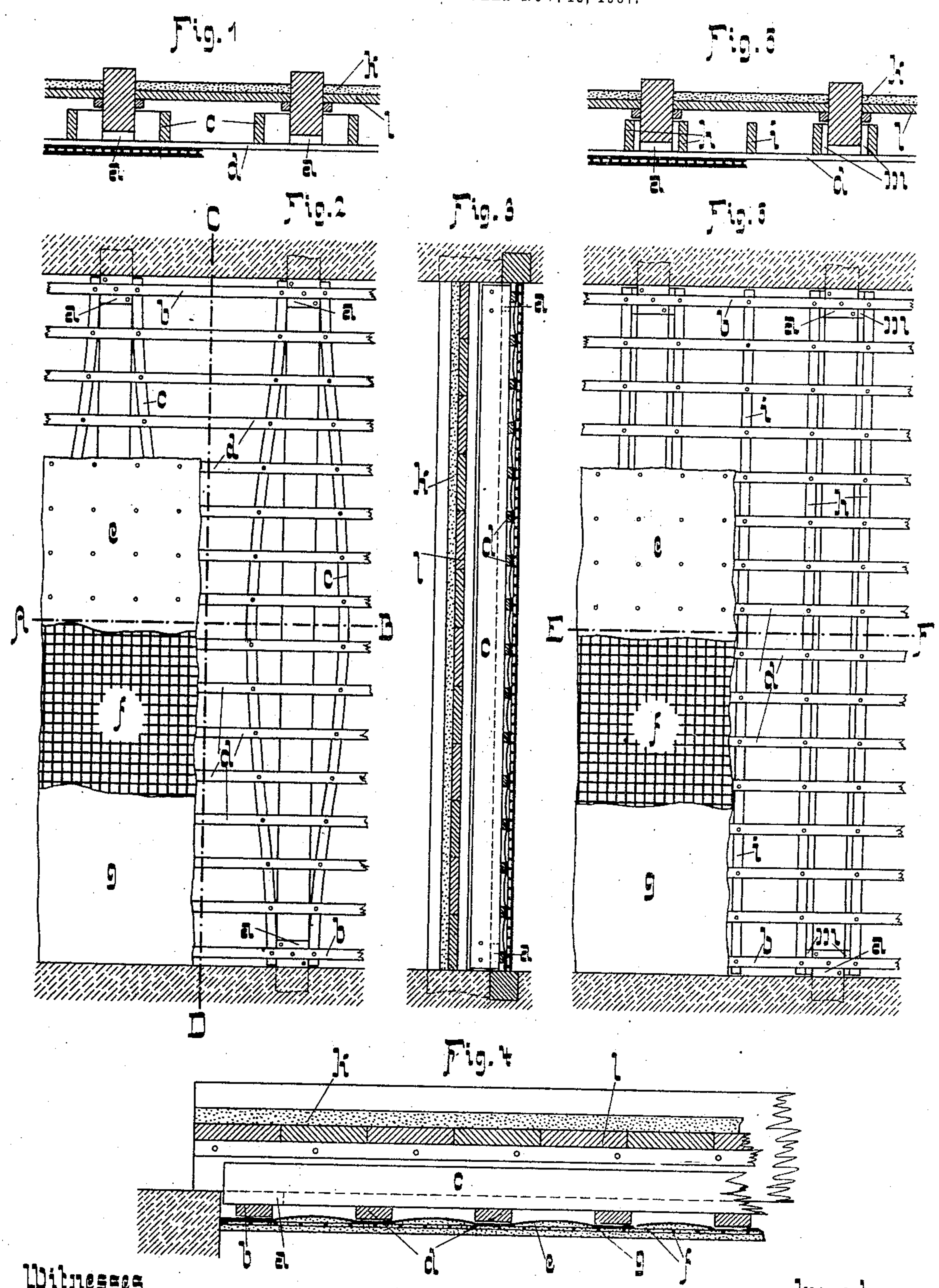


No. 894,308.

PATENTED JULY 28, 1908.

F. ABEL.  
CEILING.

APPLICATION FILED NOV. 18, 1907.



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRIEDRICH ABEL, OF OFFENBURG, GERMANY.

## CEILING.

No. 894,308.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed November 18, 1907. Serial No. 402,664.

*To all whom it may concern:*

Be it known that I, FRIEDRICH ABEL, a subject of the German Emperor, residing at Offenburg, Baden, German Empire, have invented certain new and useful Improvements in Ceilings, of which the following is a specification.

In order to prevent the transmission of shocks from the floor of an upper story to the ceiling below and consequent cracking of the latter, double floors have been constructed, the ceiling joists of which are quite independent of the main or floor joists proper. The disadvantage of such structures, however, is their high cost and the increased amount of space required, owing to their greater height.

The subject of my invention is a suspended ceiling which while presenting all the advantages of structures such as above referred to, is also cheap and simple to construct.

According to my invention the actual ceiling is carried by a framework which except at the points of support is suspended altogether free of the joists.

One form of construction of my invention is illustrated in the accompanying drawing, in which—

Figure 1 is a vertical section through a portion of a ceiling on the line A—B of Fig. 2. Fig. 2 is an underside view of Fig. 1, certain portions being removed to display underlying parts. Fig. 3 is a section on the line C—D of Fig. 2, and Fig. 4 is a like section showing a portion of the structure drawn to a larger scale. Fig. 5 is a vertical section of a modified embodiment of my invention, and Fig. 6 an under side view thereof.

In constructing the new ceiling the joists are supported on the brickwork in the usual manner and lining-pieces *a* nailed to their underside. To these linings *a* laths *b* are then secured, whereupon other strips *c* are laid upon the laths *b* and their ends nailed to each side of the joists. The strips *c* are bowed apart centrally in a horizontal plane so that they will be free from contact with the joists except at their ends and will not partake of the springing or other motion of the joists, and are retained in such position by laths *d*, running parallel with the laths *b*. To the laths *d* a layer of ordinary roofing felt or pasteboard *e* is then attached and covered with wirework *f*, destined to receive plaster *g*.

Instead of bowed strips *c*, straight strips *h* may be employed as shown in Figs. 5 and 6.

These strips are supported from the joists by

being attached to lateral lining pieces nailed to the joists at their ends, and are free from the joists except at these points, so that they will not partake of any springing or other motion of the joists. Laths *b*, *d*, may be secured to and supported from these strips. Intermediate laths *i*, nailed to the lathing *b*, *d*, may be used to stiffen the framework. In this manner a plaster ceiling is obtained, which although connected to the extremities of the joists, otherwise constitutes a freely suspended framework. Shocks experienced by the floor above in no wise affect the ceiling, even though the joists should break, since the ends of the joists retain their original fixed position and since centrally of the joists there is a free space between joists and ceiling corresponding to the thickness of the linings *a*, which allows of the joists bending without disturbing the ceiling below.

Since the ceiling only carries its own weight which is but slight and since it is uniformly loaded and not exposed to shocks, cracking of the plaster is thoroughly obviated. It will also be remarked that at the free spaces between the laths *d*, the plaster on being laid on will force its way through the network and buckle up the pasteboard whereby a rigid structure is constituted which effectually prevents the formation of cracks.

In view of the light weight of the structure, fewer bearers and standards are necessary, whence the construction of the ceiling is rendered relatively cheap. The new ceiling is impervious to water and moisture and insulates both from heat and cold. Such a ceiling, moreover, is sound deadening, the more so as the plaster layer *k* on the deals *l* constitutes an intermediate layer between the plastering *g* of the ceiling and the floorboards and in conjunction with the intervening spaces prevents the passage of sounds.

Another advantage that should not be overlooked is that owing to the tarry smell arising from the pastboard *e*, mice and other vermin are kept away.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

1. In a ceiling, the combination with joists supported at their ends, of strips supported at their ends by said joists but free from contact therewith at all other points, and laths secured to said strips to receive the plastering.
2. In a ceiling the combination with joists supported at their ends, of bowed strips se-

cured only at the ends of the joists, and laths secured to said strips to receive the plastering, said strips being separated from the joists for the greater part of their length.

5 3. In a ceiling, joists, suspended strips centrally bowed in a horizontal plane, secured only to the ends of the joists, and supporting and stiffening laths secured to the

underside of said strips, substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

FRIEDRICH ABEL.

Witnesses:

SYDNEY ELLIOTT,  
JOSEPH ROHMER.