K. EILER.

SOUND DAMPING DOOR.

APPLICATION FILED FEB. 2, 1916.

1,405,984. Patented Feb. 7, 1922.

Fig. 1.

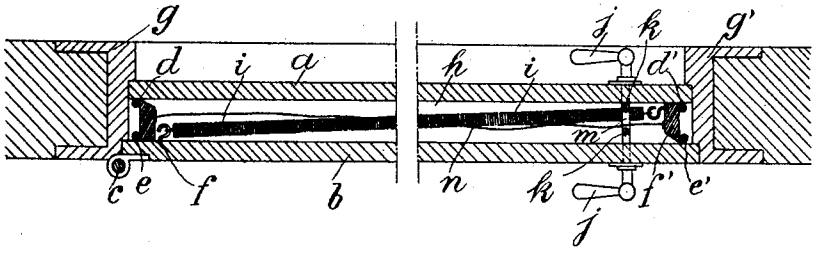
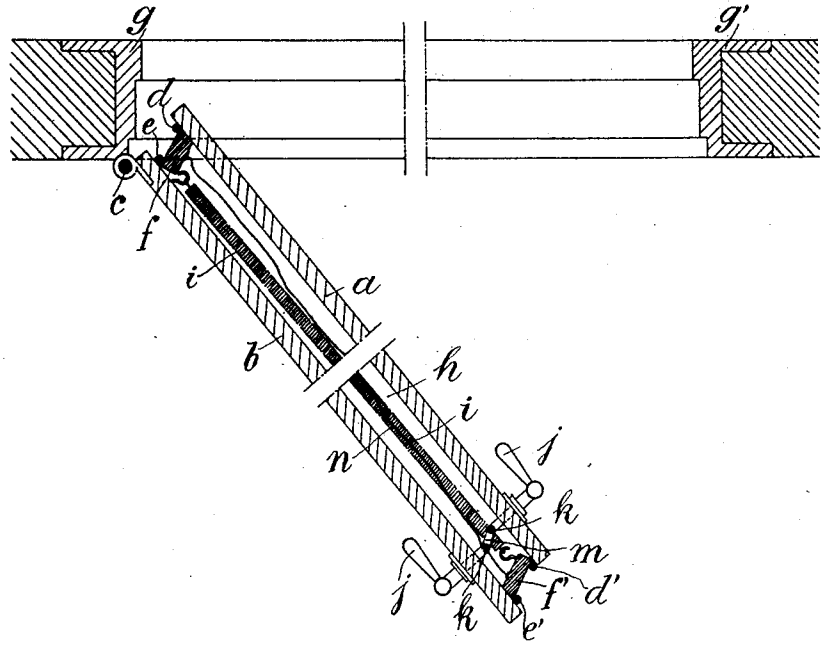


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

KLAUS EILER, OF SAHRENSDORF ON FEHMARN, HOLSTEIN, GERMANY, ASSIGNOR TO PETER EILER, OF GERMANTOWN, CALIFORNIA.

SOUND-DAMPING DOOR.

1,405,984. Specification of Letters Patent. Patented Feb. 7, 1922.

Application filed February 2, 1916. Serial No. 75,872.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that I, KLAUS EILER, teacher, a German subject, residing at Sahrensdorf a/Fehmarn, Holstein, Prussia, German Empire, have invented new and useful Improvements in Sound-Damping Doors, (for which I have filed an application in Germany, Apr. 8, 1914,) of which the following is a specification.

My invention relates to improvements in such doors which for producing a damping of sound are arranged in the form of a casing, whose inner and outer wall or leaf are both pivoted to one single hinge.

According to the present invention the two walls or leaves of the door are connected together at their extremities by ledges in a manner similar to the parallelogram of Watt. Between said ledges is arranged a suitable resilient means, preferably a helical spring or coil, so that, when the door is opened, a displacement or shifting of the inner wall or leaf of the door relatively to the outer wall or leaf takes places, whilst on closing the door the inner wall or leaf of the door strikes against the frame or casing of the door and in this way is moved back in its original position. By this arrangement the door without prejudice to its easy manipulation is rendered properly tight, so that the sound damping action of the door is increased.

In the accompanying drawing forming a part of this specification and in which similar letters of reference relate to corresponding parts throughout the several views,

Fig. 1 is a cross section of a structural form of my improved door in its closed position.

Fig. 2 shows the door partly open also in cross sectional view.

Referring now to the drawing, the door consists of two walls or leaves *a*, *b* arranged behind each other and pivoted to one single hinge *c*. Between the inner wall or leaf *a* and the outer wall or leaf *b* are inserted ledges *f*, f^1 pivoted to the extremities *d*, *e* and d^1, e^1 of said walls or leaves *a* and *b*, so that said walls or leaves *a*, *b* are, as already mentioned above, connected together in a way similar to the structure called Watt's parallelogram, intended for parallel motion. The two ledges *f*, f^1 are at their inner sides connected together by one or several coil springs *i* or other elastic or resilient means located in the space *h* between the walls or leaves *a* and *b* of the door, so that, when the door is open (Fig. 2), the ledges *f*, f^1 get into an inclined position. In consequence thereof the wall or leaf *a* of the door is displaced with regard to the wall or leaf *b* and the closing of the door is not impeded by the wall or leaf *a*.

On closing the door the wall or leaf *a* strikes with its edge or border directed towards the hinge *c* against the side *g* of the frame or casing of the door, so that the wall or leaf *a* of the door in the closing position of the latter is shifted or displaced in opposition to the tension of the coil or helical spring *i*. In this manner a tight closure is obtained at the other side g^1 of the door-frame or casing.

As to be seen in both figures of the drawing the pivot or broach of the door latch *j* is arranged so as to be laterally movable or hinged in order to allow of the same freely following the displacement of the wall or leaf *a* of the door during the movement of said wall or leaf *a* towards the hinge *c*. To this purpose the pivot or broach of the door latch *j* is preferably made sectional, i. e. to the both inwardly projecting extremeties *k* of said pivot or broach is pivotally attached a link *m* forming a yielding connection between said extremities *k* of the pivot or broach of the door latch *j*.

Furthermore, a piece of fabric or cloth *n* may be spread along said door leaves *a* and *b* in the space *h*, said piece of fabric or cloth being attached to the inner sides of the ledges *f* and f^1.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:—

1. In a door the combination with two walls arranged adjacent each other a certain distance apart, of two ledges pivoted to the extremities of said walls respectively, between said two walls, resilient means arranged between, and fixed to, the inner sides of said ledges, said resilient means being adapted when the door is opened to afford a displacement of the inner door wall rela-

tively to the outer door wall, whilst when the door is closed said inner door wall strikes against the door-frame and is correspondingly pushed back.

2. In a door, the combination with an outer and an inner leaf lying a certain distance apart, of two ledges arranged between said leaves and pivoted to the extremities of said leaves, resilient means arranged crosswise between said ledges and attached to the inner sides of said ledges, so that said inner leaf on being influenced by said coil spring is displaceable with regard to the fixed outer leaf, and a door-latch yieldable correspondingly to the displacement of said inner leaf.

3. In a door, the combination with an outer and an inner leaf lying a certain distance apart, of two ledges arranged between said leaves and pivoted to the extremities of said leaves, a coil spring arranged across said ledges and attached to the inner sides of said ledges, so that said inner leaf is subjected to be displaced by said coil spring with regard to the fixed outer leaf, a door-latch, having a divided pivot, and a link pivotally arranged between both extremities of said divided pivot.

4. In a door, the combination with an outer and an inner leaf set a certain distance apart, of two ledges arranged between said leaves and pivoted to the extremities of said leaves, resilient means arranged crosswise between said ledges and attached to the inner sides of said ledges, so as to be capable of displacing said inner leaf, a piece of textile fabric spread out between, and fixed to, the inner sides of said ledges, and a door-latch yieldable in accordance with the displacement of said inner leaf.

In witness whereof I have hereunto signed my name this 30th day of December 1915, in the presence of two subscribing witnesses.

KLAUS EILER.

Witnesses:

FRANCIS R. STEWART,

LOUIS F. DILGER.