No. 849,249. PATENTED APR. 2, 1907.

P. C. LAWLESS.

CLASP.

APPLICATION FILED OCT. 21, 1904.

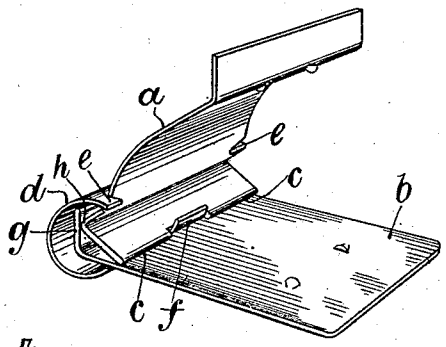


Fig. 1.

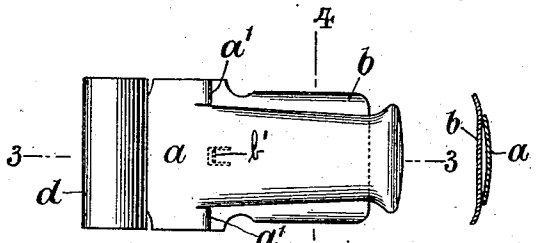


Fig. 2.

Fig. 4.

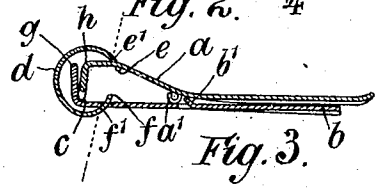


Fig. 3.

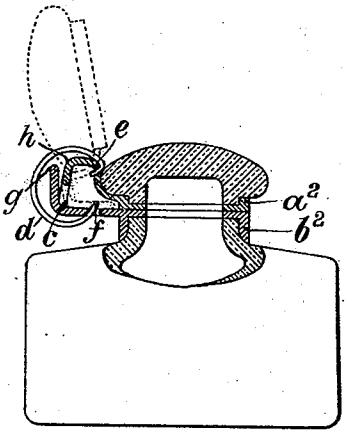


Fig. 5.

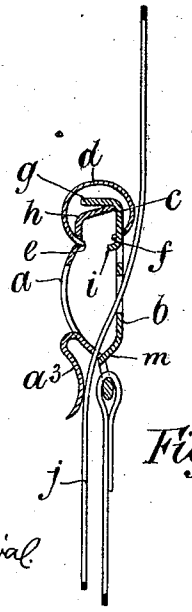


Fig. 6.

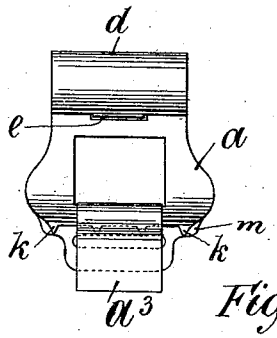


Fig. 7.

Witnesses
H. M. Kuehne
John A. Percival.

Inventor
Philip C. Lawless
By Richards & Co.
Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PHILIP CHARLES LAWLESS, OF HAMPSTEAD, LONDON, ENGLAND.

CLASP.

No. 849,249. Specification of Letters Patent. Patented April 2, 1907.

Application filed October 21, 1904. Serial No. 229,461.

To all whom it may concern:

Be it known that I, PHILIP CHARLES LAWLESS, a subject of Great Britain, residing at No. 50 Parliament Hill, Hampstead, London, England, have invented new and useful Improvements in Clasps, of which the following is a specification.

This invention relates to a securing-clip; and it consists of the features and arrangement and combination of parts hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings, which show four examples of the use of the device, Figure 1 is a view in isometric projection, showing in the open position a form of construction suitable for clipping together a number of sheets of paper. Figs. 2, 3, and 4 show a modified form adapted for the purpose of a tie-clip. Of these Fig. 2 is a plan, Fig. 3 is a section taken along the line 3 3 of Fig. 2, and Fig. 4 is a section along the line 4 4 of Fig. 2. Fig. 5 is a part sectional elevation showing the device applied to the lid of an ink-bottle, and Figs. 6 and 7 are two views of a form of construction suitable for a buckle for a belt or band.

In these views it will be seen that a piece *a* is adapted to be angularly displaced relatively to a piece *b* by turning about a fulcrum which consists of the edge *c* of the bent end of *a* and a portion of the surface of *b*. The two pieces *a* and *b* are forced toward one another by means of a spring *d* of C-shaped section, the edges of which are prevented from displacement relatively to the surfaces of *a* and *b* on which they press by the formation of fangs *e* and *f* on the edges of the spring and the provision of slits or notches on the pieces *a* and *b*, into which the fangs *e* and *f* are inserted. By means of the fangs and notches the displacement of the edges of the spring relatively to the pieces *a* and *b* will be prevented both in the direction of the length of the edges and also in a direction at right angles thereto. The piece *b* has a bent end *g*, so situated that its surface forms an abutment for the corner *h* at the bend of the piece *a*, which on the angular divergence of *a* from *b* thrusts the fulcrum edge *c* of *a* toward the fang *f* of the spring. The spring *d* exerts a pair of equal and opposite pressures on the pieces *a* and *b* in the direction of a line shown in Fig. 3, joining the points *e' f'*, which points are at the edges of the spring *d*. In the closed position of the pieces the fulcrum is in its most remote position from this line *e' f'*, so that the spring then acts with the maximum leverage, tending to maintain the pieces in their closed position.

When the pieces *a* and *b* are forced into a divergent position, the consequent approach of the fulcrum toward the line of pressure *e' f'* will cause a rapid diminution of the leverage of the spring-pressure. With this diminution of leverage there will be only a very small enlargement of the distance between the edges *e' f'* and increase in the closing force of the spring, so that the moment of the closing force will become quickly less as the pieces are caused to become angularly diverged. This feature of the contrivance is of considerable value for the purposes above enumerated.

When the pieces have been angularly diverged to such a position that the fulcrum edge *c* of *a* coincides with the line *e' f'*, then the leverage will have been reduced to zero, and if this divergence is slightly exceeded and the edge *c* is permitted to pass to the other side of the line *e' f'* then the force of the spring will operate to tend to increase the divergence, which, if not limited, will cause a dislocation of the parts. To prevent this, a limit is imposed to the movement of the fulcrum edge *c*. This may be effected by raising a spur *i* by bending out of its plane a portion of the material of *b*, as shown in Fig. 6; but a still more simple method of arresting the angular divergence is by prolonging the fang *f* of the spring sufficiently for it to protrude above the internal surface of *b*, as shown in Figs. 1, 3, and 5. In this case in order that the fulcrum edge may pass a slight distance beyond the line of the closing force *e' f'* of the spring the edge *c* is notched to a small extent, as shown in Figs. 1, 3, and 5. This second feature of the contrivance, whereby the spring maintains the divergent position, will enable the invention to satisfy the requirements of the purposes before mentioned in a completely satisfactory way.

In order that the fulcrum edge *c* may be forced away from the line *e' f'* when the parts *a* and *b* resume the closed position after being opened, the slit in *a*, into which the fang *e* is inserted, is made a little farther from the line *e' f'* than the corresponding slit in *b*, whereby the closing force of the spring, acting in the direction of the line *e' f'*, will tend to cause the edge *c* to slide into the corner made by the bent-up portion *g*.

Four examples of the use of the device are illustrated by way of example; but numerous other applications may be cited.

As before stated, Figs. 2–4 show the device in the form of a clip for securing a necktie to the shirt-front. In order to intensify the grip, it is localized at a short leverage from the joint by turning downward toward *b* two ears *a'* *a'*, formed on *a*, and bending upward toward *a* a spur *b'*, formed on *b*. To facilitate the separation of *a* from *b* when desired, the end of *a* is prolonged beyond *b* and the sides of *b* extend beyond those of *a*. Both *a* and *b* are slightly curved, as shown by the section in Fig. 4, in order to enhance the stiffness of the parts. As adapted to secure the lid of an ink-bottle, (shown in Fig. 5,) the pieces *a* and *b* are each provided with rings. The ring a^2 embraces the neck of the lid and the ring b^2 the neck of the bottle. In other respects the construction is as before described. When employed for a buckle for a band, as shown in Figs. 6 and 7, the loose end *j* of the band is passed in such a manner between the clipping portions of the pieces *a* and *b*—namely, between the spiked end *k* of *a* and a bent portion *m* of *b*—that the tension of the band will operate to draw the clipping-surfaces together and augment the grip. The portion a^3, stamped out of *a* and bent away from the hinge, is available as a finger-piece to facilitate the unfastening of the buckle.

I claim—

1. A clasp composed of two portions *a* and *b* pivoted one on the other about a displaceable fulcrum, said portions having slits therein, a hollow spring *d* having fangs on its operating edges which engage in the slits, the portions *a* and *b* having bent ends inclosed within the hollow of the spring, the fulcrum consisting of an edge of *a*, and a portion of the surface of *b*, a portion of the part *b* acting to thrust the fulcrum edge of part *a* toward the line of pressure of the closing force of the spring, and diminish its leverage of pressure when the portions *a* and *b* are caused to angularly diverge from one another.

2. A clasp composed of two pieces *a* and *b*, which pivot one on the other about a displaceable fulcrum, said pieces having slits therein, a spring *d* on the operating edges of which fangs are formed which engage in said slits, said pieces *a* and *b* having bent ends which are inclosed within the hollow of the spring *d*, the displaceable fulcrum consisting of an edge of the piece *a* and a portion of the surface of the piece *b*, a portion of piece *b* acting to thrust the fulcrum edge of piece *a* toward the line of pressure of the closing force of the spring when the pieces *a* and *b* are caused to angularly diverge from one another and a stop for preventing the continued divergence of pieces *a* and *b* when the displaceable fulcrum reaches the line of pressure.

3. A clasp composed of two pieces *a* and *b*, which pivot one on the other about a displaceable fulcrum, said pieces having slits therein, a spring *d* on the operating edges of which fangs are formed which engage said slits, said pieces *a* and *b* having bent ends which are inclosed within the hollow of the spring *d*, the displaceable fulcrum consisting of an edge of piece *a* and a portion of the surface of piece *b*, a portion of piece *b* acting to thrust the fulcrum edge of piece *a* toward the line of pressure of the closing force of the spring when the pieces *a* and *b* are caused to angularly diverge from one another, the continued divergence of pieces *a* and *b* being prevented by the fang of the spring *d* which is inserted in the slit in piece *b* operating as a stop to limit the displacement of the fulcrum edge of piece *a*.

4. A clasp composed of two pieces *a* and *b* which pivot one on the other about a displaceable fulcrum, said pieces having slits therein, a spring *d* on the operating edges of which fangs are formed which are inserted in said slits, said pieces *a* and *b* having bent ends which are inclosed within the hollow of the spring *d*, the displaceable fulcrum consisting of an edge of *a* and a portion of the surface of *b*, the piece *a* having a notch formed in its fulcrum edge, a portion of piece *b* acting to thrust the fulcrum edge of piece *a* toward the line of pressure of the closing force of the spring to a distance limited by the contact of the inner edge of the notch formed in the fulcrum edge of *a* with one of the fangs formed on the spring *g*.

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

PHILIP CHARLES LAWLESS.

Witnesses:

THOMAS ALFRED HEARSON,

WALTER J. SKERTEN.