

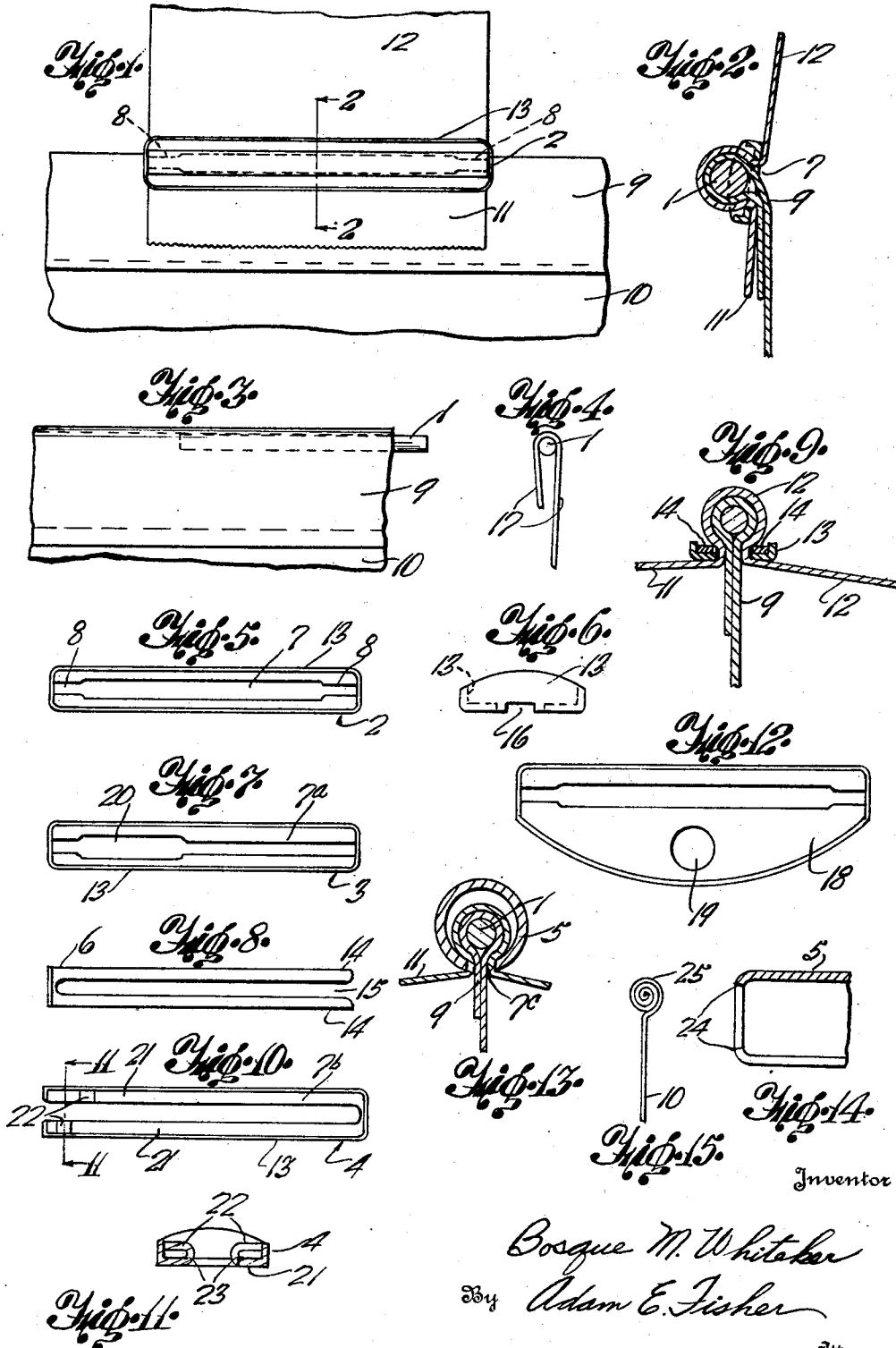
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BUCKLE OR FASTENER

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UNITED STATES PATENT OFFICE

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BUCKLE OR FASTENER

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This invention relates to buckles or fasteners for the purpose of securing any suitably flexible strap, such as a canvas strap or the like, to any similarly flexible object or article, such as a canvas sack or the like.

The principal objects of the invention are to simplify and render more efficient the art involved, to provide a fastener with features of adjustment not possessed by any known form of buckle or fastener, to provide a fastener which will not tear the fabric engaged, to provide a buckle or fastener consisting of only two main elements, one a free lock pin for removably enfolding in the doubled fabric of the sack or the like at any desired point thereupon, as in the hem of the margin of the mouth of the sack, and the other a slotted frame or anchor element which may be constructed in several forms, each adapted to slidably engage the said lock pin and the enfolding fabric of the sack as well as the additional and superimposed fold or loop of the strap laid over the said lock pin and sack fabric, in such manner as to unyieldingly tie or lock the strap to the sack. In addition to the lock pin and anchor plate as constituting the two main elements of the invention, there is also provided an auxiliary slotted key for use in conjunction with the lock pin and anchor plate for providing a particularly strong or secured connection between the strap and the sack, or whatever the connected flexible articles may comprise.

In the following specification, the invention will be described as for connecting a flexible canvas strap to a canvas sack, but it will be understood, of course, that the invention may be applied and used for any similar purpose, or where it is required to join together any two suitably flexible articles.

In the drawing:

Figure 1 is an elevation showing a canvas strap connected to the margin of the mouth of a canvas sack, through the application of my invention;

Figure 2 is a cross section on the line 2—2 of Figure 1;

Figure 3 is a detail showing the method

of inserting the lock pin within the hem of a sack;

Figure 4 is a detail showing the lock pin merely enfolded in a fold of material, as at the margin of the mouth of a sack;

Figure 5 is a plan view of a form of the frame or anchor element;

Figure 6 is an end view of a form of the frame or anchor element;

Figure 7 is a plan view of a modified form of the frame or anchor element;

Figure 8 is a plan view of the key;

Figure 9 is a transverse section of an assembly of the strap and sack as connected together by the application of my invention, including lock pin, anchor element and key;

Figure 10 is a plan view of another modification of the frame or anchor element together with a special form of key inserted therein;

Figure 11 is a section on the line 11—11 of Figure 10;

Figure 12 is another modification of the frame or anchor element, as specially adapted for connecting a rope or cable to any flexible article;

Figure 13 is a cross section, showing still another or tubular form of frame or anchor element as assembled for connecting a strap and sack;

Figure 14 is an end view of the tubular form of frame shown in Figure 13, showing the manner of upsetting the ends inwardly, for strengthening same;

Figure 15 is an end view of a rolled seam or hem as formed upon the margin of the sack fabric or other material, as a substitute for the lock pin shown in Figure 4 and other views.

In carrying out my invention, I provide a lock pin 1 as shown in Figure 3, several forms of anchor element or frame, as shown at 2, 3, 4 and 5 in Figures 5, 7, 10 and 13 respectively, and a key 6, as shown in Figure 8. These elements may be constructed of any suitably rigid material, such as metal. The pin 1 may be constructed of heavy wire, or wood or heavy cord, or any other suitable material and the anchor element and key of sheet metal, or fibre or bakelite or other suit-

able material. The anchor element or frame 2, in Figure 5, is formed with a longitudinally extended main slot 7 of a length slightly shorter and width somewhat greater than the length and diameter of the pin 1, so as to permit the latter to easily pass through the former, and the slot 7 is extended and narrowed at its ends as shown at 8, to provide a sort of bearing for the ends of the pin 1 after same is passed through the slot 7. In the application of the elements of the invention as so far described, two of the lock pins 1 are loosely inserted within the hem 9 of the mouth of the sack 10, which may be done in the making of the sack or otherwise. These pins are then adjusted to opposite sides of the mouth of the sack which may be readily done.

A pin 1 is then passed through the slot 7 of an anchor element or frame 2, the said slot being just wide enough to snugly pass the pin carrying its fold or hem 9 of material as stated. By then pressing the frame 2 down somewhat below the pin 1 so as to space the two sufficiently apart, an end 11 of the strap 12 may be readily worked up through the slot 7 and narrowed ends 8 from the outer side of the sack 10, up over the pin 1 and then down again through the slot 7 and narrowed ends 8 at the inner side of the sack. A pull upon the strap 12 will now draw the assembly taut, with the pin 1 bearing upon the frame 2 and the folds of material pinched between the two, this pinching effect being especially effected at the narrowed slot ends 8, so as to firmly secure the strap to the sack. This operation may be repeated at the opposite side of the sack for locking the other end of the strap to the similar pin 1 at that side, whereby a perfect loop (not shown) is provided for supporting the sack from the shoulder, or for such other purpose as may be desired. The width of the strap 12 should correspond to the length of the slot 7 and extensions 8. For the sake of strengthening the frame 2, the margins thereof may be flanged up as shown at 13. The fastening elements as just described and assembled will suffice for all ordinary connections, but if an especially strong connection is desired, for unusually heavy service, I provide in addition, an auxiliary or reinforcing key 6, which is in the form of a fork embodying the prongs 14 spaced apart to provide an open slot 15 corresponding in width to that of the end slots 8 of the frame 2, and the width and length of the prongs 14 corresponding to the space within the flanged sides of the frame 2 so that the key may seat therein with the slots 7, 8 and 15 in registry. The key 6 is mounted in place by passing the prongs 14 over the aggregated folds of the hem 9 and strap 12 surrounding the pin 1, the said prongs passing between the pin 1

and frame 2 and nesting in place within the flanges 13 of the frame, all as clearly shown in Figure 9. This key thus mounted serves as a reinforcement against lateral strains. In order to facilitate mounting the frame or anchor element 2 upon the hem of the sack, over the pin 1, the end flanges 13 thereof may be undercut as shown at 16, in alignment with the slot 7 and extensions 8, for the accommodation of the top of the hem 9 which thus is enabled to pass straightly and smoothly out past the ends of the pin 1, without crumpling. The form of fastener as described provides a very simple, efficient and practical means for securing the strap to the sack, and eliminates any danger of tearing the fabric of the sack, as the grip afforded is in the nature of a purely friction grip and teeth are eliminated. As suggested above, the lock pins 1 may be slid through the hem to any desired point around the mouth of the sack.

Instead of the hem 9, the fabric 17 may be simply folded over the lock pin 1, as shown in Figure 4. When the strap and frame are then assembled thereover as already described, the joint will be firmly locked together. Where it is desirable to connect a rope or cable to any form of fabric, as to an awning (not shown), a special form of frame or anchor element 18 may be employed, as shown in Figure 12, the said frame having an aperture 19 cut through it for the reception of a rope (not shown).

Another modified form of frame or anchor element is shown at 3 in Figure 7, wherein the main slot 7a is enlarged at one end as shown at 20, to facilitate the passing of this form of frame over the pin 1. In such case the main slot 7a may be narrowed less than the diameter of the pin 1, inasmuch as the pin is passed entirely through the opening 20.

Another modified form of frame is shown at 4 in Figure 10, wherein the frame is formed like a fork, similarly to the key 6, there being thus provided an open slot 7b and the prongs 21 which are adapted to approximately register with the prongs 14 of the key 6. In this case the ends of the prongs 21 carry out turned ears 22 spaced from the prongs, thereby forming slideways 23 adapted to slidably engage the prongs 14. In the use of this form of frame, the frame itself may be slid into place beneath the pin 1 in the hem 9 and over the superimposed loop of the strap 12, the fabric passing into the open slot 7b, and the key 6 may be then slid into position upon the frame, entering at the extremities of the prongs 21 and through the slideways 23, thus locking all together.

Still another form of frame is shown at 5 in Figure 13, the same consisting of an open tube, longitudinally slotted as shown

at 7c, whereby the frame may be readily slid into place over the lock pin and fabric folds in the manner and for the purpose as previously described. In this form the ends of the tube would be turned inwardly as shown at 24, for the sake of strengthening the structure.

As stated, the several fastening elements may be made of any suitable material, and the dimensions, gage and strength of material may be selected as desired. In actual practice, lock pins 1 of Number 9 wire, United States standard gage, cut in lengths of two and three-fourths inches, have been very satisfactory, the slots and other features of the anchor elements or frames being formed to correspond, of course. Or in lieu of lock pins, sacks having enlarged marginal edges or seams may be employed, the same being in cross section substantially equal to that of the lock pins and serving the same purpose. These marginal enlargements may be produced in any desired manner, as by rolling the marginal fabric back upon itself and sewing it down to form a hem 25 as shown in Figure 15, and as more particularly pointed out in a separate application to be shortly filed.

From the foregoing description, it is thought the method of construction and manner of use of the invention will be fully understood, and while I have herein pointed out certain specific forms and features of certain embodiments of my invention, it is understood that I may vary the same or adopt new forms, within the scope of the appended claims.

I claim:

1. In combination with a plurality of layers of flexible material, a fastener for securing the same together in overlapped relation, the said fastener comprising a lock pin for enfolding in a number of the layers of material less than the whole, and a frame having a slot through which the said pin and enfolding material may be snugly passed, but which will not permit the repassage of the pin enfolded in all of the said layers of material.

2. In combination with a plurality of layers of flexible material, a fastener for securing the same together, the same comprising a lock pin, and a frame having a slot of a width sufficient snugly to pass the pin enfolded in a portion of the said layers of material, but insufficient to repass the pin as enfolded in all of the said layers of material.

3. In combination with a number of layers of flexible material, a fastener for securing the same together, the same comprising a lock pin, and a frame having a slot of a width sufficient simultaneously and snugly to pass the pin and a portion of said layers of material, but insufficient to repass the pin and all of said layers simultaneously.

4. In combination with a number of layers of flexible material, a fastener for securing the same together, the same comprising an apertured frame, and a lock pin, the frame aperture being such that the said pin and a portion of said layers of material may be concurrently passed through the aperture in one direction, but when all the layers of material are added to the pin, the whole assembly will be locked against retraction through the frame aperture in the opposite direction.

5. In a device of the kind described, the combination with a number of layers of flexible material, of two complementary fork-like elements adapted to fit together to form an apertured frame, and a lock pin, the latter being so dimensioned relative to the aperture of the frame that a pin and a portion of said layers of material may be concurrently passed through the frame aperture in one direction, but with the addition of all the layers of material upon the pin, the whole assembly is locked against retraction.

6. In a fastener for securing together two layers of flexible material, a frame having a slot therein, and an independent pin adapted to pass snugly through the slot of the frame accompanied by a fold of one layer of the said material, but frictionally locked against retraction through said slot when accompanied by a superimposed fold of the other layer of material.

7. In a fastener for securing together two layers of flexible material, a frame having a slot therein, an independent pin adapted to pass snugly through the slot of the frame accompanied by a fold of one layer of the said material, but frictionally locked against retraction through said slot when accompanied by a superimposed fold of the other layer of material, and a forked reinforcing key for sliding upon the joint formed by said lock pin and frame.

8. In a device for securing together two layers of flexible material, a frame having a main slot therein with axially aligned and relatively narrow slot extensions at each end of the main slot, and an independent lock pin substantially equal in length to the total length of the said slots, the diameter of the pin being sufficiently less than the width of the main slot that the pin accompanied by a fold of one layer of said material may be inserted through the said main slot but will be frictionally locked against retraction through said slot when accompanied by a superimposed fold of the other layer of material, the diameter of the said pin being sufficiently greater than the width of the end extension slots that the ends of the pin may have a bearing in those end slots.

9. In a device for securing together two layers of flexible material, a frame having

an elongated slot therein, the said slot being relatively wider at one portion than another, and an independent lock pin, adapted to be enfolded by the layers of the flexible material, the width of the wider portion of the slot being sufficient to snugly pass the layers of material and enfolded pin, the width of the narrow portion of the slot being insufficient to pass the pin alone, whereby the said folds of material may be gripped between the pin and the frame at the margins of the said slot.

In testimony whereof I affix my signature.
BOSQUE M. WHITEKER.

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