

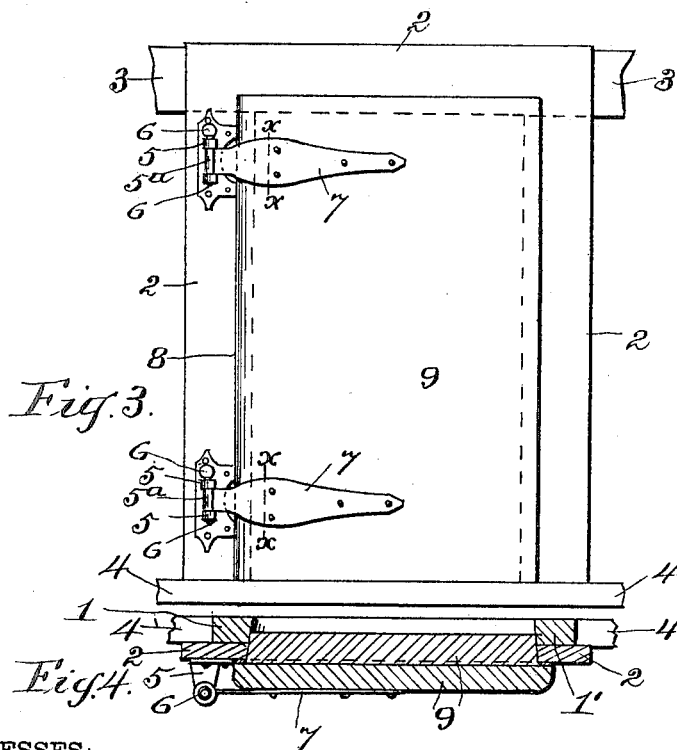
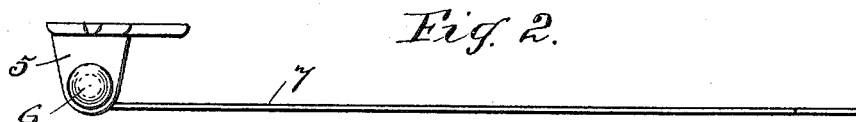
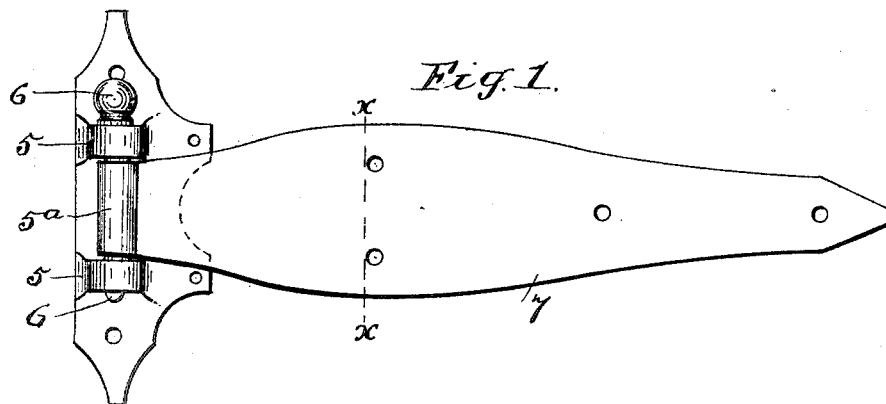
No. 647,586.

Patented Apr. 17, 1900.

S. P. STEVENSON.
HINGE.

(Application filed July 27, 1898. Renewed Sept. 15, 1899.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

S PRICE STEVENSON, OF CHESTER, PENNSYLVANIA.

HINGE.

SPECIFICATION forming part of Letters Patent No. 647,586, dated April 17, 1900.

Application filed July 27, 1898. Renewed September 15, 1899. Serial No. 730,640. (No model.)

To all whom it may concern:

Be it known that I, S PRICE STEVENSON, a citizen of the United States, residing at Chester, Delaware county, Pennsylvania, have invented a new and useful Improvement in Hinges, of which the following is a specification.

This invention relates to hinges for the doors of air-tight compartments, and is especially applicable to refrigerators and all cold-storage-compartment doors.

It has for its object the easy and secure closing of such doors into close contact with their casings and jambs, so as to elastically hold them in air-tight contact therewith; and it consists in an improved form of elastic hinge whereby the door in closing moves primarily upon the pivotal part of the hinge and the final closing movement is made by the bowing or flexure of the spring-plate, forming a characteristic feature of these hinges, so that the door is drawn into contact with the casing and jambs into which it is fitted, such doors being usually provided with a packing or gasket to contact with their casings or frames.

The following is a complete and exact description of the mode of making and using this invention, reference being had to the accompanying drawings, in which—

Figure 1 shows an elevation of the hinge. Fig. 2 is a plan view thereof; Fig. 3 in front view, a door with such hinges applied to it; Fig. 4, a horizontal section of the door and hinge in closed position.

1 and 1' represent the jambs of the door-frame, and 2 the front casing thereof; 3, the lintel, and 4 the sill.

5 is the bearing or clevis of the hinge, secured to the front casing 2.

9 is the door.

6 is the pivot of the hinge, which is set at a considerable distance out from the face of the front casing 2.

7 is the spring-plate or, as it is sometimes called, the "strap" of the hinge. This is made with an eye 5^a to fit on the pivot 6 and widens out from the pivot nearly to double the breadth at the line *xx*, resting near the edge 8 of the door 9, from which place it then tapers to the end. In securing such hinges to the door 9

they are fastened by screws, and a considerable portion of the length, as shown in Fig. 4, does not rest upon the door, but is used to elastically force the door into contact with the front casing 2, constituting a spring. The tapering form of this portion has the effect to distribute or equalize the elastic flexure of the spring through the entire length of the part between the pivot and that fastened to the door and avoids undue flexure and permanent set at any point in that part.

To improve the flexure of the spring and the forcing of the door against the jamb, the edge of the door 9 is preferably rounded, as shown at the part marked 8 in Fig. 4, so that as the door shuts it first contacts with the front casing 2 and then the flexure of the spring-plate 7 takes place, producing a drawing movement or pulling of the door 9 toward the pivot 6 of the hinge, and the final firm pressure when fastened against the casing 2 making intimate contact therewith and excluding any air-currents from entering or leaving.

By reason of the elasticity of these hinges and their mode of application the framework or casings may spring considerably, as may also the door, and a correction is found in the forcible application of the door elastically to the opposing surfaces, and under all reasonable conditions of use the door remains airtight when closed.

The chief peculiarity imparting operative value to these hinges is the form of the spring plate or strap, and these being susceptible of use with pivots of usual construction are separately merchantable, and are therefore made the subject of a distinct claim.

Having described my invention, what I claim is—

1. An elastic hinge adapted to support and swing doors, consisting of a pivotal support a pivot fitted therein, a spring-plate fitted to swing thereon, said spring-plate being made of elastic material and increasing in width from its pivotal attachment to the part applied to the edge of the door for the purpose of distributing the flexure and elastic reaction of the spring throughout the plate substantially as set forth.

2. As an article of manufacture a hinge—

strap formed from elastic metal plate, having
an eye adapted to swing on a pivot, and per-
forations for the insertion of screws or rivets
at a sufficient distance from said eye to permit
5 elastic flexure of the intervening portion, said
intervening portion tapering from a greater
breadth at the perforated portion to the eye;

in such proportions as to distribute elastic
flexure equally in the plate, and thus to avoid
permanent set in any point thereof.

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