Aug. 23, 1932. T. COLLINS 1,873,292

PLASTER BOARD STUD AND LOCK

Original Filed Feb. 13, 1929

Fig. 1.

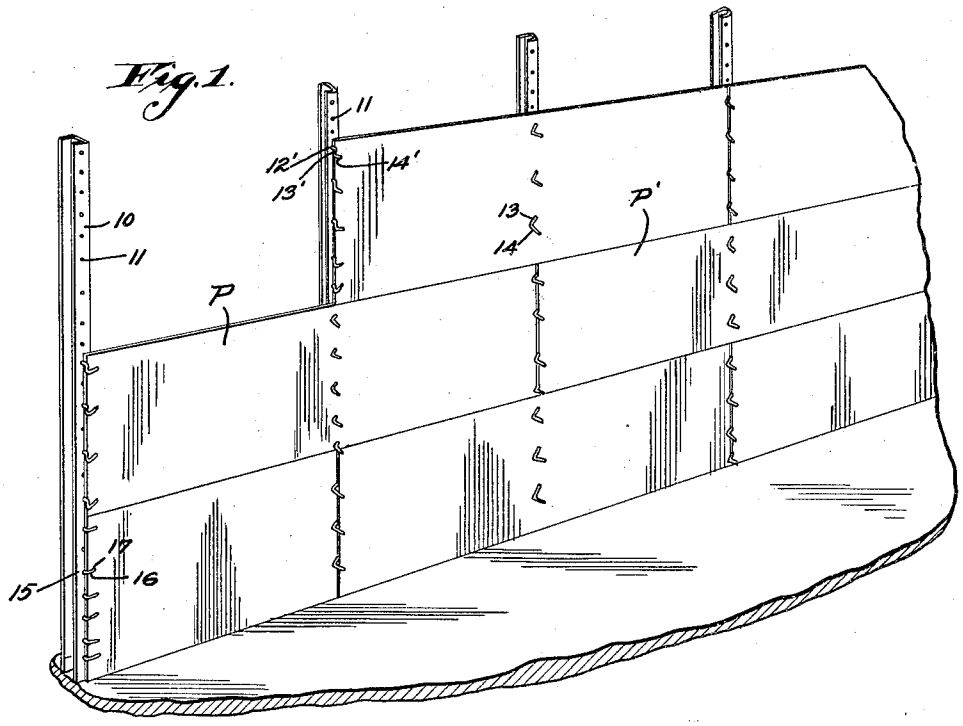

Fig. 2.

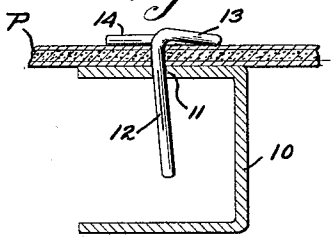

Fig. 4.

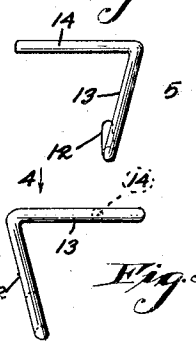

Fig. 5.

Fig. 6.

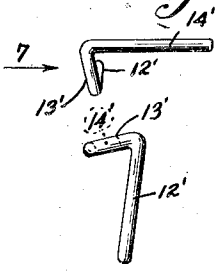

Fig. 7.

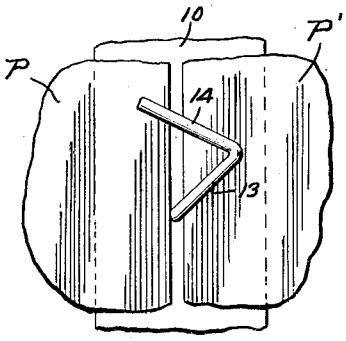

Fig. 3.

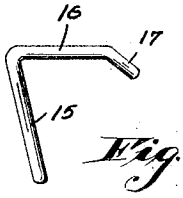

Fig. 8.

Inventor:
Timothy Collins.
by Hazard and Miller
Attorneys.

Patented Aug. 23, 1932

1,873,292

UNITED STATES PATENT OFFICE

TIMOTHY COLLINS, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO ARTHUR W. NASH, OF LOS ANGELES, CALIFORNIA

PLASTER-BOARD STUD AND LOCK

Application filed February 13, 1929, Serial No. 339,608. Renewed January 28, 1932.

This invention relates to improvements in plaster board studs and locks and may be considered as an improvement over the construction disclosed in my prior Patent No. 1,697,521, issued January 1, 1929.

An object of this invention is to provide an improved plaster board stud and lock wherein the stud has a plurality of circular perforations or apertures therein, adapted to receive the locks or keys which are caused, on rotation, to bind in the apertures so that they will fasten the plaster boards firmly to the studs.

Another object of the invention is to provide a plaster board lock or key which may be easily, quickly and cheaply constructed out of heavy wire or similar material and which is, to a certain extent, resilient so that when the key is mounted on the stud it will press against the plaster boards engaged thereby, causing the plaster boards to be continually and tightly held against the studs.

A further object of the invention is to provide a plaster board key or lock which is so constructed that it may be inserted through the center of a plaster board to fasten the plaster board to a stud. By such a construction it is possible to assemble the plaster boards against the studs with the vertical joints between the plaster boards broken or in staggered relation, employing some keys or locks at the ends of the plaster boards and others at their centers.

Another object of the invention is to provide a plaster board wall construction wherein the plaster boards are assembled with their vertical joints in staggered relation.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawing for the illustrative embodiment of the invention, wherein:

Fig. 1 is a partial view in perspective, illustrating the improved plaster board wall construction in the process of erection and illustrating the improved studs and locks.

Fig. 2 is a horizontal section taken through one of the studs.

Fig. 3 is a partial view in elevation of a stud illustrating the manner in which a lock or key holds the marginal edges of two adjacent plaster boards thereto.

Fig. 4 is a top plan view of one of the keys or locks.

Fig. 5 is a view in elevation of the lock shown in Fig. 4 taken in the direction of the arrow 5 upon Fig. 4.

Fig. 6 is a top plan view of a slightly modified form of construction of plaster board lock.

Fig. 7 is a view in side elevation of the same taken substantially in the direction of the arrow 7 upon Fig. 6.

Fig. 8 is a view in side elevation of a still further modified form of construction.

Referring to the accompanying drawing wherein similar reference characters designate similar parts throughout, the improved plaster board wall construction comprises a plurality of vertically arranged studs 10. These studs, in the preferred form of construction are channel irons having a row of perforations 11 formed in each of its sides. The perforations 11 are circular or approximately circular in form and are adapted to receive the shanks of the keys or locks. Several different types of keys or locks are provided which may be optionally employed or which may be substituted, one for the other. The preferred form of lock is shown in Figs. 2 to 5, inclusive and comprises a shank 12 slightly smaller in diameter than the diameters of the perforations 11 so that it may be easily inserted in the perforations. At the top of the shank there is a head which extends laterally from one side of the shank only. The head in the modification shown in Figs. 2 to 5, inclusive comprises two portions indicated at 13 and 14. These portions are arranged at an angle to each other which is slightly less than 90 degrees and the angle, as clearly shown in Figs. 2 and 5, between the shank 12 and the portion 13 is slightly less than 90 degrees. As clearly shown in Fig. 4 the shank is not only inclined to the portion 13 but is inclined also toward the portion 14 so that the shank in reality forms an angle slightly less than 90

degrees with the plane which contains the two portions 13 and 14. The lock or key is preferably formed of a relatively heavy wire bent to form the shank and the portions 13 and 14 of the head. The wire is resilient to a certain extent although it cannot be easily bent. In assembling the construction a plaster board P is placed against the wall and a plurality of the keys and their shanks positioned in the perforations 11. They are pushed into the perforations so that the under side of the portion 14 is slightly lower or behind the outer surface of the plaster board P. The key is then rotated, causing the portion 14 to be sprung slightly and to be slid over the outer face of the plaster board. The rotation and tension placed on the key causes the shank 12 to bind in the perforations so that it cannot be withdrawn from the perforation. Also, by virtue of the inclination of the shank to the portions 13 and 14 of the head, a screwing or tightening action takes place during the rotation. After the portion 14 has been swung over the outer face of the plaster board the rotation is continued until the portion 13 is also over the plaster board. An adjacent plaster board P^1 can then be positioned against the shank and the key then reversely rotated until it assumes the position shown in Fig. 3 wherein the portion 13 of the head extends over the outer face of the plaster board P^1 and the portion 14 is lapping or extending over the vertical joint between the plaster boards P and P^1. In this manner a single key can be caused to hold the marginal edges of two adjacent plaster boards tightly and firmly against the stud. The resiliency of the key causing it to act like a spring pressing the board against the studs.

A feature of the invention resides in the fact that the perforations 11 are circular in form and the tightening is effected by the rotation of the shanks 12 on substantially their own axes. By thus having the perforations small in diameter and circular the strength of the studs is adequately preserved and also no lateral or longitudinal sliding need take place to lock the plaster boards to the studs. This feature is also important in that it enables a plaster board wall to be constructed wherein the vertical joints between the plaster boards are broken or are in staggered relation as shown in Fig. 1. The plaster boards may have apertures formed therein of approximately the same size as the perforations 11 and the keys may be extended through the apertures into the studs and tightened therein. Such keys will be located at the centers of the plaster boards so that each plaster board will be firmly locked in place at its center as well as at its ends. The advantages of having broken or staggered vertical joints instead of aligned joints will be present also.

The keys which are preferably employed at the centers of the plaster boards are illustrated in Figs. 6 and 7. These keys are of substantially the same construction as that shown in Figs. 2 to 5 inclusive, with the exception that the portion 13^1 on the head is much shorter than the portion 13. The inclination of the shank 12^1 with respect to the portions 13^1 and 14^1 is substantially the same as the inclination of the shank 12 with respect to the portions 13 and 14.

In Fig. 8 there is a further modified form of construction wherein the key is shown as having a shank 15, a laterally extending head 16, and a downwardly bent end 17. The shank 15, as shown, forms an angle with the head 16 slightly less than 90 degrees, so that when the end 17 is pressed against the plaster board it will tend to cause the shank 15 to tilt slightly in the aperture 11 and to bind therein.

From the above described constructions it will be readily appreciated that the improved keys or locks may be easily, quickly and cheaply constructed and may be easily and quickly mounted on the studs and caused to press the plaster boards firmly against the studs. Also, the improved key, by virtue of its slender shank enables the key to be used intermediate the ends of the plaster board as well as at its ends, thus enabling a plaster board wall construction to be erected with staggered vertical joints. The improved key cannot be withdrawn from the apertures or perforations 11 as long as the head is under tension and pressing the plaster boards tightly against the studs thus forming a rigid, sturdy plaster board wall.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. A plaster board lock comprising a single piece of wire bent to provide a shank and a head, the head being formed of two portions arranged at an angle to each other in approximately the same plane, the shank forming an angle of less than ninety degrees with the portion connecting the shank with the apex of the angle.

2. A plaster board lock comprising a single piece of wire bent to provide a shank and a head, the head being formed of two portions arranged at an angle to each other in approximately the same plane, the plane containing the shank and the portion connecting the shank to the apex of the angle forming an angle of less than ninety degrees with the remaining portion of the head.

3. A plaster board lock comprising a single piece of wire bent to provide a shank and a slightly resilient head which projects laterally from one side of the shank only, said

shank forming an angle of less than ninety degrees with said head.

4. A plaster board lock comprising a single piece of heavy wire bent to provide a shank, and a head formed of a connecting portion and an outer portion, the connecting portion and outer portion forming an angle of less than ninety degrees, and the shank and connecting portion forming an angle of less than ninety degrees, the shank also forming an angle of less than ninety degrees with the plane joining the outer portion with the top of the shank.

In testimony whereof I have signed my name to this specification.

TIMOTHY COLLINS.