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(54) An alarm clock, a wall clock or a watch to be inserted in a knapsack or similar articles provided with an interchangeable decorative member.

(57) Alarm clocks, wall clocks, watches to be inserted on knapsacks and similar articles are provided with an interchangeable decorative member, possibly colored, which may be applied directly by the consumer on top of the conventional fixed glass so that it is possible to change repeatedly the appearance of the alarm clock, the wall clock or the knapsack. There is provided at least one support for the decorative member which is placed on the opening of the frame and which is adapted to the shape of the opening so that by the insertion of magnets or by means of pressure, they will fix the interchangeable decorative member. The decorative member may be opaque or transparent, may be made of glass or plastic material, paper, mirror, ceramic. According to one embodiment the decorative member may be used without a support.

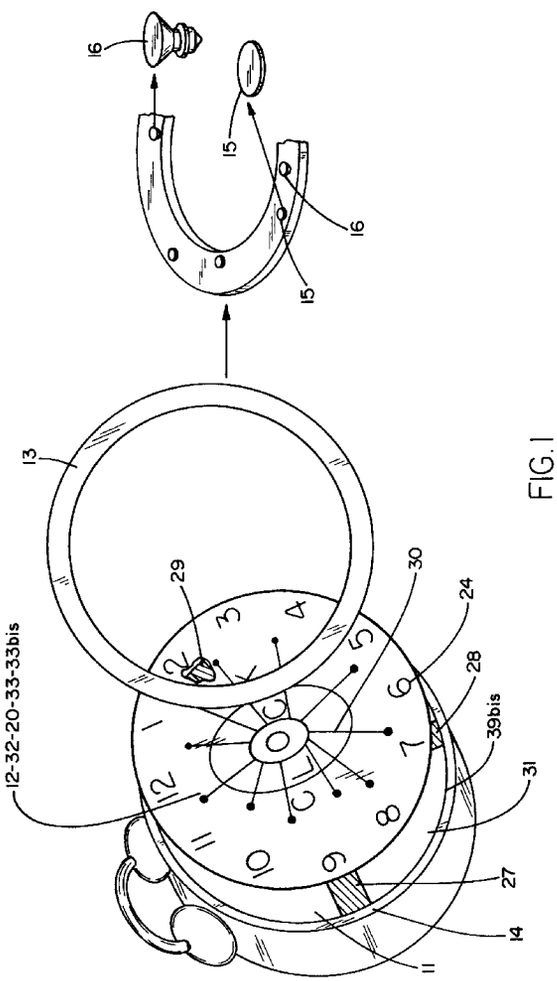

FIG. 1

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The present invention relates to alarm clocks, wall clocks, watches inserted on knapsacks and similar articles. More specifically, the invention relates to decorative members which may also be colored and which are interchangeable so that the consumer may vary the appearance very simply. The decorative members may be holograms and may be made of paper, metal, plastic material, mirror and could even be made of ceramic or stone. The decorative members may have a variety of designs and are placed above the hands and on top of the fixed glass.

The dial of the clock as well as the interchangeable decorative member, the support for the decorative member and the frame of the clock may have a variety of shapes such as square, round, rectangular, oval, or any other shape and may also have a variety of thickness. Also the support for the decorative member may be made of a variety of material such as plastic, metal, and may have a variety of colors. The decorative member may be opaque or transparent, but even when it is opaque, it is possible to see the hands of the clock which are placed in the lower part so that the user may be able to read the time and also enjoy the decorative member. For the purpose of reading the time, it is also possible to use systems different from conventional hands.

In order to read the time, according to one embodiment of the invention, the interchangeable decorative member is transparent so that it is possible to see the hands of the clock and read the time.

According to another embodiment of the invention, the interchangeable decorative member is provided with symbols which indicate the time and are not transparent. In this case, the hands which are under the decorative member will indicate the time at the particular moment in which they go under the symbols.

The hands according to the present invention are longer and wider than the conventional hands but have the same length, that is the hand which indicates the hours and the hand which indicates the minutes as well as the hand which indicates the seconds, if the latter is also provided, have the same length.

According to a preferred embodiment of the invention, the hands are fluorescent.

In the case of the alarm clock, there is also utilized a fourth hand which has the same characteristic of the hands described hereinabove and which serves the purpose of programming the sound at the particular predetermined time.

According to a specific embodiment of the invention, the interchangeable decorative members are smaller with respect to the size of the fixed glass and are placed on the central part of the fixed glass so that the perimetrical area of the watch is transparent.

The interchangeable decorative member may be commercially available and may be already sold together with a transparent support or may be contained in the lateral part of the clock in a particular frame formed of a plastic material or glass.

The decorative member and the support may be connected by means of glue or by welding or soldering or may be put together by pressure and are placed on top of the fixed glass.

The symbols mentioned hereinabove which are intended to indicate the time, are placed on the sides of the support or on the side of a transparent frame so that the hands which are located under the decorative members may be easily seen. The symbols may also be printed on the sides of the fixed glass and in this case the support or the frame are totally transparent.

According to one embodiment, the decorative member may be made of mirror and is located in a frame made of glass or transparent plastic material which has the symbols indicating the time along its perimeter.

According to another embodiment of the invention, it is possible to use a decorative member which functions as a calendar and has inserted in its internal part a pin which contains two hands, the latter rotating independently and indicating one the day and the other the month of the year which will be printed on the side of the decorative member.

In the case of alarm clocks and watches inserted in knapsacks and similar articles, the decorative member is placed within the outline of the opening of the frame and above the fixed glass and is held by a support which is applied on the border of the clock.

According to another embodiment, the decorative member is applied without any support. This is so in the case in which the seat within which the decorative member is to be inserted has such dimensions that the decorative member is held in it and the user may with a slight pressure hold it in that space blocked by the internal walls of the seat. In this case the substitution of one decorative member with another may be easily carried out by inserting a point, for instance a penpoint on an upper side of the frame on which a small vertical slit is made. It is also possible to have one of the two sides of the upper part of the frame having a part slightly cut-out and this will allow the user to change the decorative member merely by inserting his fingernail. It is also possible to provide a seat less deep with respect to the height of the decorative member so that the upper part of the decorative member protrudes slightly from the surface of the frame of the clock. In this manner, the user may apply pressure on the external borders in order to substitute a new decorative member.

The support for the interchangeable decorative member may be mounted in a variety of manners. One embodiment consists of applying on the clocks magnets of weak magnetization so that they will not interfere with the operation of the clock. For instance, the type of magnet which is preferably used is composed of samarium and cobalt and is made of very

small dimensions. These magnets are applied either in the interior of the opening of the frame or in the lower part of the support. This system facilitates the substitution of the interchangeable decorative member by eliminating every complication in actual use and permits the manufacturer to utilize clocks which already exist without modifying the structure of the frame because only one support adaptable to the dimensions and to the shape of the opening of the frame is required. This system also facilitates the use of watches which are in the market but which have not been sold yet so that they may be updated because it is possible to modify easily the appearance of the watches by adding the interchangeable decorative member at a very small cost.

In the particular case of the fixed dial of an alarm clock in the upper surface where the decorative member is placed, there is provided conventionally a small opening which permits the user to program the required sound at the predetermined time. For this operation, the use of a particular internal wheel is used. This wheel has impressed the time references on its entire circumference and the time references are always visible from the slit of the dial. According to the present invention, on the contrary, the numerals are utilized at the particular time according to the manner how the alarm clock has been programmed and they are not visible when they are not necessary because they can also interfere with the reading of the dial or the interchangeable decorative member. For this reason, there is provided a wheel which has the numerals only in one part of its circumference and the part which has no numerals, is of the same color as the fixed dial, for instance white, or it may show the trademark of the article. In this manner, the user, when he does not utilize the alarm clock to sound at particular times, may turn the wheel and stop at the point of the color, for instance white or the point of the trademark. In order to increase the visibility of the numerals, which visibility is necessary for programming particularly during the night the alarm clock without removing the interchangeable decorative member, a luminous material is applied to the numerals to render them phosphorescent. The fixed internal dial which is placed under the hands is of only one color, preferably white so that the hands may be seen.

According to another embodiment, there is used a narrower support applied with pressure along the external perimeter of the opening of the frame of the clock.

According to another embodiment, there is formed a stepped structure on the external side of the frame which permits the support to be inserted with pressure along the perimeter. This operation may also be carried out on the front part of the clock in the case in which the opening of the frame has a few raised parts which permit the adaptation of the support to the same opening so as to block the interchangeable member.

The support may also be inserted on the frame by means of a closure operating with a screw. According to this embodiment, along one side of the frame there are formed threads in which the same support having a helicoidal raised portion is screwed. The support may also use different systems such as a bayonet type, a system which utilizes a few small curved pins which are placed within the internal part of the support or along the border of the frame or small teeth which are inserted in respective seats formed in the part of the matching structure. The user in this manner will push and simultaneously rotate slightly the support up to the time when the pin or the tooth is blocked within the respective seat.

The support may also be located along the external border of the fixed glass which in this case will protrude and has a shape with right angle corners so that the support is blocked on its lateral side. According to this embodiment, the support is made of plastic and elastic material so as to permit a perfect adherence and simultaneously the glass is not scratched. When the support is made of a rigid material, it is preferably inserted on the frame by pressure along the upper part by a snapping motion. On the other hand, when the support is made of a plastic and elastic material, it is slightly extended by the user along its external part after which it is fixed adapting itself to the same structure of the glass or along the side of the frame.

The elastic support may be provided along its side with small openings so as to permit its substitution. These openings may have a variety of shapes so as to give to the user a further variation in the shape of the final product.

The interchangeable decorative member may be made of a thin film which may be colored so that the user may cause the decorative member to adhere to a transparent glass or the film may be applied directly on the fixed glass of the clock. This operation may be carried out omitting the use of the support and the application is carried out by means of known systems such as glue or by adhesion letting the air out and causing the formation of a vacuum. In this manner, the film may be easily removed and substituted.

In the case of clocks which are flat such as the wall clocks, but adaptable also for watches inserted in knapsacks and similar articles, there is provided the application of the interchangeable decorative member sold already with its appropriate support. It is also possible to make a channel along the front of the frame or to provide along the sides of the frame a stepped structure along which the support is applied with magnets. The same fixed glass may form a stepped structure. The application may also be carried out with pressure.

The small channel along the front of the frame is used either for blocking the support with pressure or for the arrangement of the same by the user with the

magnets so that the support is better fixed along the front of the clock. In the case of wall clocks and watches inserted in knapsacks or similar articles, differently from alarm clocks, it is preferable to utilize an interchangeable decorative member already mounted with its own support because in this case the user must only remove the support without placing the interchangeable decorative member within the opening of the frame above the fixed glass. For the substitution of the interchangeable decorative member in the case of alarm clocks and watches inserted in knapsacks and similar articles, the user with a simple motion of the finger may cause the decorative member to slide and to remain resting on top of the fixed glass.

According to another embodiment, the interchangeable decorative member may be substituted by applying one or more small fan shaped members along the internal part of the support. The fan shaped members will adhere at the time of use to the external side of the interchangeable decorative member, thus attracting the decorative member when the support is raised.

The interchangeable decorative members may be provided as a plurality with a single support or each one of them may have its own support. The interchangeable decorative member may be inserted either in the internal lower part of the support or in the upper part.

According to another embodiment, the opening of the frame of the watch is provided with some means of attachment or a support which permits the user to insert along the upper part a dial or the interchangeable decorative member without using the external support. The support is an opaque member inserted on the frame of the clock and may serve as a support or for locking the decorative member. As a support there may be used a transparent frame of variable dimensions depending on the size of the interchangeable decorative member. This transparent frame is used simply by pressure of its external sides on the internal part of the frame. This frame has flat sides and is wider than the support mentioned hereinabove.

A transparent frame which allows the interchangeable decorative member to be placed in its interior may also be used.

The invention is further illustrated by reference to the accompanying drawings in which numeral 9 designates an alarm clock, numeral 17 is a clock fixed on a wall, numeral 26 is a watch inserted on a knapsack. The numerals 27, 28 and 29 designate the hands of hours, minutes and seconds; numberal 31 is the dial and numeral 11 is the fixed glass. Numerals 12, 20, 32 designate different types of interchangeable decorative members.

Numeral 12 designates a transparent decorative member, numeral 32 is an opaque decorative member and numeral 20 designates a hologram.

Three different support members are illustrated in the figures. Numeral 13 designates a support which sits in the opening 14 in the frame of the clock or watch. This support 13 holds the transparent member 12 or the hologram 20. It may also be used to hold the frame 33 or frame 33bis and both frame 33 and 33bis may support the opaque member 32. This support 13 is used with magnets or a screw or a step structure or a bayonet type structure.

Numeral 33 is a transparent frame which encloses the opaque member 32 or the hologram 20 (see Fig. 2 at the left) so as to leave a transparent portion around the perimeter of the opaque member. This frame has a hollow portion in the interior to receive the interchangeable decorative member.

Numeral 33bis designates the transparent support and is used with decorative members which are applied on top of the support (see Fig. 2 at the right). This type of support may be used with opaque decorative members. This type of support does not require a hollow portion in the middle.

Numeral 33 designates a transparent frame which carries on the upper part the symbols or numbers of the hours. This frame has the function of supporting the interchangeable opaque decorative member 32 and has variable size so that the part 56 which varies in size may hold the border of the decorative member. The decorative member and the frame are sold together and are inserted and held in the frame of the alarm clock, clock being applied on a wall and watch being inserted on a knapsack, through the action of the support member 13 or through its lateral part which is inserted with pressure in the cavity of the frame. While the actual outer diameter of the frame may be the same, the internal dimensions differ so that part 56 may properly hold the decorative member.

Numeral 33bis designates a transparent support which holds the interchangeable decorative member in its upper part. The size does not vary because the size of the interchangeable decorative member is not significant.

Support 33 and 33bis are used in the alternative.

Numeral 13 designates the support and locking means for the frame 33 and support 33bis on top of the frame of the clock or watch, but in a few instances the support 13 may be omitted because frame 33 or 33bis are applied with pressure.

In some instances, the use of the support 33 and 33bis may be omitted because the decorative member is transparent and may be inserted into the cavity of the clock 39 or 39bis with pressure and then held by means of support and locking means 13.

Fig. 1 illustrates an alarm clock (9) or a wall clock (17) provided with a support (13) having magnets (15). The support in addition is provided with small fan-shaped members (16). Numeral 14 designates the opening in the frame. Numeral 39bis designates the seat formed by the opening (14) in the frame and the fixed glass for the decorative members 12, 32, 20.

Numeral 33 designates the frame of variable size and numeral 33bis is a transparent support. The entire assembly is locked by the support 13 with the magnets 15 which provide for locking the support 13 on the opening 14. The fan-shaped members 16 adhere to the side of the decorative member or to the frame 33 or to the support 33bis. When the decorative member is transparent as member 12, support 13 does not require frame 33 nor frame 33 bis.

The hands 27, 28 and 29 have the same length, are longer and wider than conventional hands and are fluorescent so that it is possible to see them through the transparent parts 24 which have the numerals indicating the time. Numeral 30 represents one possible decorative design.

Fig. 1bis illustrates a watch 26 for a knapsack or similar article 55 with an opening 14, fixed glass 11 which form seat 39bis for the insertion of the decorative member. Numerals 12, 20, 32, 31 have the same meaning indicated hereinabove. Numeral 33 is a frame of variable size and numeral 33bis is a transparent support. Numeral 13 is the support which locks the entire assembly and which is applied with pressure into the opening of the frame 14.

Fig. 2 illustrates an alarm clock 9, a clock to be applied on a wall 17 or a watch for a knapsack 26. It shows the opening 14 and the fixed glass 11 which form seat 39bis. This seat permits the insertion either of the transparent frame 33 which has the numerals 24 designating the time and in the internal part 56 there is inserted the decorative member. The seat may also be used to insert the transparent support 33bis which also has numerals 24bis designating the time. The entire assembly is locked by means of support 13 which is firmly held on top of the opening 14. The fixed dial 31 is of a light color and numerals 27, 28 and 29 designate the hands as hereinabove.

Fig. 3 illustrates the top part of an alarm clock 9 which is also adaptable for a watch for a knapsack 26 with opening 14, fixed glass 11 which forms the seat 39bis. This seat permits the insertion of the decorative member 12, 20 or the support 33bis. The user may easily substitute the decorative member by application of pressure thus causing the decorative member to slide on the surface of the fixed glass 11. Numerals 27, 28 and 29 designate the hands and numeral 31 is the fixed glass.

Fig. 4 illustrates the insertion in the internal part of the opening 14 of the magnets 15 which attract and fix the support 13.

Fig. 5 illustrates a new manner for using the sound in the case of an alarm clock 9. It shows the fixed dial 31 of a light color which in its upper part in the same place where ordinarily the decorative member 12 is placed is provided with an opening 34. In the interior there is provided wheel 35 of the sound assembly which has the numerals 36 designating the time only along one part of its circumference. The other part, designated by numeral 37, has no numbers and has the same color of the dial 31. Numeral 31 designates the frame.

Fig. 6 illustrates a part of the frame in the alarm clock 9, the clock to be applied on a wall 17 or a watch 26 to be inserted on a knapsack. The internal part of the opening 14 and the fixed glass 11 form a compartment 39bis which serves to lock the decorative member 12, 20, 32. The latter is placed either on a frame 33 or on a transparent support 33bis. This assembly with groove 38 is used instead of support 13. The groove 38 serves to remove the decorative members 12, 20, and supports 33 and 33 bis.

Fig. 7 illustrates a part of a frame for an alarm clock 9, a swatch to be applied on a wall 17 or a watch to be inserted on a knapsack. Numeral 14 is the opening in the frame which is provided in the interior with a step which forms seat 39. The decorative member 12, 20, 32 is inserted with pressure into seat 39 and is located either on the frame 33 or the transparent support 33bis. The fixed glass 11 is fixed on the opening 14 by means of indentation 38.

Fig. 8 illustrates the upper part of frame 51 suitable for an alarm clock 9 or a clock to be applied on a wall 17 or a watch to be inserted on a knapsack 26. Numeral 13 is the support which holds the interchangeable decorative member 12, 20, 32 into the seat 54. The support 13 is made of elastic plastic material and is provided along its outer border with openings 40 which increase the elasticity. The support 13 is inserted with pressure along the external part of the fixed glass.

Fig. 9 illustrates an alarm clock 9, a wall clock 17 or a watch to be inserted on a knapsack 26. Numeral 14 is the opening of the frame and the fixed glass is designated by numeral 11. Numeral 39bis is the seat formed by the opening 14 and the fixed glass which permits the insertion of frame 33 which has the numerals designating the time 24bis and in internal part 56, the decorative member. In this case, the decorative member is provided with means for designating the calendar. The hands 42 and 43 may indicate the days and the hand 41 indicates the month. The hands rotate independently on a pin 44 which is inserted in the central internal part of the decorative member. The entire assembly is locked by support 13 which is held into the opening 14.

Fig. 10 illustrates an alarm clock 9, a clock to be applied on a wall 17 or a watch 26 to be inserted on a knapsack. Numeral 46 designates a film which has numbers 24bis designating the time and which adheres to the surface of the fixed glass 11. The time is read at the time when the hands 27, 28 and 29 pass under the numerals.

Fig. 11 illustrates an alarm clock 9 or a clock to be placed on a wall 17 or a watch to be inserted on a knapsack 26. Numeral 46 designates the ornamental design in the form of an interchangeable film which

adheres on the upper part of the transparent support 33bis. This film 46 has numbers 24 and numeral 30 represents the ornamental design. The support 33bis together with the film 46 is inserted in the seat 39 or 39bis. The former seat is formed between the opening 14 of the frame and the fixed glass enclosed afterwards by support 13 (not shown). The latter seat is formed directly on the opening 14. Numerals 27, 28, 29 and 31 have the same meaning as hereinabove.

Fig. 12 illustrates an alarm clock 9bis or a clock to be located on a wall 17bis or a watch to be inserted on a knapsack 26bis. Numeral 47 designates the dial with the numbers designating the time and numeral 34 designates the known opening of the frame. Numerals 27, 28 and 29 have the same meaning as indicated hereinabove and are placed on top of the dial. Numerals 12 and 20 designate the different embodiments of the interchangeable decorative member which are placed on top of the fixed glass 11. They are locked by the support 13 in the same manner as described hereinabove.

Fig. 13 is a partial view of a frame 51 suitable for an alarm clock 9 or a clock 17 to be placed on a wall or a watch to be inserted on a knapsack 26. Numerals 27 and 28 designate the hands which designate the hours and the minutes and which have the same length. Numeral 11 is the fixed glass. Numerals 12 and 20 designate different embodiments of the interchangeable decorative member which are applied on top of the transparent support 33bis or on top of the frame 33 and they are inserted with pressure in the seat 54 of the support 13 which is provided in the lower part with a protrusion 49 which is inserted in the recess 48 of the frame 51.

Fig. 14 is a cross-section of the frame 51 which is suitable for the alarm clock 9, a clock 17 to be located on a wall or a knapsack 26. It shows the hands 27 and 28 of the same length. Numeral 11 designates the fixed glass. Numerals 12 and 20 designate the decorative interchangeable member which are located on top of the frame 33 or support 33bis. The interchangeable decorative member is inserted with pressure in the seat 54 of support 13. Fig. 14 also shows the opening 14 of the frame with a step structure 18 which is intended to receive the support 13 with pressure. This figure shows different embodiments depending on the type of the decorative member. Only support 13 may be used or the support 13 may be used together with support 33 or support 33bis, with the sides of support 33 or 33bis being inserted in compartment 54.

Fig. 15 is a cross-section of the support 13 which is inserted on the frame 51 by means or a screw with threads 50 placed on both sides. Numeral 54 designates the seat in which is inserted the interchangeable decorative member.

Fig. 16 is a cross-section of the support 13 which is inserted into the frame 51 by means of a bayonet structure. Numeral 52 designates a curved pin located in the interior part of support 13 or a small tooth which is inserted into the seat 53 by a slight rotation of the support 13. Numeral 54 designates the seat in which is inserted the interchangeable decorative member. It is clear that the present invention permits the consumer to vary the appearance of an alarm clock, a watch inserted in a knapsack and or change the color in a very simple manner as discussed hereinabove and as shown in the figures.

Claims

1. An alarm clock, a wall clock, a watch inserted in a knapsack (9), (17) and (26) and the like provided with an interchangeable decorative member made of glass, paper, plastic material or a hologram (12, 20, 32), said clock or watch having a frame, said frame having an opening (14), said alarm clock, said wall clock and said watch inserted in a knapsack having a fixed glass (11), and hands (27,28,21), said decorative member being disposed above said hands and above said fixed glass.

2. The alarm clock, wall clock, the watch inserted in a knapsack (9,17,26) according to claim 1 characterized by the fact that it includes a support (13), said interchangeable member is restrained by said support, said support being inserted in said opening (14) and having magnets (15).

3. The alarm clock, wall clock, the watch inserted in a knapsack (9,17,26) according to claim 1 characterized by the fact that it includes a support (13), said interchangeable member is restrained by said support, said support being inserted in said opening (14), said interchangeable member being held therein by pressure.

4. An alarm clock, a wall clock, a watch inserted in a knapsack (9,17,26) and the like according to claim 1 characterized by the fact that said interchangeable: decorative member is restrained by a transparent support (33bis), the numerals (24bis) indicating the time being impressed on said fixed glass.

5. An alarm clock, a wall clock, a watch inserted in a knapsack (9,17,26) and the like according to claim 1 characterized by the fact that said interchangeable decorative member is restrained by a transparent frame (33), the numerals (24) indicating the time being impressed on said fixed glass.

6. The alarm clock, the wall clock, the watch inser-

ted in a knapsack according to claim 2 which additionally comprises at least one fan-shaped member (16) on said support (13) in the internal part thereof.

7. The alarm clock, the wall clock, the watch inserted in a knapsack according to claim 1 wherein said hands (27,28,21) are fluorescent, of equal length, and the hand (27) is wider than the hands (28,29) and hand (28) is wider than the hand (29).

8. The alarm clock, the wall clock, the watch inserted in a knapsack according to claim 2 characterized by the fact that said interchangeable decorative member has a pin (44) in the center thereof and two hands (42,43) Indicate the days and a third hand (41) indicates the month and said interchangeable decorative member functions as a calendar.

9. The alarm clock, the wall clock, he watch inserted in a knapsack according to claim 3 wherein said hands (27,28,29) are fluorescent, of equal length, and the hand (27) is wider than the hands (28,29) and hand (28) is wider than the hand (29).

10. The alarm clock, the wall clock, the watch inserted in a knapsack according to claim 4 wherein said hands (27,28,29) are fluorescent, of equal length, and the hand (27) is wider than the hands (28,29) and hand (28) is wider than the hand (29).

11. The alarm clock, the wall clock, the watch being inserted in a knapsack according to claim 3 characterized by the fact that said opening (14) has in the internal cavity a stepped structure along the entire border and an indentation (38).

12. The alarm clock, the wall clock, the watch being inserted in a knapsack according to claim 4 characterized by the fact that said opening (14) has in the internal cavity a stepped structure along the entire border and an indentation (38).

13. The alarm clock, the wall clock,the watch being inserted in a knapsack according to claim 5 characterized by the fact that said opening (14) has in the internal cavity a stepped structure along the entire border and an indentation (38).

14. The alarm clock, the wall clock, the watch inserted in a knapsack according to claim 3 characterized by the fact that said support (13) is made of elastic plastic material and has a plurality of openings (40) along the outer border thereof.

15. The alarm clock, the wall clock, the watch inserted in a knapsack according to claim 1 characterized by the fact that said support (13) has a protrusion (49) at each side thereof, said protrusions engaging with recesses (48) in said frame (51).

16. The alarm clock, the wall clock, the watch inserted on a knapsack according to claim 3 characterized by the fact that said opening (14) of the frame has a step structure, adapted to receive said support (13) with pressure.

17. The alarm clock, the wall clock, the watch inserted on a knapsack according to claim 3 characterized by the fact that said support (13) engages with said frame by means of threads (50) which engage with a screw on the border of said frame.

18. The alarm clock, the wall clock, the watch inserted on a knapsack according to claim 3 characterized by the fact that said support (13) is held in said frame (51) by means of a curved pin (52) located in the interior thereof inserted into the seat (53) of said frame, said curved pin forming a bayonet type structure.

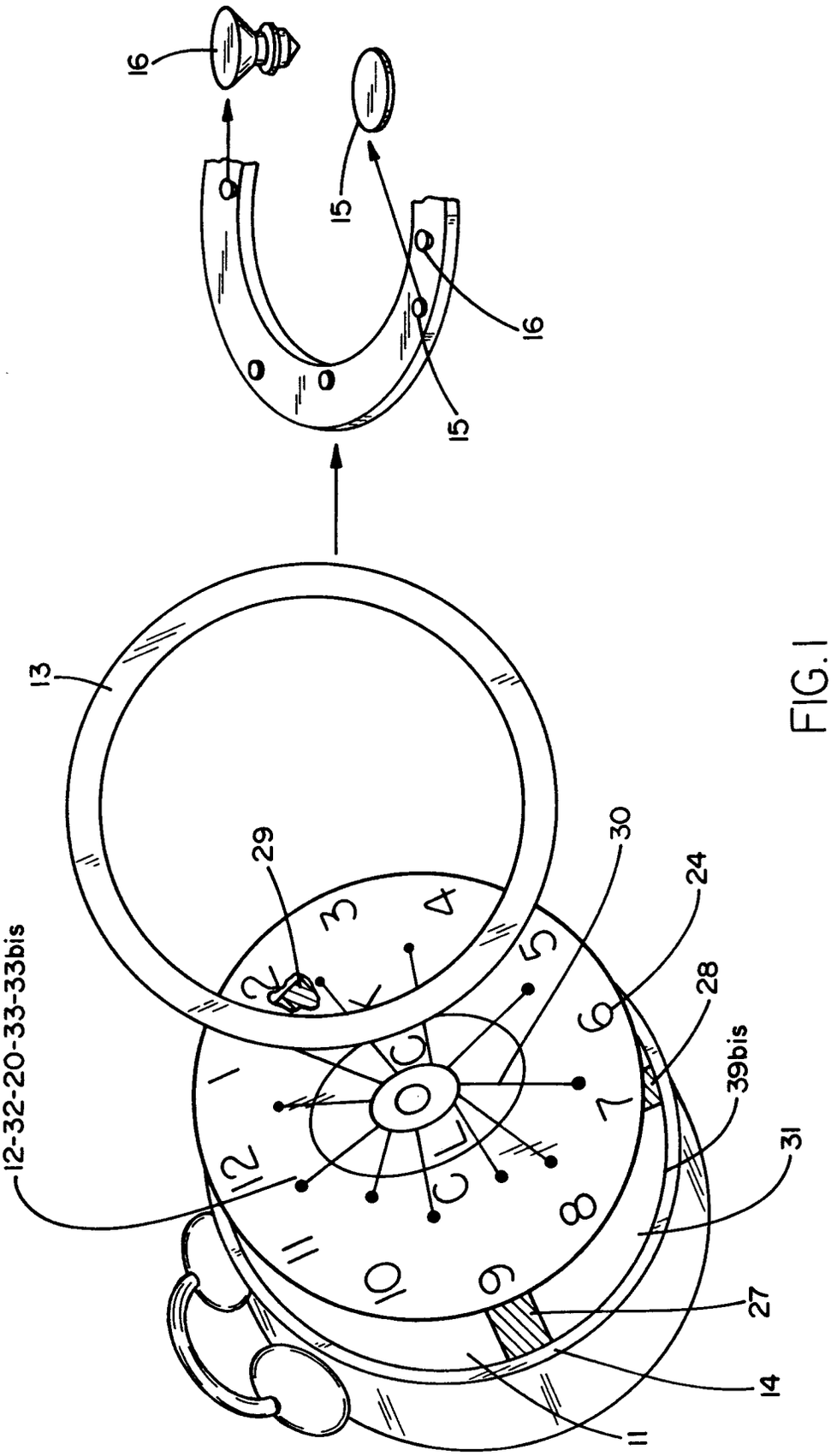


FIG. 1

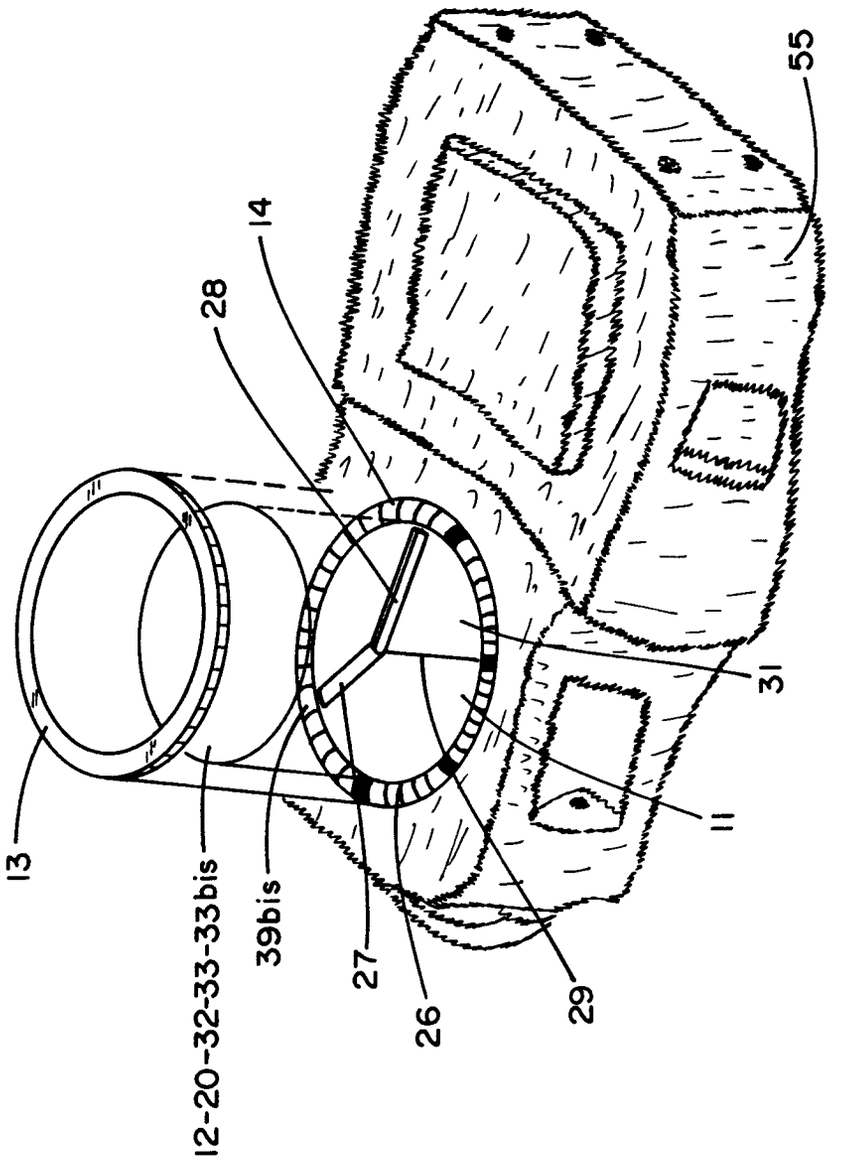
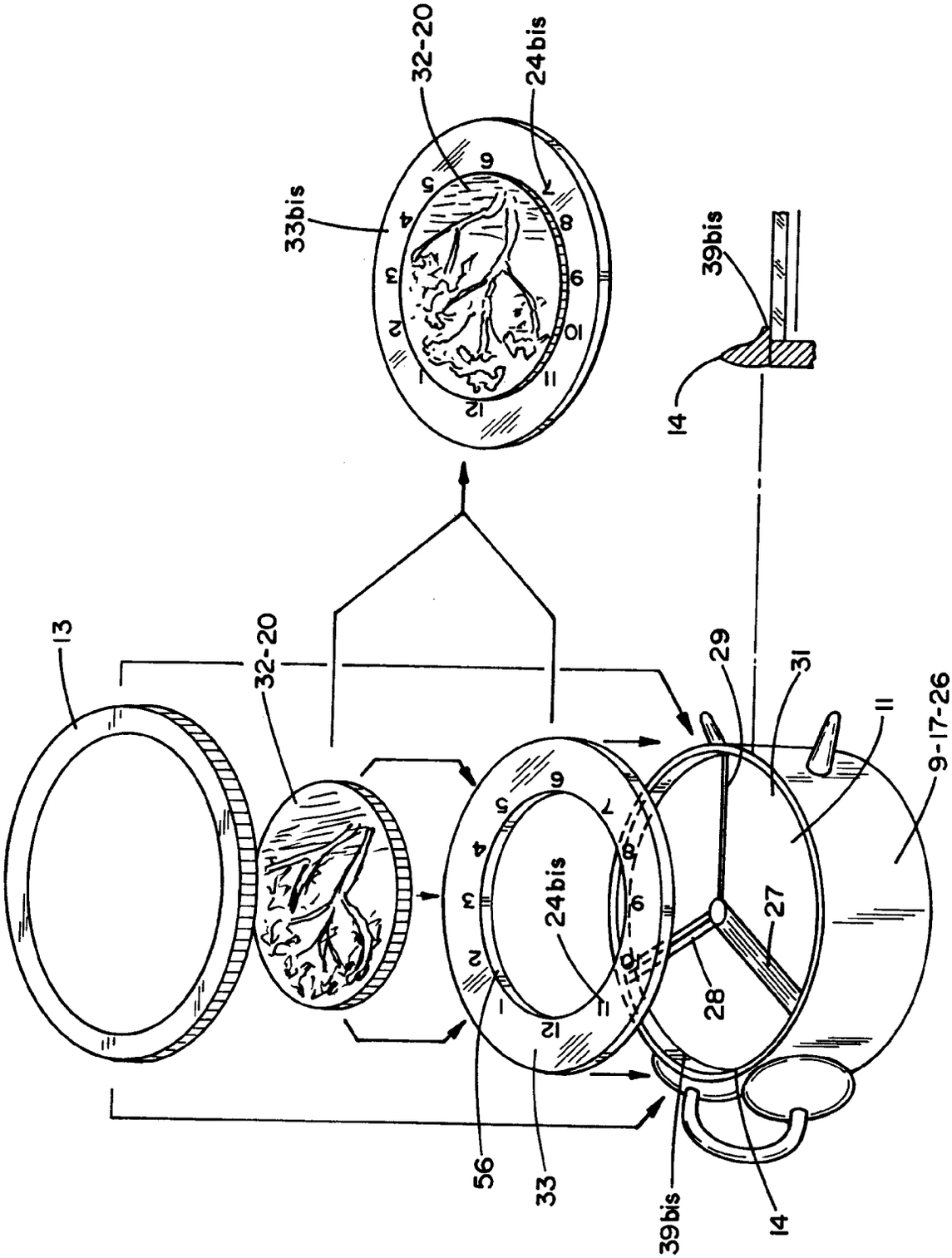


FIG.1BIS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39bis
14

FIG.2

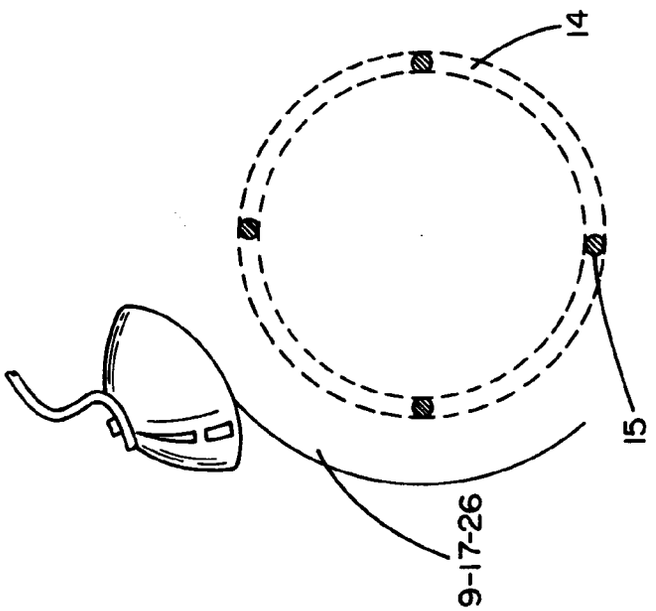


FIG.4

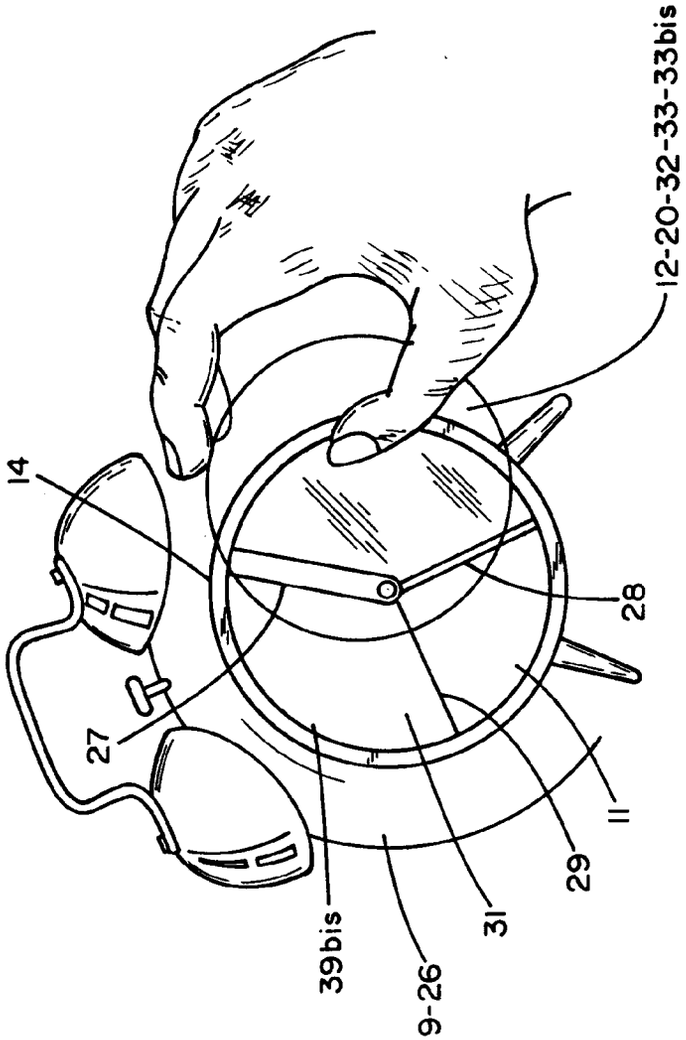
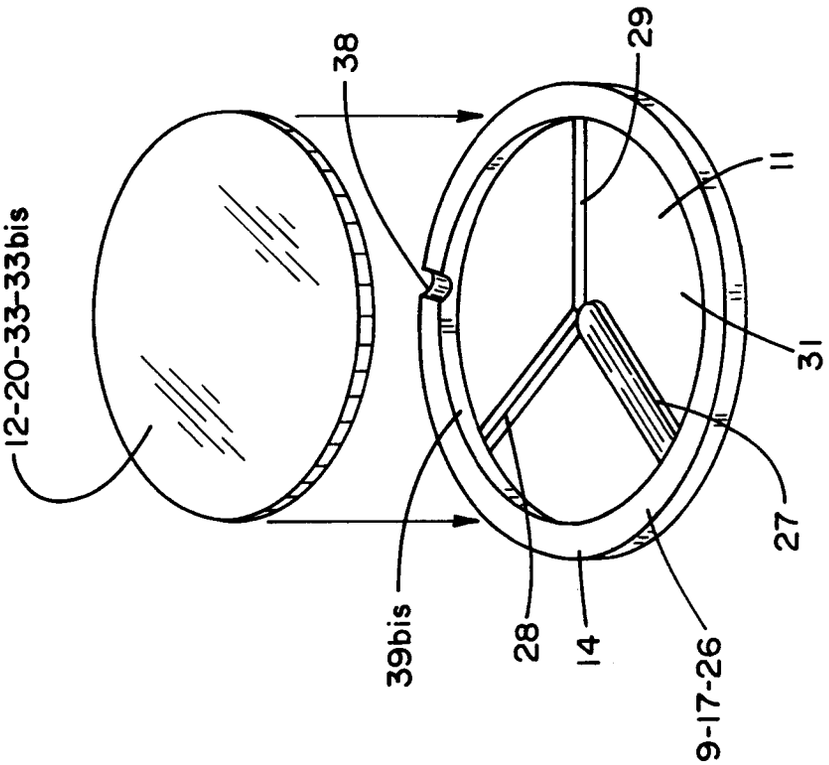


FIG.3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38
29
11
31
27
39bis
28
14
9-17-26

FIG.6

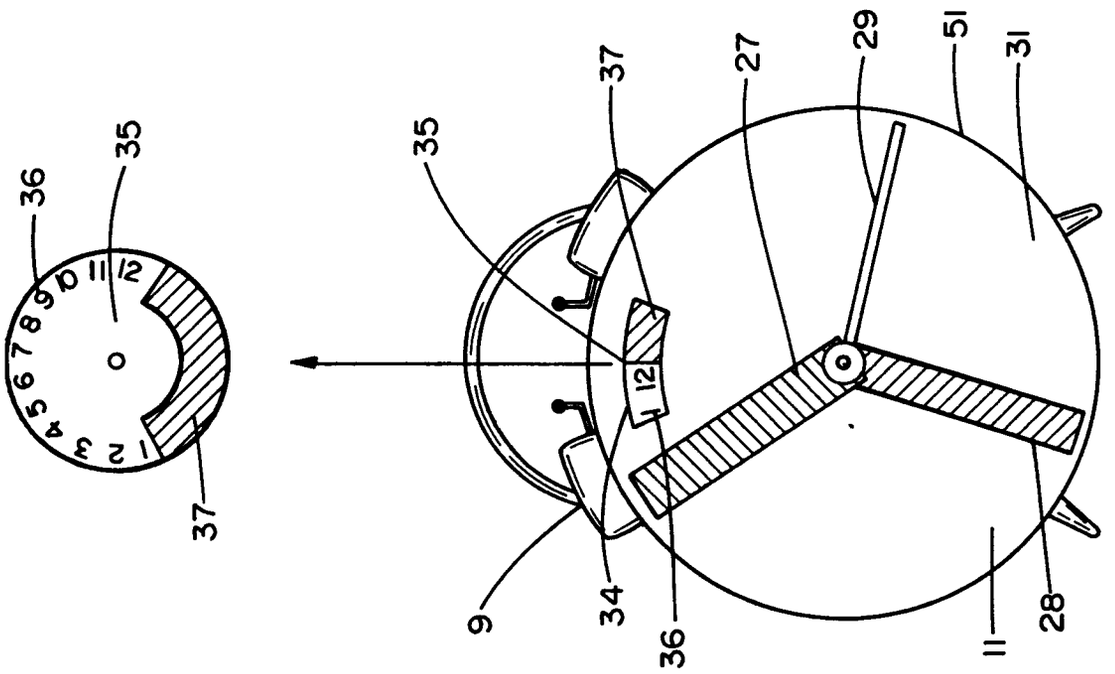
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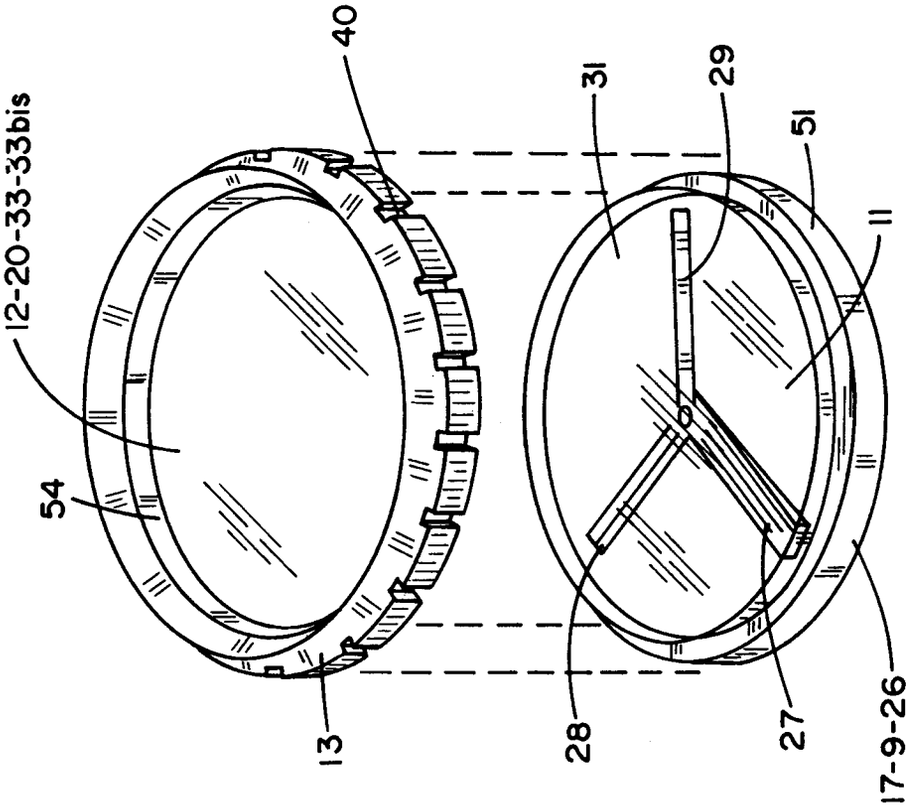
FIG.5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51
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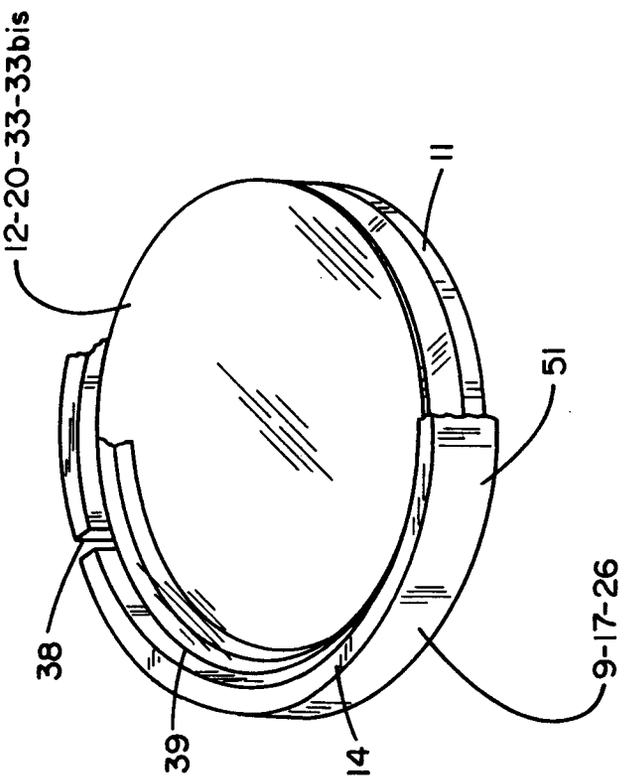
17-9-26

FIG.8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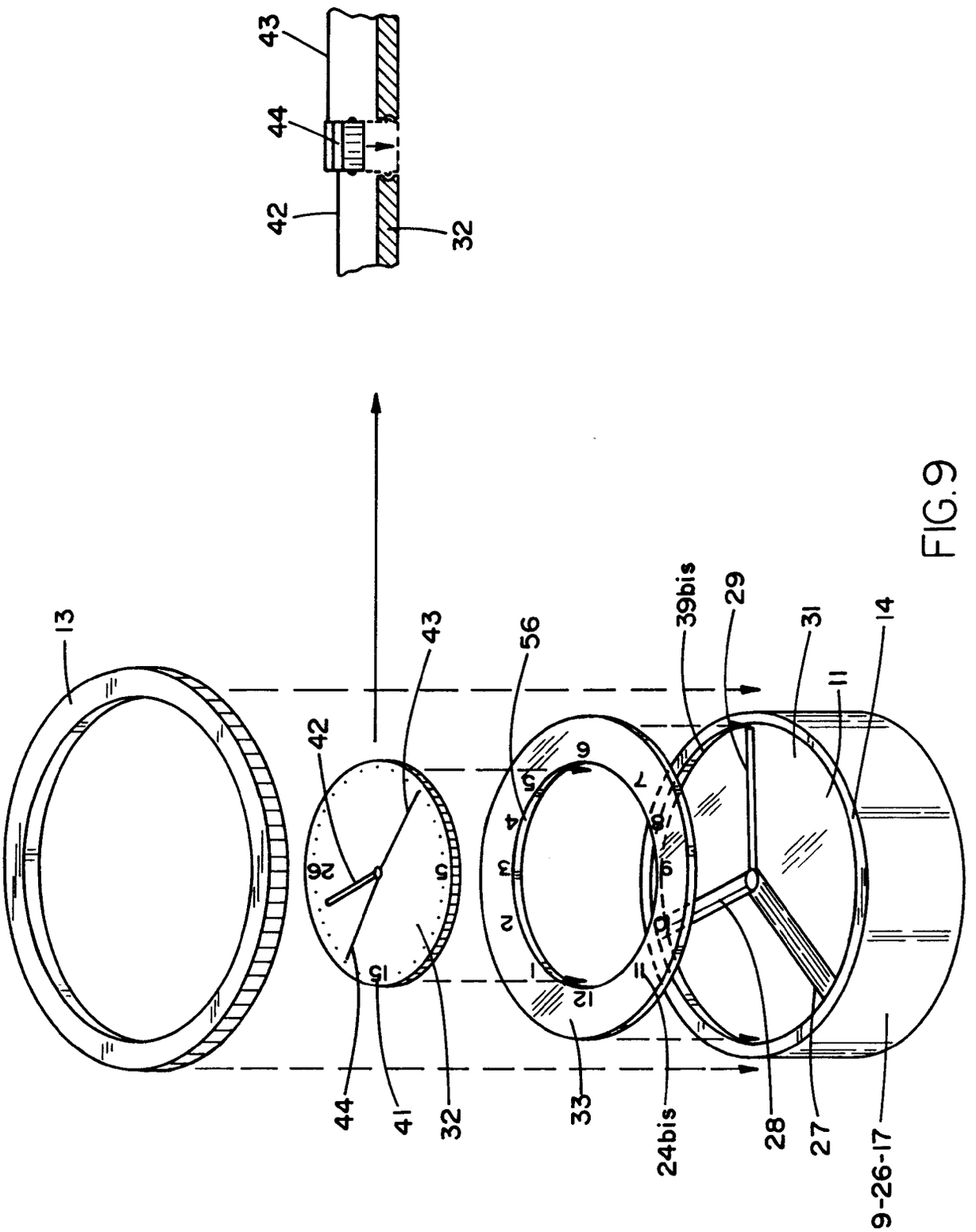
9-17-26

FIG.7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32
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42
56
39bis
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31
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11
44
41
32
33
24bis
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27
9-26-17

FIG.9

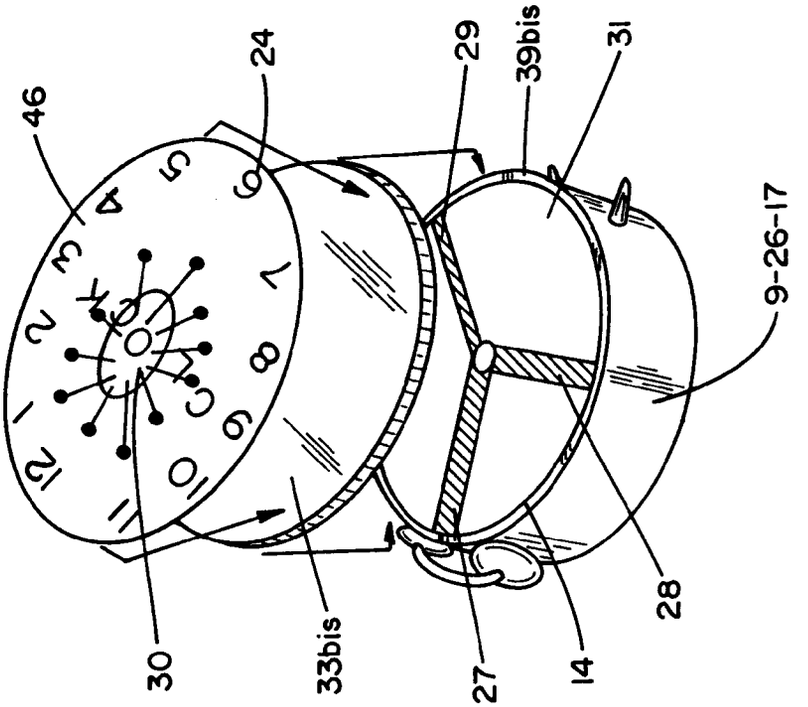
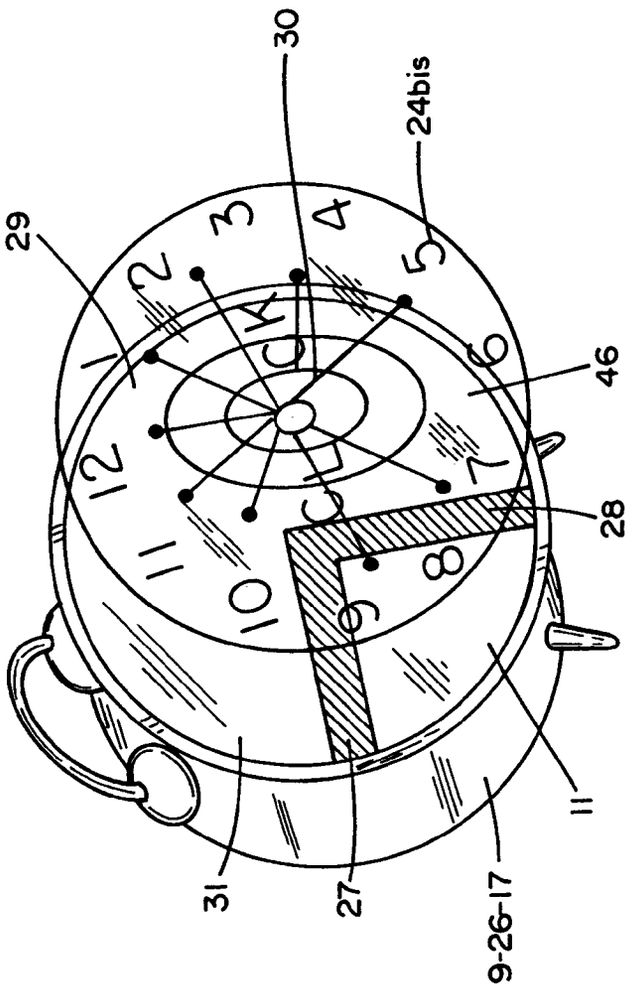

46
24
29
39bis
31
9-26-17
28
14
27
33bis
30

FIG.11


30
24bis
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46
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9-26-17

FIG.10

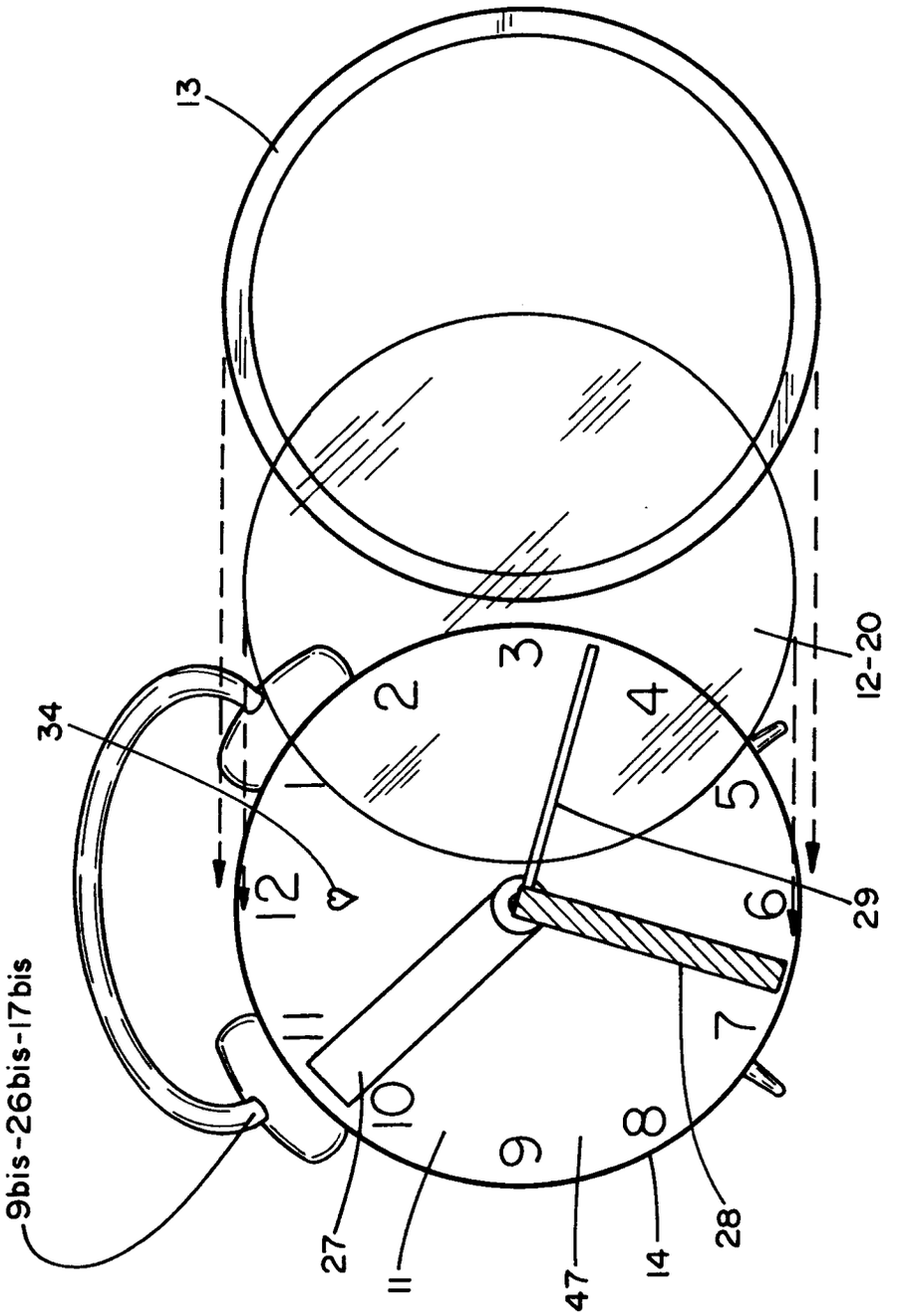

FIG.12

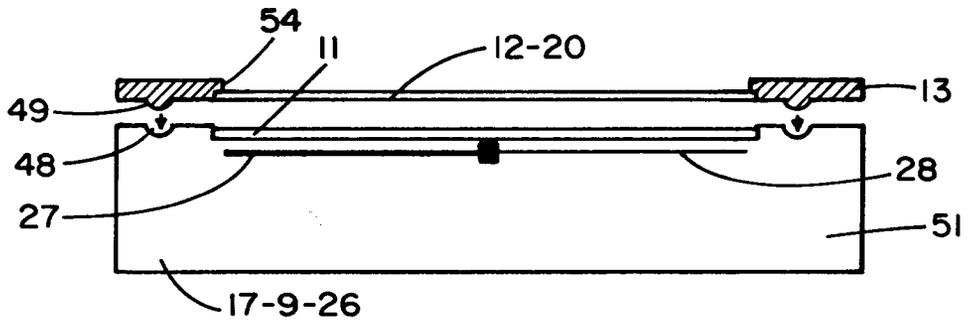

FIG.13

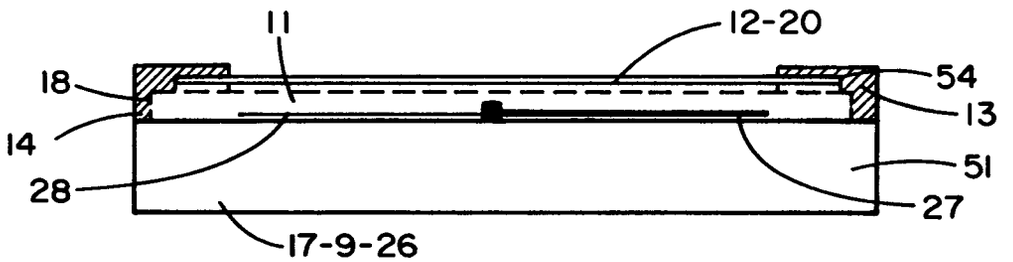

FIG.14

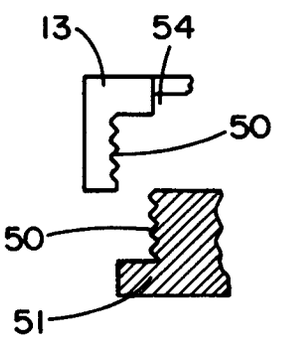

FIG.15

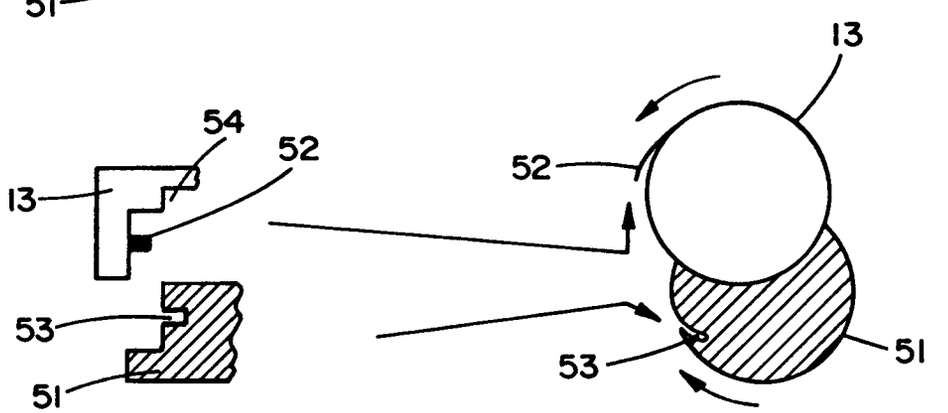

FIG.16

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 10 5119

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-A-2 538 803 (HOPPE)	1	G04B45/00
A	* the whole document *	11	G04B19/04
	---		G04B19/32
X	EP-A-0 282 934 (METAMORFOSI OLOGRAFIA ITALIA DI EVA APRILE)	1-3	
A	* the whole document *	11-16	

X	EP-A-0 199 298 (DIEHL GMBH & CO)	1,4,5	
A	* page 3, line 28 - page 9, line 24; figures 1-3 *	3,7,9-16	

X	US-A-4 332 020 (LEOPOLD)	1,4,5	
	* the whole document *		

A	CH-A-131 706 (CALAME)	1,2,17	
	* the whole document *		

A	GB-A-196 804 (AMERICAN RADIUM COMPANY)	7,9,10	
	* the whole document *		

A	CH-A-332 892 (RAYVILLE SA)	1,15-18	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
	* the whole document *		
	---		G04B
			A45C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	02 JUNE 1992	PINEAU A.

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