

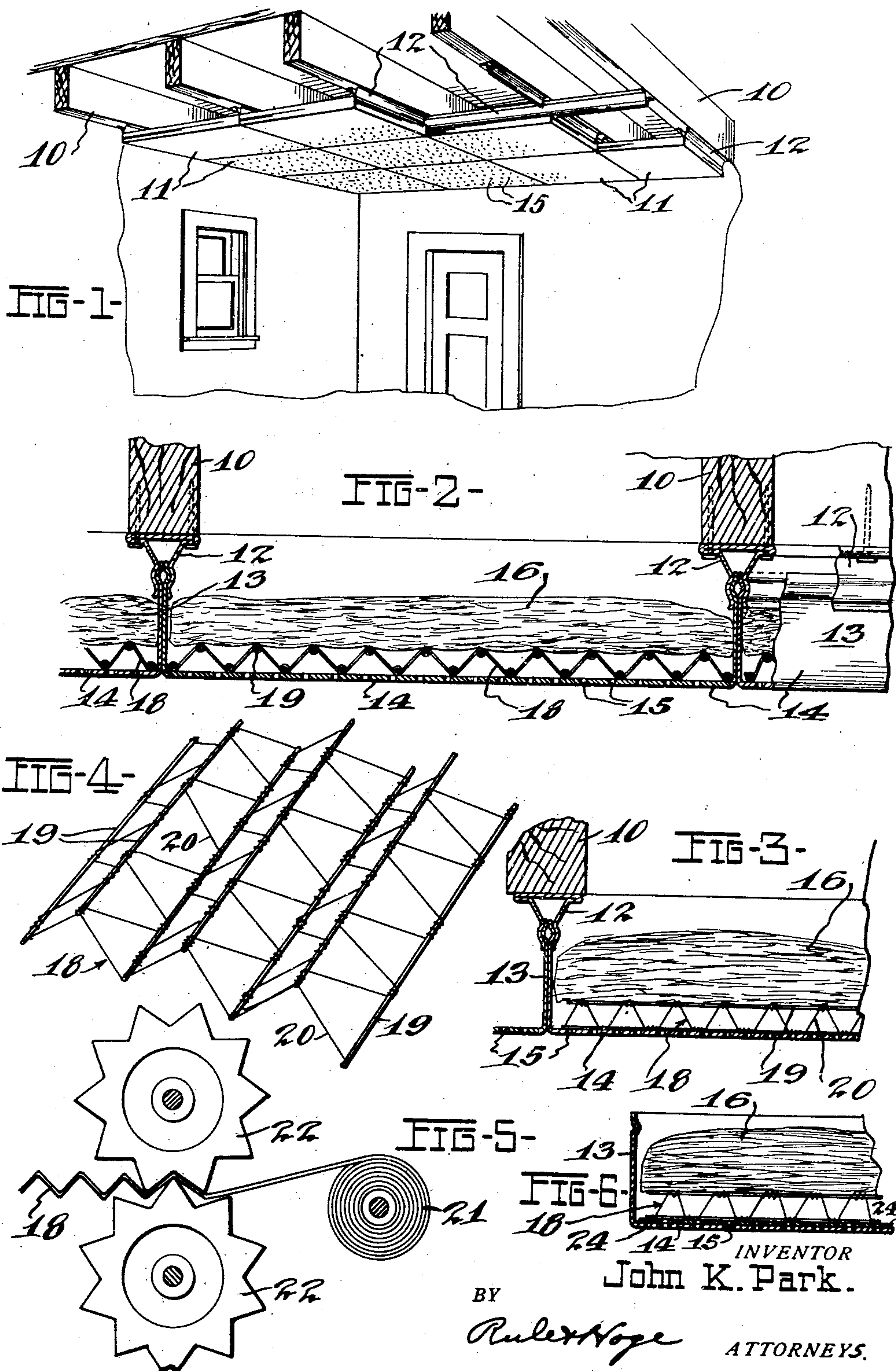
Feb. 28, 1939.

J. K. PARK

2,148,496

INSTALLATION OF ACOUSTICAL INSULATING MATERIAL

Filed Dec. 31, 1936



UNITED STATES PATENT OFFICE

2,148,496

INSTALLATION OF ACOUSTICAL INSULATING MATERIAL

John K. Park, Newark, Ohio, assignor, by mesne assignments, to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Application December 31, 1936, Serial No. 113,616

5 Claims. (Cl. 20—4)

My invention relates to means for use in the installation of material for acoustically insulating ceilings, wall surfaces and the like. In certain systems of acoustical insulation, it is customary to provide perforated panels in the form of pans, each containing a pad or layer of fibrous sound insulating material. This material is spaced or separated from the surface of the pan, as by means of small channels or runners in the bottom of the pan.

My invention comprises improved means for supporting and spacing insulating material from the bottom of the panel in which it is installed. An object of the invention is to provide such a supporting and spacing means which will insure substantially uniform spacing of the desired depth throughout the entire surface area.

A further object is to provide a spacing material for the purpose indicated, which will permit the use of less rigid types of acoustical pads or material than have heretofore been found practical.

A still further object of the invention is to provide a spacing device of the character indicated, which automatically centers itself within the panel or pan in which it is installed and will not slide out of position during installation.

Other objects of the invention will appear hereinafter.

Referring to the accompanying drawing:

Fig. 1 is a fragmentary perspective view of a structure comprising a ceiling provided with acoustical insulation;

Fig. 2 is a fragmentary vertical sectional view showing an insulating panel;

Fig. 3 is a similar view but showing the wire netting arranged with its parallel supporting wires extending in a direction at right angles to that of Fig. 2;

Fig. 4 is a perspective view of a separator;

Fig. 5 is a view showing means for crimping the wire netting of which the separators are composed; and

Fig. 6 is a view similar to Fig. 3, showing a modified construction.

Referring particularly to Fig. 1, the ceiling which is to be insulated may be of usual construction comprising parallel joists 10. Panels 11 comprising heat insulating and sound deadening material, are attached to the lower surfaces of the joists. The means of attachment, as shown, comprises supporting strips 12 nailed to and extending lengthwise of the joists. Each said strip, as shown, is in the form of a spring clip adapted to grip the upturned edges 13 of

sheet metal pans 14. The pans may be provided, as usual, with small openings 15 spaced at short intervals throughout the entire bottom surface of the pan.

Within each pan is placed an acoustical pad 16 or layer of sound and heat insulating material. This pad, which may be coextensive laterally with the major dimensions of the pan in which it is installed, preferably consists of glass wool. This wool in its preferred form consists of glass fibers loosely matted or felted to provide a light flexible resilient mat, the individual fibers being of considerable length, ranging from a fraction of an inch up to several inches or more, and of great fineness.

In order to support the mat and space it from the floor of the pan, a supporting device 18 is provided which, as shown, is made of wire netting, the latter being crimped or bent in zigzag fashion. This supporting material may consist of ordinary poultry netting comprising parallel strands 19, each consisting of one or more wires, and interwoven wires 20 extending transversely to and connecting the strands 19.

As shown in Fig. 5, a roll 21 of the netting is fed through a pair of crimping rolls 22, thereby crimping or bending the netting into the zigzag formation shown. After the crimping operation, the material is cut to suitable lengths, forming the spacing and supporting elements 18. These may be substantially equal in length and width with the pans 14. The bends are preferably made, as shown, to coincide with the strands 19. It will be observed that with this construction the strands 19 form line contact supports for the pad 16, giving more effective and reliable support than would otherwise be provided. For example, if the crimps or bends were made intermediate the strands 19, point contacts would be made with the pad 16, causing the support to sink into the pad, thereby preventing uniform, reliable spacing of the pad from the floor of the pan.

When the panels are installed, the insulating pads 16 provide a practically continuous mat of the insulating material which, when made of glass wool such as above described, is particularly effective both as a heat insulating material and as a sound absorbing and deadening material.

In Fig. 6, I have shown a liner 24 interposed between the spacer 18 and the floor of the pan. This liner may be of a size and shape to substantially cover the floor of the pan and is provided with perforations in register with the openings 15. The liner is made of a soft, sound ab-

sorbing material such as a soft paper or other fibrous material, or may consist of rubber or the like. The primary purpose of such liner is to absorb any sound vibrations or other form of vibration of the pan and prevent any rattling or sound which would be produced by such vibration or movement in contact with the spacer 18.

Modifications may be resorted to within the spirit and scope of my invention.

10 I claim:

1. The combination of a pad of loosely matted fibers, means providing a flat surface over which the pad is mounted, and a support interposed between the pad and said surface for supporting the pad and spacing it from said surface, said support comprising openwork material having a zigzag conformation by which supporting contact of the said support with the bottom surface of the pad is provided at short intervals throughout said surface.

2. The combination of a pad of loosely matted fibers, means providing a flat surface over which the pad is mounted, and a support interposed between the pad and said surface for supporting the pad and spacing it from said surface, said support consisting of a crimped woven wire fabric in supporting contact with the bottom surface of said pad at short intervals throughout said surface.

30 3. The combination of a pad of loosely matted

fibers, means providing a flat surface over which the pad is mounted, and a support interposed between the pad and said surface for supporting the pad and spacing it from said surface, said support consisting of wire netting including parallel strands, said netting being bent or crimped to cause said strands to form line contact supports for the insulating pad.

4. The combination of a perforated sheet metal pan, a pad of sound deadening material mounted in said pan, and a spacing device interposed between said pad and the floor of the pan, said spacing device being substantially equal in length and width to the pan and comprising a wire fabric of zigzag conformation in supporting contact with the bottom surface of said pad at short intervals throughout said surface.

5. A building structure comprising a ceiling including acoustical insulating means, said insulating means comprising panels each consisting of a sheet metal pan and a pad of glass wool mounted therein, and spacing means between the floor of the panel and said pad comprising wire netting crimped to zigzag conformation and having a multiplicity of contacts with the bottom surface of the pad and distributed over substantially the entirety of said surface, whereby the pad is supported and spaced from the floor of the pan.

JOHN K. PARK. 30