

[54] **SECURITY DEVICE**

[76] Inventor: **Gordon E. Ries**, 4423 3rd Ave. East,
Bradenton, Fla.

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[51] Int. Cl. **G03b 37/00**

[58] Field of Search **95/82, 15; 350/299,
350/303; 346/107**

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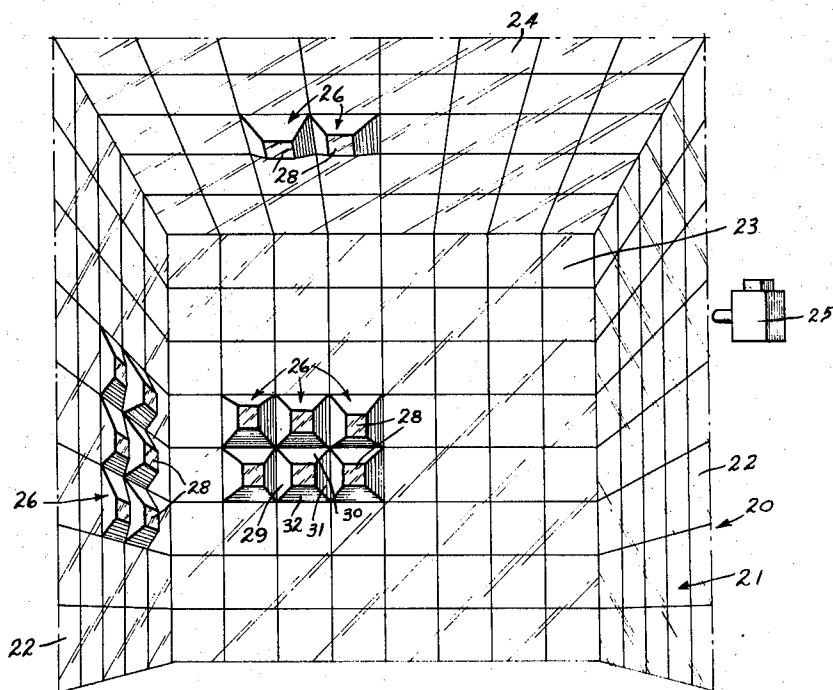
Primary Examiner—John M. Horan

Attorney—Sherman Levy

[57] **ABSTRACT**

A security device in the form of a surveillance system, wherein there is provided a plurality of reflector surfaces that can be used to give or provide a composite or mosaic picture for use with a television camera, photographic equipment or the like.

1 Claim, 11 Drawing Figures



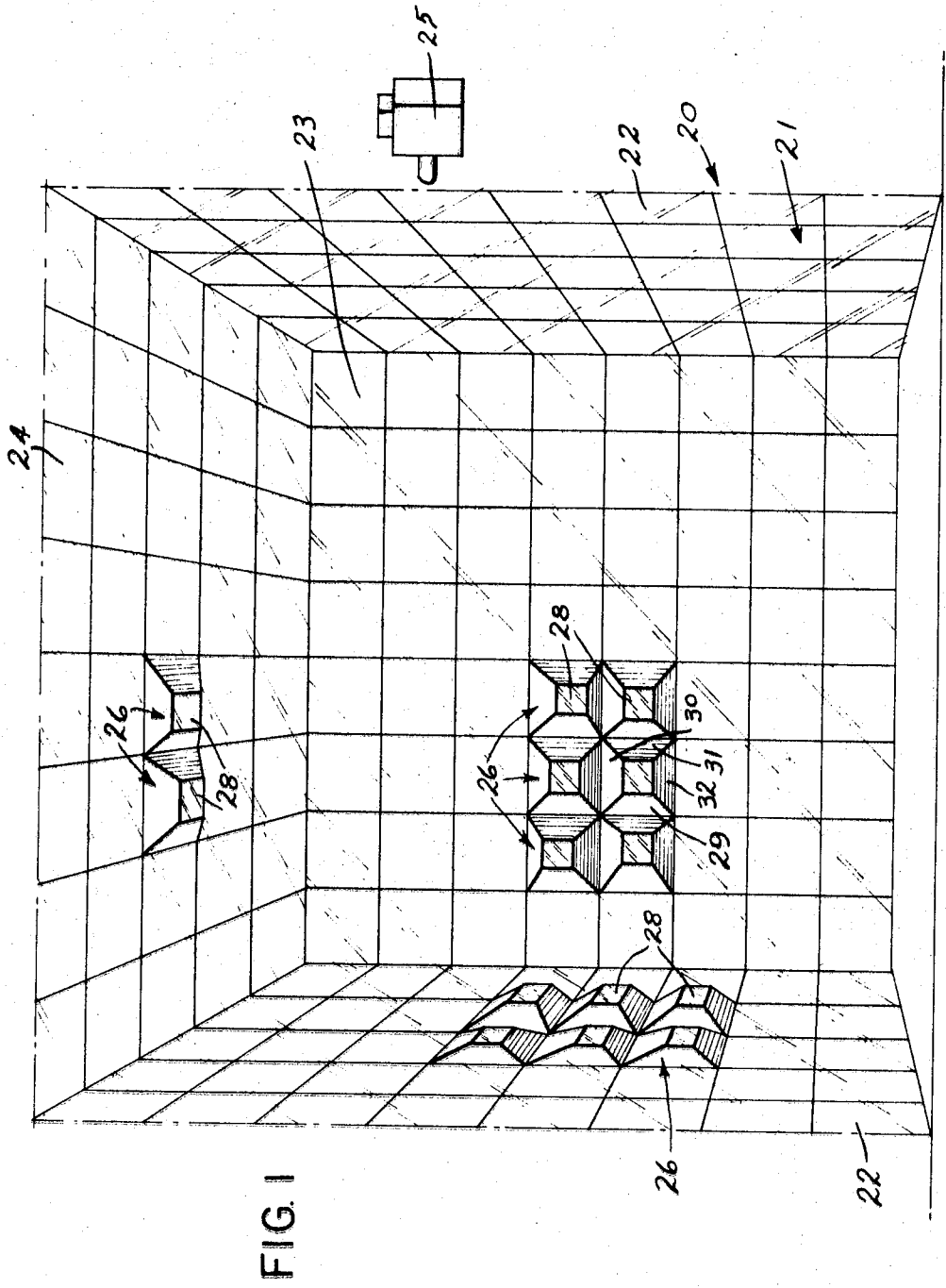


FIG. 2

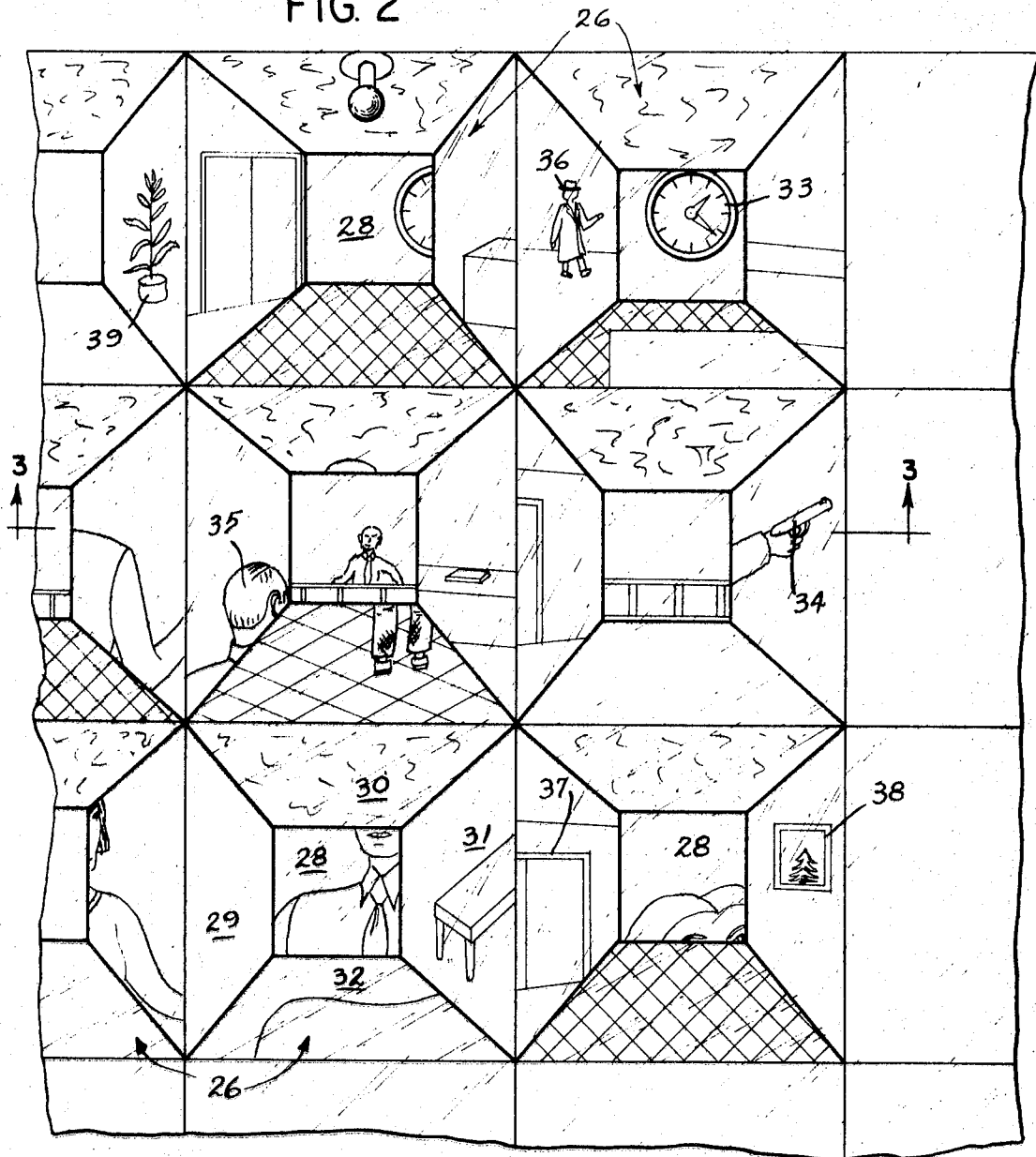


FIG. 3

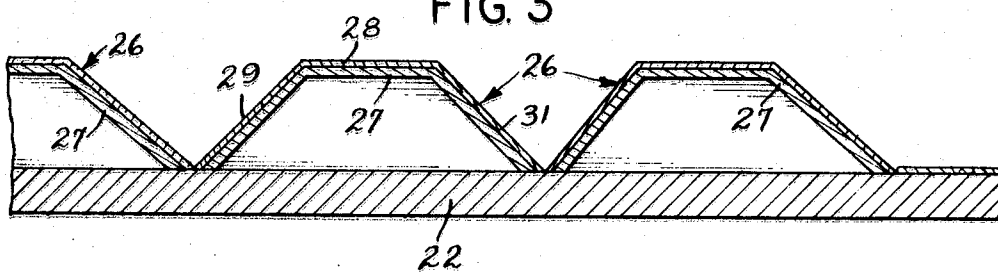


FIG. 4

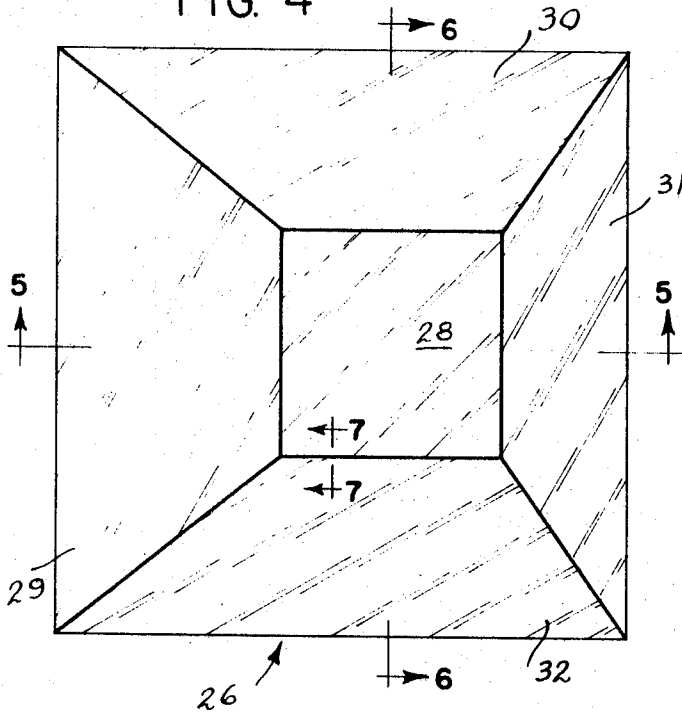


FIG. 6

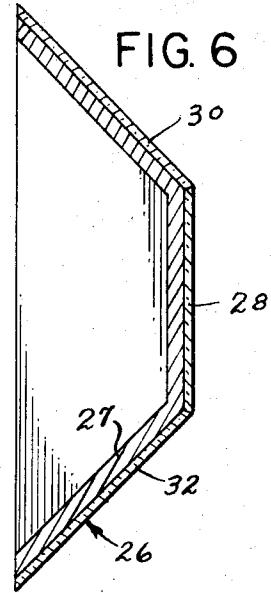


FIG. 5

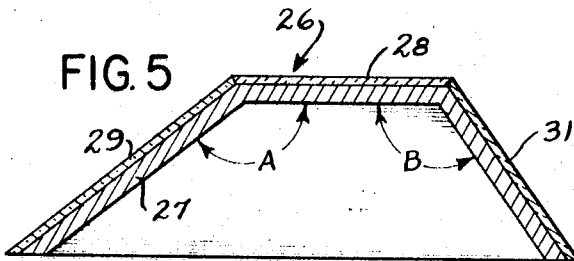


FIG. 7

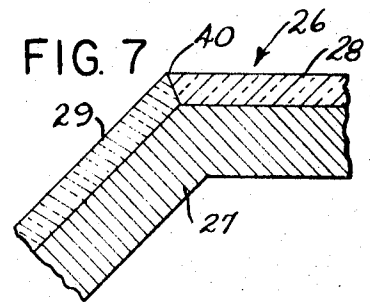


FIG. 8

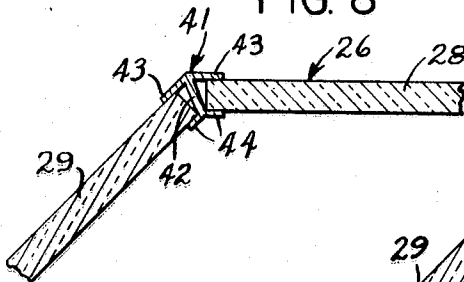


FIG. 9

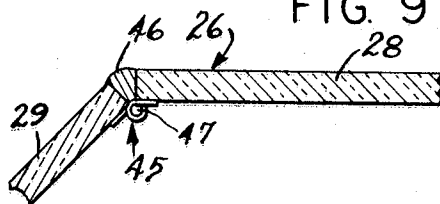


FIG. 10

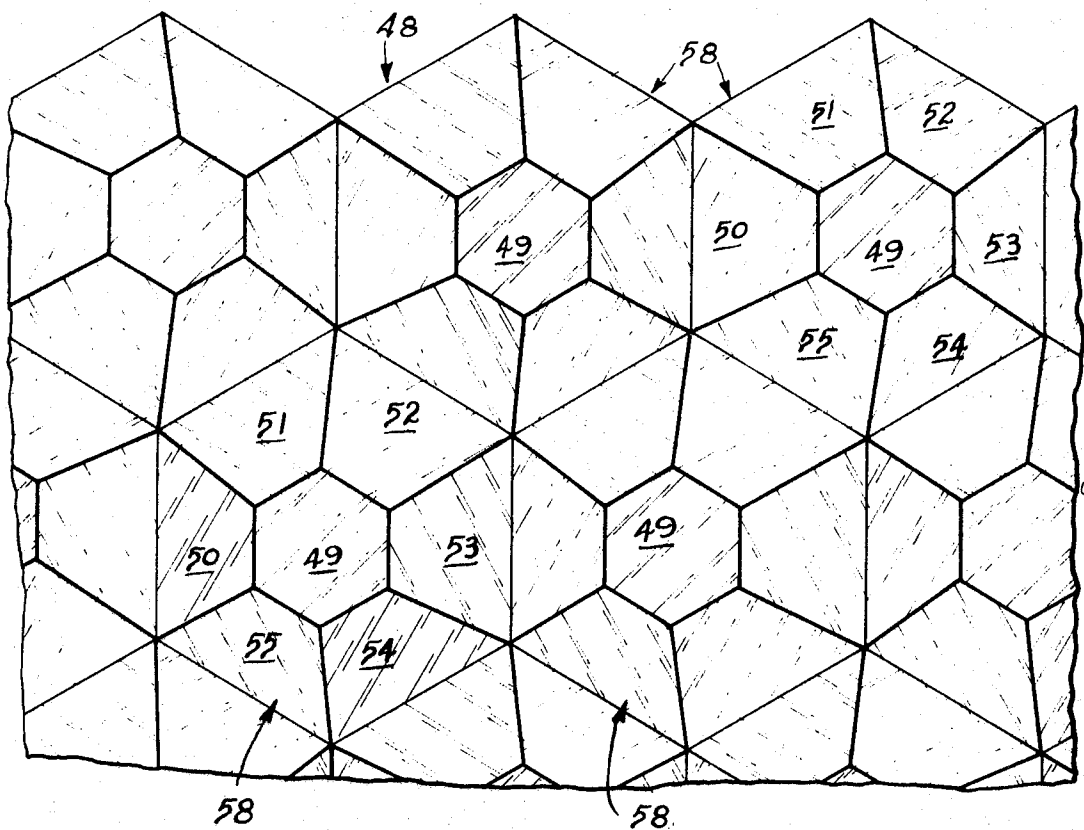
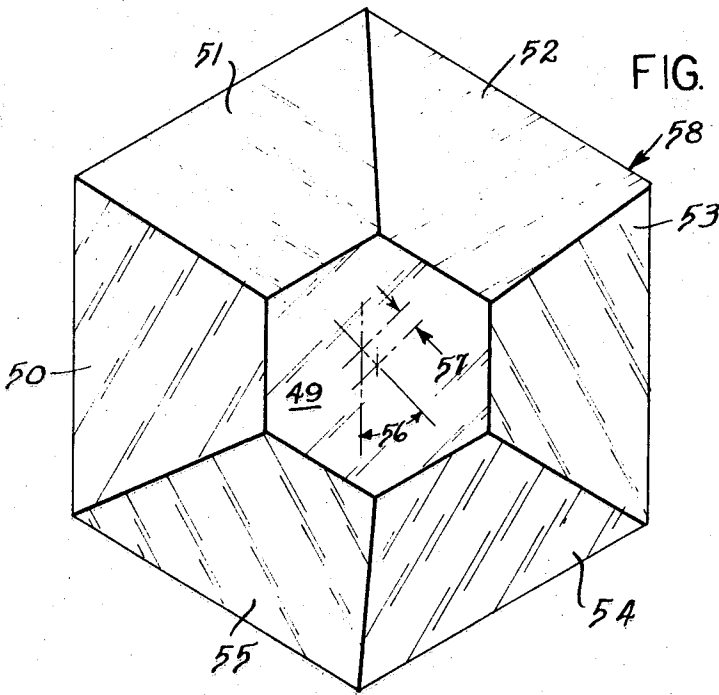


FIG. 11



SECURITY DEVICE

The present invention relates to a surveillance system, and more particularly to a plurality of reflector members or units that include mirror surfaces or reflective surfaces that will give a composite or mosaic picture when used with a television camera, photographic equipment or the like.

An object of the present invention is to provide a surveillance system that can function as a security arrangement since it will permit police officers and the like to readily obtain a composite picture for use in matters that require evidence for various purposes.

A further object of the present invention is to provide a security device that consists of a plurality of reflective pyramids or other units wherein the units have mirror or reflective surfaces arranged at different angles with respect to each other so that a composite picture can be obtained by police officers, security personnel, as well as personnel whose job it is to prevent shoplifting and the like, and wherein the device of the present invention can also be used for entertainment purposes to provide psychedelic arrangements of various objects or persons or lights that are to be reflected.

Another object is to provide a device of the character described that is adapted to minimize errors productive of wasted labor and material in the cutting of structural members.

Further objects and advantages are to provide improved elements and arrangements thereof in a device of the character described that is economical to produce, durable in form, and conducive to the most economical use of materials and uniformity of members formed therefrom.

Still further objects and advantages will become apparent in the subsequent description in the specification.

In the drawings:

FIG. 1 is a perspective view of a room illustrating the present invention installed therein.

FIG. 2 is a side elevational view illustrating the device in use.

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 2.

FIG. 4 is an enlarged top plan view of one of the reflector units.

FIG. 5 is a sectional view taken on the line 5—5 of FIG. 4.

FIG. 6 is a sectional view taken on the line 6—6 of FIG. 4.

FIG. 7 is an enlarged sectional view taken on the line 7—7 of FIG. 4.

FIG. 8 is a view similar to FIG. 7, but illustrating a modification.

FIG. 9 is a view similar to FIG. 7, but illustrating a further modification.

FIG. 10 is a side elevational view similar to FIG. 2 to illustrate a further modification.

FIG. 11 is an enlarged top plan view of one of the reflector units of FIG. 10.

Referring in detail to the drawings, and more particularly to FIGS. 1 through 7 of the drawings, the numeral 20 indicates a surveillance system for use with a room such as the room or other area 21, and the room 21 may include vertically disposed spaced parallel side walls 22, a vertically disposed back wall 23, and a horizontally disposed top wall 24. The numeral 25 indicates

a conventional television camera, photographic camera, or the like.

In accordance with the present invention, there is provided reflector structures or units 26, and as shown in FIG. 3, a support member or base 27 is provided for each of the reflector units 26. Each of the reflector units 26 is adapted to include a flat outer mirror or reflecting surface 28, as well as a plurality of angularly arranged mirror or reflecting surfaces 29, 30, 31 and 32. Thus, each of the reflecting units 26 may have a truncated pyramid shape or configuration.

As shown in FIG. 2, when using an arrangement as shown in FIG. 1, a composite picture will result that can be used as evidence when a photograph of the same is taken or when the composite picture of FIG. 2 is viewed on a television screen at a remote location. Thus, as shown in FIG. 2, the composite picture may show various objects or portions thereof, such as a clock 33, to indicate the time of commission of a crime, a weapon such as a pistol 34, a portion 35 of a person's head, and a portion of a person 36, a doorway 37, picture 38, plant 39, or the like. Thus, such a composite picture, when used in a court proceedings by police officers, they will be able to accurately tie together all of the various elements of a crime, as well as establishing the time of commission of the crime, the locale, and the like.

As shown in FIGS. 4 and 5, the outer flat surface 28 may be offset with respect to the adjacent reflecting surfaces 29 and 31, so that, for example, the angle "A" between the surfaces 29 and 28 is different from the angular relationship or angle "B" between the surfaces 28 and 31.

In FIG. 7, the numeral 30 indicates the abutting joint or surface between certain of the reflective faces such as the reflectors 29 and 28.

Referring to FIG. 8 of the drawings, there is illustrated a modification wherein a coupling member 41 is provided for connecting adjacent edges of the reflector surfaces together, and the coupling member 41 may include an intermediate rib 42 as well as flanges 43 and 44. The reflector surfaces 29 and 28 may be received between the flanges 43 and 44 by a snug or slip fit.

Attention is directed to FIG. 9 of the drawings, wherein there is illustrated a further modified means for connecting adjacent mirror surfaces or reflector surfaces together, and in FIG. 9 the modification is indicated generally by the numeral 45, and may include a filler 46 as well as a hinge joint 47, and due to the provision of the hinge joint 47, the parts can be folded to a compact position, when they are not being used or when they are being stored or shipped.

Referring now to FIGS. 10 and 11 of the drawings, the numeral 48 indicates a modified security device, surveillance system, or the like, that consists of a plurality of reflector units 58 that each include a flat outer surface 49 having a hexagonal shape, and each of the units 58 further includes flat mirror or reflecting surfaces 50, 51, 52, 53, 54 and 55, and the reflecting surfaces 50 through 55 are arranged at an angle relative to each other, and these surfaces are also arranged at an angle with respect to the surface 49. As shown in FIG. 11, an offset arrangement is provided, as shown by the angle indicated by the numeral 56, and similarly, the numeral 57 indicates an offset arrangement of the face or surface 49 with respect to the center line thereof.

From the foregoing, it will be seen that there has been provided a surveillance system, security device, or the like, and in use, with the parts arranged as shown in the drawings, one or more walls of a room, such as the walls 22, 23 and 24, such as the walls of the room 21 may be provided with the reflector prisms or units 26 and a photographic camera, television camera 25 or the like may be used in conjunction therewith. Assuming, for example, that the mirror devices or reflector devices 26 are arranged all around various suitable walls in a bank or the like, in the event a bank robber enters the room, a mosaic or composite picture will be provided, as for example, as shown in FIG. 2, and this can later be used as evidence in a trial or for other purposes. Such an offset picture, for example, as shown in FIG. 2, may illustrate or provide evidence, showing the weapon 34 being used in the holdup, the time 33 when the crime occurred, a picture of the person 35 committing the crime, or a picture of the victim, and other composite parts will show up as illustrated in the drawings. This is because each of the units 26 includes a flat outer surface 28 of reflecting material, as well as the plurality of flat reflecting surfaces 29, 30, 31 and 32 and these surfaces 28 through 32 are arranged at an angle relative to each other, so that the final or completed picture will show various segments or objects or persons in the room or other area.

As shown in FIGS. 4 and 5, the outer flat surface 28 may be offset relative to the reflecting surfaces 29 and 31 so that different effects can be provided or accomplished. The reflecting surfaces, such as the surfaces 28 and 29 may be arranged as shown in FIG. 7, so that their adjoining edges 40 abut, or as shown in FIG. 8, a coupling 41 can be provided so that adjoining edges are snugly received in such a coupling. In FIG. 9, a modification is illustrated wherein a hinge joint 45 is provided that permits the units to be folded when the same are not being used.

In FIGS. 10 and 11 a different shape of reflecting unit 56 is illustrated, and for example, in FIGS. 10 and 11 the flat surface 49 has a hexagonal shape, and six flat reflecting surfaces 50 through 55 are provided for each of the units 58, as compared to the units 26 which may include four flat reflecting surfaces 29 through 32 that are arranged at an angle with respect to the reflecting surface 28.

It will, therefore, be seen that the present invention consists of a plurality of reflective pyramids or other shapes and these may be similar or different in configuration, and a camera, or the like, can be used in conjunction with the devices as illustrated in FIG. 1. The present invention can be used in a store, as an anti-shoplifting device, and can also be used in amusement parks and entertainment places and for psychedelic purposes. It can also be used as a reflector in communication systems for check cashing purposes. In the event of a holdup, for example, every angle in the room will be preserved on film. Instead of a photographic camera, a television monitoring system can be utilized.

The present invention will cover long distances, and is good for accident investigations and provides a composite picture and gives positive identification, and can work in conjunction with black and white film, infra-

red and the like. The angle between the mirrors may vary as desired and the units can be removable, and if desired, an interlocking fit may be provided.

The present invention is especially suitable as a security device, for commercial establishments and the like, and a series of the units are adapted to be used in conjunction with photographic equipment to provide identifiable photographs, both singly and in composite form, of persons and/or objects reflected from the structure.

The present invention is especially suitable as a security device in banks and other commercial establishments as a guard against the hazard of armed robbery, holdups, larceny by concealment and the like.

The device can also be used in conjunction with a telephoto or wide angle lens system. When used in a bank, it can cover every teller, as well as the front and back walls with a single wall installation. When installed in the ceiling of a convenient store, all of the aisles between the counters can be monitored by one cashier at his central point near the door. Further, in large department stores valuable merchandise can be protected by installations in both walls and ceilings.

Smaller installations may be made in vehicles, such as armored cars to protect employees therein while the trucks are being used. The present invention uses a modular construction and it functions especially as a security arrangement.

In FIGS. 10 and 11, the surfaces 50 through 55 may be arranged at a suitable angle relative to each other such as is desired. Also, in FIGS. 10 and 11, the distance indicated by the numeral 57 illustrates how the hexagonal surface 49 may be offset from the center of the larger unit 58 at an angle indicated by the numeral 56. This angular arrangement thus gives each reflective surface a different reflective angle.

The parts may be made of any suitable material and in different shapes or sizes as desired or required.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatus.

What is claimed is:

1. In a security device for a room including vertically disposed spaced parallel side walls, a vertically disposed back wall, a horizontally disposed top wall, and a camera, each of said side and back walls and top wall having a plurality of stationary reflector structures thereon for reflecting broken images, each of said reflector structures including a support member, said reflector structures each having a truncated pyramidal shape and including a flat outer surface, and a plurality of reflecting surfaces arranged at an angle with respect to each other and with respect to said flat outer surface, one of said reflecting surfaces being arranged to reflect the face of a clock to a camera, and another of said reflecting surfaces reflecting a working area.

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