An L-shaped shelf bracket is provided with a rearwardly extending fixed plug adapted to be mounted in a cooperating socket formed in the side of a cabinet wall. The plug is formed with an axial chamber closed at the rearward end and open at the forward end to receive a spring and pin mounted for reciprocation therein. The pin is adapted to be forced fully back into the chamber when retracted against the force of the spring and to extend outwardly parallel to the upper surface of a shelf placed on the lower leg of the L-shaped bracket in order to lock the shelf in position against vertical displacement. The device may be attached to any socket in a cabinet wall so that a shelf may be adjusted as to height. The retractable pin holds the shelf in place during and after shipment.

3 Claims, 3 Drawing Figures
SELF-LOCKING SHELF SUPPORT

BACKGROUND OF THE INVENTION

1. Field of the Invention
This invention relates generally to cabinet hardware and more particularly is directed towards a new and improved shelf support bracket having a self-locking mechanism for restraining a shelf against displacement.

2. Description of the Prior Art
In the manufacture of various types of cabinets or similar products which incorporate shelves, it is a desirable feature to fabricate the cabinet so that any shelves involved may be adjusted to different heights whereby the customer may set the shelf height to his own particular needs. This feature is normally achieved by a drilling rather shallow sockets vertically along opposing side walls of the cabinet and inserting small posts into the sockets with the other ends of the posts projecting from the wall so as to support the ends of a shelf placed thereon. The height of the shelf is changed by removing the plug and replacing it in a socket at a different level. While this type of shelf support is satisfactory for installed units, it is unsatisfactory for use during shipment since the shelves are not held against vertical displacement and may easily tumble about inside a cabinet possibly damaging or marring the cabinet. For this reason, shelves are normally packaged and shipped separately from the cabinet for installation at the customer's site. This practice is also unsatisfactory since the shelves and cabinets may not arrive at the same time and often times the shelves will become lost during shipment.

In U.S. Pat. No. 3,471,112 dated Oct. 7, 1969 and entitled "Combination Self Support & Anchor" there is disclosed a shelf bracket which locks the top and bottom edges of the shelf so as to permit the shelf to be shipped installed without becoming loose. It is an object of the present invention to provide improvements over the shelf lock disclosure in the foregoing patent and to provide an adjustable, self-locking shelf support particularly useful for mounting heavy shelves.

SUMMARY OF THE INVENTION
This invention features a self-locking adjustable shelf support, comprising an L-shaped bracket formed with a rearwardly extending plug or peg on one leg thereof adapted to be mounted in a cooperating socket formed in the side wall of a cabinet. The plug is formed with an axial chamber and a spring-loaded pin is mounted in the chamber adapted to telescope into the plug when retracted and snap out into a locking position over the end of a shelf mounted on another leg of the bracket.

BRIEF DESCRIPTION OF THE DRAWINGS
FIG. 1 is a view in perspective of a self-locking shelf support made according to the invention, FIG. 2 is a view in front elevation thereof, and, FIG. 3 is a sectional side view showing the device in locking position with a shelf.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS
Referring now to the drawings the reference character 10 generally indicates a self-locking device for mounting a shelf 12 to a wall 14. The device is particularly useful for mounting shelves to a selected height position in cabinets, bookcases or similar structures, especially those in which the shelf 12 is relatively heavy.

In the preferred form of the invention the device 10 is generally organized about an L-shaped bracket 16 having a flat body portion 18 and a perpendicularly extending flat lip or leg 20 extending from the lower edge thereof. The bracket piece preferably is stamped from steel or the like to provide strength and rigidity sufficient to support a heavy load. Typical dimensions of the bracket include a body length of perhaps 1¼ inches and a leg length of perhaps one-half inch. These dimensions are only by way of example and obviously a wide variety of sizes may be employed depending upon the particular application.

Fixed securely to the body portion 18 is a pin or plug 22 located perhaps one inch up from the lip 20. In the illustrated embodiment, the plug 22 is of a cylindrical configuration terminating in a conical tip at its outer end and formed with a reduced neck 24 which projects through a circular opening 26 in the wall of the flat body portion 18. The neck is fitted tightly to the body 18 and this may be done by a variety of techniques such as press fitting, welding or the like. The outer end of the neck 24 terminates substantially flush with the forward face of the body portion 18. The plug 22 is formed with an axial recess 28 open at the left-hand end thereof as viewed in FIG. 3 and closed at the right-hand end thereof. Preferably, the passage 28 is cylindrical and terminates at its left-hand end with a slight restriction 30 which cooperates with an annular rib 32 formed on the pin or plunger 34 mounted for reciprocation in the passage 28. The pin 34 preferably is cylindrical and is normally urged into the extended position of FIG. 3 by means of a coil spring 36 mounted in the passage compressed between the right-hand end of the pin and the back wall of the passage. The shank of the pin 34 has a length such that when fully retracted the outer end will be substantially flush with the outer face of the body 18. Typically, the shank will project perhaps one-fourth inch out from the body when fully extended. Here again, the dimension is only by way of example and may be varied according to requirements.

In the use of the device, the wall 14, whether it be a cabinet, bookcase or the like, is formed with a socket 38 having a diameter substantially equal to the outside diameter of the plug 22 and having a depth at least equal to the length of the plug. If the shelf is to be made adjustable, a number of socket holes 28 may be drilled in a vertical row along the wall 14. Generally, these holes are drilled in horizontal pairs so that two shelf brackets may be employed at each end of the shelf. A similar set of sockets is drilled in the opposite wall to receive other brackets for the opposite end of the shelf. With the sockets formed in the wall, the devices 10 are mounted in pairs at the same level in opposite walls, preferably two devices for each end of the shelf. The shelf 12 is then mounted by depressing the pin 34 so that it retracts fully into the passage 28. The shelf is then dropped down to rest on the lip 20 and the pin is released to snap out into a locking position over the top of the shelf 12. This effectively locks the shelf at top and bottom against vertical displacement so that a shelf may be installed in the cabinet, for example, by the manufacturer and shipped in place without fear of the shelf becoming loose. The shelf is easily removed in order to change the height by merely depressing the pin 34 and lifting the shelf clear. The device may then be
removed from its socket 38 and placed in another socket where the shelf may be re-installed.

Having thus described the invention what I claim and desire to obtain by Letters Patent of the United States is:

1. A self-locking shelf support, comprising
   a. a plate formed with a lip extending perpendicularly from the front face thereof,
   b. a plug fixed to said plate in spaced parallel relation to said lip and above said lip and extending perpendicularly from the rear face of said plate for mounting said support to a cooperating socket in an upright cabinet wall and the like,
   c. said plug being formed with a chamber open at the front face of said plate and closed at the rear of said plug,
   d. a pin retractably mounted for limited axial movement in said chamber parallel to said plug, and,
   e. resilient means engaging said pin and normally urging said pin to a position extending perpendicularly from the front face of said plate in spaced parallel relation to said lip, said pin adapted to be temporarily retracted into said chamber by axial pressure applied to the outer end thereof.

2. A self-locking shelf support according to claim 1 wherein said means includes a coil spring mounted in said chamber between said pin and an end wall of said plug.

3. A self-locking shelf support according to claim 2 wherein said plate is L-shaped stamped from sheet metal.