F. W. HARKINS.

FABRIC CLASP.

APPLICATION FILED JUNE 21, 1902.

965,143.

Patented July 19, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

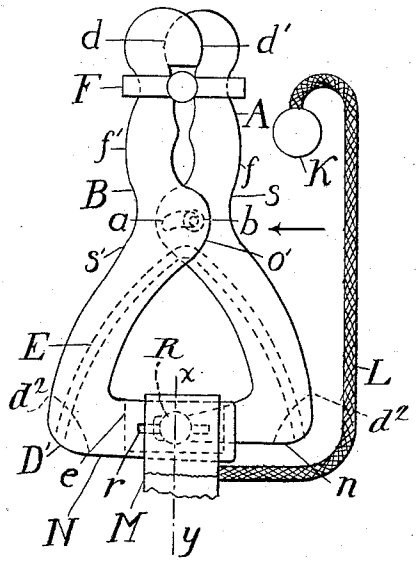


Fig. 3.

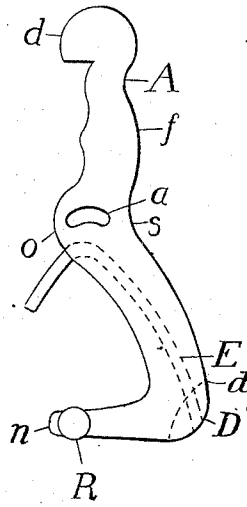


Fig. 4.

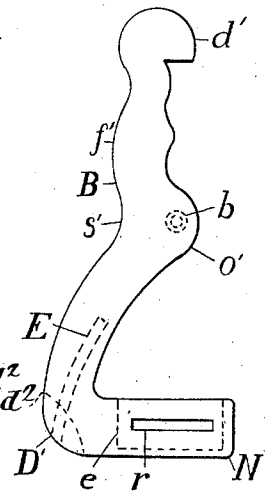


Fig. 2.

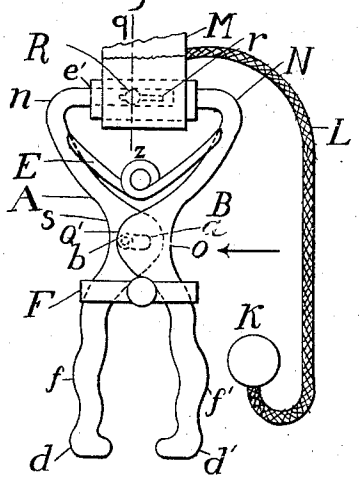


Fig. 5.

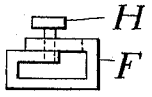


Fig. 6.

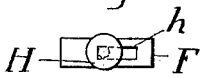


Fig. 7.

Fig. 8.

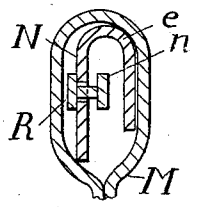
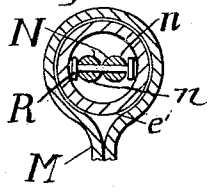


Fig. 9.



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2 SHEETS—SHEET 2.

Fig. 10.

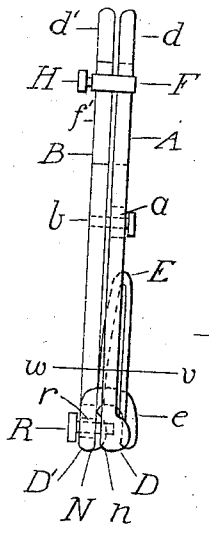


Fig. 12.

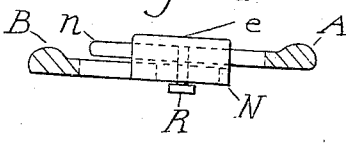


Fig. 14.

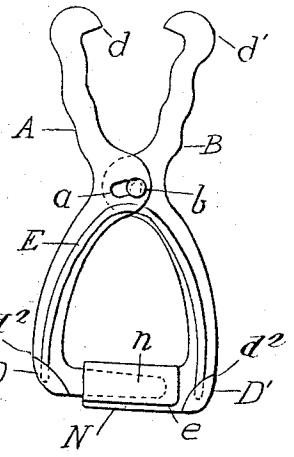


Fig. 16.

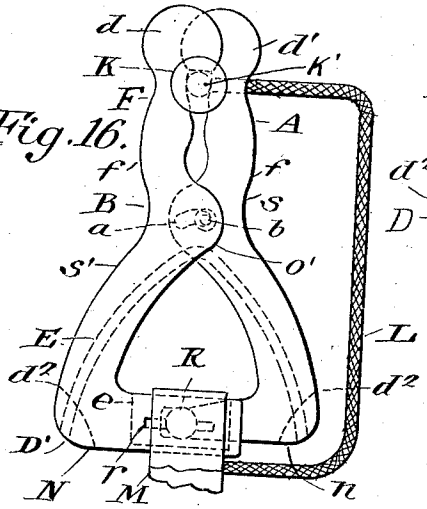


Fig. 11.

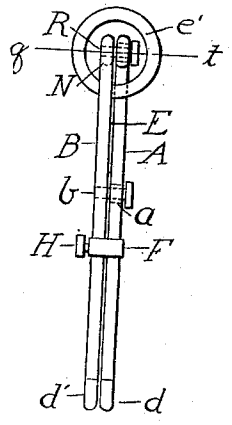


Fig. 13.

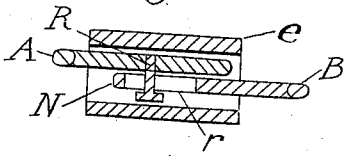
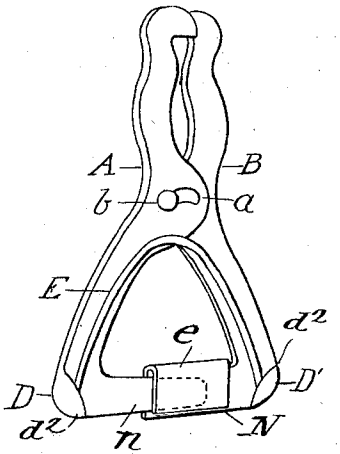


Fig. 15.



Witnesses.

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UNITED STATES PATENT OFFICE.

FRANCIS W. HARKINS, OF CHICAGO, ILLINOIS, ASSIGNOR TO LAURA R. FRASER, OF CHICAGO, ILLINOIS.

FABRIC-CLASP.

965,143. Specification of Letters Patent. **Patented July 19, 1910.**

Application filed June 21, 1902. Serial No. 112,690.

To all whom it may concern:

Be it known that I, FRANCIS W. HARKINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new Fabric-Clasp, of which the following is a specification.

My invention relates to improvements in fastening devices by which articles are fastened together, such as a sleeve, hose or other supporter more particularly, and the object of my invention is to provide means of quickly and securely accomplishing this result. I attain this result by the invention illustrated in the accompanying drawing in which—

Figure 1 shows the device, made of sheet metal for heavy fabrics, as closed, the ball for greater clearness being shown as unused. Fig. 2 represents the device as open and as made of wire flattened out sufficiently in parts for use with light fabrics. In Figs. 1, 2, the device is shown attached to ends of the connecting band or webbing. Fig. 3 is a view of one of the arms in Fig. 1 showing a portion of the attached spring. Fig. 4 is a view of the other arm in Fig. 1 showing the rest of the spring. Fig. 5 is a plan of the guard for the closed device. Fig. 6 is a front view of the guard. Fig. 7 is an elevation of the stud used to pin or pivot the arms together. Fig. 8 is a section of a portion of Fig. 1 made on the plane *x y*. Fig. 9 is a section of a portion of Fig. 2 made on the plane *q z*. On the second sheet of drawings, Fig. 10 is an edge view of the device shown in Fig. 1, in the direction of the arrow, omitting ball and webbing. Fig. 11 is an edge view of the device shown in Fig. 2, in the direction of the arrow omitting ball, webbing and spring. Fig. 12 is a transverse section on line *w v* of Fig. 10, while Fig. 13 is a transverse section on line *q t* of Fig. 11. Fig. 14 is a modified rear view of the clasp as seen in Fig. 1, omitting the webbing and the stud R connecting the large hooks. Fig. 15 is a modified perspective view of the clasp as shown in Fig. 14, omitting the webbing and the stud R connecting the large hooks and shown closed. Fig. 16 is the device shown in Fig. 1 except that the ball K is shown in position in use to hold the material K′.

Similar letters refer to similar parts throughout the several views.

The two arms A and B of the device (Figs. 3, 4) have their ends *d*, *n*, *d′* N shaped into hooks, both hooks of each arm turned in the same direction, so that when assembled and associated together in the device, (Figs. 1, 2) these hooks face each other in pairs, hook *d* facing hook *d′* and hook *n* facing hook N. Interference of these hooks is prevented by one arm being placed upon the other. Hook *n* may be provided with a stud R that works in a slot *r* of hook N and serves to hold hooks *n* and N in place. Stud R also acts as a pivot around which the arms rock when hooks *d*, *d′* are opened or parted widely. Arms A and B are bowed at bows S S′ to secure their proper working. When constructed of sheet material, especially, they are also provided with enlarged bellies O, O′ to allow the greater elongation of the slot *a* of arm A, necessary when heavy materials are to be connected. Arm A is provided with the slot *a* for the reception of stud *b* of arm B; it also has the stud R which works in the slot *r* of arm B. But this slot *r* of arm B and stud R of arm A may be dispensed with in case an ear *e* is turned over on hook N of arm B to form a housing for hook *n* of arm A, as shown in Figs. 14, 15, or both may be used as shown in Fig. 1. Or, instead of the housing or ear *e* of Fig. 1, a sleeve *e′* Fig. 2 may be used to the same purpose, namely, to keep the hooks *n*, N together and to prevent interference of the webbing M with their action. Sleeve *e′* and stud R, working in slot *r* may both be used together as shown in Fig. 2.

In the device the two arms A and B are associated together by means of the stud *b* of arm B made to work loosely in the slot *a* of arm A, stud *b* being provided with an enlarged head to prevent the disassociation of the arms. The slot *a* is slightly curved to lessen friction and allow the free movement of the movable pivot *b* which, on the hooks *d*, *d′* opening to their widest extent, must move over the arc of a circle. In Fig. 1 this slot *a* is shown somewhat elongated to secure more movement of the stud or moving pivot *b*, this movement being especially required by the greater opening necessary to admit the thicker material to be connected, a construction allowed by the clasp being made of sheet material instead of wire as in Fig. 2. The arms A and B Figs. 1, 14 are also connected together by the spring E,

which also acts to hold the two hooks *d*, *d'* together or closed by keeping the two hooks *n*, N extended or apart. Spring E may be made of any suitable construction but is preferably made of wire, as shown in Fig. 2, with one or more coils. Its ends may be fastened in any suitable way as by turning over them the corners of the arms D, D' as shown in Figs. 1, 3, 4, indicated by dotted lines d^2. One end of spring E being connected to corner D' of hook N, the other end being connected to corner D of hook *n*, both hooks N, *n* are held apart, unless forced together by external means.

In Figs. 5, 6 F is a small open band made preferably of spring brass having near the lower of the overlapping ends the stud H (having head *b* to keep the ends of band F associated and shaft *p*) which moves in the slot *h* of the other end. Slot *h* allows one end of band F to slip over its other end, thus securing suitable enlargement of the grasp of spring (or band F) by the adjustment of its ends according to the thickness or size of the material embraced by arms A and B. Band F embraces the arms A and B when hooks *d*, *d'* are closed together; it is slipped to its position above the corrugations *f f'* which serve to retain it in place, where it acts as a guard to hold the hooks *d*, *d'* firmly together beyond the possibility of opening accidentally: when the hooks *d*, *d'* are to be separated, guard F is slipped down toward the middle of the clasp out of the way as indicated in Fig. 2.

In Figs. 1, 2, K is a small ball made preferably of some elastic material which may be attached to some part of web M (Figs. 1, 2) by a small cord L of proper length. The band M passing around the ear *e* of arm B (Fig. 1) or the sleeve *e'* of arms A B (Fig. 2) may be used to unite an object to the clasp to which it is attached.

In Fig. 1 the device is shown as made of sheet metal and connected to one end of the band or webbing M while in Fig 2 it is shown as made of wire and connected at the other end of the said band. Either form may, of course, be attached to each end of the band M, and either form may be attached to one end of the band M, while the other end of band M may be attached to some object.

In operating my device, the ball K (where it is used) is first inserted in a fold of the material to which the device is to be attached, then the hooks *n* and N being forced together by the fingers against the spring E and hooks *d d'* opened or separated sufficiently to admit the ball K previously enfolded by the material, on removing the fingers, the hooks *d*, *d'* are snapped together around the material beneath the ball. The clasp (Figs. 1, 2) thus may serve to connect a material to the webbing M. By having this clasp on each end of any connecting material M, (Figs. 1, 2) two objects or materials may be similarly connected.

In opening the hooks *d*, *d'* (Fig. 14) quickly to the widest extent allowed by the slot *a*, where stud R is not used, a pivot is secured by the arm *n* striking against the inside of the ear or housing *e* of the hook N (Figs. 1, 2), hooks N and *n* being so formed and arranged as to secure this result: but, if preferred, the two arms N, *n* may be pinned together by the stud R working in the slot *r*; in this case, the use of the sleeve *e'* is advisable to prevent the interference of the stud R and the webbing. The ball K is serviceable only with flexible materials. Where its use is inadvisable, I elect to dispense with it.

The release of the material by my device naturally suggests itself. I first slip down the guard F to the waist or middle of the device, if the guard is used. By pressing the clasp open as before described, between thumb and finger, I disengage the hooks *d*, *d'* (Fig. 1) and release the material, and the ball K, where K is used.

As the details of construction may be varied considerably without altering my invention substantially, I do not limit myself to the exact form, arrangement and combination shown, but

What I claim as new and desire to secure by Letters Patent is:—

1. A device consisting of two arms pivoted together intermediate of their extremities by a pivot which is at right angles to the planes of said arms, the arms placed one upon the other so as to lie in different planes that are parallel to each other and having their ends shaped into hooks which lie each in the plane of its arms, the arms being so made and adjusted as to slide one upon the other at both ends, the arms bearing a spring which unites and actuates them so placed and adjusted as to keep one pair of hooks closed by holding the other pair of hooks apart, the closed hooks forming at one end a double hook or clasp to hold firmly the material embraced by it, by the overlapping of the end of one arm over the adjacent end of the other arm, substantially as described, for the purpose set forth.

2. A clasp to connect a flexible material to the object to which the clasp is attached, having two movable arms, whose ends are made into hooks, the arms connected by a pivot intermediate of their extremities and by a spring that serves to keep one pair of hooks closed by keeping the other pair of hooks apart the arms lying one above the other in different parallel planes and so made and adjusted as in action to slide one upon the other, in combination with a ball-like substance attached to the said object, which ball-like substance on being enfolded

in said flexible material makes an enlargement of the same or head, and on being embraced immediately below the head, by one pair of hooks of the clasp, prevents the slipping of the material and its disengagement from the clasp, substantially as described, for the purpose specified.

3. A device for the connection of articles having arms A and B placed one above the other pivoted by a movable pin *b*, which is at right angles to the arms A and B and connected together by spring E, arm A being made with a transverse curved slot *a* to allow a free movement of the pivot *b* when moving over the arc of a circle on the action of the arms, arm A being made with hooks *d* and *n*, both turned in the same direction, arm B being made with hooks *d'*, N both turned in the same direction, all parts being formed and associated so that on hooks N and *n* being forced toward each other, the hooks *d'*, *d* usually held together by the force of the spring E are separated for the reception of a part of the articles to be connected, substantially as described, for the purpose specified.

4. Arm A, its ends *d* and *n* made into hooks lying in the plane of arm A and turned in the same direction, arm A provided with transverse curved slot *a* and pin R, and arm B having ends *d'* and N made into hooks lying in the plane of arm B and turned in the same direction, provided with a pin *b* suited to work in the slot *a* of arm A, and a slot *r* for the reception of pin R of arm A, arm B being provided with an ear *e* for a housing or sleeve for the hook *n* on arm A in combination with spring E fastened at one end to arm A and at the other end to arm B, all parts named being made and arranged so that hooks *d*, *d'* are held closed by the force of spring E, but on forcing the hooks *n*, N by each other sufficiently, the arms A, B, are separated and moved over the arc of a circle, thus allowing the opening of the hooks *d*, *d'* to the widest extent permitted by the slot *a* of arm A for the reception of the material to be connected, substantially as shown and described, for the purpose set forth.

5. A device consisting of the arms A, B placed one upon the other and held together by the pivot *b*, which is perpendicular to them, and joined together by the spring E which has one end fastened to arm A and the other end fastened to arm B, arm A having one end shaped into the hook *d*, and other end shaped into the hook *n* both ends turned in the same direction and provided with pin R, arm B having one end shaped into the hooks *d'*, the other end shaped into the hook N, both ends turned in the same direction and provided with a slot *r* for the pin R of arm A to keep the two ends *n*, N from disassociating, all parts named so made and arranged that the hooks *d*, *d'* are held closed one upon the other, but on the hooks *n*, N being forced together, the hooks *d*, *d'* are made to separate for the reception of the material to be connected, substantially as shown and described, for the purpose set forth.

6. The arm A, one end shaped into the hook *d*, the other end shaped into the hook *n*, both hooks being turned in the same direction, having the transverse slot *a* curved in the arc of a circle, arm B superimposed on arm A, and having the pivot *b* adapted to work in the slot *a* of arm A and one end shaped into hook *d'*, the other end shaped into the hook N which has an ear *e* turned over for a housing of hook *n*, in combination with spring E that has one end fastened to arm A and the other end fastened to arm B, all parts being made and arranged so that the hooks *d*, *d'* are held closed by the force of the spring E but on the hooks N, *n* being forced together sufficiently the arms A, B are separated and the hooks *d*, *d'* opened to the extent allowed by slot *a* for the reception of the material to be connected, substantially as shown and described, for the purpose set forth.

7. A hooking device for the attachment of a flexible material consisting of two arms, one superimposed on the other, so as to move in different planes, having their upper and lower surfaces parallel so as to allow the end of one arm to slip by that of the other arm, each arm having its ends turned into hooks in the same direction, the two arms pivoted together by a pivot on one arm perpendicular to that arm and made to move in a transverse arched slot of the other arm and actuated by a spring connecting the two arms, in combination with a ball enveloped in the material to be connected, substantially as shown and described, for the purpose specified.

8. A hooking device for the attachment of a flexible material consisting of two arms, one superimposed on the other so as to lie in different planes having their upper and lower surfaces parallel so as to allow the end of one arm to slip by that of the other arm, each arm having its ends turned into hooks in the same direction, the two arms pivoted together by a pivot on one arm perpendicular to that arm, their lower hooks kept from separating sidewise by a pin of one arm, said pin working in a slot of the other arm, the two arms being united by a spring that serves to keep the hooks at one end of the arms together and the hooks at the other end apart, in combination with a ball suited to enfold in the material to be attached, substantially as described for the purpose set forth.

9. A hooking device consisting of two arms, one superimposed on the other so as to lie in different planes, each arm having

its ends turned into hooks in the same direction, the two arms pivoted together by a pivot of one arm, perpendicular to that arm and made to move in a transverse slot of the other arm, their lower hooks kept from separating sidewise by a housing for one hook made by turning over an ear on the adjacent hook, the two arms actuated by a spring which connects them, in combination with a ball by which when enfolded in the material to be connected the slipping of the material embraced by the hooks is prevented, substantially as described for the purpose specified.

FRANCIS W. HARKINS.

Witnesses:
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GEORGE DONEGONS.