

SPECIFICATION **Drawing Apparatus**

The present invention concerns a drawing device, intended more particularly for children and enabling them to produce in a simple and amusing way all sorts of figures having an essentially geometrical base.

To this end, the apparatus of the invention is essentially characterised in that it comprises, in combination, a fixed but interchangeable stencil, provided with a cut-out having a definite shape serving as a guide for a drawing member, and a support adapted to receive the inscriptions of the drawing member, this support being provided rotatable so as to be able to be moved angularly in successive stages.

With this arrangement, as will be seen more clearly later on, it is possible to produce very easily fairly complicated figures from one or more stencils having cut-outs of a simple shape.

According to one embodiment of the invention, the support for receiving the inscriptions of the drawing member is formed in a way known per se by a translucent screen forming the upper part of a sealed enclosure containing a powdery material capable of sticking to said translucent screen, whereas the drawing member is formed by a movable pen disposed inside said enclosure and bearing resiliently on the inner face of the screen.

The use of this well known technique also allows all sorts of patterns to be produced easily, but it is obviously not possible in this case to materially conserve said patterns which must be progressively wiped out.

In a particular embodiment, the screen is provided having a circular and bulging shape, whereas the drawing pen passes axially across the bottom of the enclosure, in a sealed and hinged way, through one end which is connected by means of a suitable linkage to a control member of the "joystick" type capable of coming to bear on the cut-out of the stencil.

Preferably, the sealed enclosure and the linkage are disposed on the same hollow case in which there are also provided an aperture through which the control member passes and a recipient for the inter-changeable stencil.

Preferably also, the sealed enclosure is rotatably mounted on the case and comprises in addition on its periphery, as in the first embodiment, evenly spaced notches cooperating with a resilient bearing member integral with the case.

As for the stencil, it is advantageously formed by a small plastic material plate whose outer form corresponds to that of the recipient provided about the aperture, this small plate comprising, in addition to the cut-out for guiding the drawing member, at least one longitudinal slit disposed close to one of its edges and a boss projecting from this edge, so as to allow the stencil to bed into the recipient owing to the resilient distortion of said edge of the small plate.

One embodiment of the invention is described

here-after by way of example, with a reference to the accompanying drawings in which:

Figure 1 is a plan view of drawing apparatus in accordance with the present invention;

Figure 2 is a sectional view along line VI—VI of Figure 1; and

Figure 3 is a partial sectional view along line VII—VII of Figure 2.

In the embodiment of the invention which is shown in the drawings, use is made of an inscription technique well known in other connections, but in which the patterns must be wiped out progressively as they are produced and cannot then be materially kept.

The support for receiving the inscriptions is constituted by a translucent screen 20, having a circular and bulging shape, which forms the upper part of a sealed enclosure 21 containing a powdery material 22, for example aluminium powder, capable of sticking to the inner surface of screen 20. As for the drawing member, it is formed by a style 23 resting resiliently on said inner surface of the screen. For this, the style is slidably mounted in a support tube 24 inside which is a pressure spring 25.

It will be readily understood that by moving style 23, this latter removes powder 22 sticking to the surface of screen 20 while forming a line which is then visible from the outside through the translucent wall of said screen. Furthermore, this line may be immediately wiped out, since it only requires the enclosure to be turned over and lightly shaken so as to cause the powder 22 to stick again in the places cleared by the style.

In accordance with the invention, the translucent screen 20 is rotatably mounted on a hollow case 26, made for example from a moulded plastic material, and comprises a series of notches 27 co-operating with a blade spring 28 firmly fixed to said case. Thus, as can be more clearly seen in Figure 2, these notches 27 are disposed on the periphery of a cylindrical skirt 29 extending screen 20. As for the bottom of enclosure 21, it is formed by a wall of flexible plastic material 30 fitting over the edge of skirt 29. The visible part of screen 20 is fixed furthermore into a ring 31 provided with large projections 32 which facilitate the manual rotation of the assembly in relation to case 26.

Tube 24 supporting style 23 passes axially through the bottom of the enclosure through a seal 33 and thus allows the style to be moved in all directions from the outside, owing to the flexibility of bottom wall 30. For this, the end of tube 24 is connected by a suitable linkage 34 to a control member 35 of the "joystick" type, provided with a grip 36 projecting outside case 26 through an aperture 37 circular in section.

Thus, as can be clearly seen in Figure 3, linkage 34 comprises first of all rigid frame 38 which is rotatably mounted about a first longitudinal axis through pivots 39. On this frame are disposed two parallel transverse members 40 and 41 which are rotatably mounted about axes perpendicular to said longitudinal axis and which

are respectively inter-locked with tube 24 carrying the style 23 and with control member 35. Said transverse members are furthermore connected by a rod 42 and thus form a deformable parallelogram. With this arrangement, all the movements made with the control member 35 are faithfully reproduced by tube 24 and so by the drawing style 23.

The aperture or window 37 provided in case 26 comprises on one part of its periphery a shoulder forming a recipient for an interchangeable stencil 43 which in this embodiment is rectangular in shape. This stencil is also provided with two lateral slits 44 associated with bosses 45 and allowing it to be force-fitted into said recipient. It will be noted further that the stencil thus only partially covers circular aperture 37 and may thus be easily withdrawn by introducing a finger into the visible part of said aperture.

Stencil 43 is moreover provided with a cut-out 46 through which passes control member 35 and whose profile is adapted to serve as a guide for said control member. Because of the position of the stencil in relation to aperture 37, this cut-out 46 is naturally staggered and corresponds accordingly also to an offset part of screen 20. In the particular embodiment described here, cut-out 46 is in the shape of a biconvex lens and thus allows patterns of the kind shown at 47 in Figure 5 to be produced on screen 20. For this, we proceed in the way already described, the only difference being that the pen is here replaced by control member 35.

We can then see finally that with such an apparatus it is possible to produce very easily all sorts of patterns. The apparatus of the invention allows then, in short, all sorts of geometrical patterns to be produced very easily, and this from only a few different stencils. In fact, the number of possible combinations is practically infinite.

We can in fact first of all vary the number of notches which determines the angle of rotation of the support between each operation. It is obviously preferable for the total number of notches provided to be a whole multiple of this number, so that the pattern produced may close on itself, but this is not absolutely indispensable. With this in mind, there will preferably be provided 60 notches a number divisible particularly by 2, 3, 4, 5 and 6.

Several different stencils may naturally then be combined in the same pattern. These patterns will however, as we saw above, have to be wiped out progressively as they are produced by simply turning the apparatus over.

Co-pending Application/Serial No. which has been divided out of the present application, describes and claims a drawing apparatus, characterised in that it comprises in combination, a fixed but interchangeable stencil,

provided with a cut-out of a definite shape serving as a guide for a drawing member, and a support capable of receiving the inscriptions of the drawing member, this support being provided rotatable so as to be able to be moved angularly through successive stages, and being removably fixed to a rotating plate carried by a rigid stand, whereas the interchangeable stencil is mounted on this stand in an aperture forming a receptacle disposed directly above said plate.

Claims

1. A drawing apparatus, characterised in that it comprises in combination, a fixed but interchangeable stencil, provided with a cut-out of a definite shape serving as a guide for a drawing member, and a support capable of receiving the inscriptions of the drawing member, this support being provided rotatable so as to be able to move angularly through successive stages, and being formed in a way known per se by a translucent screen forming the upper part of the sealed enclosure containing a powdery material capable of sticking to said translucent screen, whereas the drawing member is formed by a movable style disposed inside said enclosure and bearing resiliently on the inner face of the screen.

2. A drawing apparatus according to claim 1, wherein the screen is circular and bulging in shape, whereas the drawing style passes axially through the bottom of the enclosure, in a sealing and hinged way, through an end which is connected by means of a suitable linkage to a control member of the "joystick" type capable of bearing on the cut-out of the stencil.

3. A drawing apparatus according to claim 2, wherein the sealed enclosure and the linkage are disposed on the same hollow case in which are also provided an aperture through which passes the control member and a recipient for the interchangeable stencil.

4. A drawing apparatus according to claim 3, wherein the sealed enclosure is rotatably mounted on the case and comprises on its periphery evenly spaced notches cooperating with a resilient bearing member integral with the case.

5. A drawing apparatus according to any of the preceding claims wherein the stencil is formed by a small plastic material plate whose outer shape corresponds to that of the recipient provided about the aperture, this small plate comprising, in addition to the cut-out for guiding the drawing member, at least one longitudinal slit disposed close to one of its edges and a boss projecting from this edge, so as to allow the stencil to be bedded in said recipient owing to the resilient deformation of said edge of this small plate.

6. A drawing apparatus substantially as hereinbefore described with reference to the accompanying drawings.

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The aperture or window 37 provided in case 26 comprises on one part of its periphery a shoulder forming a recipient for an interchangeable stencil 43 which in this embodiment is rectangular in shape. This stencil is also provided with two lateral slits 44 associated with bosses 45 and allowing it to be force-fitted into said recipient. It will be noted further that the stencil thus only partially covers circular aperture 37 and may thus be easily withdrawn by introducing a finger into the visible part of said aperture.

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2. A drawing apparatus according to claim 1, wherein the screen is circular and bulging in shape, whereas the drawing style passes axially through the bottom of the enclosure, in a sealing and hinged way, through an end which is connected by means of a suitable linkage to a control member of the "joystick" type capable of bearing on the cut-out of the stencil.

3. A drawing apparatus according to claim 2, wherein the sealed enclosure and the linkage are disposed on the same hollow case in which are also provided an aperture through which passes the control member and a recipient for the interchangeable stencil.

4. A drawing apparatus according to claim 3, wherein the sealed enclosure is rotatably mounted on the case and comprises on its periphery evenly spaced notches cooperating with a resilient bearing member integral with the case.

5. A drawing apparatus according to any of the preceding claims wherein the stencil is formed by a small plastic material plate whose outer shape corresponds to that of the recipient provided about the aperture, this small plate comprising, in addition to the cut-out for guiding the drawing member, at least one longitudinal slit disposed close to one of its edges and a boss projecting from this edge, so as to allow the stencil to be bedded in said recipient owing to the resilient deformation of said edge of this small plate.

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