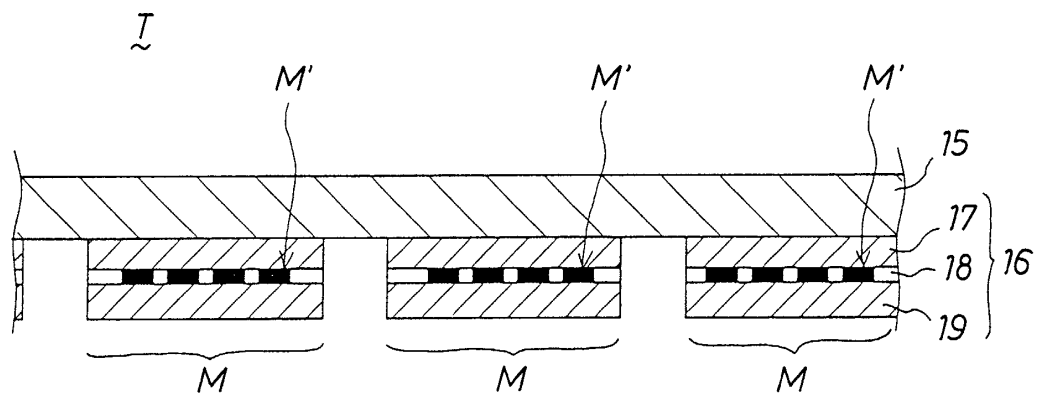


Fig. 8C

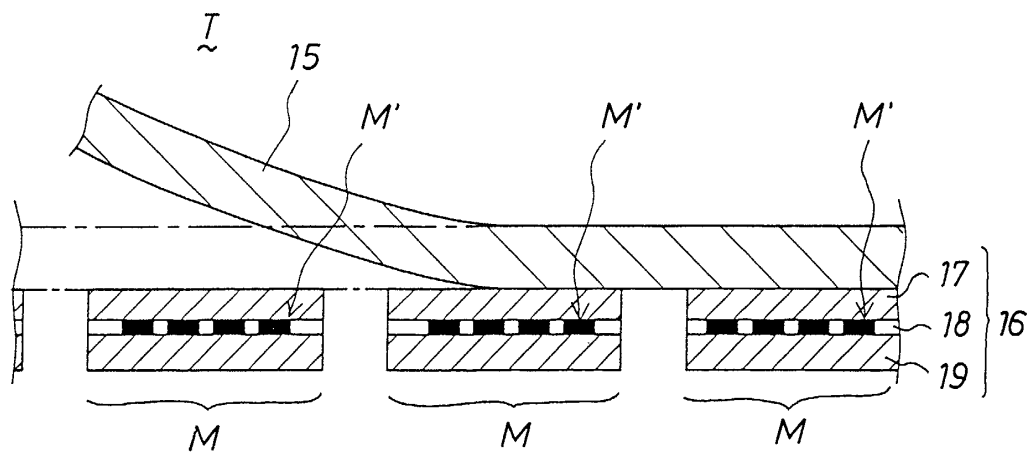


Fig.9A

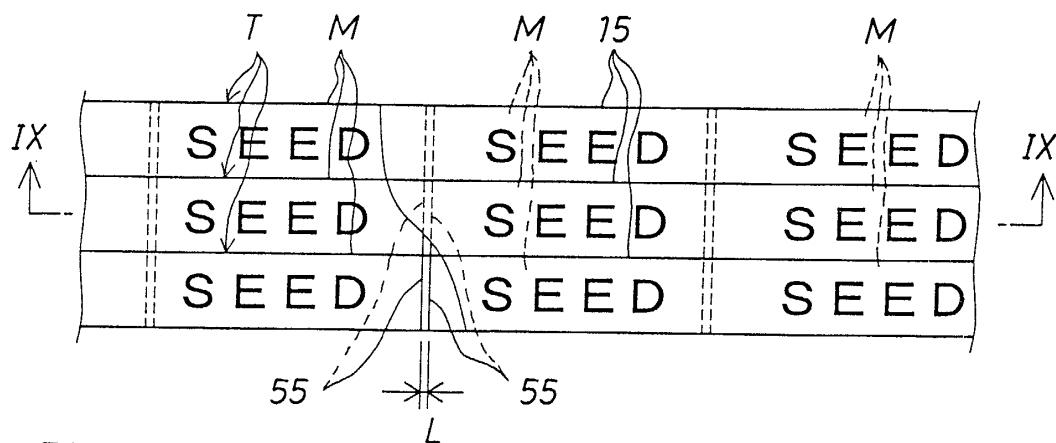


Fig.9B

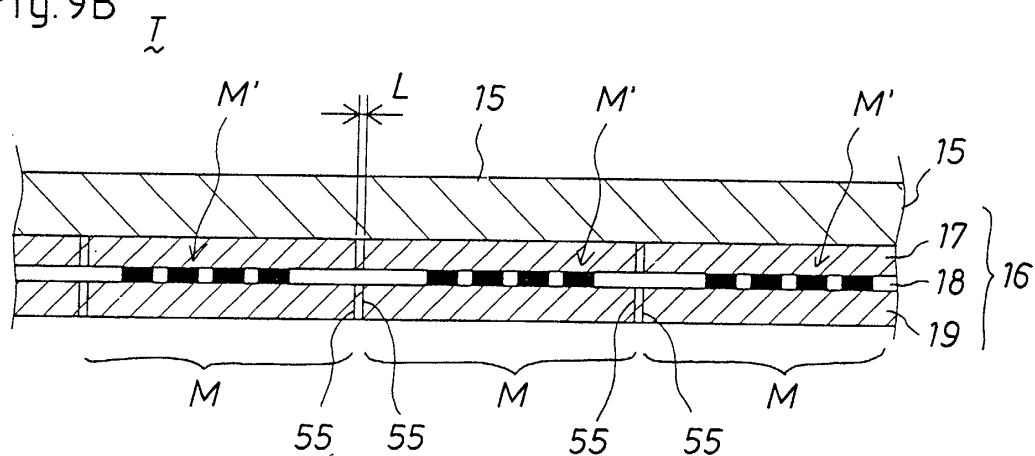


Fig.9C

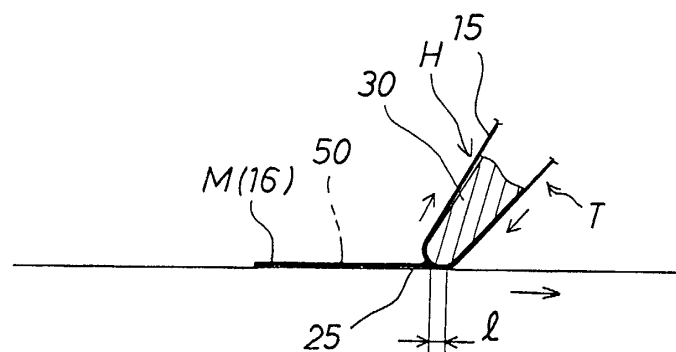


Fig.10A

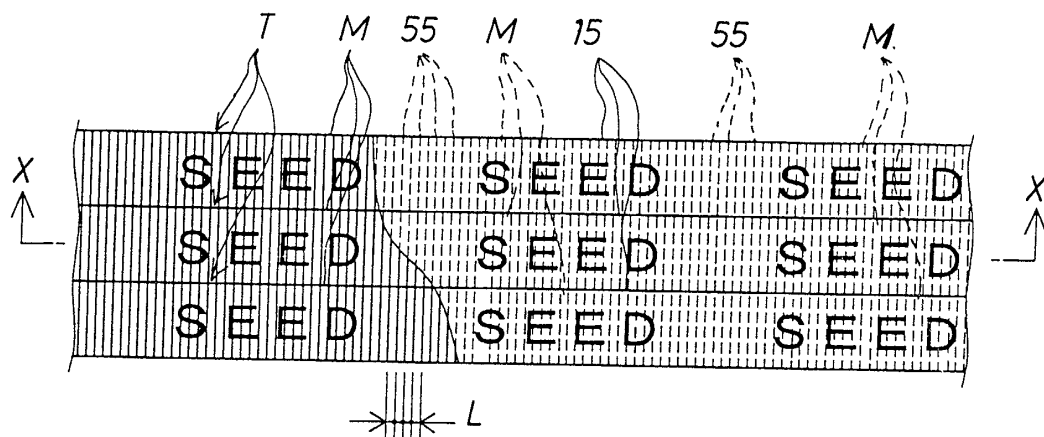


Fig.10B

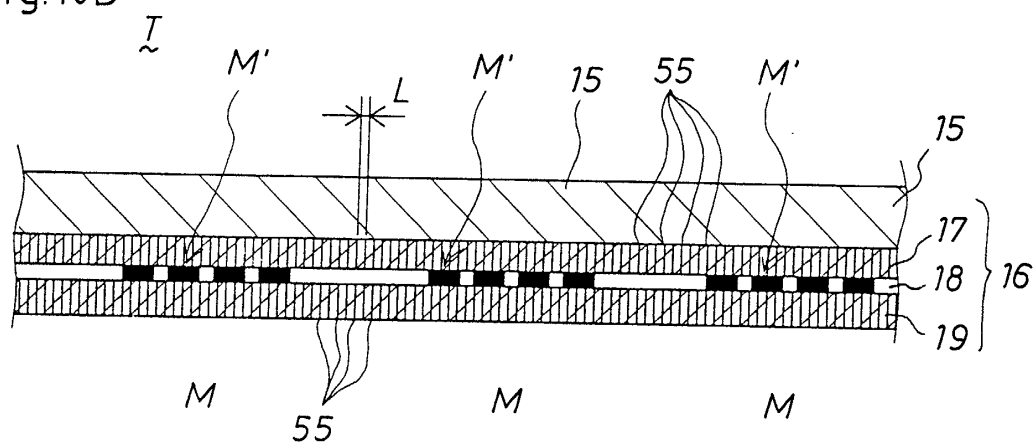


Fig.10C

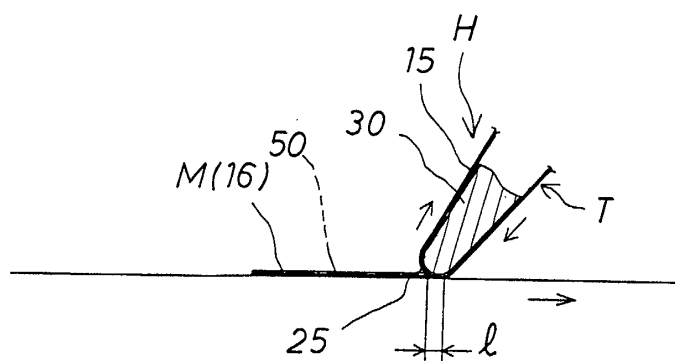


Fig.11A

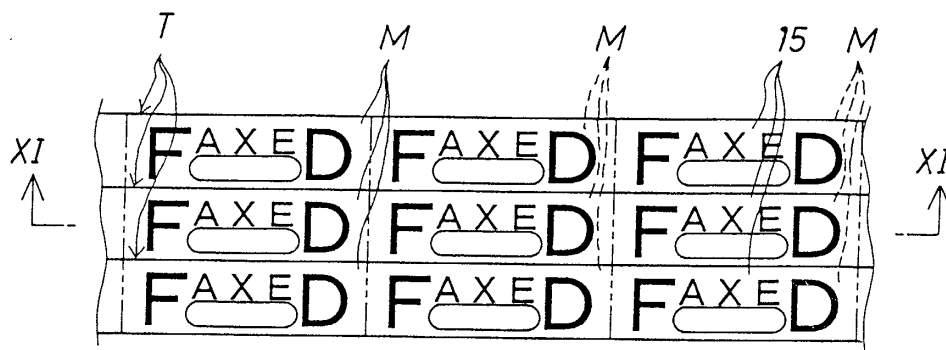


Fig.11B

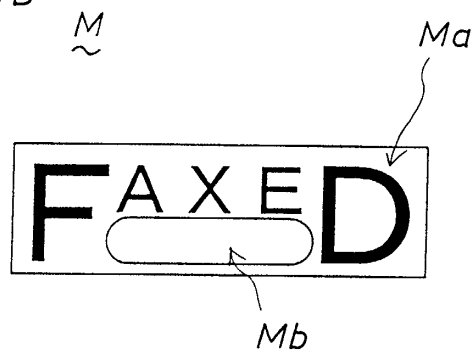


Fig.11C

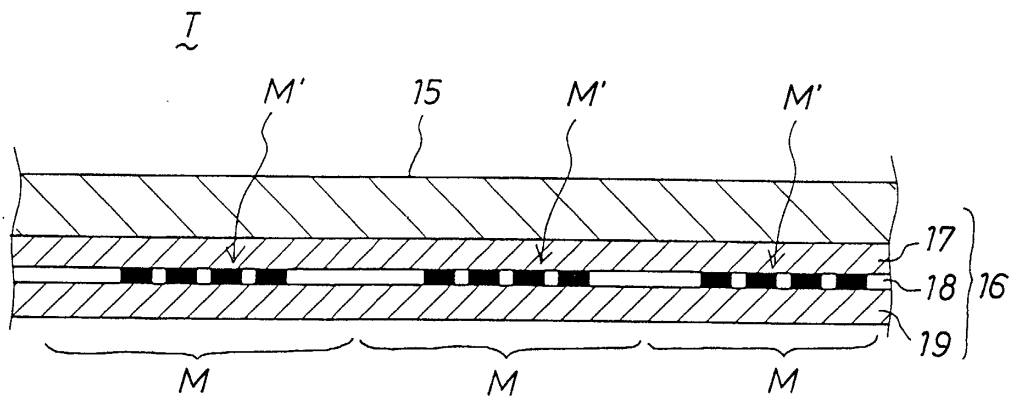


Fig.12A

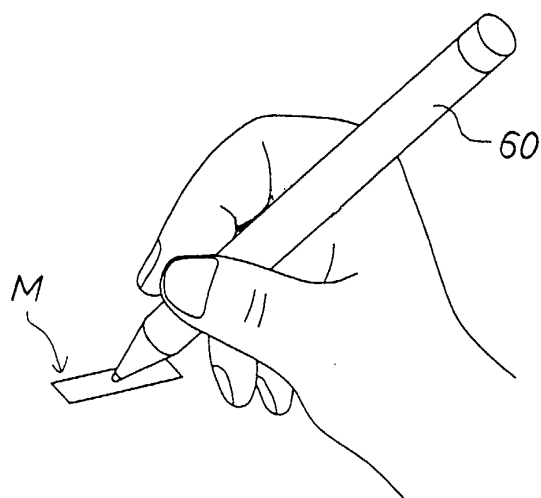


Fig.12B

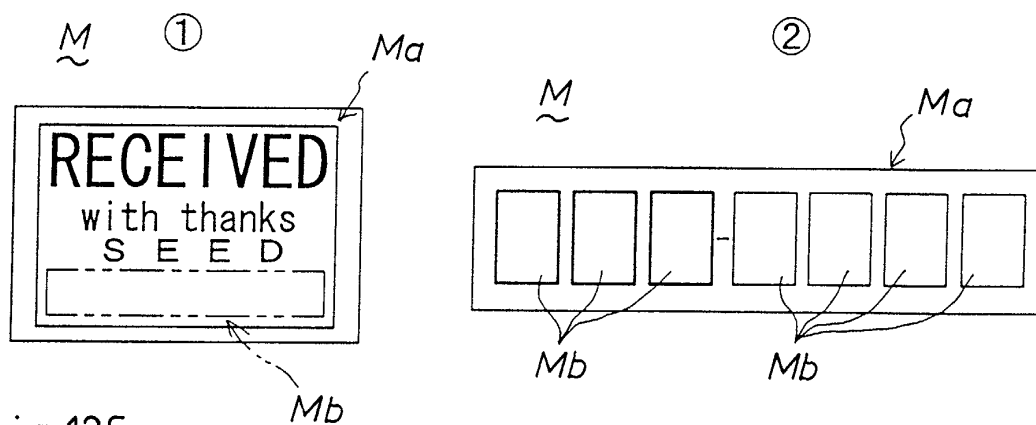


Fig.12C

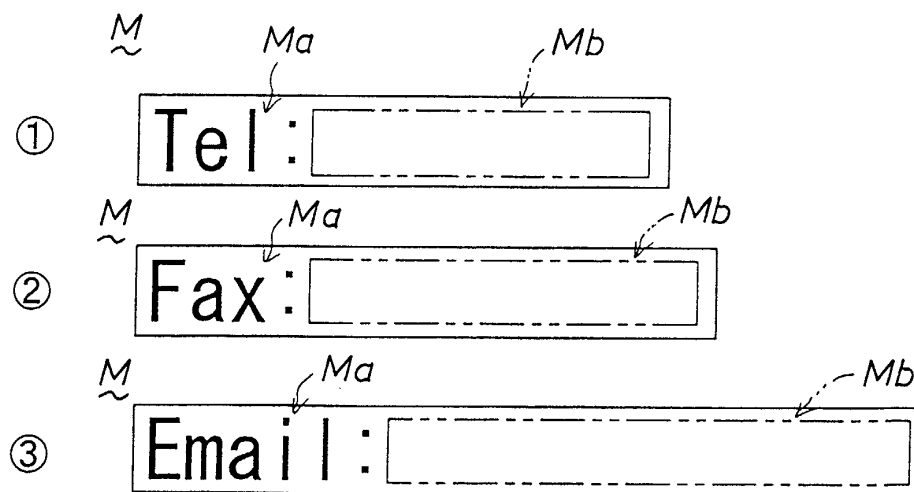


Fig. 13

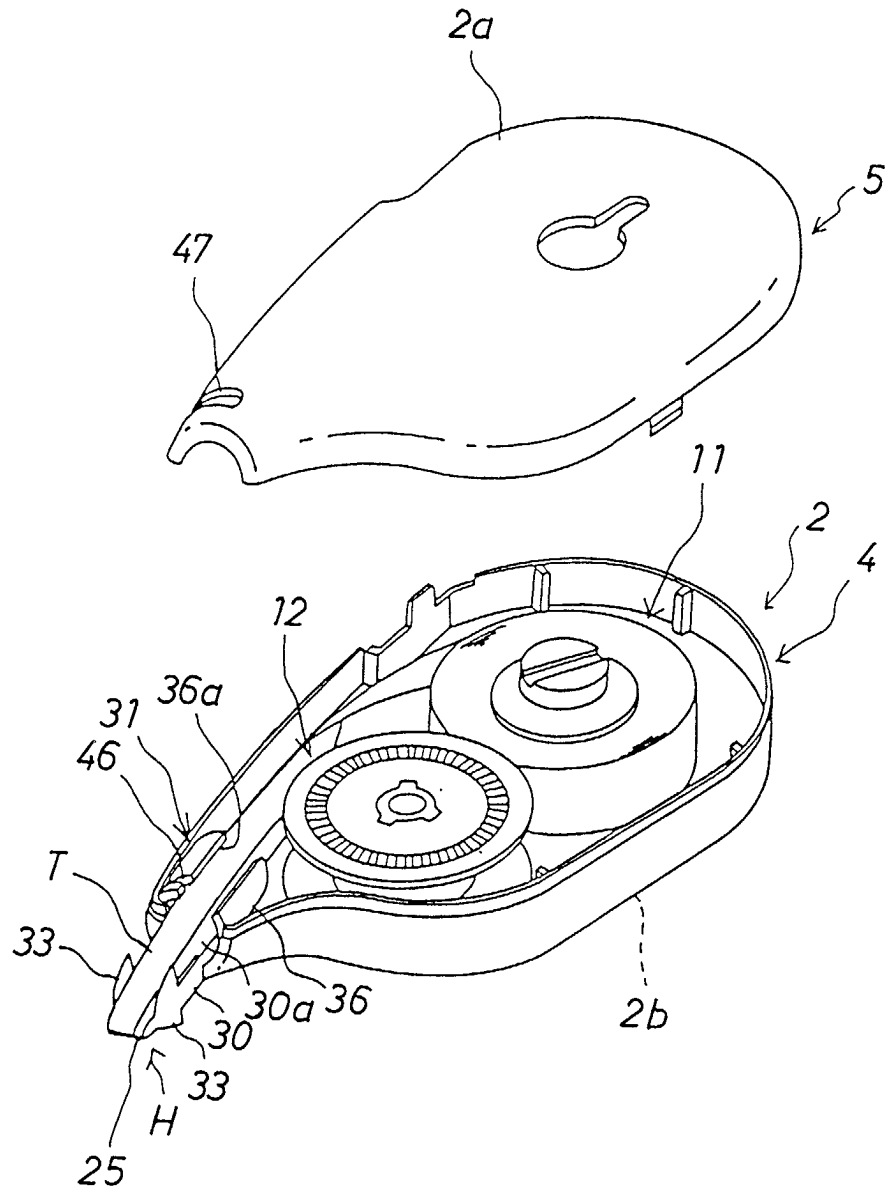


Fig.14A

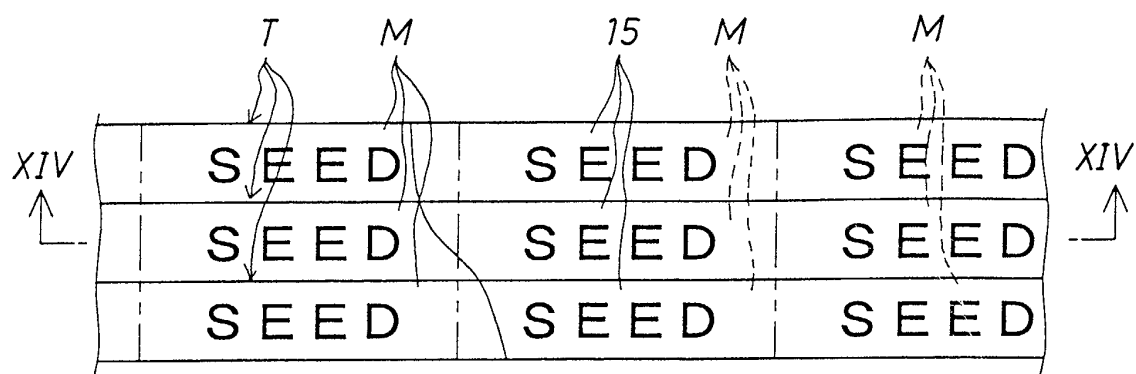


Fig.14B

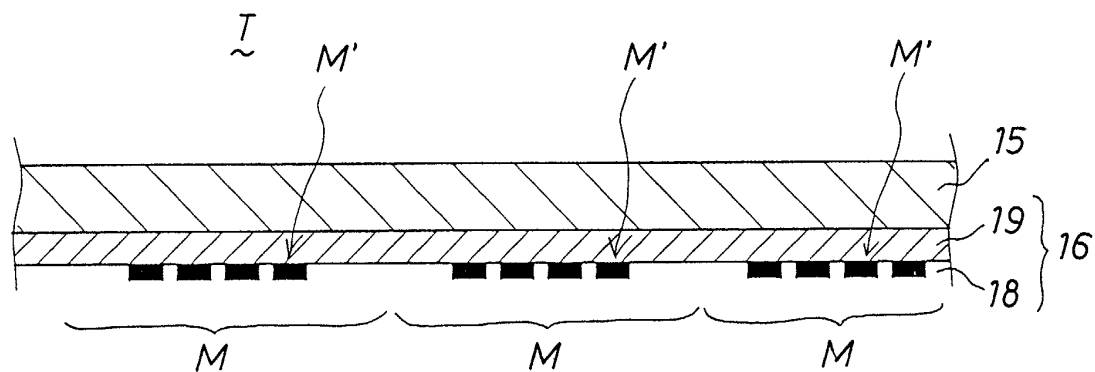


Fig.14C

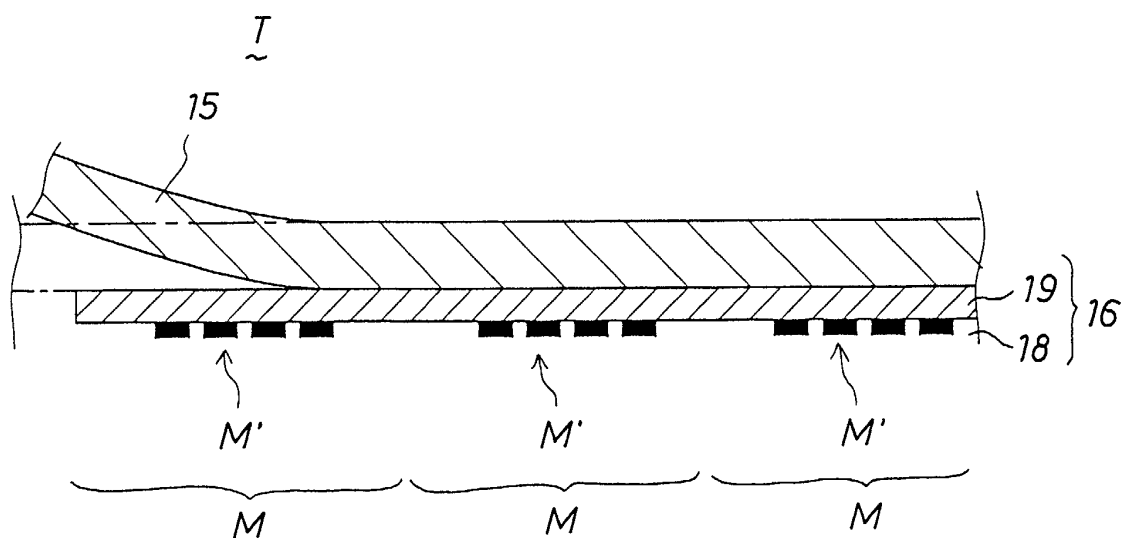


Fig.15A

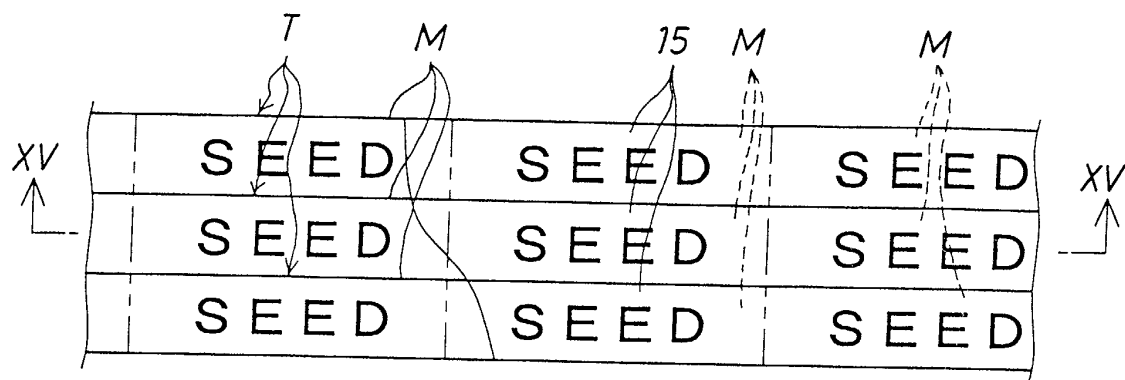


Fig.15 B

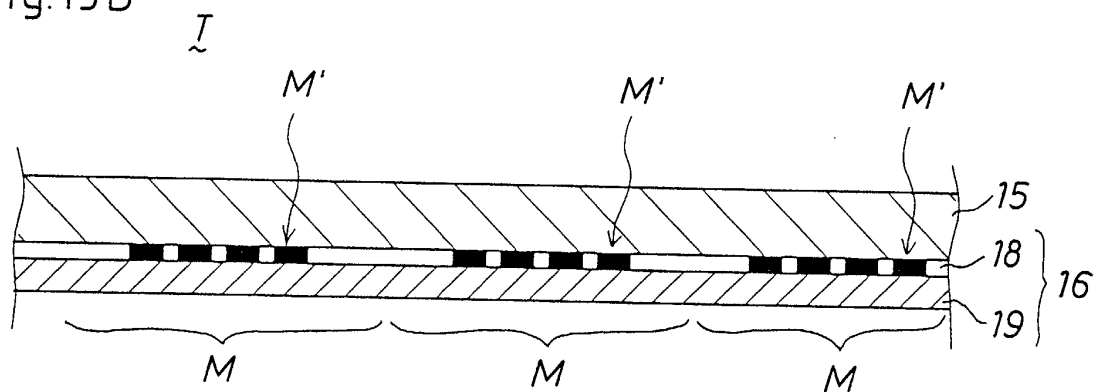


Fig.15C

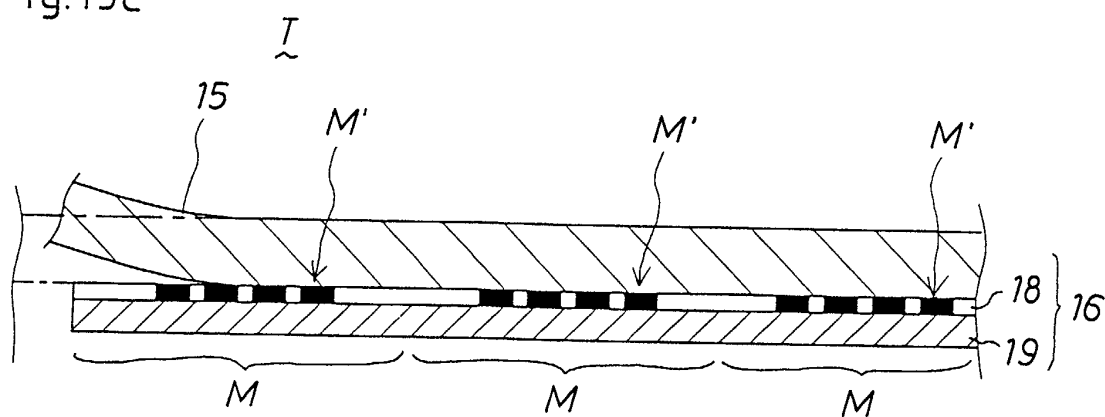


FIG.16A

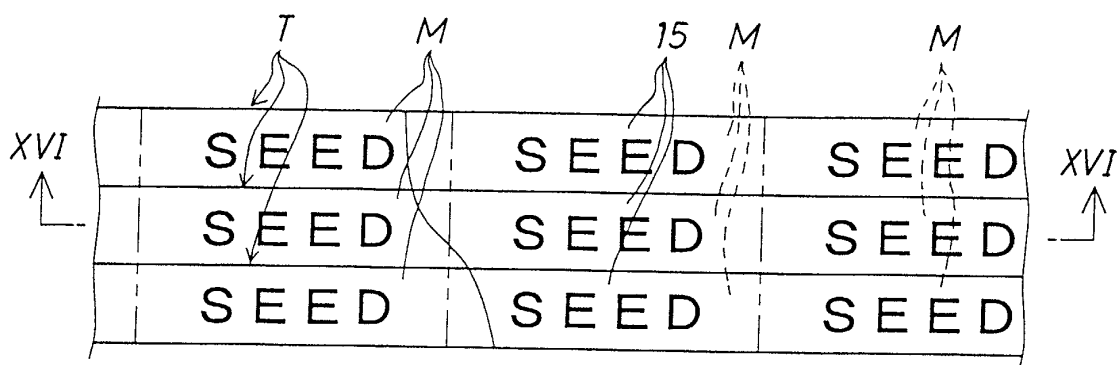


Fig.16B

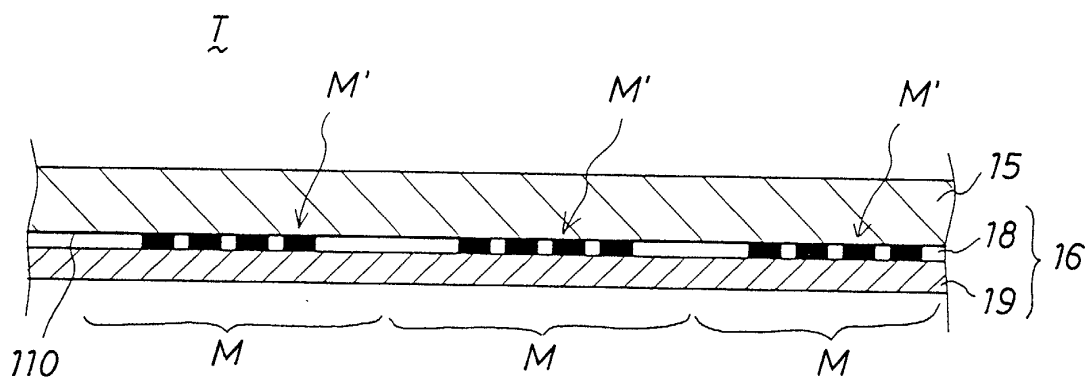


Fig.16C

