April 22, 1941. C. BECKER 2,239,187

APPARATUS FOR TEMPORARILY RENDERING SECONDARY REPRESENTATIONS VISIBLE ON A TRANSPARENT PRIMARY REPRESENTATION

Filed Oct. 27, 1938

Fig. 1.

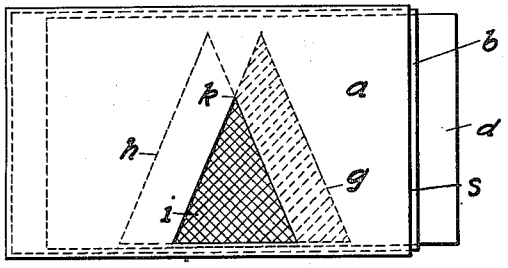


Fig.-2

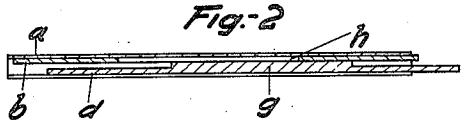


Fig.-3

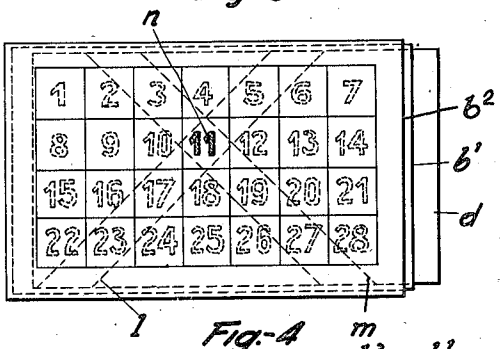


Fig.-4

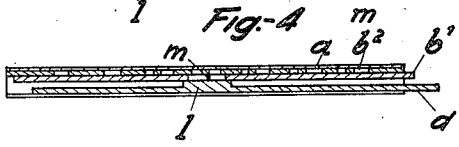


Fig.-5

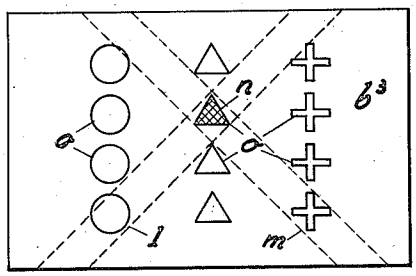


Fig.-6

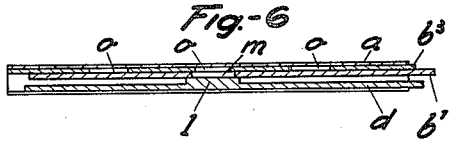


Fig.-7

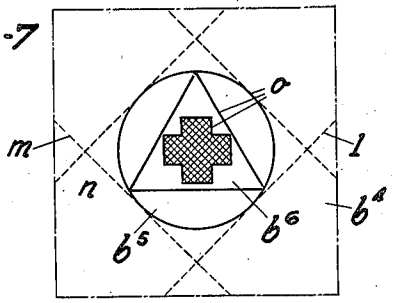
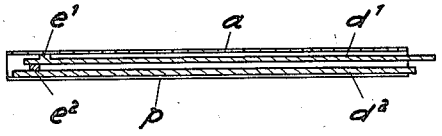


Fig.-8



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APPARATUS FOR TEMPORARILY RENDERING SECONDARY REPRESENTATIONS VISIBLE ON A TRANSPARENT PRIMARY REPRESENTATION

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Application October 27, 1938, Serial No. 237,234
In France January 19, 1938

3 Claims. (Cl. 35—40)

The present invention relates to apparatus for producing representations of variable configuration and making said representations visible on a primary or basic representation, more particularly to an apparatus of the type set forth by means of which a point of the secondary representation can be made visible on and moved all over a primary representation.

Apparatus are known by means of which secondary representations are temporarily rendered visible in a transparent primary representation. In these cases, the secondary representations are provided on a slide, rotary disc or the like which is located beneath the primary representation. The secondary representations can be rendered visible in the transparent primary representation by portions that are cut out of a cover put between the primary representation and said slide and which cover has the same color as the surface of the slide. Consequently in these cases the slide is the carrier of the finished secondary representation and purpose of the cover is only to cover up the secondary representations or to render them visible in the transparent primary representation.

It is an object of the present invention to provide an apparatus of the type set forth by means of which secondary representations can be made visible at every portion of the whole surface of a primary representation without, as hitherto, the slide having to be larger than the primary representation. Furthermore with the apparatus according to the present invention the configuration of the secondary representations can be changed.

According to the invention the secondary representations are not in finished condition on the slide as hitherto, but they are partly on a slide and partly on a cover so that the secondary representations are formed conjointly by the slide and cover which are movable relative to one another. According to the invention the cover is also used for the formation of the secondary representations, whereas hitherto it only had the function of covering up secondary representations and rendering them visible in part in the transparent primary representation. In the apparatus according to the invention, one or more movable covers is or are employed, all these covers being characterised by the feature that they contain fractional representations the cooperation of which results in the formation of secondary representations visible in the primary representation.

Various embodiments of the invention are shown in the accompanying drawing, in which

Fig. 1 is a top view of an apparatus according to the present invention,

Fig. 2 is a cross sectional view taken along line 2—2 in Fig. 1,

Fig. 3 is a top view of a modified apparatus according to the present invention,

Fig. 4 is a cross sectional view taken along line 4—4 in Fig. 3,

Fig. 5 is a top view of another modification of the present invention,

Fig. 6 is a sectional view taken along line 6—6 in Fig. 5,

Fig. 7 is a partial top view on an enlarged scale of a further modification of the present invention,

Fig. 8 is a cross sectional view of a still further modified embodiment of the present invention.

Referring more particularly to the embodiment of the present invention according to Figs. 1 and 2 the cover sheet *b* is slideably movable within a casing S having a transparent top *a*. A colored triangle *g* is put on the slide *d* which slide is also slideably disposed within casing *a* and underneath sheet *b*. A transparent triangle *h* is provided in the covering sheet *b*. This triangle is either cut out of sheet *b* or is produced of transparent material forming part of said sheet. By displacement of the covering sheet *b* and the slide *d* relative to each other and displacement of the two parts relative to the casing S which casing has a transparent top, a triangle *i* of variable size can be made visible on said top. The apex *k* of the triangle can be applied as a co-ordinate to any desired point of the top *a*. One of the two movable parts *d*, *b* represents the abscissa values and the other the ordinate values. By adjusting the relative position of members *d* and *b* the apex of the triangle can be made to point to a desired point of the top *a*. Conversely, by adjusting the apex of the triangle to coincide with a point of top *a*, the co-ordinates of this point can be read on the members *d* and *b*. A map or any other original or primary pictorial representation may be translucently applied to top *a*.

Figs. 3 and 4 show an embodiment in which the covering sheet consists of a movable part b^1 and a stationary part b^2. In this case an inclined colored strip *l* extending clear across the figure and across the path of movement of the parts is provided on slide member *d* and, on the movable part b^1 of the covering sheet, a transparent strip *m* which is provided at an angle (e. g. 90°) to the colored strip *l* and also extends clear across the figure and across the path of movement of the

parts and intersects strip l in all possible positions. A square is produced at the point of intersection n of the two strips l and m. The transparent cover sheet a is provided with a stationary, for example, printed cover b^2 from which, for example, the outlines of the numbers of a system of numbers are cut out so as to be transparent. The point of intersection of the strips l and m can be shifted to any desired portion of the stationary pictorial representation by displacing the cover b^1 and the slide d. The transparent portion of the cover b^2, which lies above the point of intersection is underlaid by the colored square appearing at the point of intersection so that the representation of the number or the like located at this point is rendered visible.

In the embodiment of my invention according to Figs. 5 and 6, instead of the stationary cover b^2 of Fig. 4, there is provided a second movable cover b^3 which lies above the cover b^1. This cover b^3 has transparent parts o of various forms—e. g. circles, triangles and crosses. By making one of these parts o coincide with the square-shaped intersecting portion n of the colored strip l and of the transparent strip m, the representations of the corresponding parts o (circle, triangle or cross) can be rendered visible successively.

According to Figure 7, instead of arranging the various representations all on one cover b^3, only the representations (circle, triangle or cross) may be individually placed on individual sheets b^4, b^5, b^6. In this case, the larger representations are cut out of the sheet overlaying the smaller representation.

The case can also occur that all the primary arrangements for the formation of a secondary composite representation are placed in the covers, and the slide forms an underlayer having a desired color. The covers themselves need not extend over the whole of the sheets which support them; these sheets may be transparent only in part. The function of the top parts as cover may be entirely dispensed with and they may form slides as the slides in slide rules holding primary arrangements for the formation of secondary representations.

The apparatus according to Fig. 8 has a transparent cover a carrying a primary or basic representation, two transparent slides d^1 and d^2 and an opaque—e. g. white—underlayer or base p. The slides d^1 and d^2 each is provided with a colored stripe e^1, e^2, which stripes are at an angle to each other. In this arrangement, the two colored stripes e^1 and e^2 and their intersecting point are visible through the cover a. Slide d^2 may also be opaque and be of the color of the underlayer p, so that it serves as a base at the same time.

In the case of the examples hereinbefore described, the transparent portions in the covers may also be formed by suitable perforations.

I claim:

1. An apparatus for indicating points on a transparent representation, said apparatus comprising, in combination, a slide means adjacent to and being slideably displaceable with respect to said transparent representation, said slide means having a transparent area, another slide means adjacent to and being slideably displaceable with respect to said first mentioned slide means and with respect to said transparent representation, said other slide means being provided with a not transparent representation, said not transparent representation together with the border line of said transparent area forming an indicating point, the position of said indicating point being changeable with respect to said transparent representation upon displacement of said slide means relative to said transparent representation.

2. An apparatus for indicating points on a transparent representation, said apparatus comprising, in combination, a slide means adjacent to and being slideably displaceable with respect to said transparent representation, said slide means having a triangularly shaped cut out, another slide means adjacent to and being slideably displaceable with respect to said first mentioned slide means and with respect to said transparent representation, said other slide means being provided with a not transparent triangle, the edge of said cut out intersecting with the border line of said triangle and forming an indicating point therewith, the position of said indicating point being changeable with respect to said transparent representation upon displacement of said slide means relative to said transparent representation.

3. An apparatus for indicating points on a transparent representation, said apparatus comprising, in combination, a slide means adjacent to and being slideably displaceable with respect to said transparent representation, said slide means having a transparent area, comprising an inclined border line, another slide means adjacent to and being slideably displaceable with respect to said first mentioned slide means and with respect to said transparent representation, said other slide means being provided with a not transparent representation, comprising a border line which is oppositely inclined to said first mentioned border line, said border lines together forming an indicating point, the position of said indicating point being changeable with respect to said transparent representation upon displacement of said slide means relative to said transparent representation.

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