Oct. 21, 1941. T. J. KELLEY, JR 2,259,751

INSTITUTIONAL COMMUNICATION WINDOW

Filed Nov. 16, 1939

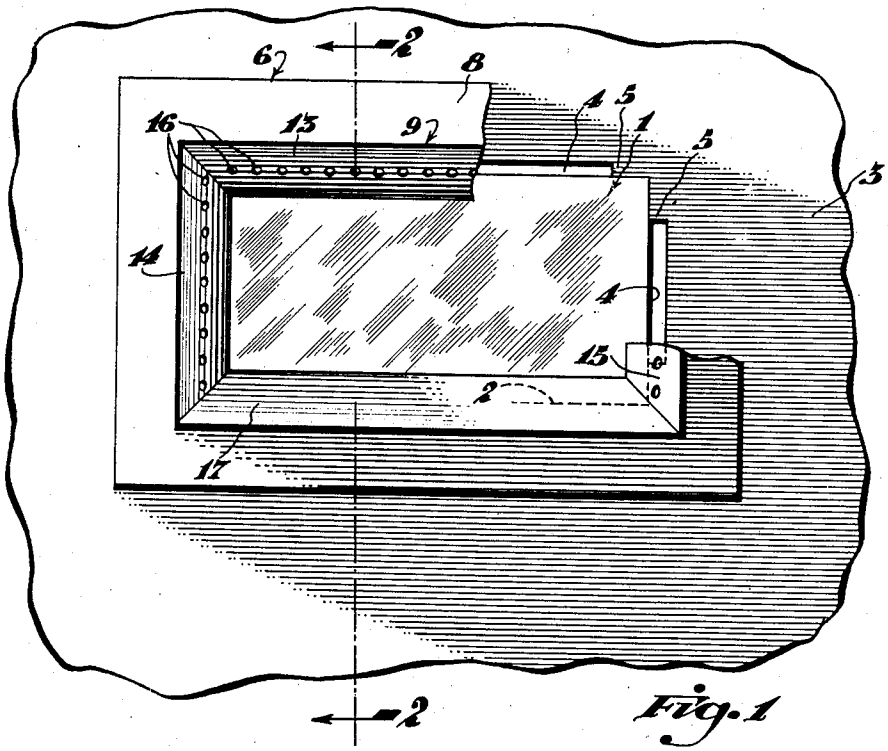



Fig. 1

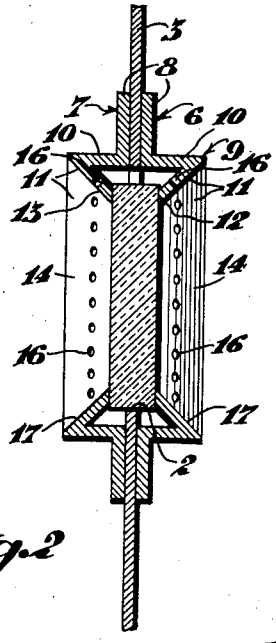



Fig. 2

INVENTOR.

BY Thomas J. Kelley Jr.

Wood & Wood

ATTORNEYS

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# UNITED STATES PATENT OFFICE

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## INSTITUTIONAL COMMUNICATION WINDOW

Thomas J. Kelley, Jr., Webster Groves, Mo., assignor to The Stewart Iron Works Company, Covington, Ky., a corporation of Kentucky

Application November 16, 1939, Serial No. 304,766

1 Claim. (Cl. 189—5)

This invention relates to an improved structure adapted for use in penitentiaries, jails, asylums, and the like, where the inmates are permitted to communicate with visitors on the outside without having direct contact with them. More specifically, it relates to what might be termed a communication window, by means of which a person in confinement can observe, be observed, and communicate with a person not in confinement, such as a visitor or a guard.

In providing a structure adapted to the purposes of the invention, it is necessary to take every precaution to prevent those on the outside from passing any sort of article to the prisoner, and it is also necessary to provide an observation medium and communication medium which is bullet-resisting. However, at the same time it is necessary to provide a structure through which communication can be established with ease and comparative comfort.

The general solution to the communication problem has been to provide a sound receiving aperture, or series of apertures, closely adjacent to the mouth of the speakers on either side of the confinement partition. These corresponding apertures are then joined by a sound passage of irregular contour, through which the sound waves pursue a tortuous route. It is therefore impossible for the speakers to pass articles from aperture to aperture through the sound passage. In devices of this type there has been involved a problem of sanitation of the apertures and sound passages, and various more or less complicated arrangements for disinfecting these portions of the device have been provided.

The structure of the invention, which is considerably simplified over most of the structures of the prior art, provides a ready and effective observation and communication means in which there is clear visibility between the outside and inside, and an effective sound passage. At the same time, however, there is no sanitation problem, as neither speaker speaks directly into the apertures leading to the sound passage. The slight acoustical valve incident to a structure in which the mouth is placed close to the aperture has been equalized in the present invention by providing improved means for the general collection and passage of sound.

It has been one of the objects of this invention to provide a communication and observation means for institutional use which, although greatly simplified in structure, is very effective for the purposes intended.

A second object has been to provide a structure in which there is no direct contact or close association between the mouth of the speaker on either side and the sound receiving aperture, and, accordingly, one in which no sanitation question is involved.

Another object has been to provide a structure having improved means for sound reception and transmission.

Another object has been to provide a structure in which the observation medium—in this case a panel of bullet-resisting, wired or laminated glass, is supported in the aperture in the institutional partition in such a way as to permit the assembly of the completed structure with a minimum of parts and, resultantly, a minimum of expense.

Further objects and advantages will be apparent from the further and more detailed description of the drawing, disclosing a preferred embodiment of the invention, in which:

Figure 1 is a front elevation view broken away to show a corner of the glass panel in its mount.

Figure 2 is a cross-sectional view taken on line 2—2, Figure 1.

In the drawing, a rectangular, bullet-resisting glass panel is indicated at 1. The glass panel is mounted in a similarly configurated aperture 2 in a steel partition 3. Narrow communication slots or sound passages 4, preformed in the partition, extend along the sides and upper edge of the glass panel. The communication slots do not extend the entire length of the sides and the upper edge of the panel, but stop short of each corner to provide supports 5—5 for the two upper corners of the panel.

Rectangular frames 6 and 7 are provided for the glass panel on both sides of the partition. Each frame is comprised of a base 8 which lies flatly on the partition around the aperture 2 and sound receptor and collector 9 which extends outwardly from the base. The frame is positioned around the aperture 2 so that the inside edge of the base lies along the line of the outside edge of the communication slots 4, so as not to close them. The sound receptor 9 extends outwardly, as at 10, perpendicular to the base and is turned inwardly, as at 11, at approximately 45° to the line of extension, to contact the face of the panel near its edge. The contacting edge 12 of the sound receptor is angulated to present a flat, snug-fitting surface to the face of the panel. Otherwise expressed, the glass panel is held in the aperture of the partition from both sides by a frame comprising a pair of sound receptor elements which contact both faces of the panel near

the outer edges of each face and flare outwardly at 45° on all sides of the panel to a line perpendicular to the outside edge of the communication slots 4, and there are turned inwardly to their respective bases 8.

Three of the exposed flared faces of the sound receptor, the upper 13, and the two sides 14 and 15, have a plurality of aligned holes 16 drilled perpendicularly through them; the lower face 17 being plain. The holes 16 preferably are placed in the faces of the sound receptor nearer the panel than the outward edge, so that the communication holes are near the bottom of the cup-like formation of the sound receptor, which tends to collect and focus sound waves, and to increase the acoustical properties of the communication system. If desired, the faces 13, 14, 15 and 17 may be concave instead of straight as illustrated. This will tend to further improve the acoustics.

It may be noted from Figure 2 of the drawing that the axes of the opposing holes 16 in the faces of the receptors are at right angles to one another, so that the route of sound waves from one side of the partition to the other necessarily has to pursue a circuitous course. This prevents the passage of any article, even a flexible article such as a wire, through one aperture into the sound passage and out another aperture on the other side of the partition.

The two frames may be held in position by welding or they may be bolted or riveted together through the partition.

The drawing discloses the frames as being of one piece construction. In this instance, the frame is stamped out of a single piece of metal. Therefore, the entire structure is assembled from only three pieces; the two frames and the glass panel. At the same time, even though the structure is very simple, it has been found to be very effective for the purposes intended.

The frames may be comprised of several pieces, as will be readily apparent to one skilled in the art, and also the angulation of the faces of the receptor may be varied to meet various requirements. Likewise, the contour of the communication window may be altered. A circular, oval, or many-sided window may be provided without departing from the spirit of the invention, and the contour of the frames may be modified to conform to the contour of the window.

It will be specifically noted that no sound receiving apertures are provided on the lower edge of the frames contiguous to the mouth of the speaker on either side of the partition. It has been found that conversational sounds pass equally well, if not better, through the side and upper apertures, and in dispensing with the lower apertures, the problem of providing means for cleaning and disinfecting the apertures is avoided, as a speaker is at no time directly in front of the aperture through which the sound waves of his voice pass.

It is a human characteristic to wish to look at the person with whom a conversation is being had, and, partly for this reason, there is no desire to turn sidewise and speak directly into the side apertures. If desired, some specific means can be provided to prevent the speaker from directly approaching the window, and this will in no way interfere with the passage of conversational tones, as the cup-like construction of the receptor will tend to collect and receive the tones, even though the speaker may be a few feet removed from the observation panel.

Having fully described my invention, I desire to be limited only by the ensuing claim:

A sound transmitting window comprising, a partition wall having an opening therein, a panel of glass mounted in said opening, frame elements on the respective sides of the wall including flange portions extending beyond the margin of the respective faces of the panel of glass for holding it in position, said frames including flared walls providing a conical sound collecting chamber, the upper and side walls including apertures, the lower wall being imperforate, said partition wall including clearance notches along the edges of the panel of glass adjacent the openings for permitting the transmission of sound from one side of the panel of glass to the other.

THOMAS J. KELLEY, JR.

CERTIFICATE OF CORRECTION.

Patent No. 2,259,751. October 21, 1941.

THOMAS J. KELLEY, JR,

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, first column, line 45, for the word "valve" read --value--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 25th day of November, A. D. 1941.

Henry Van Arsdale.

(Seal) Acting Commissioner of Patents.

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