

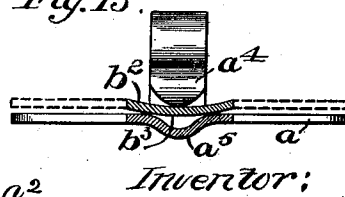
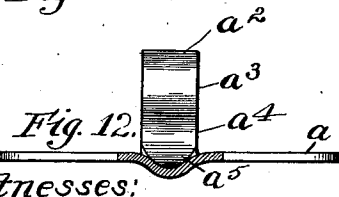
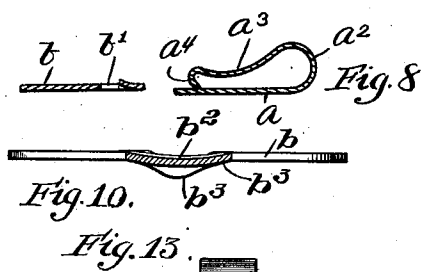
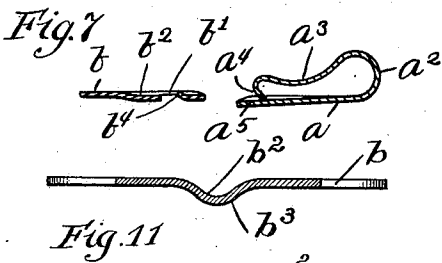
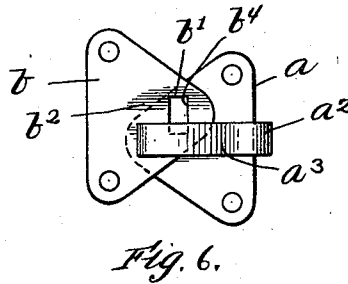
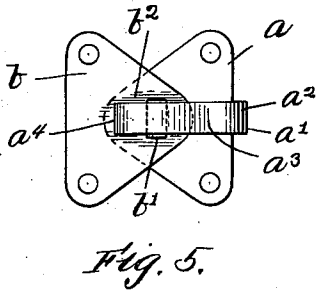
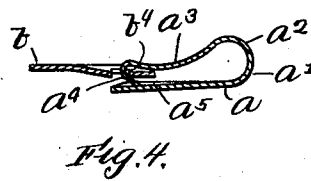
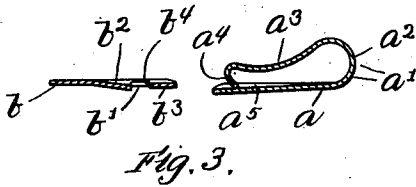
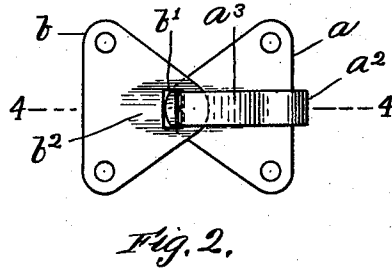
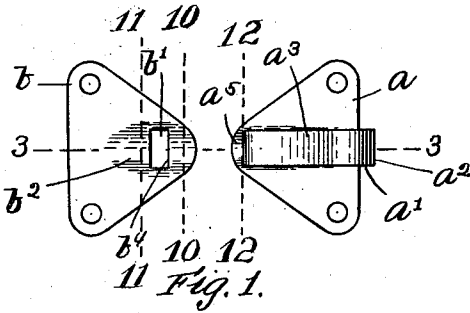
W. S. BARKER.

CLASP.

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1,019,016.

Patented Mar. 5, 1912.



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WALTER S. BARKER, OF CAMBRIDGE, MASSACHUSETTS.

CLASP.

1,019,016.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed April 29, 1909. Serial No. 493,003.

To all whom it may concern:

Be it known that I, WALTER S. BARKER, of Cambridge, county of Middlesex, State of Massachusetts, have invented an Improvement in Clasps, of which the following is a specification.

This invention relates to clasps, the members of which are adapted to engage each other by a sliding movement of one upon the other in a direction toward each other, and to disengage each other by a further sliding movement toward each other and by a final transverse movement.

The clasp embodying this invention comprises a hook-member and an apertured member, both made of sheet metal. The apertured member has the front wall of its aperture arranged in a plane above the back wall thereof, whereby when the parts are in engagement the hook projects into the aperture a distance greater than the thickness of the plate, and, by engaging the front wall thereof, prevents the members from being disengaged by a movement in a direction away from each other, yet said hook may pass easily over the back wall thereof by a movement of the members in a direction toward each other when disengaging them. The members are provided with longitudinal guiding-means constructed and arranged to provide for the elevation of the front wall of the aperture above its back wall, and for providing an easy passage of the hook out of the aperture when disengaging the members.

Figure 1 is a plan view of a clasp embodying this invention, the members being disengaged. Fig. 2 is a similar view, the members being in engagement. Fig. 3 is a longitudinal vertical section of the two members of the clasp taken on the dotted line 3—3 Fig. 1. Fig. 4 is a longitudinal vertical section of the clasp taken on the dotted line 4—4 Fig. 2. Fig. 5 is a plan view of the clasp, the members of which have been moved toward each other in the act of disengaging them. Fig. 6 is a similar view showing the members moved transversely, one with relation to the other, in the act of disengaging them. Figs. 7, 8 and 9 are longitudinal sections of modified forms of clasps embodying my invention. Fig. 10 is an enlarged transverse section of the apertured-plate, taken on the dotted line 10, Fig. 1. Fig. 11 is an enlarged transverse section of the apertured plate taken on the dotted line 11, Fig. 1. Fig. 12 is an enlarged trans-

verse section of the hook-member taken on the dotted line 12, Fig. 1. Fig. 13 is an enlarged transverse section of the plates of both members, when in sliding engagement.

The hook-member of the clasp consists of a plate *a* of sheet metal, having holes through it or other means adapting it to be attached to an object. It has an extension *a'* at the heel, which is bent upward, in a direction away from the plate, as at *a*², and forward over the plate, as at *a*³, and inward toward the plate at the end, as at *a*⁴, thereby to form a hook. The end *a*⁴ of the hook is also preferably bent inward slightly toward the heel. The metal composing the hook is sufficiently springy to give the hook the requisite resiliency. The resilient hook thus formed extends nearly but not quite to the toe, so that the toe projects a short distance beyond the end of the hook to provide for the easy entrance of the apertured plate between the toe and hook. The plate *a* is also formed with a longitudinal groove *a*⁵, extending from its toe toward but preferably not to its heel, and said groove is curved transversely and forms a guide to receive a similarly shaped rib on the apertured-member. The end of the hook is curved to conform to the shape of the groove, and said end is designed to normally engage the plate or at least to terminate very close to the plate, see Fig. 12.

The apertured-member consists of a plate *b*, of sheet metal having holes or other means adapting it to be attached to an object. It has an aperture *b'* of any suitable shape, herein shown as rectangular. It has a longitudinal groove *b*² extending from its toe toward but not to its heel, and said groove is curved transversely. The groove is formed by the pressure of a suitable die and plunger, or by other means, so that the plate is bent by the operation, resulting in the formation of a rib *b*³ on its under side, as well as the groove *b*² in its upper side. The transverse curvature of the portion of the groove *b*² in front of the aperture *b'*, see Fig. 10, is formed on an arc of longer radius than the transverse curvature of the portion of said groove back of said aperture, see Fig. 11, so that the grooved portion of the plate in front of the aperture, which constitutes the toe-portion, occupies a position above the grooved portion back of the aperture, see Fig. 3. And, furthermore, the transverse curvature of the toe-portion of the apertured plate is formed on an arc of longer

radius than the transverse curvature of the groove a^5 of the hook-member, see Fig. 13, and as a result the ribbed portion of the apertured member will not bottom in said
 5 groove a^5 when the two members are in engagement, and consequently when so disposed the toe-portion of the apertured-member is supported above the bottom of said groove a^5 , and also above the end of the
 10 hook, so that the hook cannot become disengaged by a pull on the members in a direction away from each other.

Providing the members with longitudinal guiding means enables them to be easily
 15 brought into engagement, the toe of the apertured-member more easily finding its way beneath the hook of the hook-member. Curving the end of the hook to conform to the groove in the hook-member insures the
 20 hook projecting thereinto so as to project through the aperture in the apertured-plate and thereby prevent disengagement of the members by a movement in a direction away from each other. Furthermore, by provid-
 25 ing the apertured-member with a groove b^2 in its upper side the end of the hook easily follows along therein and assists in guiding the members when moved toward each other for the purpose of engaging them, and also
 30 when moved farther in the same direction for the purpose of disengaging them. By terminating the groove b^2 in the apertured-plate a short distance beyond the aperture, in a gradual manner, as shown, it will be
 35 seen that the end of the hook is easily moved up onto the flat heel portion of the plate, so that it may be subsequently disengaged therefrom by a transverse movement of the members, one with relation to the other,
 40 which is the final act performed when disengaging the members. Forming the transverse curvature of the groove in the apertured-plate in front of the aperture on a longer radius than the transverse curvature
 45 of the groove in the hook-member enables the front wall of the aperture to occupy a position well above the end of the hook, when the members are in engagement, thereby preventing disengagement of the mem-
 50 bers by a movement away from each other, and forming the transverse curvature of the groove in the apertured-plate back of the aperture on a shorter radius than the groove in front of the aperture and on approxi-
 55 mately the same radius as the groove in the hook-member, enables the hook to pass easily out of the aperture onto said grooved portion of the apertured-member by a move-
 60 ment of the members in a direction toward each other when disengaging them.

The toe-portion of the apertured-member extends forward of the aperture a distance greater than the distance between the end of the hook and the end of the toe-portion of
 5 the hook-plate, so that said apertured-mem-

ber cannot be tilted into a position to slide along on the hook and thereby cause the members of the clasp to kink or fold one upon the other.

In lieu of forming the transverse curva- 70
 ture of the longitudinal depression on arcs of different radii they may be formed on arcs of the same radius, as shown in Fig. 7, and the front wall of the aperture bent upward, as at b^4 to lift it above the end of the
 75 hook when the two members of the clasp are in engagement. Furthermore, the longitudinal guiding-means may be omitted, if desired, see Fig. 8, although in such case the movements of the members in the direction 80
 toward each other are not guided.

Referring to Fig. 9, the hook which is formed on the hook-member has at its extremity a stud a^6 in lieu of the downwardly
 85 extended end portion a^4 .

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A clasp composed of a hook-member having a transversely curved groove formed 90
 therein extending longitudinally in front of and also back of the end of the hook, and an apertured-plate having its toe-portion in front of its aperture formed with a longitudinal groove, curved transversely on an arc 95
 of longer radius than the transverse curvature of the groove in the hook-member, whereby said toe-portion of the apertured-plate is prevented from bottoming in the groove in the hook-member when the mem- 100
 bers are in engagement, substantially as described.

2. A clasp composed of a hook-member having a transversely curved groove formed 105
 therein extending longitudinally in front of and also back of the end of the hook, and an apertured-plate having its toe-portion in front of its aperture formed with a longitudinal groove, curved transversely on an arc 110
 of longer radius than the transverse curvature of the groove in the hook-member and having its heel-portion immediately back of its aperture curved on an arc of shorter radius than the transverse curvature of the 115
 groove in its toe-portion, whereby the toe-portion of the apertured-plate is supported above the bottom of the groove in the hook-member when the members are in engagement, and the hook is permitted to easily 120
 pass out of the aperture when the members are moved toward each other to disengage them, substantially as described.

3. The clasp herein described composed of a hook-member comprising a sheet metal 125
 attaching-plate having a resilient hook, the end portion of which is bent inward and terminates at the plate and with said plate forms a converging space, the end of the hook being at the apex thereof, and an apertured-member comprising a sheet metal at- 130

taching-plate having an aperture to receive the end of said hook, the portions of said apertured-plate in front and also in rear of the aperture adapted to enter said
5 converging space and engage the end of the hook at the apex of said space, thereby to lift and pass beneath the hook by movements of the members toward each other, the portion of said apertured-plate in rear
10 of the aperture corresponding in shape to that portion of the attaching-plate of the hook-member in front of the hook and the

portion of said apertured-plate in front of the aperture being elevated with respect to the portion in rear thereof, substantially as 15 described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER S. BARKER.

Witnesses:

B. J. NOYES,
H. B. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
