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BAG FRAME

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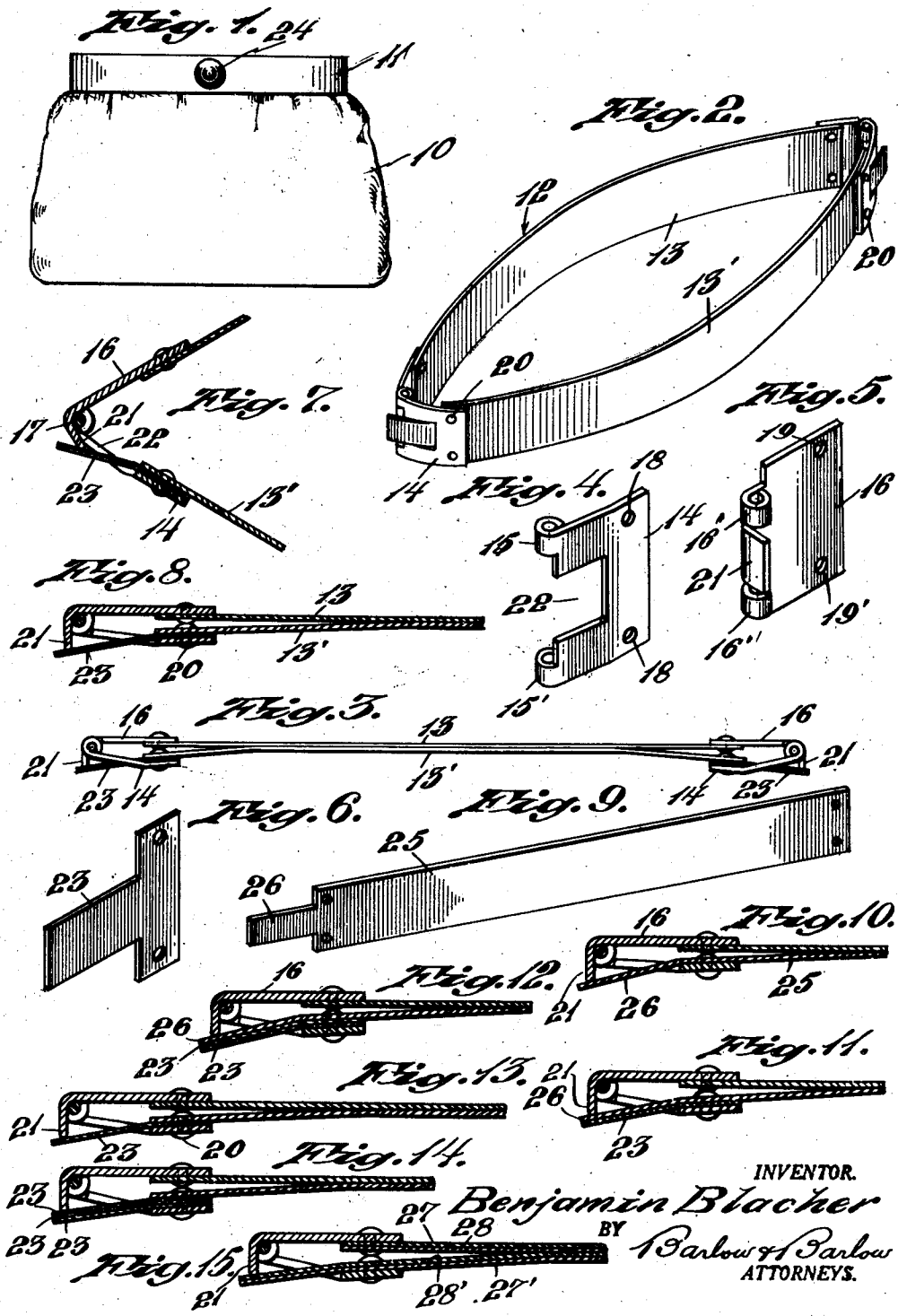

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BAG FRAME

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1 Claim. (Cl. 150—10)

This invention relates to a bag frame and has for one of its objects to provide a device which will snap closed when moved into a position approximating its closed position and, due to some resiliency, will tend at all times when closed to maintain a closure of a bag to which it is attached.

Another object of the invention is to provide a device which from closed position may be merely pulled open without releasing any locks or latches and which may be closed by external oppositely directed pressures toward each other and there be maintained closed without the need of any locks or latches.

Another object of the invention is to utilize a leaf spring for urging the device either to open or closed position, which spring may, if desired, be a part of one of the resilient closure members.

Another object of the invention is to provide two flat ribbon-like resilient members which may be secured together at their ends and which will bow outwardly to form an opening or will lie in substantially face-to-face contact to close the opening with suitable devices connecting them at their ends for assisting in such movement from opened or closed position.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claim.

In the accompanying drawing:

Fig. 1 is an elevation of a bag equipped with my improved frame;

Fig. 2 is a perspective view of the frame in open position;

Fig. 3 is a top plan view of the frame in closed position;

Fig. 4 is a perspective view of one of the hinge parts;

Fig. 5 is a perspective view of a cooperating hinge part;

Fig. 6 is a perspective view of a separate spring;

Fig. 7 is a fragmental sectional view showing the hinge connecting adjacent ends of the ribbon-like members and in open position corresponding to the position shown in Fig. 2;

Fig. 8 is a view similar to Fig. 7 showing the relationship when in closed position such as shown in Fig. 3;

Fig. 9 is a perspective view of a modified form of ribbon member, showing a tongue at the end forming a spring part on the member itself;

Fig. 10 is a fragmentary sectional view similar to Fig. 8 but illustrating the resilient member and spring as shown in Fig. 9 in assembled position with the hinge;

Fig. 11 is a view similar to Fig. 10 but illustrating the hinge as formed with an additional ply;

Fig. 12 is a view similar to Fig. 10 but showing the spring as formed of a plurality of additional plies;

Fig. 13 is a view similar to Fig. 8 but illustrating the spring for the hinge as of a single ply;

Fig. 14 is a view similar to Fig. 8 but illustrating the spring for the hinge as composed of three plies; and

Fig. 15 is a view similar to Fig. 10 but illustrating the flat ribbon members as made up of two plies, each with a spring similarly formed to that shown in Fig. 10.

In the use of bag frames it is desirable to provide a frame device which may be pulled from its opposite sides to open the bag and by applying pressure to the outer surfaces of these sides, the frame members may be pushed together and stay closed without the necessity of using any locks or latches; and in order to perform this in a suitable manner I have so arranged two flat ribbon-like members that they will lie in substantially face-to-face contact which is assisted by the inherent resiliency of the members and have connected these members together at their ends with a hinge device which is so formed that its spring actuated parts are moved toward each other when positioned beyond a certain angle so that they will snap closed, whereas when moved open beyond a certain position the same spring will cause them to snap open and thus I am enabled to provide a frame, the flat ribbon-like members of which will bow outwardly to provide for the opening of the bag but which when pushed together will maintain themselves closed by reason of the inherent resiliency and the hinge connection at their ends, and by being flat and in face-to-face contact will occupy a minimum amount of space; and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished.

With reference to the drawing, 10 designates the pouch material of the bag which is assembled upon a frame by a suitable covering for the frame as at 11. The frame is designated generally 12 and, as illustrated perspectively in Fig. 2, is formed of two flat ribbon-like members 13—13' which are identical and usually of spring steel of a temper which will cause the members to have considerable resiliency and be rather stiff.

The members are connected together at their ends by hinges which consist of a part 14 having eyes 15—15' and a part 16 having eyes 16'—16''.

The eyes 15, 16', 16'' and 15' are positioned in line with each other and a pintle pin 17 is passed through these eyes and suitably enlarged at its ends so as to hingedly relate these two parts together. Openings 18 and 18' are provided on the part 14 and 18—18'' on the part 16 for the reception of rivet pins 20 to attach the hinge parts to the ends of the members 13—13'. Part 16 is provided with a cam or finger 21, while the part 14 is provided with a cut-out or recess 22 through which the cam or finger 21 will swing when the two parts are moved relatively about that pintle.

A pair of leaf springs 23 are mounted between the part 14 and the end of the member 13' to extend through the opening 22 and be in a position to be engaged by the cam or finger 21. This cam or finger 21 is disposed at substantially right angles to the plane or body portion as shown in Fig. 8; the springs 23, which are illustrated as two in number in Figs. 7 and 8, will engage the finger 21 in a position outwardly of the pintle so as to tend to move the hinge parts 14 and 16 about the pintle toward each other as shown in Fig. 8 so as to tend to close the ends of the members 13 and 13'; whereas when the members 13—13' are pulled outwardly so as to bow them into the position shown in Fig. 2, which may be accomplished by a handle 24 on the opposite sides of the bag, then the spring will engage the finger 21 on the opposite side of the pivot pintle 17 and tend to swing the two hinge parts 14 and 16 open or outwardly as shown in Fig. 7.

In Figs. 2, 7 and 8 I have illustrated the members 13—13' as provided with square ends and two leaf springs such as 23 applied in connection with the hinge by being mounted between the hinge part 14 and the ribbon member 13' and there held in position by the rivets 20. In some cases, however, a single spring 23, such as shown in Fig. 13, will be utilized in a similar manner to that shown in Figs. 2, 7 and 8, whereas in some cases three springs 23, as shown in Fig. 14, will be utilized instead of two springs.

The flat ribbon-like members 13—13' are formed of spring steel stock and in some cases it may be desirable to form such members as shown at 25 in Fig. 9 with the spring tongue 26 formed as one piece with the stock thereof and in such an arrangement no separate spring need be provided, this structure being illustrated in section in Fig. 10. In some cases it may be desirable to supplement the pressure of the spring tongue 26 by an additional spring, such as 23, and in Fig. 11 I have illustrated one such additional supplementary leaf spring, whereas in Fig. 12 I have illustrated two such additional supplementary springs, it being understood that any desired number of leaf springs may be built up to obtain the desired control and stiffness of spring action which is desired.

In Fig. 15 I have illustrated the flat ribbon-like members as formed of two parts 27—28 and 27'—28', in which case the ends of both members are provided with spring tongues, such as 26 above illustrated.

In instances where the spring tongues 26 are cut from the ribbon-like member, these members will be reversed and the hinge reversed in the joining of the parts together. Where, however, when separate springs are utilized, as 23, it will be immaterial whether the hinges are symmetrically arranged to each other at the opposite ends of the device.

In each of the showings which I have illustrated, it will be apparent that the ends of the ribbon-like members, as 13, 13' which are connected together, are spaced by reason of the construction of the hinge which connects them or by reason of the means which connects the ends to the parts of the hinge. This serves, as will clearly be apparent from Fig. 3, to bow the ribbon members inwardly when in closed position and assist in holding the members in contact at their center portion.

The foregoing description is directed solely toward the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claim.

I claim:

A bag frame comprising two resilient flat ribbon-like members in face-to-face contact when in closed position, a hinge at each end of the frame, each connecting the adjacent ends of said members together, each hinge being provided with two parts with one part being notched, a pivot connecting said parts and means including a leaf spring which is integral with one of said ribbon members for extending through the notch of the notched part and acting on a portion of the other of said two parts extending therefrom and at an angle thereto to relatively urge the parts toward each other when in closed position and to relatively urge them in the opposite direction when in open position whereby to bow the ribbon members outwardly.

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