Feb. 7, 1956 R. D. CRANDALL 2,733,635

STEREOSCOPES

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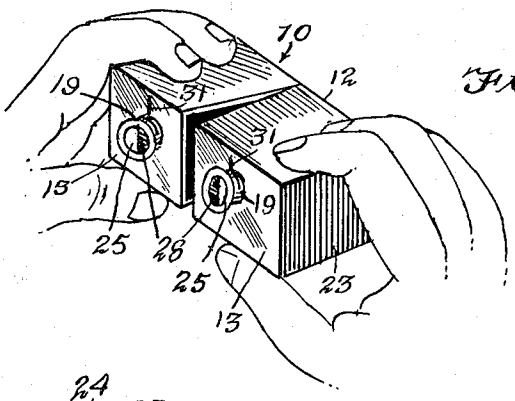
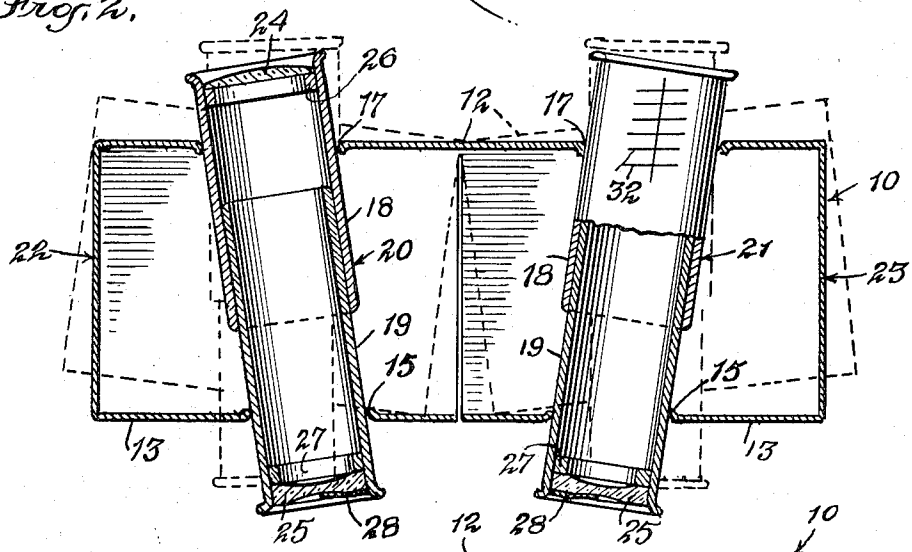


Fig. 1.

Fig. 2.



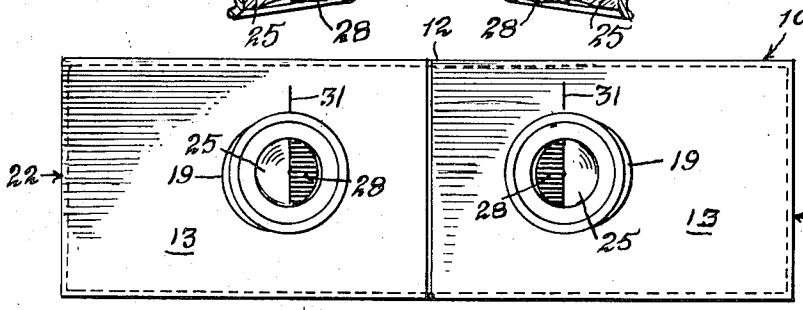
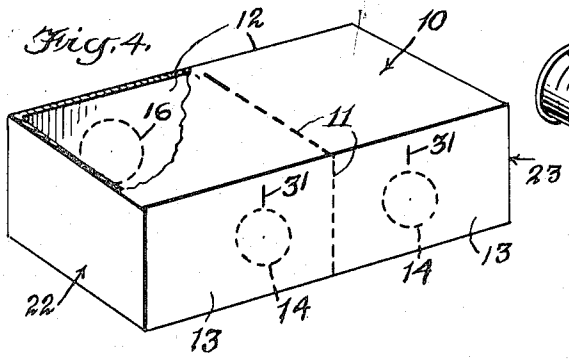


Fig. 3.

Fig. 4.



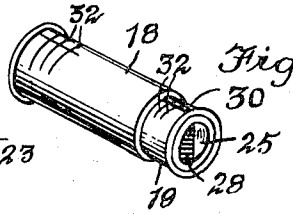


Fig. 5.

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STEREOSCOPES

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4 Claims. (Cl. 88—29)

This invention relates to stereoscopes and has for its object the provision of a device of the character mentioned which is capable of so functioning as to attain pronouncedly highly satisfactory optical results despite the fact that it is so constructed that it may be commercially produced at a sufficiently low cost to justify its being employed, for example, as a give-away article packaged along with and designed to promote the demand and sale of such commodities as breakfast cereals and other similarly packed products.

A further object of the invention is to provide a simple and effective means for effecting various adjustments of the optic systems in themselves and with reference to each other so that the device from an optical standpoint may be easily and readily conditioned by the user to enable him to attain such blending of two pictures of an object as will result in a clearly defined image in relief.

Other objects and advantages of the invention will become apparent from the following description when considered in connection with the accompanying drawings, in which—

Figure 1 is a perspective view, illustrating the present stereoscope in the hands of a user,

Fig. 2 is a horizontal central sectional view of the stereoscope and illustrating it by full and dotted lines respectively in two of its various positions of adjustment,

Fig. 3 is a rear view of the stereoscope and illustrating the manner in which the eye-piece of each of the two optic systems is masked for the purpose hereinafter more particularly mentioned.

Fig. 4 is a perspective view illustrating a container, in which the pair of optic systems, best shown in Fig. 2, may be included along with a product sold on the market in packaged form, the container being provided with score lines so that it may be readily conditioned to receive the two optic systems as shown in Fig. 2, and

Fig. 5 is a perspective view illustrating one of the optic systems of Fig. 2.

Referring to the drawings, the numeral **10** indicates a container of the cardboard type often employed in the packaging of various commodities, such as breakfast foods, the package being provided with score-lines **11** which extend throughout three sides of the container in a transverse central relation to the same. The score-lines **11** enable the container to be separated transversely of itself except for the front wall **12** which, as will be readily understood from an inspection of Figs. 1 and 2, remains intact at all times. The rear wall **13** of the container is provided with score-lines **14** which enable that wall to be conveniently punched out so as to provide therein a pair of openings **15**. Likewise, the container **10** is provided in its front wall **12** with a pair of score lines **16** which enable portions of that wall to be conveniently punched out so as to there provide a pair of openings **17**, which are somewhat larger than the openings **15** and are spaced from each other to a substantially greater extent than the distance between the corresponding openings **15**. The openings **17—17** are of such

size, with respect to the openings **15—15**, that they are adapted to receive the forward telescopic sleeves or sections **18** of a pair of optic systems, the openings **15—15** being adapted to receive the rear telescopic sleeves or sections **19** of said systems which are respectively indicated in their entirety by the numerals **20** and **21**.

When the container **10** is employed in the packaging of a commodity, such as a breakfast cereal, both of the optic systems **20—21** are included within the container and passed on to the consumer purchaser so as to enable him to assemble the present stereoscope in its form shown in Figs. 1 to 3, using the container, when partially separated along the line **11**, to provide a pair of hingedly connected sections **22—23**, within which the optic systems **20—21**, respectively, are adapted to be assembled and there supported in operative relation to each other. When assembling the optic systems **20—21** in relation to their associated retaining sections **22—23**, the telescopic sleeves **18—18** and **19—19** are introduced respectively through the openings **17—17** and **15—15** so that they assume, with respect to each other, a telescopic relation, as shown in Fig. 2.

The respective optic systems **20** and **21** include a front lens **24** and a rear lens **25**, the lens **24** being suitably connected to an annular ring **26** which is suitably anchored to the inner wall of the section **18**. Each of the lenses **25** is suitably connected to an annular ring **27**, which is suitably anchored to the inner wall of its associated telescopic section **19**. As will be understood from an inspection of Figs. 2 and 3, each of the lenses **25** carries a mask **28** which is semi-circular in contour, the masks being so disposed on the respective lenses that the left half of the left lens appearing in Fig. 3 remains exposed at all time whereas the right half of the right lens appearing in Fig. 3 remains exposed at all times. By experiment it has been found that these masks **28** and their relationship to each other may be used to a decided advantage, from an optical standpoint, when the fully assembled device is employed as a stereoscope.

In order that the person assembling the device may be guided in the assembling operations so that the masks **28** will assume their respective vertical positions shown in Fig. 3, the telescopic sections **19** are provided with longitudinally extending indexing marks **30** which are adapted to register with the vertically disposed indexing lines **31** provided on the rear face of the container **10** as shown in Figs. 3 and 4. As a further guide to the person assembling the device, the sections **18** and **19** are provided with transverse graduations or indexing lines **32** which enable him to determine to what extent, as between limits, the telescopic sections should be moved in order that the two optic systems **20** and **21** may occupy proper positions within the assembly, it being noted in this connection that the transverse graduations **32** are to be considered in conjunction with the plane of the front and rear walls of the sections **22** and **23** which respectively serve to support the optic systems in their operative positions.

Taking into account the relationship of the openings **17** and **15** to the sections **18** and **19**, it will be understood that once said sections are properly adjusted lengthwise of themselves in order to obtain proper focusing, such units are frictionally held against undue displacement with respect to the retaining sections **22—23**, although if it becomes desirable from time to time to longitudinally adjust one or the other of the telescopic sections **18—19**, such adjustment may be readily effected despite the frictional gripping action that exists as between the walls **12—13** and the respective sections **18—19**.

Inasmuch as the container **10** is adapted to be separated along its transverse score line **11**, thus leaving the

front wall **12** of the structure intact, it follows that the retaining sections **22—23** which support the optic systems **20—21** may be moved from their full-line positions, shown in Fig. 2, to their dotted line position shown therein, or to any intermediate position that may become necessary in order to so condition the device, from an optic standpoint, that the user will obtain the best optical effect when the device is employed as a stereoscope.

The stereoscope herein illustrated as embodying the present invention, despite its simplicity and relatively low cost of manufacture, has been found to attain pronouncedly highly satisfactory optical results and has proved itself capable of being readily adjusted, even by children, employing it in the viewing of subjects in duplicate as when they gather in a semi-circular group about the duplicated subject.

Needless to say, the device may be employed in obtaining the desired effect, such as may be attained by placing a single picture in a vertical position and arranging a vertically disposed mirror immediately in front of one of the side margins at right angles to the plane of said picture, the picture and the mirror being thusly so related to each other that the image of the picture appears in the mirror as though it were in the same plane as the plane of the picture itself, in which case the picture and the image are identical and when viewed through the present device, will effect a stereoscopic phenomena.

In addition to the device being capable of highly satisfactory use in connection with still subjects in duplicate, it may be employed to advantage by one or more persons seated in front of the screen of a television receiver on which is made to appear, for example, a moving picture originating at the television transmitting station and characterized by the fact that the successive picture presentations are so duplicated that they may be employed as animated stereoscopic subjects. Since the device embodying the present invention may be employed in connection with a television presentation of a duplicated motion picture, as just described, it follows that the device may also be employed as a stereoscope for viewing such motion picture when projected directly upon the usual type of motion picture screen from the usual type of motion picture projector.

Although only one form of the invention is herein illustrated and described, it will be understood that various changes and modifications may be made with respect to that which is herein illustrated without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A binocular viewer comprising a pair of optic systems, a holder for said systems formed of a rectangular container of cardboard-like material, said container having a substantially central, torn, perforated line of separation through three walls providing a pair of similar opposite supporting sections on opposite sides of said line, within which said systems are carried in spaced relation to each other, said container having a fourth, remaining continuous flexible front wall whereby said supporting sections are swingable relative to each other about an axis contained in said front wall, the said front wall and the rear walls of the container having pairs of punched-out aligned openings through which the optic systems respectively extend, thereby to enable said systems to be angularly adjusted with respect to each other.

2. A binocular viewer comprising a pair of optic systems, a holder for said systems formed of a rectangular container of cardboard-like material, said container having a substantially central, torn, perforated line of separation through three walls providing a pair of similar opposite supporting sections on opposite sides of said line, within which said systems are carried in spaced relation to each other, said container having a fourth, remaining continuous flexible front wall whereby said supporting sections are swingable relative to each other about an axis contained in said front wall, the said front wall and the rear walls of the container having pairs of punched-out aligned openings through which the optic systems respectively extend, thereby to enable said systems to be angularly adjusted with respect to each other, said supporting sections being so proportioned as to resemble cubes.

3. A binocular viewer comprising a pair of optic systems, a holder for said systems formed of a rectangular container of cardboard-like material, said container having a substantially central, torn, perforated line of separation through three walls providing a pair of similar opposite supporting sections on opposite sides of said line, within which said systems are carried in spaced relation to each other, said container having a fourth, remaining continuous flexible front wall whereby said supporting sections are swingable relative to each other about an axis contained in said front wall, the said front wall and the rear walls of the container having pairs of punched-out aligned openings through which the optic systems respectively extend, thereby to enable said systems to be angularly adjusted with respect to each other, the said openings in the front and rear walls having torn, perforated edges displaced laterally of said walls by said optic systems.

4. A binocular viewer comprising a pair of optic systems each having a rear lens, a mask covering only a portion of each of said rear lenses, a holder for said systems formed of a rectangular container of cardboard-like material, said container having a substantially central, torn, perforated line of separation through three walls providing a pair of similar opposite supporting sections on opposite sides of said line, within which said systems are carried in spaced relation to each other, said container having a fourth, remaining continuous flexible front wall whereby said supporting sections are swingable relative to each other about an axis contained in said front wall, the said front wall and the rear walls of the container having pairs of punched-out aligned openings through which the optic systems respectively extend, thereby to enable said systems to be angularly adjusted with respect to each other.

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