

No. 625,634.

Patented May 23, 1899.

F. C. ARBENZ.
FURNITURE FASTENING.

(Application filed Oct. 29, 1898.)

(No Model.)

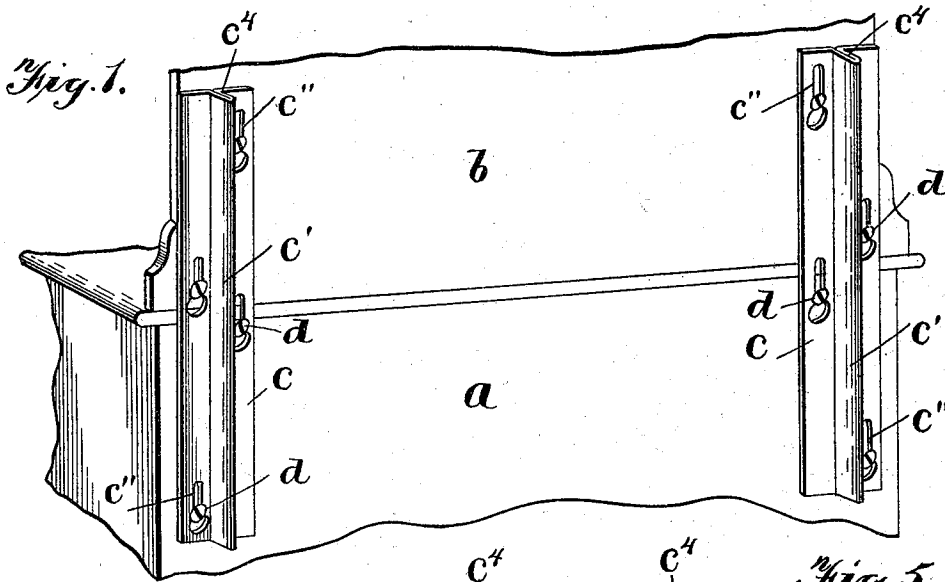
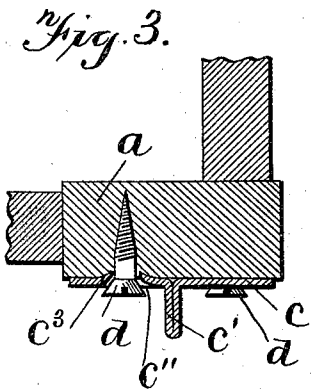


Fig. 2.

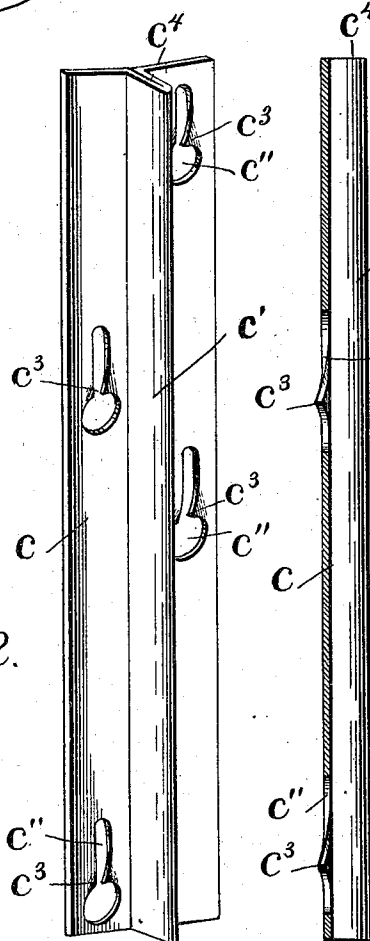
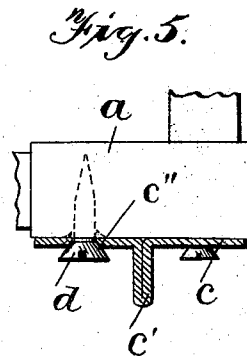


Fig. 4.

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UNITED STATES PATENT OFFICE.

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FURNITURE-FASTENING.

SPECIFICATION forming part of Letters Patent No. 625,634, dated May 23, 1899.

Application filed October 29, 1898. Serial No. 694,953. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. ARBENZ, a citizen of the United States, residing at Chillicothe, in the county of Ross and State of Ohio, have invented certain new and useful Improvements in Furniture-Fastenings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in furniture-fastenings, and more particularly to an improved fastening-plate; and the objects and nature of the invention will be found fully particularized hereinafter.

The invention consists in certain novel features in construction and in details and in combinations and arrangements of features and details, as more fully and specifically set forth and specified hereinafter.

Referring to the accompanying drawings, which merely illustrate one example of a construction which might be employed in carrying out the spirit and scope of my invention, Figure 1 is a perspective view of the back of an article of furniture, showing two of my improved fastening-plates uniting two sections of said piece of furniture. Fig. 2 is a detail enlarged perspective view of the fastener-plate. Fig. 3 is a detail cross-sectional view taken on Fig. 1 through a fastener-plate at a point below and looking up toward the screw. Fig. 4 is a detail longitudinal section through the fastener-plate. Fig. 5 is a cross-sectional view similar to that of Fig. 3, but taken in a plane just above and looking down on the screw.

In the drawings, *a* is the base, and *b* the top, of an article of furniture. These two parts of the piece of furniture are formed separate and detachable, and various devices have been employed heretofore for detachably uniting such separate parts of articles of furniture; and it is the object of my invention, among others, to provide an improved fastener which will be of great strength and durability and yet which is easy of manufacture and can be quickly and conveniently handled in being applied to or released from the article of furniture and which is secure against accidental displacement and release.

A fastener within the scope of my invention is indicated in the drawings generally by the reference-letter *c*, and consists of a single integral elongated plate or metal strip formed of sheet metal, preferably having a certain degree of elasticity, having the outward ridge, bulge, or corrugation *c'* arranged longitudinally thereof at a point preferably between or intermediate the longitudinal side edges of the strip, leaving the flat sides of the strip on each side of the corrugation through which holes or openings are formed to receive and lock against rigid projections from the faces of the parts of the article of furniture being locked together. The longitudinal (preferably central) corrugation is struck up in the metal strip, with the sides of the corrugation preferably, although not necessarily, closed together about as shown. The holes *c''* are stamped or cut in the flat faces of the plate by suitable dies, and these holes or openings are usually arranged alternately on opposite sides of the longitudinal corrugation, so as not to be directly opposite each other. Each hole is arranged longitudinally of the metal plate, with the large lower end opening of a size to permit passage therethrough of the head *d* of a screw or other headed pin or projection rigid with the piece of furniture, with the narrow slot extending upwardly from said large opening and longitudinal of the metal strip. This slot preferably has parallel sides and is of a width to loosely permit the entrance of the shank of the screw or projection thereinto from the large opening and preferably so that the edges of the slot will not grip or bind on the said shank, but so that the plate on each side of the slot can bind or lock outwardly against the inner face of the head *d* of the screw, whereby the fastening-strip will be locked by the binding or gripping engagement and outward pressure against the inner faces of the heads of the screws. Points or angular edges *c³* are formed on both sides of the junction between the slot and large opening, and these two points at each locking-opening are bent downwardly, so as to project inwardly beyond the plane of the inner face of the plate or strip.

Each section of the article to be joined is provided at the rear with properly-arranged

headed projections to register with the various locking-openings of the fastening-plate, so that there is only sufficient space between the inner faces of said heads and the surface of the furniture to snugly receive the thickness of the metal fastening. The fastening-plate is then placed on the rear face of the article, extending onto both sections thereof, with the headed projections extending through the large openings, and by a few taps with a hammer on the upper end of the corrugation the metal strip will be forced down, so that the slots receive the screw-shanks, and the faces of the fastening-plate on both sides of each slot will firmly press against and grip the inner face of the head, and hence rigidly lock the plate and at the same time force said sharp points or spurs c^3 into the wood of the sections of the furniture or other article, and hence hold the plate against retrograde or loosening movement.

By reason of the elastic or spring nature of the sheet metal and the fact that the screw-heads tend to straighten or flatten the same out against the back face of the furniture said plate presses outwardly with great force against the screw-heads. This tendency to flatten out the plate is caused by inward projections or an unevenness, such as the points c^3 , and might also be caused by the usual slight inward inclination of the flat sides of the plate transversely from the central corrugation.

It will thus be noted that a feature, among others, of my invention consists in forming the plate with inwardly-deflected edges or portions so arranged and formed that as the plate is forced beneath the screw-heads d the plate will be flattened out to a greater or less extent and will thereby bear outwardly with great pressure against the screw-heads. The opposite longitudinal sides of the plate can be deflected or inclined inwardly at an angle to constitute such before-mentioned inwardly-deflected portions, or intermediate inwardly-deflected edges or portions, such as c^3 , can be solely depended on to perform the function of springing the metal of the plate out against the screw-heads. The plate is suitably formed to receive the screw-heads and shanks, and in the specific example shown the opening with the contracted slot therefrom can be conveniently termed a "keyhole-slot."

The longitudinal corrugation is preferably cut off squarely at the ends to form end heads c^4 to receive the blows of the hammer at the top or bottom of the plate in securing or detaching the same, whereby danger of forcibly striking the article of furniture is avoided and the convenience of operating the plate is materially increased. This corrugation also strengthens the plate and braces the same against bending and giving.

The screws d (if such are employed) can be tightened or loosened after the plate is attached, and, if desired, the plate at the edges of the slots can be beveled to fit the under

faces of the screw-heads, although the bending down of the points c^3 forms a bevel at the top face of the plate. The plate can be easily released by tapping its lower head c^4 , which causes the plate to move up, releasing the pressure on points c^3 , and the plate can be removed when the screw-heads enter the large openings.

These fastening-plates can be employed on many different articles of furniture and other articles, as in securing the glass frames or standards on bureaus, washstands, chiffonniers, &c. The bending in or beveling of the points at ends of slots forms inclines or bevels, which greatly facilitate the heads in compressing the plates and in gradually forcing the spurs into the wood.

It is obvious that this invention is not limited to the employment of the rib c^4 and that other forms of longitudinally-raised portions or corrugations can be formed in the plate to stiffen the same or render the same transversely yielding with a spring tension.

It is evident that various changes might be made in the forms, constructions, and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the exact construction shown.

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

1. A furniture-fastening comprising a longitudinally-slidable metal strip formed with openings to receive headed projections and slots extending from said openings to receive the necks of said projections, the metal of the plate turned down adjacent to said slots to form gripping or locking spurs or edges, substantially as described.

2. The fastening-plate having a longitudinal ridge and flat portions having openings formed with elongated reduced portions and points formed in the edges of the plate at said openings bent downwardly constituting spurs to enter the wood and lock the plate.

3. The fastening-plate consisting of an elongated sheet-metal strip of spring metal having slots to receive the shanks of headed projections and provided with inward projections whereby when the plate is forced beneath said heads the pressure will force the plate out and bind the same against said heads.

4. As an article of manufacture, a fastening-plate formed of spring metal having holes therein to permit passage of headed projections and slots from the holes to receive the necks of said projections so that the plate presses under and locks against the under surfaces of said heads, said plate having inwardly-deflected portions to engage the surface of the sections being united and spring or press the plate out against said heads, substantially as described.

5. As an article of manufacture, a fastening-plate having inwardly-extending spring

projections with outer beveled faces to catch under the heads of headed projections and exert tension against the same to lock the plate, substantially as described.

5 6. As an article of manufacture, a fastening-plate having holes and slots therein and formed with beveled or inclined faces adjacent the holes and slots to ride on the under faces of headed projections, and inwardly-projecting portions adjacent said faces, substantially as described.

10 7. A sheet-metal fastening-plate having a longitudinal intermediate raised portion, the longitudinal side portions or edges of said plate inclined or deflected inwardly and provided with keyhole-slots to receive the necks of headed projections, substantially as described.

15 8. A metal fastening-plate formed with openings and slots to receive the necks of headed projections and to bind against the heads thereof when the plate is moved longitudinally in one direction and to release therefrom when moved in the opposite direction, said plate formed and provided with locking means biting, gripping or binding against the members joined thereby and pressing the

plate out against the inner faces of said heads, substantially as described.

9. As an article of manufacture, the furniture-fastening comprising an elongated sheet-metal plate having locking means on its inner faces and an intermediate rib or corrugation extending longitudinally the full length of the plate with its ends cut to form heads at the ends of the plate to receive the blows of a hammer, the opposite flat portions of the plate formed with holes to permit passage of headed projections and slots within the edges of the plate and all extending from said holes toward the same end of the plate, whereby longitudinal movement of the plate in one direction causes the slots to receive the necks of the projections and movement in the opposite direction releases the plate from all of the projections, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of the subscribing witnesses.

FREDERICK C. ARBENZ.

Witnesses:

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