

(No Model.)

2 Sheets—Sheet 1.

R. M. POWERS.
SCUTTLE LADDER.

No. 453,294.

Patented June 2, 1891.

Fig-1-

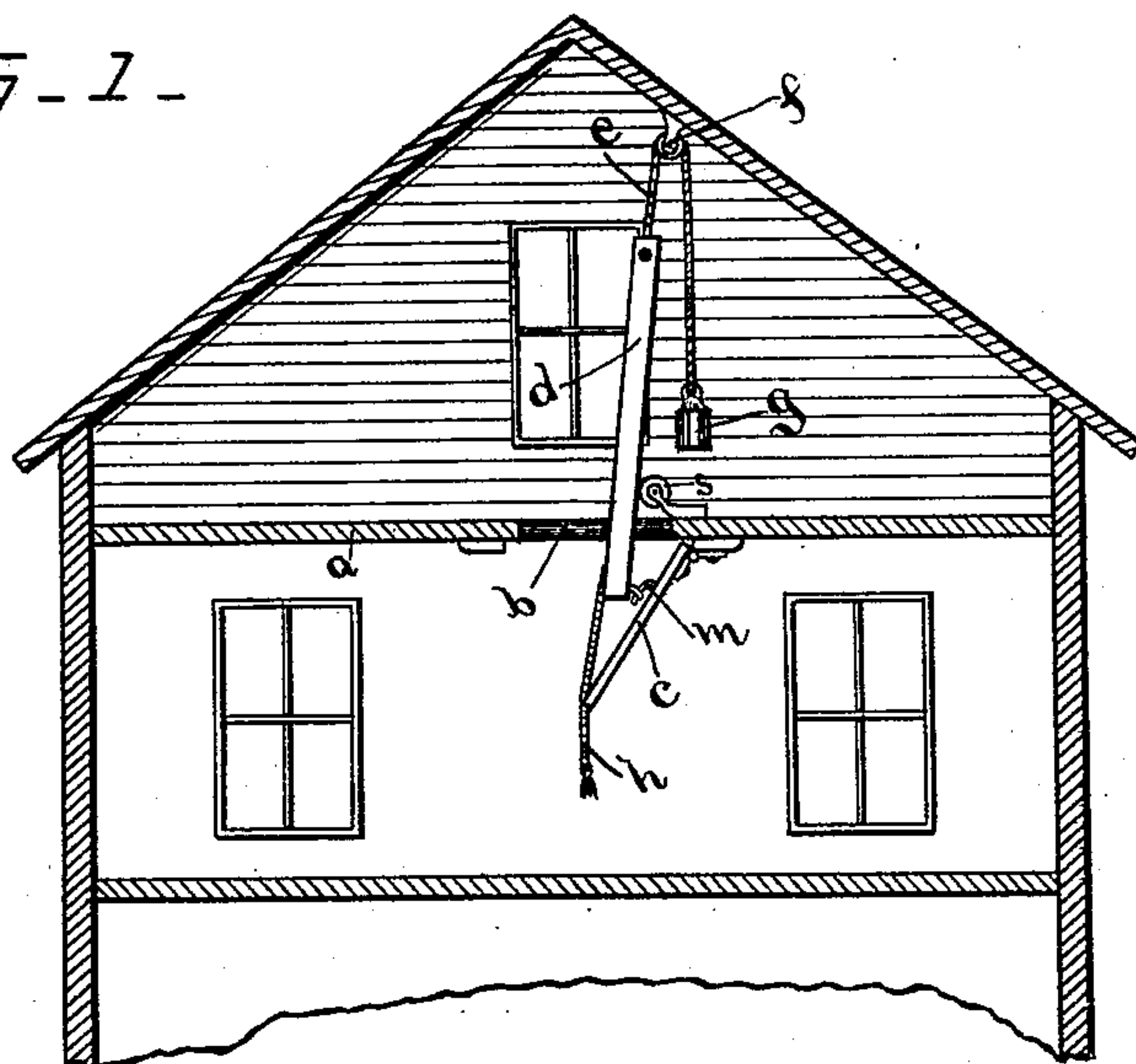


Fig-2-

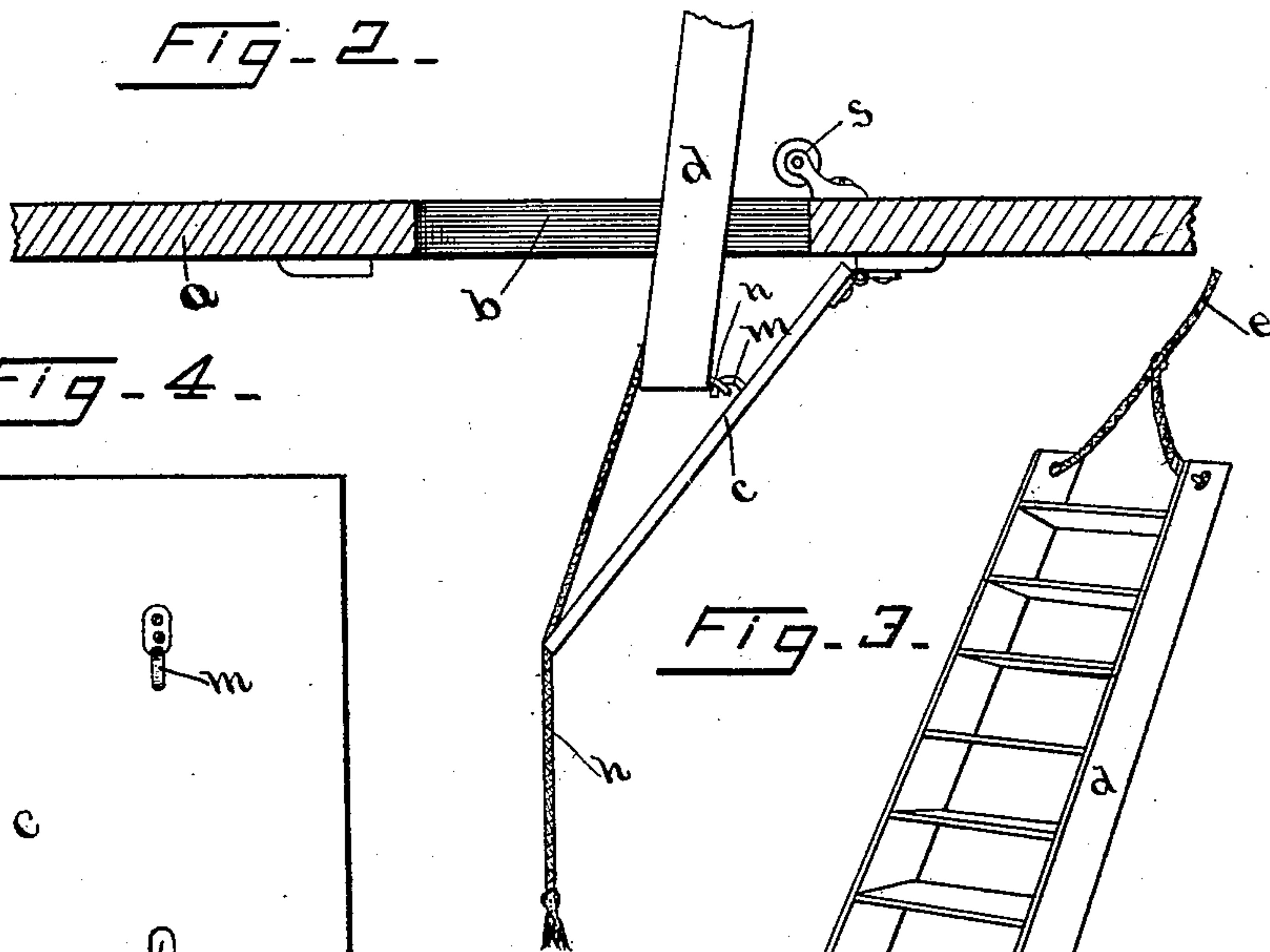


Fig-4-

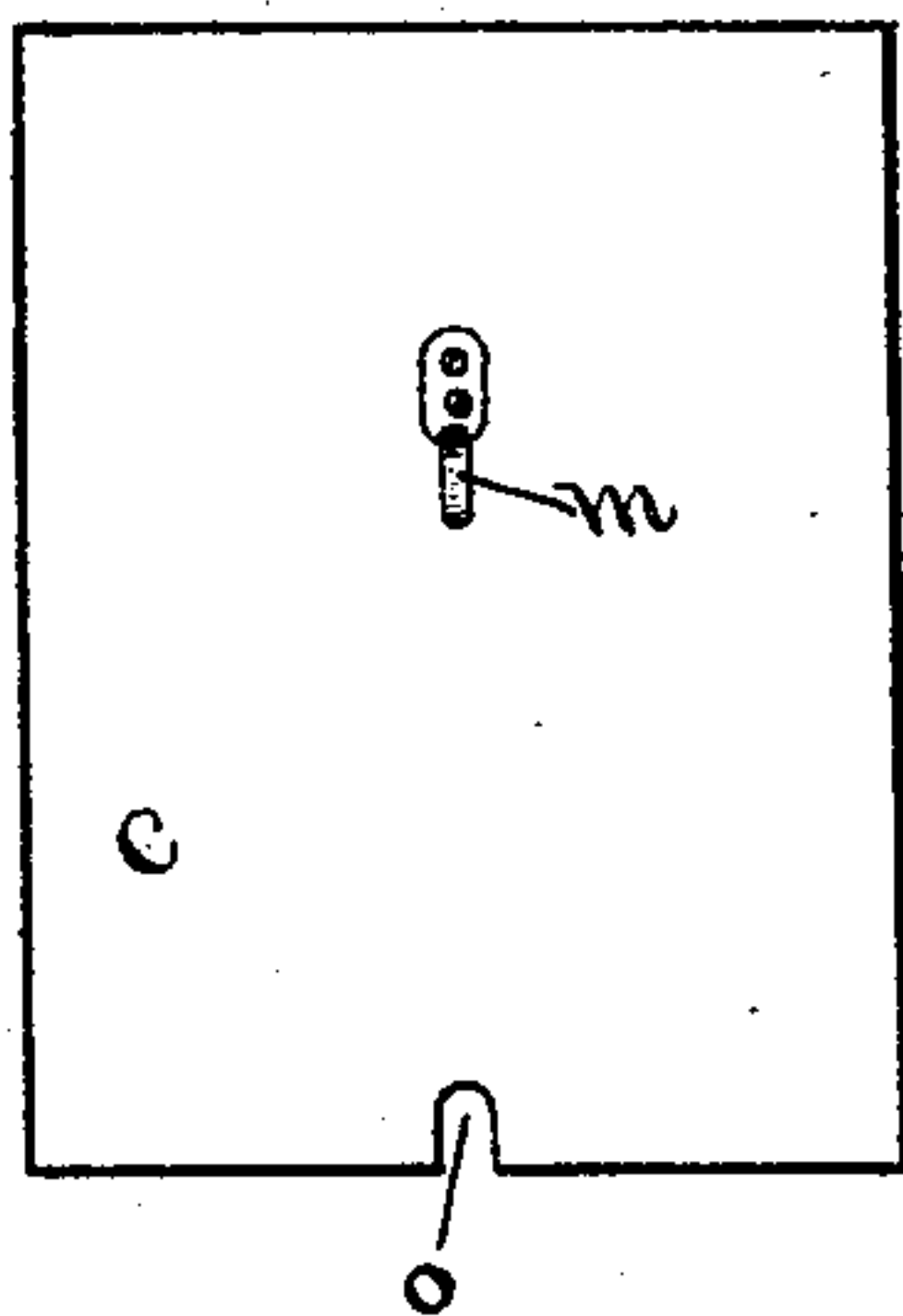
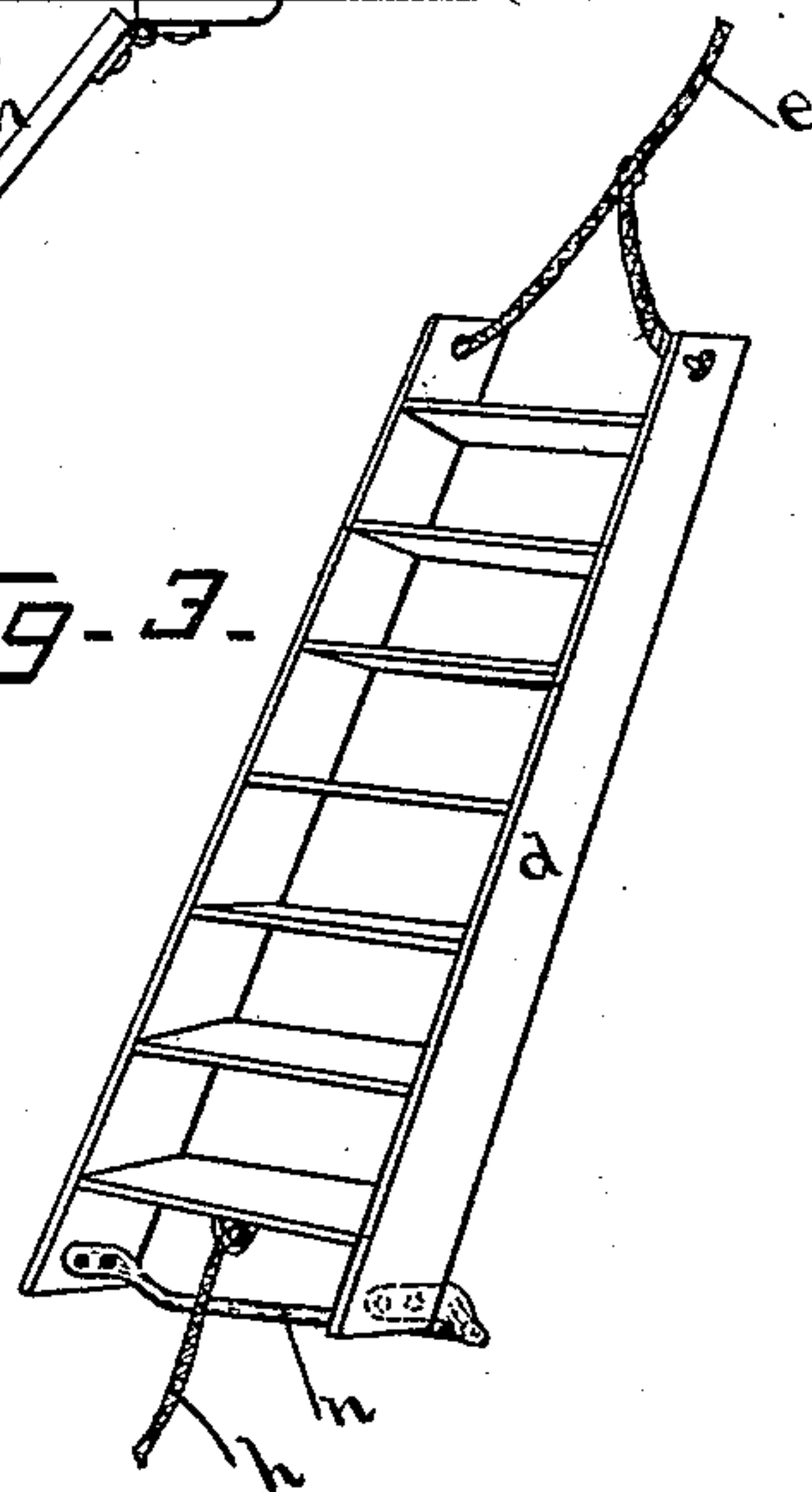


Fig-3-



Witnesses

Alonso M. Luther.
Allen Tenny

Inventor

Richard M. Powers.
By his Attorney
Frank H. Allen.

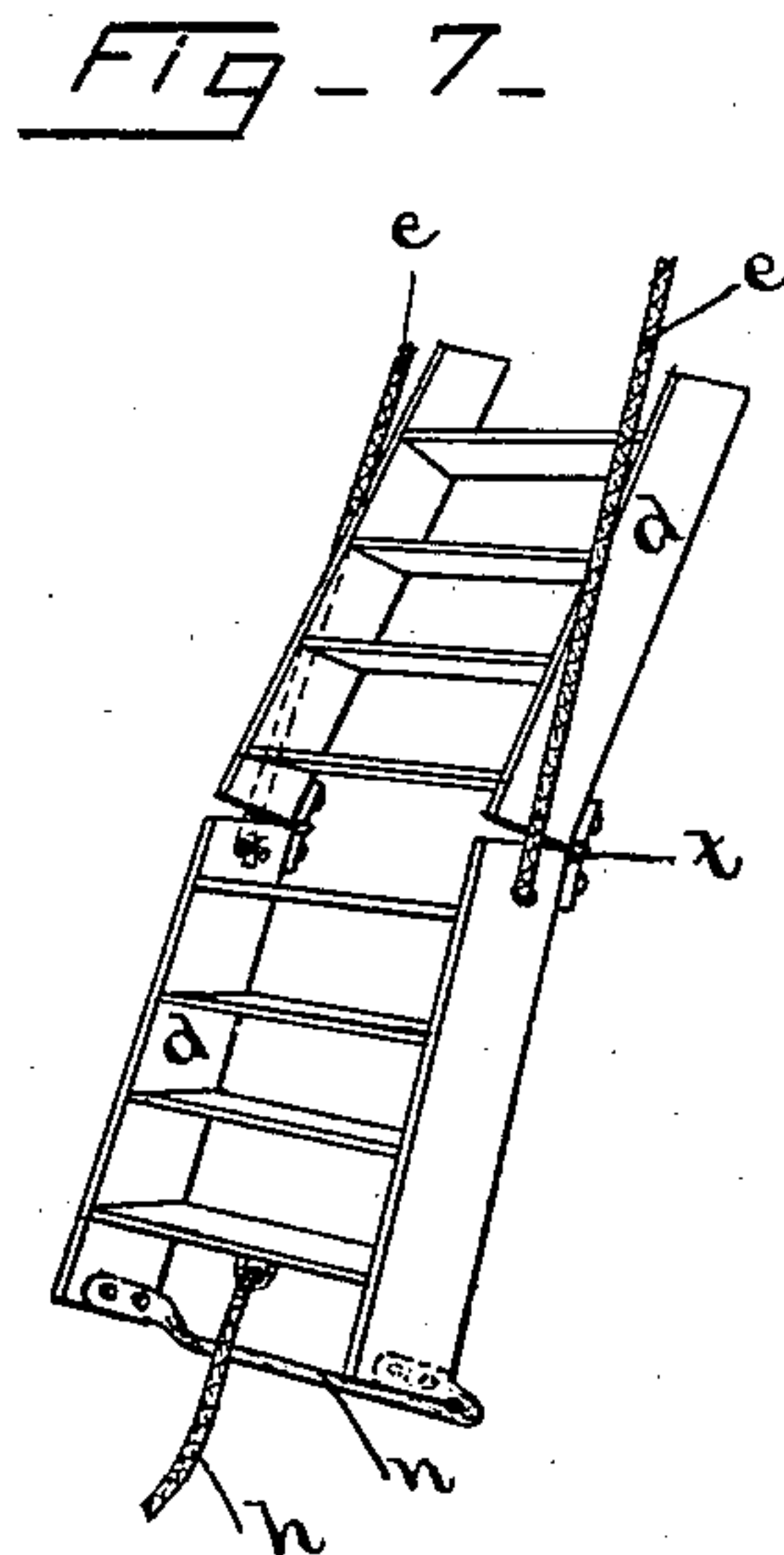
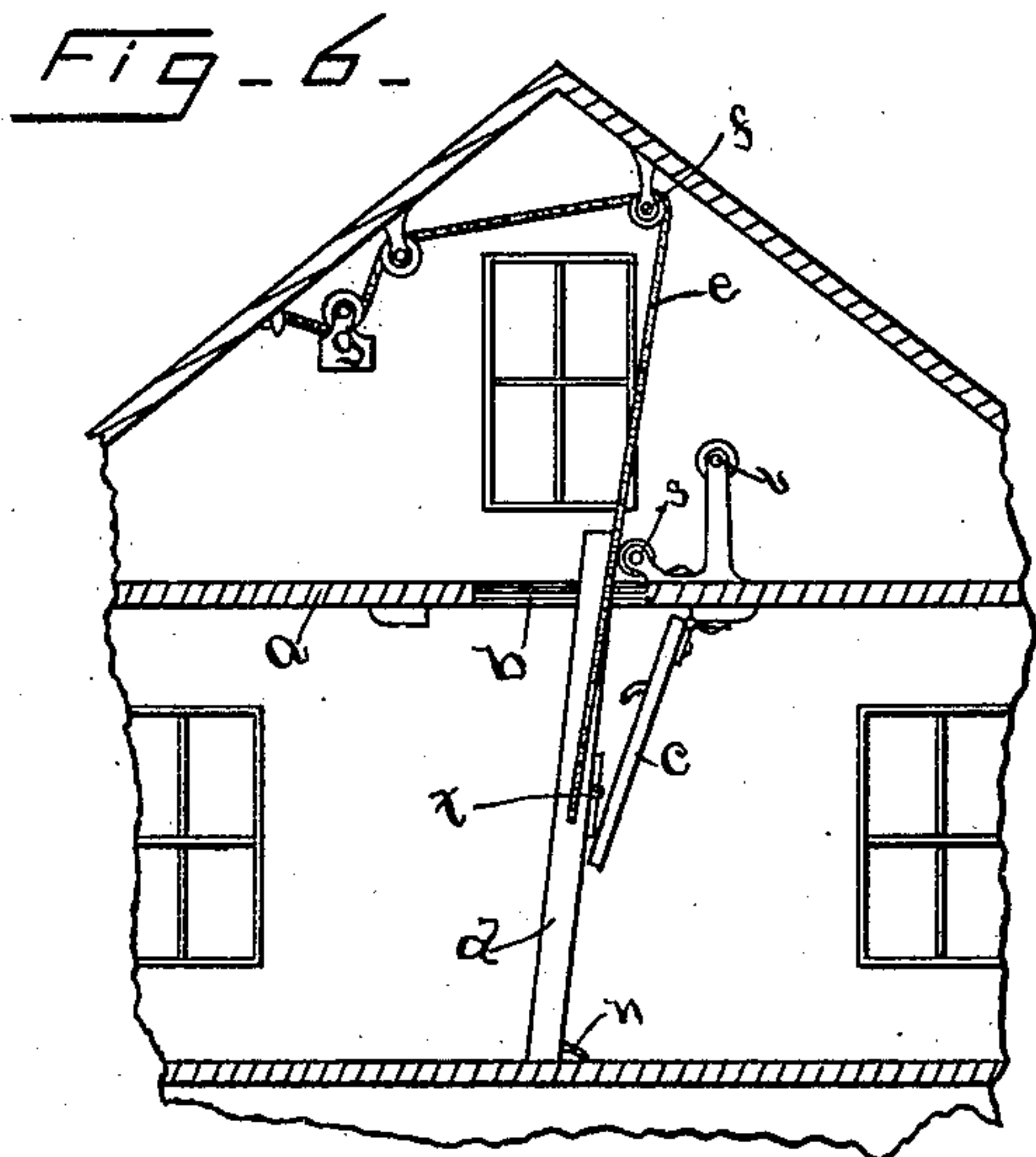
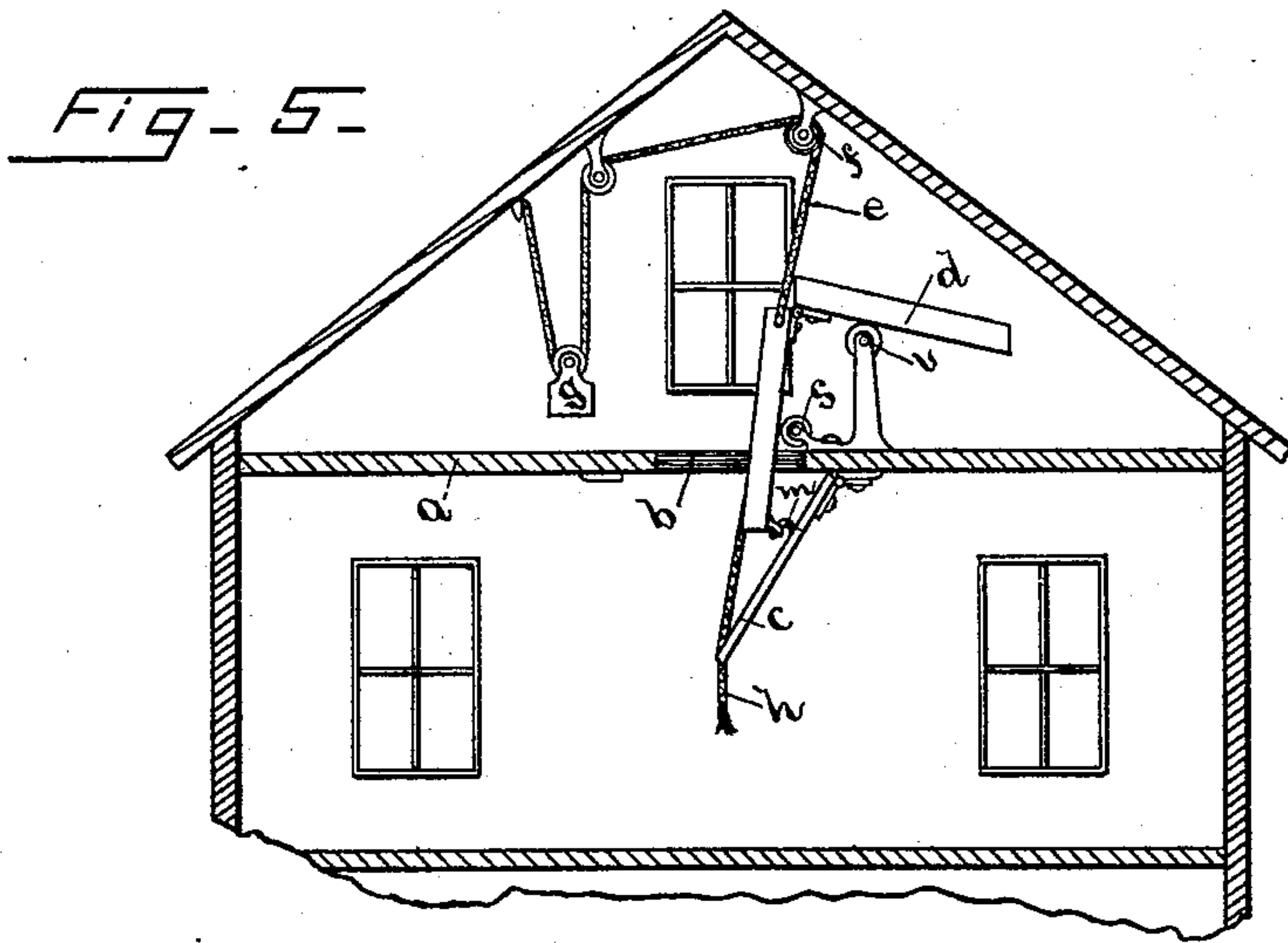
(No Model.)

2 Sheets—Sheet 2.

R. M. POWERS.
SCUTTLE LADDER.

No. 453,294.

Patented June 2, 1891.



Witnesses

George M. Luther.
Allen Tenny.

Inventor

Richard M. Powers.
By *his* Attorney
Frank H. Allen.

UNITED STATES PATENT OFFICE.

RICHARD M. POWERS, OF NORWICH, CONNECTICUT.

SCUTTLE-LADDER.

SPECIFICATION forming part of Letters Patent No. 453,294, dated June 2, 1891.

Application filed February 16, 1891. Serial No. 381,650. (No model.)

To all whom it may concern:

Be it known that I, RICHARD M. POWERS, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvement in Scuttle-Ladders, which improvements are fully set forth and described in the following specification, reference being had to the accompanying two sheets of drawings, in which—

Figure 1 is a vertical sectional view of a house, showing the attic and scuttle leading thereto and having my improvements embodied therewith. Fig. 2 shows the scuttle and parts immediately connected therewith considerably enlarged. Fig. 3 is a perspective view of the ladder, and Fig. 4 is an upper face view of the trap-door that closes the scuttle-hole. Fig. 5 is substantially like Fig. 1, but shows a jointed ladder for use with attics having very little "head room," the ladder being shown as in the act of passing upward into the attic. Fig. 6 is a similar view showing the ladder in its lowest position ready for use. Fig. 7 is a perspective view of the jointed ladder.

This invention relates to ladders for use with scuttle-holes, and has for its immediate object the production of a ladder that may be readily disposed of when not in use and which may also serve to automatically close the scuttle or trap door.

In many low-posted or cottage houses a scuttle-hole furnishes the only means of access to the attic. This attic-room or space under the roof may not be available for living or lodging apartments, but is always valuable, if convenient of access, as a store-room. Ordinarily this space is reached by a ladder through a scuttle-hole, and after using such ladder it must be carried below to the cellar, shed, or other store-room until again needed, or it must be left in the passage-way or room from which the scuttle leads, either practice being more or less objectionable.

My present invention overcomes the existing objections by making it both possible and easy to pass the ladder up through the scuttle-hole after using, and thus storing it in the attic.

My invention also provides for automati-

cally closing the trap-door of the scuttle as the ladder passes upward through it.

Referring to the annexed drawings, *a* denotes the floor of a cottage-house, and *b* a scuttle-hole leading through said floor into the attic or space under the roof. A trap-door *c* is hinged to one side or end of the scuttle-hole and adapted to be swung upward to close the said hole.

Referring to Fig. 1, *d* indicates a ladder, which may be made with rungs or may have steps, as here shown. This ladder has secured to its upper end a cord or chain *e*, which passes upward over a pulley *f*, secured to a rafter or other convenient part of the roof. The free end of said cord or chain has attached to it a weight *g*, that should be heavy enough to counterbalance the ladder. It will now be understood that if the ladder be passed upward through the scuttle-hole the described cord-and-weight attachments will serve to steady the movement of the ladder and to support it at any desired elevation.

To draw the ladder down through the scuttle-hole when it is again required for use, I preferably attach to its lower portion a cord *h*, which may terminate with an ornamental tassel, if desired, and which hangs down within easy reach when the ladder is in its elevated position. The scuttle *b* has attached to it a strong hook *m*, and the ladder has secured to its lower end a cross-rod *n*, the latter being of such size and shape that it may engage the hook *m* as the ladder is raised through the scuttle-hole and thus lift the trap-door *c* and close the scuttle-opening. The trap-door is preferably notched, as at *o*, to provide an opening through and from which the cord *h* may hang when the trap-door is closed.

In order to insure the easy passage of the ladder upward through the scuttle-hole, I provide a roller *s*, that is journaled at or near the casing of said scuttle and over the hinged end of the trap-door. As the ladder passes upward it may ride on the roller *s*, which offers but little frictional resistance.

For use with attics having very low roofs and consequently little head room, I provide a ladder jointed as at *t*. (See Figs. 5, 6, and 7.) This ladder has the cord *e* attached to the

upper end of the lower section, the cord being also used with a pulley and weight or with such a system of pulleys as will allow the necessary movement of the ladder without permitting the weight to descend to the floor. Above the roller *s* I provide a second roller *v*, as in Fig. 5. When the ladder is passed upward through the scuttle-hole, the upper hinged section after it leaves roller *s* drops back upon roller *v*, as shown in Fig. 5, and as the ladder continues to rise said upper section gradually approaches a horizontal position, as in said Fig. 5, and by thus shortening or partly folding the ladder it becomes possible to store away in a very low attic a ladder long enough to reach from said attic to the floor below.

My described invention may be very cheaply constructed and makes available a vast amount of space heretofore rarely used.

Having described my invention, I claim—

1. In combination with a scuttle, a ladder counterbalanced by means substantially as herein described, and adapted to be passed upward through said scuttle when not in use.
2. In combination with a scuttle, a ladder

counterbalanced as herein described, and an anti-frictional roller, as *s*, journaled at one end of said scuttle in the path of the ladder.

3. In combination with a scuttle, a ladder counterbalanced as described, and a cord suspended from the lower end of said ladder, as and for the purpose specified.

4. In combination with a scuttle, a ladder counterbalanced as described, a trap-door hinged as set forth and adapted to close the scuttle-hole, and mechanism consisting of hook *m* and rod *n*, substantially as described, whereby the upward movement of the ladder will serve to close the trap-door.

5. In combination with a scuttle, a ladder counterbalanced as set forth and hinged midway of its length, and a roller, as *v*, in the path of said ladder, adapted to receive and support the upper (hinged) section of the ladder as it passes upward, for the purpose specified.

RICHARD M. POWERS.

Witnesses:

FRANK H. ALLEN,
ALONZO M. LUTHER.