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DIAPOSITIVE FRAME

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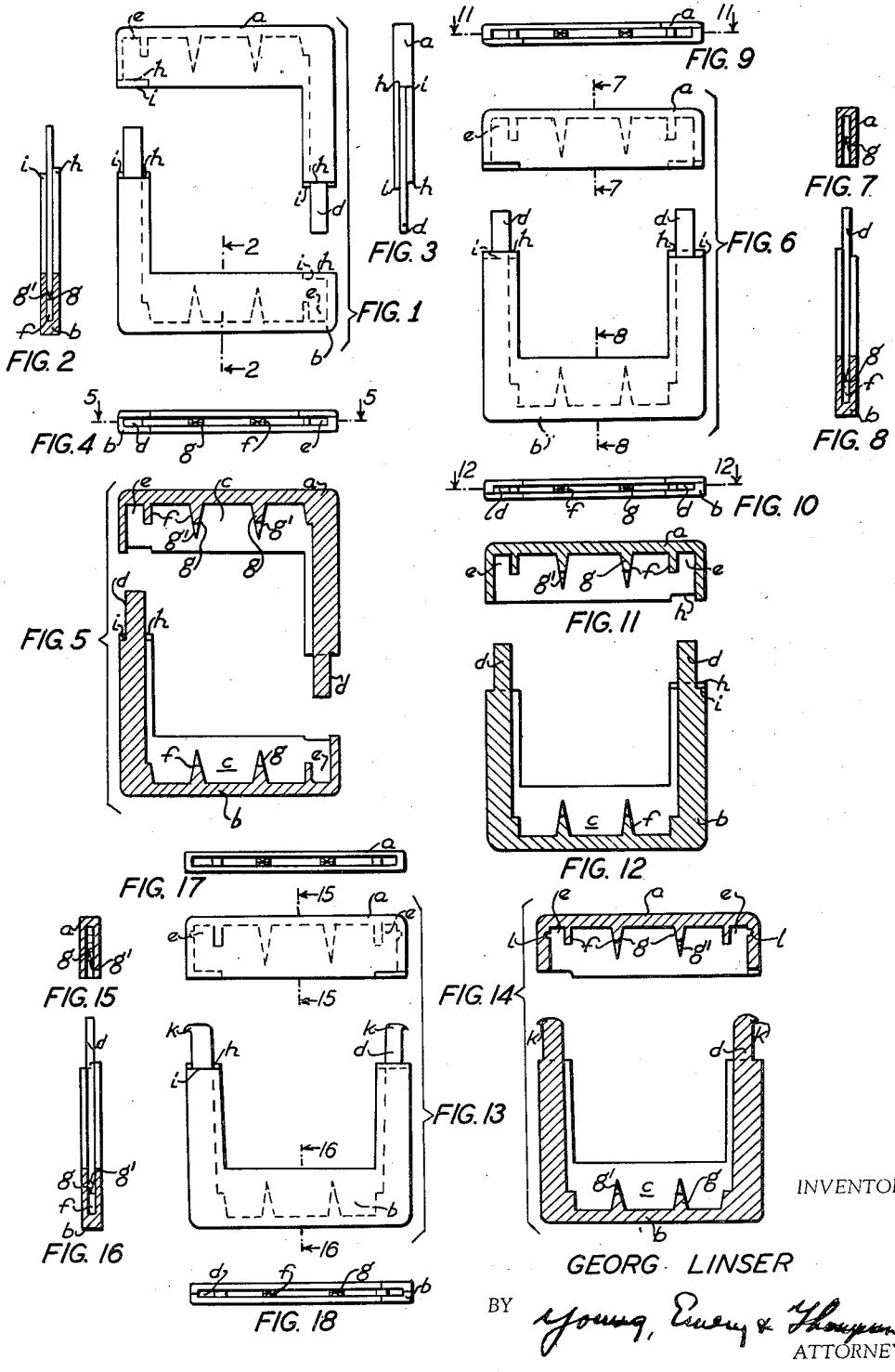

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DIAPOSITIVE FRAME

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This invention relates to a diapositive-frame with two elements of plastic separably stuck together by displacement on the plane of the frame. According to this invention the plastic elements formed between moulds by injection have tapered ribs extending a slant inwardly which on sticking the frame elements together bear on the two cover panes pressing them together in order to keep the film plane placed between them. By so doing the film in any case will be kept plane inside the frame.

The butting edges of the front and back walls of the frame elements preferably are staggered in direction of assembly and with regard to each other thus not only a dust and light proof connection of the frame stuck together is achieved but also the possibility provided that dowel pins serviceably arranged at the frame detents are readily guided at the projecting joint edges as the elements are being stuck together thus facilitating assembly.

In order to secure the frame elements in their position on being handled, i. e. to prevent inadvertent separation in one of the examples of embodiment the prongs of one of the elements formed like a bow are divergent and are provided with projections at their free ends which on sticking the frame elements together are catching notches on the other element.

The drawing is showing several examples of embodiments of the diapositive-frame in accordance with this invention, viz.:

Fig. 1 is a top-view of the diapositive-frame according to the first form of embodiment and taken to pieces.

Fig. 2 is a section following the line A—B of Fig. 1.

Fig. 3 is an end-view of the upper frame element.

Fig. 4 is an end-view of the lower frame element and

Fig. 5 a section following the line C—D of Fig. 4.

Fig. 6 is a top-view of the diapositive-frame according to the second embodiment with the elements separated.

Fig. 7 is a section following the line E—F of Fig. 6.

Fig. 8 is a section following the line G—H of Fig. 6.

Fig. 9 shows the upper element of Fig. 6 seen from below and

Fig. 10 is an end-view of the lower element.

Fig. 11 is a section of the upper frame element following the line J—K of Fig. 9 and

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Fig. 12 is a section of the lower frame element following the line L—M of Fig. 10.

Fig. 13 is a top-view of a frame with separated elements and

Fig. 14 is a section parallel to the plane of the frame.

Fig. 15 is a cross section following the line A—B of Fig. 13 and

Fig. 16 is a cross section following the line C—D of Fig. 13.

Fig. 17 shows the upper frame element seen from below and

Fig. 18 is an end-view of the lower frame element.

The frame consists of two injection-cast elements *a* and *b* of Polyamid or of a similar artificial resin suitable for being injected between moulds (plastic) hollow and open inside which elements can be stuck together by displacing them on the plane of the frame. The elements should be as poor a conductor of heat as possible, light, smooth, free from dust fibres and ridges and non-hygroscopic. The artificial resin (plastic) used should stand high temperatures and not warp nor break and should be elastic.

With the embodiment as shown in Figs. 1 to 5 the two frame elements *a* and *b* are alike so that they can be formed in the same mould. The hollow spaces of the two elements opening inwardly are marked with *c*. Each of the elements is provided with a dowel pin *d* and a corresponding entrance *e*. At the inside surface of the hollow spaces stops *f* and guiding stops *g* for the panes with film are provided. The longitudinal edges g^1 of the guiding stops *g* run from the walls aslant inwardly (Fig. 2). Should now the panes with the film be put into the frame, they will be grasped at their edges and put into the lower frame element *b* in such a way that one of the lateral edges will butt at the left side wall of Fig. 1 and the lower edge against the tapered ribs *g*. Now the top element *a* will be stuck onto the lower element, whereby the dowel pins *d* enter the openings *e* and the top edge of the panes with film bear on the stops *f* of the upper frame element.

By inserting the panes with film into the lower frame element *b* they slide along the sloping edges g^1 of the guiding stops *g* and do the same on sticking the top element onto its mate. With this arrangement the panes with the film are kept together tightly and in jamming tension.

Should on account of differences of thickness of the panes the clearance between the ribs and their mates be smaller than the total thickness

of the two panes with the film the ribs on inserting the set will be scraped by the sharp edges of the panes since the qualities of material of such injected plastics are in accordance therewith and compared with pressed plastics are more elastic too. The greater elasticity has an equalizing or compensating effect and warrants the fixation of the film on a plane.

The meeting faces *h* and *i* of the front and rear walls of the frame elements *a* and *b* are staggered in direction of the dowel pin *d*, i. e. of assembly. Thus not only a dust- and light-proof connection of the assembled frame is achieved but there is also a possibility for the dowel pins *d* on sticking the elements *a* and *b* together to readily find a guidance thus facilitating assembly.

The embodiment shown in Figs. 6 to 12 differs from the described one in as much as here the frame elements are not alike. The lower frame element *b* is given an U-shape and is provided with the dowel pins *d* which fit into openings *e* of the top element *a*, shaped like a cap, when this cap will be put on the lower element. For the rest insertion of the panes with film and assembly of both elements is done in the same way as described before.

The embodiment to Figs. 6–12 compared with that to Figs. 1–5 offers the advantage that the panes with film thanks to the removable cap always will be correctly inserted without requiring special deliberation since it is easy to realize which one is the top element and which one the bottom element. It must not be considered whether the panes with film will be inserted correctly with regard to the edges or not since the cap *a* is marked accordingly and may be turned round by 180° prior to assembly should it be necessary.

With a further embodiment to Figs. 14–18 the lower frame element *b* again is given a U-shape the ends of its prongs being fitted with the two dowel pins *d* which register with the openings *e* of the upper frame element, the cap *a* when this is being put on the lower element *b*. The stops are marked with *f* and the guiding stops *g* with the sloping longitudinal edges g^1 are to guide the cover panes. The butting shoulders *h* and *i* at the front and the rear walls of the frame elements *a* and *b* are staggered in direction of assembly and with regard of each other.

The prongs of the lower U-element *b* with the dowel pins diverge in upward direction and are fitted with hooks *k* at their free ends. According to these hooks *k* notches *l* are provided at the side walls of the top element *a*.

On inserting the cover panes with the film section into the lower frame element *b* the panes slide on the sloping edges g^1 along the guiding stops *g* and will thus be tightly jammed together.

In order to put on the upper element, the cap *a*, the two free elastic prongs of the element *b* are to be gently pressed together by grasping

them with thumb and forefinger to give these prongs a more parallel position thus allowing the cap *a* be easily put on the element *b*. If now one lets go the prongs of the lower element *b* the projections *k* by their elasticity, i. e. of the prongs, will catch the notches *l* of the cap *a* thus firmly connecting the two elements *a* and *b* in this position. For again separating them a lateral pressure upon the two prongs of the element *b* will do since the hooks *k* will thus leave the notches *l* and the element *a* can be taken off its mate *b*. Instead of hooks projections of any kind may be provided for.

I claim:

1. A diapositive frame preferably for holding together two covering panes with a film between them, comprising two elements in the form of frame members each having interengaging means to assemble the two elements by displacement in the plane of the frame, each element having a U-shaped groove in cross-section opening inwardly of the frame to hold the film and panes in position, the U-shaped grooves each having spaced guide stops in the form of ribs therein with each stop having a wedge surface so formed that they will press the two panes against the film to hold the latter tightly in the frame when the two elements are assembled.

2. A diapositive frame according to claim 1, in which the abutting edges of the frame elements are provided with front and rear walls which are staggered in the direction of assembly of the elements.

3. A diapositive frame according to claim 1, in which the two elements are made of artificial resin.

4. A diapositive frame according to claim 1, in which one of the elements is formed as a cap member with notches and the other is U-shaped in elevation with a pair of elastic prongs, each with a hook member to engage the respective notch of the cap member to hold the two elements together.

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