June 4, 1935. F. L. HUNT 2,003,937

SOUND PICTURE SET

Filed Dec. 15, 1933 2 Sheets-Sheet 1

FIG. 1

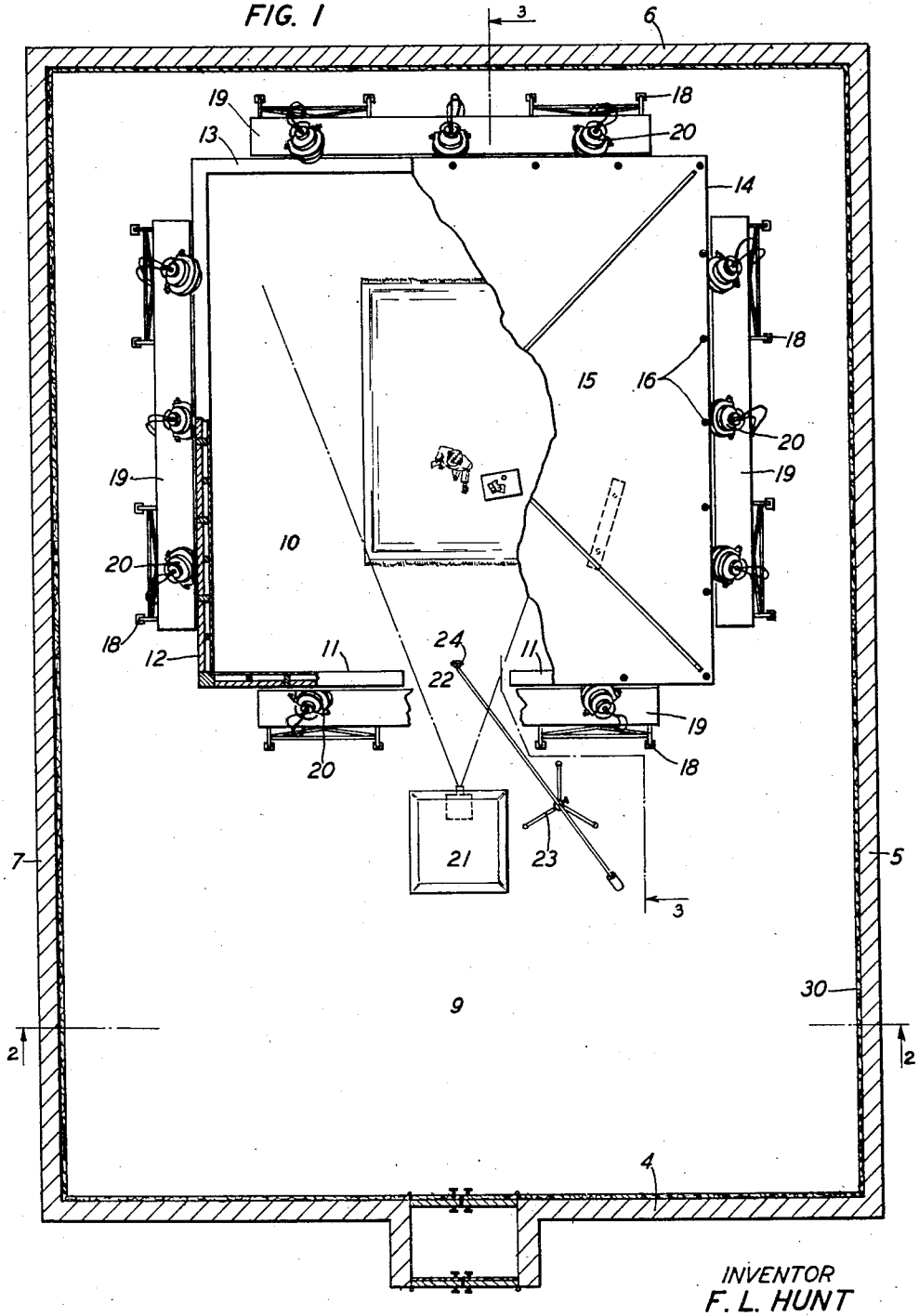

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FIG. 2

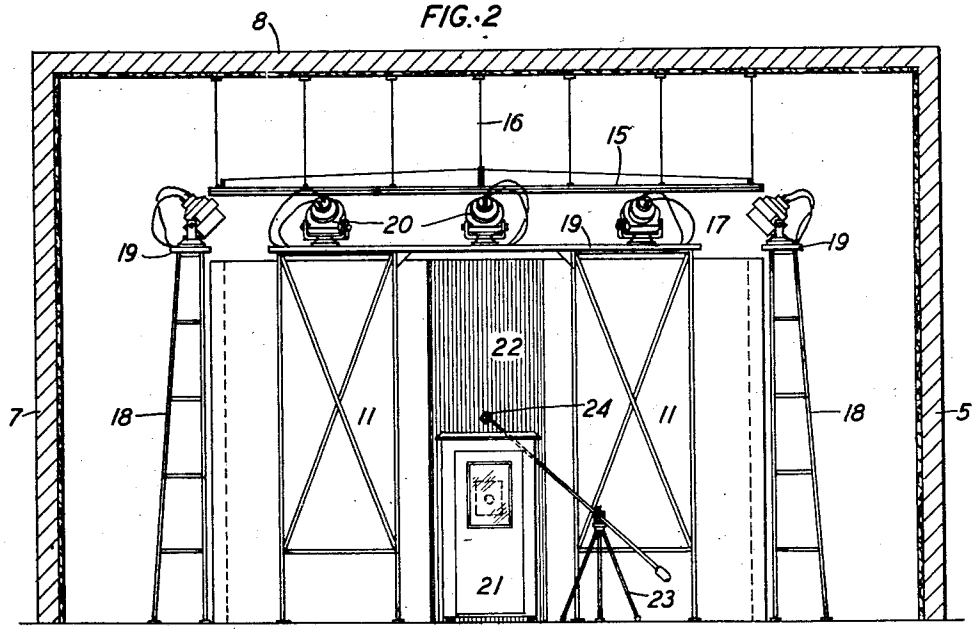
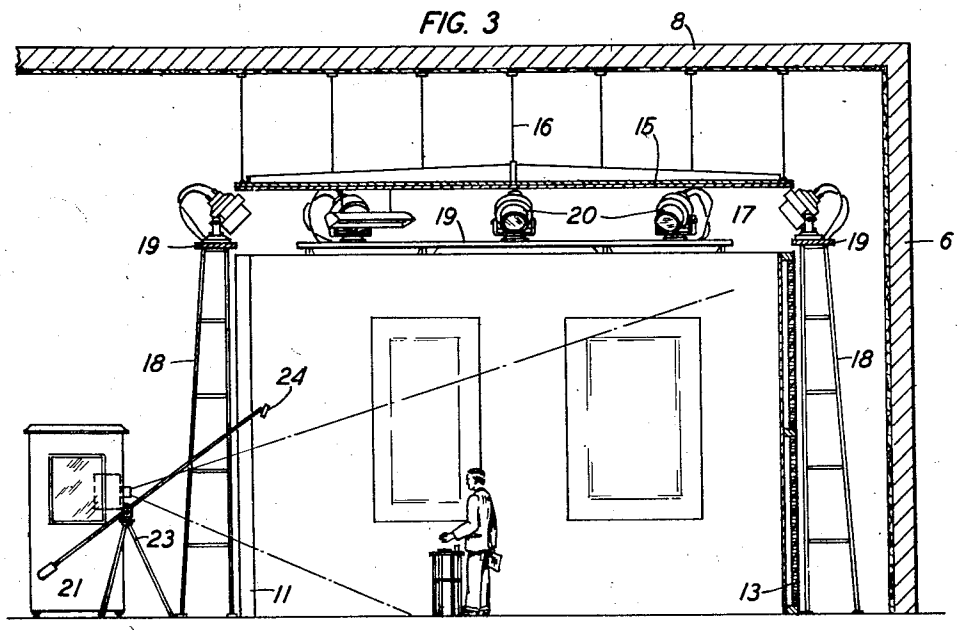


FIG. 3



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SOUND PICTURE SET

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5 Claims. (Cl. 181—30)

This invention relates to studios for sound recording and particularly to sound picture sets.

An object of the invention is to improve the acoustics of sound picture sets for recording.

Heretofore it has been the custom in taking sound pictures in a studio to set up a temporary structure comprising two or three walls having highly reflecting surfaces to simulate the walls of a room or other scenic effects and to form a semi-enclosure for the performer. Although the quality of sound production in such an arrangement may be judged to be good by a person listening directly to it, there is sometimes a hollowness of tone in the reproduction from a record made with one or two transmitters and recorded by a single recorder. The reason for this is that with two or three reflecting walls there is a wide variation in relative intensity with frequency at the microphone position and these variations appear in the record. When one listens directly, these variations do not occur simultaneously at both ears, and one's binaural sense compensates for this uneven distribution and variation in intensity of sound energy.

One of the features of this invention therefore is to minimize this sort of distortion by controlling the acoustics of sound picture sets so that the sound intensity at any point is more nearly uniform with frequency.

In one embodiment the invention provides a sound picture set in a substantially dead sound studio, the set having highly reflecting walls substantially enclosing the performers leaving an opening in one side wall only of sufficient size through which to operate a motion picture camera and before which the microphone is preferably supported.

Referring to the drawings which shown but one embodiment of the invention:

Fig. 1 is a plan view of a sound picture studio embodying the invention;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1; and

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

A sound-proof room 9 is constructed of walls 4, 5, 6 and 7 and a ceiling 8 all of which are damped with sound absorbing material 30 such as a thick layer of rock wool, felt or other similar material. The walls and ceiling are thus damped so as to have a large coefficient of absorption and provide substantially a sound-dead room. Constructed within the sound-proof room 9 is a sound picture set 10 comprising side walls 11, 12, 13 and 14 and a ceiling 15 all of which are constructed of wood or any suitable material having a highly reflecting surface. These walls may be constructed of movable flats and covered with material decorated to produce the desired scenic effects. Under certain conditions damping material may also be applied to one or more of the walls of the set to control acoustic effects. This arrangement therefore provides a comparatively live room 10 within a sound-proof and practically dead room 9. A live room having a sound absorption coefficient of approximately .2 at a frequency of 1000 cycles per second in a dead room having a sound absorption coefficient of approximately .8 at a frequency of 1000 cycles per second has been found to give satisfactory results.

The ceiling 15 of the sound picture set 10 is shown supported from the ceiling 8 of the sound-proof room 9 by any suitable means such as hangers 16. As shown in Figs. 2 and 3 the ceiling 15 is supported in spaced relation to the upper edges of the walls 11, 12, 13 and 14 providing an opening 17 adjacent the ceiling for ventilation and light. Supported on standards 18 outside of the set 10 are platforms 19 on which are mounted lamps 20 for lighting the interior of the set 10 through the opening 17. This opening may also be closed with glass or other transparent material through which the lights may be directed into the set. In the wall 11 is an opening or doorway 22 outside of which is stationed a picture camera 21 in the room 9. A transmitter pick-up 24 connected to any well-known sound recording system, not shown, may be supported in the opening 22 by a tripod 23 as shown, or within the set. All sounds passing through the opening 22 are absorbed in the room 9. The opening 22 in conjunction with the room 9 therefore acts as an efficient sound sink.

With the arrangement herein described most of the sound from a source within the set will be reflected a greater number of times than with the usual sound picture set before it reaches the transmitter with the result that the interference patterns will be less marked and the intensity level will be more uniform for all frequencies and for any position of the source or the microphone in the set. With this construction performers are also less restricted in their field of action with reference to the microphone on account of the additional reflecting surfaces. Although the sound picture set is shown as having four side walls, the number of walls may be increased.

What is claimed is:

1. The combination of a studio having highly damped walls and a substantially enclosed sound picture set disposed therein, the walls of said set having a substantially lower sound absorption coefficient than the walls of the studio.

2. The combination of a sound studio, the walls of which have sound absorption coefficient of substantially .8 at a frequency of 1000 cycles per second and a substantially enclosed sound picture set, the interior surface of the walls of which has a sound absorbing coefficient of approximately .2 at a frequency of 1000 cycles per second.

3. In a sound picture set in combination, a sound damped room, a picture set located within said room and comprising four side walls, and a ceiling, one of said side walls being provided with an opening and a camera and microphone focused through the opening.

4. In a sound picture set, a sound studio comprising a room having substantially sound deadened walls and ceiling, a picture set located within the sound deadened walls and at a substantial distance from said walls and ceiling and comprising walls of greater reflective characteristics than the sound deadened walls and a sound pickup device focused within said picture set.

5. In a sound picture set, a sound deadened room, a sound picture set located within said sound deadened room and comprising a plurality of sound reflecting flats constituting an enclosure for the action and sound, and a camera and microphone focused upon the sound picture set.

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