I. C. FEY.

STEP DOOR.

APPLICATION FILED JUNE 25, 1913.

1,185,786.

Patented June 6, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

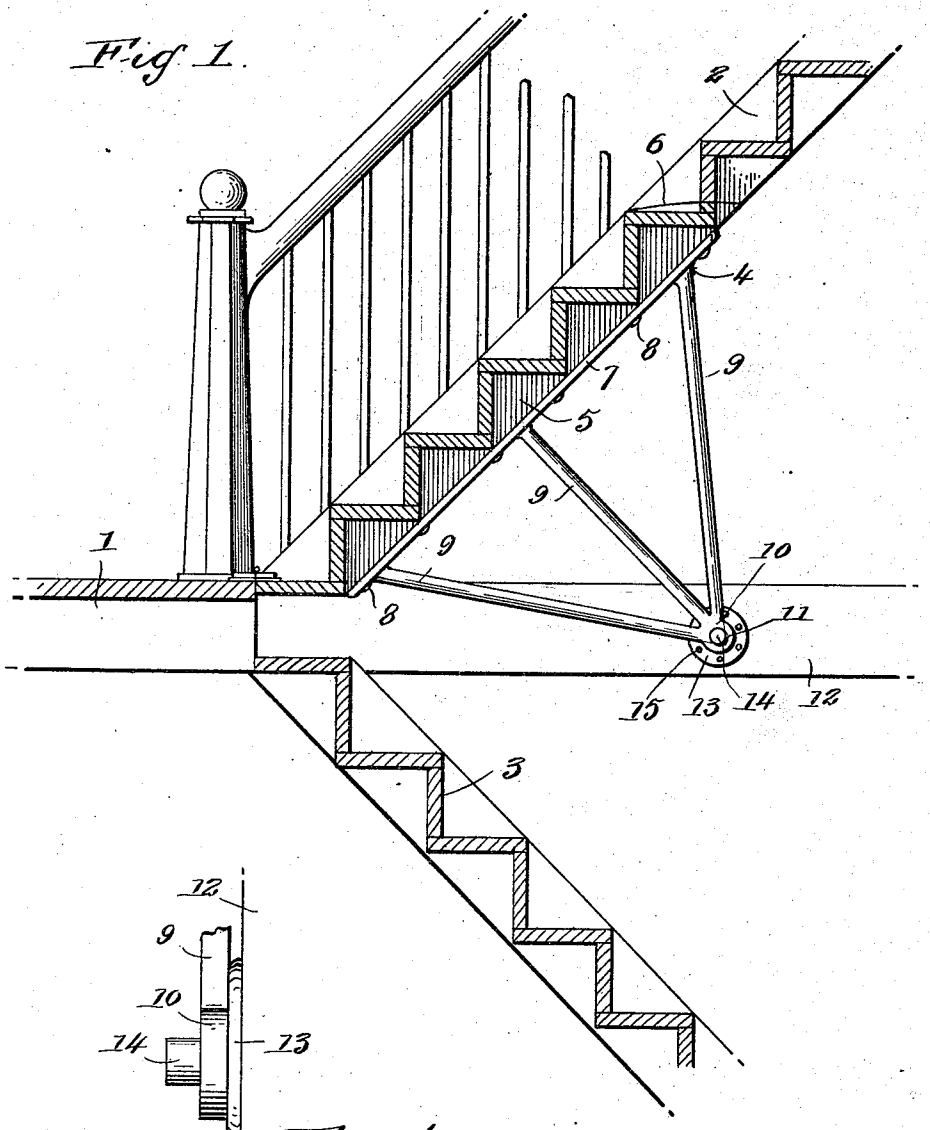


Fig. 4.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

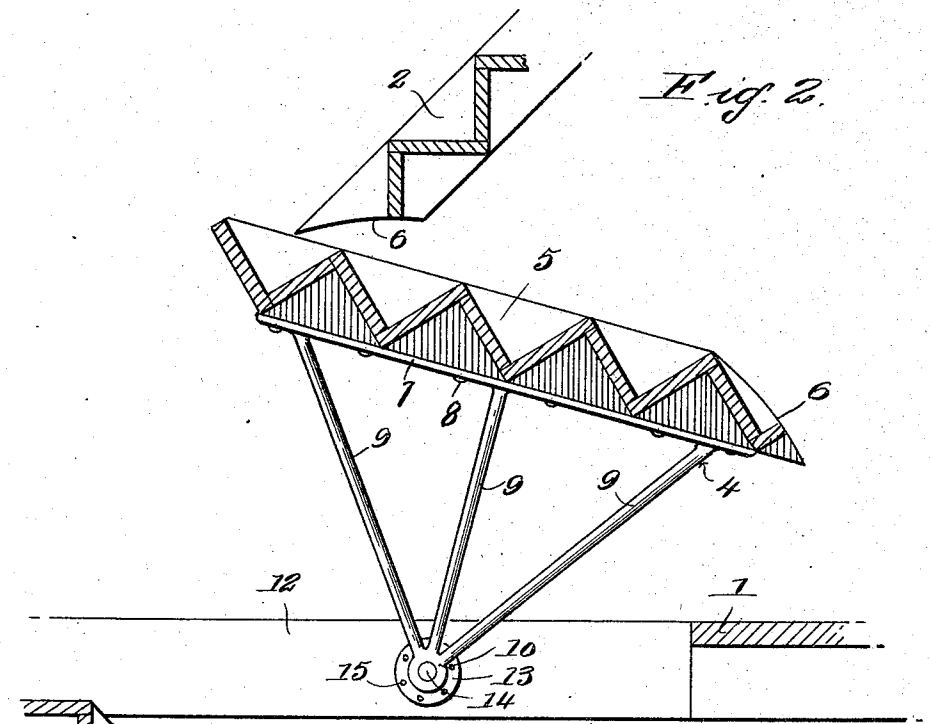
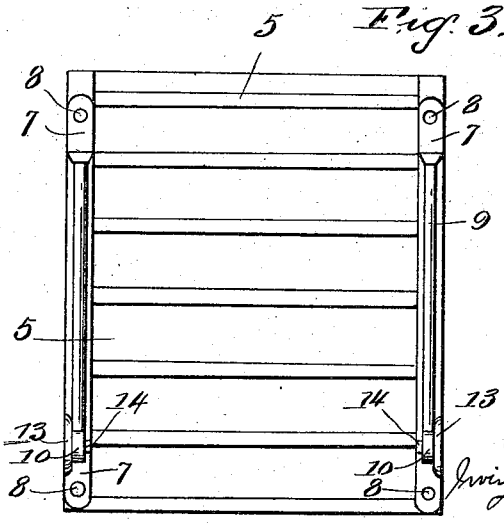


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

IRVING C. FEY, OF ST. LOUIS, MISSOURI.

STEP-DOOR.

1,185,786. Specification of Letters Patent. Patented June 6, 1916.

Application filed June 25, 1913. Serial No. 775,725.

To all whom it may concern:

Be it known that I, IRVING C. FEY, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Step-Doors, of which the following is a specification.

This invention relates to improvements in stair construction and the primary object thereof is to provide means in the nature of a specially devised trap door so disposed with respect to a flight of stairs as to form a part thereof, this arrangement of the "step-door", as it will be hereinafter termed permitting the stair arrangement of houses or other buildings to be effected so as to occupy but a minimum amount of space, the cellar stairs for instance, being disposed directly beneath the stairs leading from the first to the second floor of the building within which my invention is arranged.

A further object of the invention contemplates the provision of means including a step-door formed within one flight of stairs adapted to be disposed directly over a second flight of stairs, the said door being pivotally supported in such a novel and peculiar manner as to permit opening thereof, should occasion demand, for effecting communication between the base of the first mentioned and the top of the last mentioned stairs.

The invention still further resides in the provision of specially devised brackets adapted to be disposed, one upon each side of the step-door comprising my invention, the said brackets being pivotally secured to the joists or beams of the building for pivotally supporting the step-door in the desired manner.

The above and additional objects are accomplished by such means as are illustrated in their preferred embodiment in the accompanying drawings, described in the following specification and then more particularly pointed out in the claims which are appended hereto and form a part of this application.

In describing my invention in detail reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a longitudinal sectional view illustrating the application of the invention, the step-door being closed to form the lower portion of a flight of stairs; Fig. 2 is a similar view, showing the position of the door when open; Fig. 3 is a rear elevation of the step-door; and Fig. 4 is an enlarged elevation illustrating the manner in which the brackets are pivotally supported.

Before proceeding with the description of the drawings, I desire to call particular attention to the fact that while I have evolved and will hereinafter refer to my invention in connection with the main and cellar steps of a building, the same may be readily utilized for like purposes in connection with any flight of stairs whatsoever.

Referring now to the drawings, wherein is illustrated the preferred form of my invention the numeral 1 designates the floor of a house or other building from which a main flight of stairs 2 lead upwardly and from which the cellar steps 3 lead downwardly, the base of the former and the top of the latter terminating at adjacent points as is clearly shown in Fig. 1 of the drawings.

The main stairway 2 has a step-door designated in its entirety by the numeral 4 arranged so as to form a part thereof, the said door comprising a stairway section 5 extending from a line 6 dividing the main stairway 2 from the said section to the landing or floor 1 of the house or building within which my invention is arranged. A bracket comprising a plate member 7, adapted to be secured as at 8 to the under face of the stair section 5, and a plurality of arms 9 formed integrally therewith and terminating in a head portion 10 having a central opening 11 formed therein, is disposed beneath the said section for pivotally supporting the latter in the desired manner. One of these brackets is secured to the stair section 5 upon each side thereof, each being secured or pivotally supported to the joists 12 of the floor 1 through the medium of a casting 13 having a centrally disposed spindle 14 projecting from one face thereof, the casting being secured as at 15, one directly opposite the other. Any suitable means such as the fastening device shown at 16 may be employed for the purpose of locking the step-door or stair section 5 to the landing or floor 1 of the structure.

When it is desired that communication be opened between the landing 1 and the stairs 3 into the cellar, the door 5 comprising my invention is raised or lifted to swing rearwardly upon its pivotal support as is shown

to advantage in Fig. 2 of the drawings, the door when fully raised engaging the lower extremity of the main stairway 2 which acts as a support therefor, the said door when thus opened forming communication between the said landing and the cellar stairway 3 and cutting off communication between the landing and the main stairway 2 leaving an opening therebetween. Any suitable means such as a gate or door (not shown) may be provided at the top of the main stairway 2 to prevent use of the stairs when the trap door or section 5 is open.

It will be seen from the above, taken in connection with the accompanying drawings that considerable space is saved in the construction of houses and other buildings by arranging the step-door in the stairway as above described; that the arrangement of the said door as illustrated will allow the cellar steps 3 to be disposed directly beneath the main stairway 2, the base of the former and the top of the latter terminating in one and the same landing; and that any suitable means such as a handle may be secured to the step-door 5 to facilitate the opening and closing thereof should occasion demand.

In reduction to practice, I have found that the form of my invention, illustrated in the drawings and referred to in the above description, as the preferred embodiment is the most efficient and practical; yet realizing that the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of my invention, as defined in the appended claims.

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

1. In a device of the character described, the combination of a supporting structure, stairs leading upwardly therefrom, stairs leading downwardly therefrom, a step door formed in the base of the first mentioned stairs, arcuate meeting edges between the said door and said stairs, and a bracket pivotally connected to the supporting structure and secured to the step door, the center line of said bracket leading from the pivot point to the center of the step door and said center of the door adapted to swing beyond the vertical plane of the pivot point when in open or closed position.

2. In a device of the character described, the combination of a supporting structure, stairs leading upwardly therefrom, stairs leading downwardly therefrom, a step door formed in the base of the first mentioned stairs, and a bracket pivotally connected to the supporting structure and secured to the step door, the center line of said bracket leading from the pivot point to the center of the step door and said center of the door adapted to swing beyond the vertical plane of the pivot point when in open or closed position.

3. In a device of the character described, the combination of a supporting structure, stairs leading upwardly from the said structure, stairs leading downwardly from the said structure directly beneath the said first mentioned stairs, a step door formed at the base of the said first mentioned stairs, the said door comprising a plurality of steps adapted to form a portion of the said first mentioned stairway when disposed in alinement therewith, brackets secured to the rear faces of the step door, and means carried by the said structure for pivotally supporting the brackets for swinging the said step door out of alinement with the said first mentioned stairs, as and for the purpose set forth.

4. In a device of the character described, the combination of a supporting structure, stairs leading upwardly therefrom, stairs leading downwardly therefrom adapted to be disposed directly beneath the said first mentioned stairs, the said structure having an opening formed between the said two stairs, a step door comprising a plurality of steps adapted to be disposed in alinement with the said first mentioned steps to form when thus alined, the base thereof, brackets secured to the rear face of the said door, the said brackets comprising a plate member having a plurality of arms formed integrally therewith adapted to terminate at one end in a head portion, castings secured to the said structure within the said opening, and means carried by the casting adapted to engage the said head for pivotally supporting the step door, as and for the purpose set forth.

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

IRVING C. FEY.

Witnesses:
WM. J. FEY,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."