

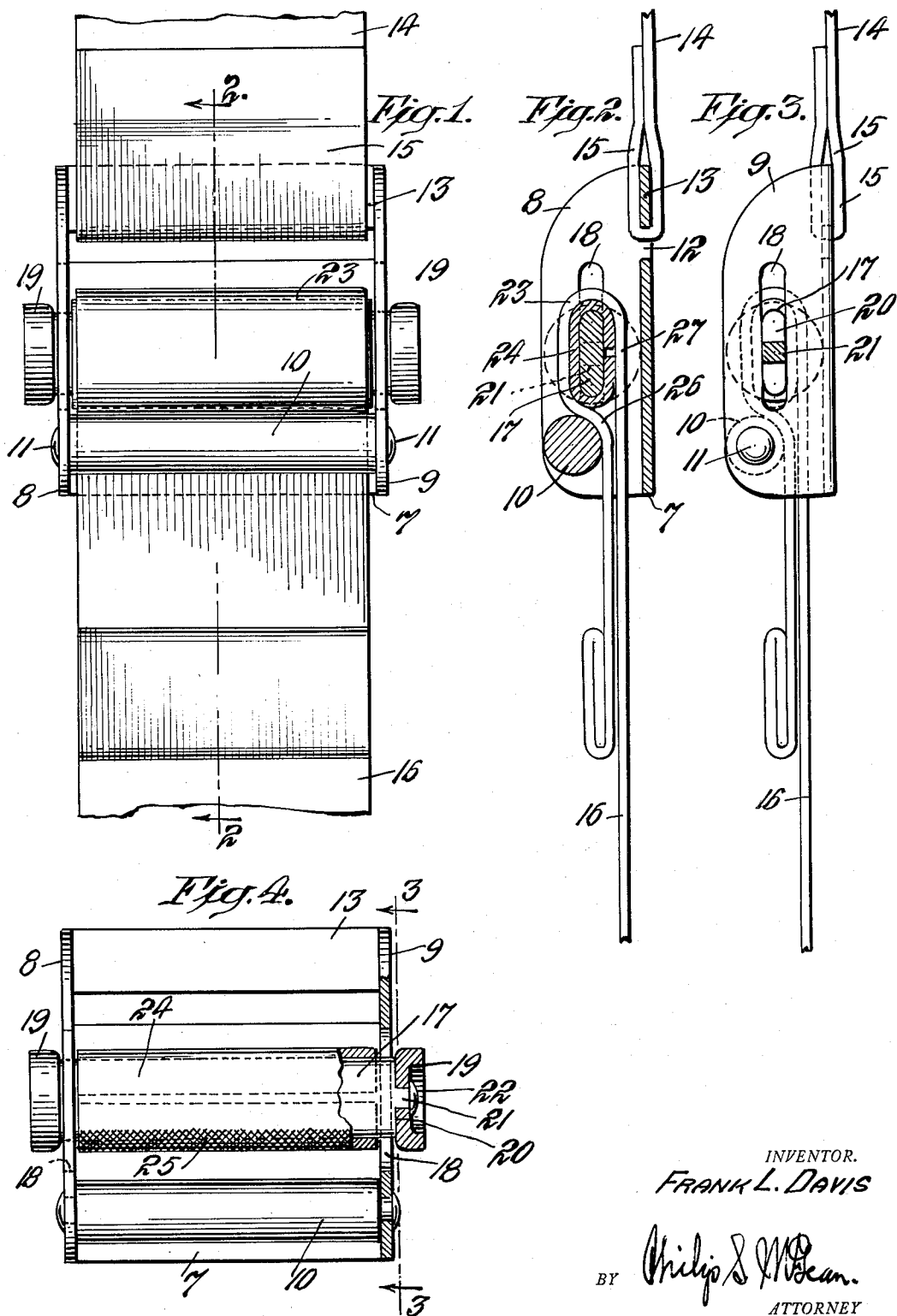
May 1, 1956

F. L. DAVIS

2,743,497

SLIDE BUCKLE

Filed March 25, 1953



INVENTOR.

FRANK L. DAVIS

BY

Philip S. Bean.

ATTORNEY

1

2,743,497

SLIDE BUCKLE

Frank L. Davis, College Point, N. Y., assignor to Davis Aircraft Products Inc., New York, N. Y., a corporation of New York

Application March 25, 1953, Serial No. 344,606

1 Claim. (Cl. 24—196)

The invention herein disclosed relates to slide buckles and the purposes of the invention generally are to provide such a buckle in a simple, light weight, small construction which will be of low cost and be easily and quickly manipulated either to take up or to let out the strap secured by the buckle.

Further special objects of the invention are to provide a slide buckle which will consist of but few parts and the main parts be of sheet metal readily produced by simple punch and die operations.

Other important objects of the invention are to provide a slide buckle of the type indicated, in which the parts may be readily assembled and secured in final relation, and in which the attached parts will fully brace and reinforce each other, enabling use of light weight materials to provide a strong, durable structure.

Additional objects are to provide a slide buckle construction in which the strap or webbing will be fully protected within the body of the buckle.

Other desirable objects and the novel features through which the purposes of the invention are attained are set forth and will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates a present practical embodiment of the invention. Structure, however, may be modified and changed as regards the immediate illustration, without departure from the true spirit and broad scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawing is a broken plan view of one of the new slide buckles;

Fig. 2 is a broken longitudinal sectional view on substantially the plane of line 2—2 of Fig. 1;

Fig. 3 is a broken side elevation and part sectional view on substantially the plane of line 3—3 of Fig. 4;

Fig. 4 is a broken plan and part sectional detail of the buckle structure.

The base or frame of the buckle consists in the present disclosure, of a channel made up of a flat back portion 7 having substantially parallel side flanges 8, 9.

These side flanges are secured in their upstanding parallel relation by a cross member shown in the form of a bar or rod 10 disposed between the flanges near one end and secured by riveting therethrough as indicated at 11.

This cross bar rigidly braces and reinforces the side flanges, enabling the channel base or frame to be made of relatively light and thin sheet metal.

Near the opposite end of the base the back wall is shown as cross slotted at 12 between the flanges to provide a cross bar 13 at that end about which one of the straps 14 is secured in the form of a loop 15.

The other, adjustable strap or webbing 16 is held by looping it about a slide arranged to bind it against the stationary cross bar 10.

This slide is shown as a flat cross bar 17 extending across between the side flanges and guided at its ends in longitudinal slots 18 in the flanges, straight and substantially parallel to the back wall 7.

2

This flat cross bar is slidably secured in this relation by cupped finger buttons or knobs 19 engaged over the abruptly angled outer ends 20 of the bar and secured in this relation by reduced shank portion 21 on the ends of the bar extending through the cups and riveted thereover at 22.

Secured in this relation, the inner ends of the finger cups ride over the outer faces of the flanges, thus to guide the bar freely in sliding relation in the slots.

The adjustable strap 16 is held by looping it about the slide bar and causing it to be gripped against the stationary cross bar 10, as particularly shown in Fig. 2.

To provide ample gripping surface for the encircling looped portion 23 of the strap, a sleeve or collar of body forming gripping material is preferably disposed about the intermediate flat portion of the bar between the side flanges.

This gripping portion may be in the form of an open sleeve 24 of metal or other material looped about the bar.

This gripping or filler sleeve may be slipped into position between the flanges as the bar is being passed through the slots 18, and it will then be secured in such relation when the finger buttons are secured over the outer ends of the bar, at the outer sides of the flanges.

To increase the holding effect the gripping sleeve 24, which may be of aluminum or other such material, may be knurled or roughened, as indicated at 25.

The open character of the gripping sleeve is an advantage, enabling it to be readily slipped into place on the slide bar and giving it a certain spring tension, permitting it to adjust itself into firm holding engagement with the loop of strap extending about the same.

The spacer bar 10, in addition to reinforcing and securing the flanges in their spaced parallel relation and forming a holding abutment for the strap looped about the slide bar, also serves as a guide for directing and holding both runs of the strap toward the flat back wall 7 of the channel.

As shown in Fig. 2, the spacer and abutment bar 10 is located relatively close to the lower ends of the slots 18 so as to allow the slide free movement to fully grip the strap against the bar, and is further shown as extending partly across the ends of the slots so as to force the free end portion of the strap to form a loop 26 thereabout. Preferably, however, the abutment bar does not extend far enough transversely of the slots to fit or hold the straight, tensional length of strap at 27 away from the gripping surface 24 of the slide bar.

In this relation, however, both lengths of the looped strap are disposed within the channel, protected by the back wall and side flanges. In this relation the back of the channel is left clear and free of projections.

The finger buttons 19 at the ends of the slide bar provide convenient means for lifting the slide, when tension on the strap 16 is relieved, out of holding relation with the cross bar 10. Thus the thumb and finger of one hand may be used to release the slide, while the other hand is left free to take up or let out on the loop of strap extending about the slide.

Adjustments can thus be quickly and easily made one way or the other and the strap will be automatically held in the position of adjustment simply by tension applied to the strap.

These features of easy adjustment and positive holding effect make the device particularly desirable for such uses as safety belts, shoulder harnesses and the like. The upper or non-adjustable strap 14 may be attached to the buckle in various ways, that shown being possibly the simplest and being desirable as adding no extra parts.

The cupped buttons projecting from the opposite ends of the slide are particularly practical for aviation purposes,

enabling a person using the buckle to firmly grip and operate the device with gloved or mittened hands.

If it be desirable to have both straps adjustable, the slide holding feature may be duplicated at the opposite end of the buckle, and if quick release is required, one strap end may be secured by a quick release holding cam mounted in the opposite end of the buckle, as disclosed in copending patent application Serial No. 273,799, filed February 28, 1952, now Patent No. 2,710,999, dated June 21, 1955.

What is claimed is:

A slide buckle comprising a one-piece sheet metal channel having a flat back wall and substantially parallel side flanges extending upwardly therefrom, a stationary non-rotatable cross-bar rigidly connecting said side flanges near one end of the channel, means for connecting a strap with the opposite end portion of the channel, said side flanges having straight, longitudinally extending slots therein close to and substantially parallel with the flat back wall of the channel with the plane of the upper edges of said slots intersecting said cross-bar, said slots extending in a plane between said cross-bar and back wall and with ends of the same close to said cross-bar, a flat non-rotatable bar extending across the channel and having flat end extensions slidably engaged in said slots, a strap holding non-rotatable sleeve engaged about that portion of said slidable bar between the side flanges and slidably engageable at its ends with the inner faces of said side flanges, a strap having a looped portion disposed within the channel and extending about said sleeve and between

said sleeve and said stationary cross-bar, with both portions of the loop confined between said cross-bar and the back wall of the channel and extending outwardly from that end of the channel, the cross-bar holding the outer turn of the loop of the strap displaced across the end of the sleeve toward the back wall and the back wall confining both turns of the loop so engaged about the sleeve and cross-bar and in described position extending outward from the end of the channel, the ends of said flat bar projecting through the slots in the side flanges, and finger buttons on the projecting ends of the sliding cross-bar and in sliding engagement with the outer sides of said side flanges for guiding said flat bar in straight sliding relation toward and away from the stationary cross-bar and enabling manual adjustment of said slide bar in respect to the rigid cross-bar.

References Cited in the file of this patent

UNITED STATES PATENTS

27,714	Hall	Apr. 3, 1860
650,785	Warner	May 29, 1900
1,235,865	Whiteker	Aug. 7, 1917
1,416,892	Shields	May 23, 1922

FOREIGN PATENTS

25,212	France	Sept. 19, 1922
	(Add. to 504,129)	
645,297	France	June 26, 1928