Nov. 8, 1927. 1,648,062

H. W. RUSSELL

BUCKLE

Filed Feb. 5, 1926

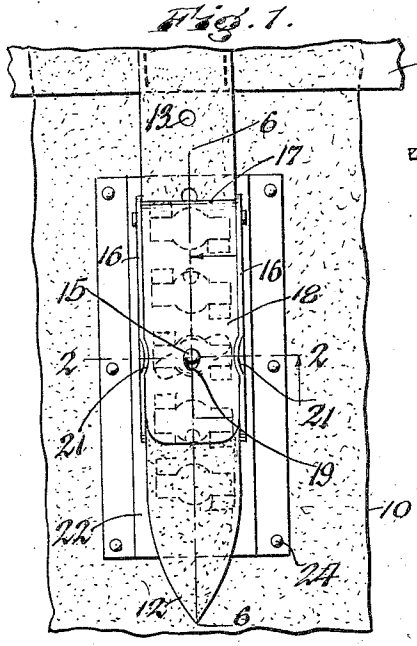


Fig. 1.

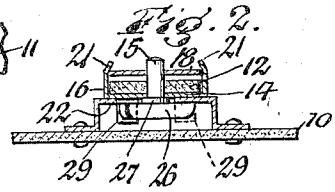


Fig. 2.

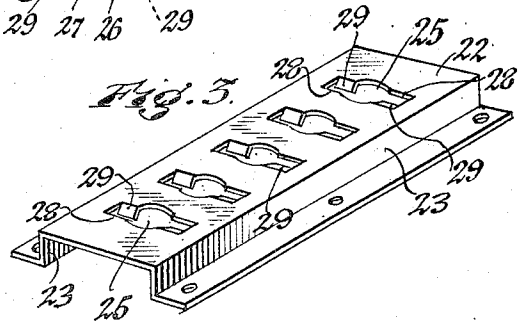


Fig. 3.

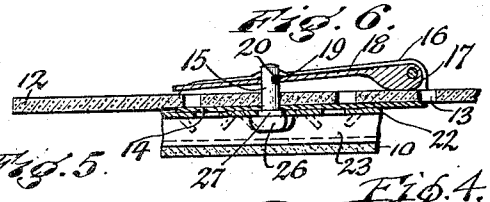


Fig. 6.

Fig. 5.

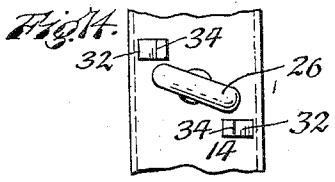


Fig. 14.



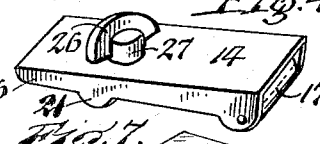


Fig. 4.

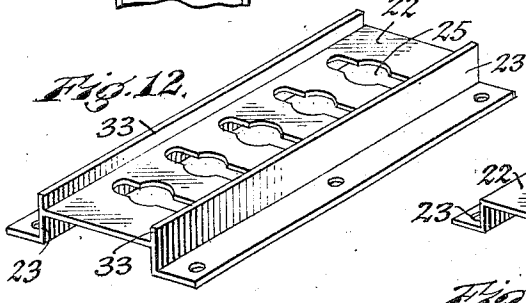


Fig. 12.

Fig. 7.

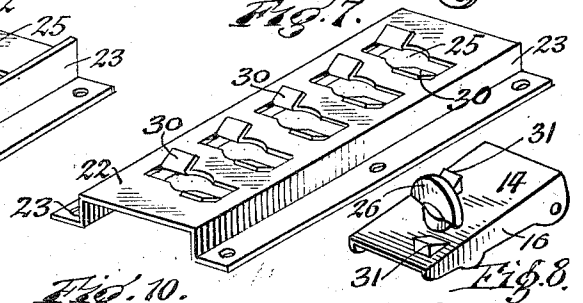
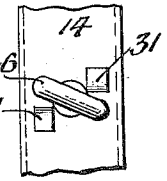


Fig. 8.

Fig. 10.



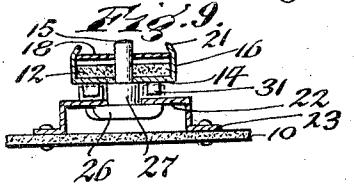


Fig. 9.

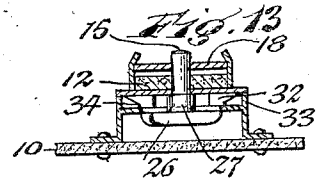


Fig. 13.

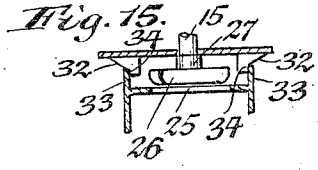


Fig. 15.

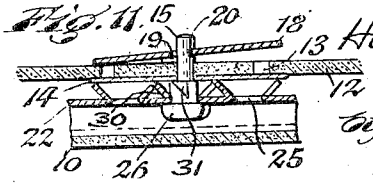


Fig. 11.

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UNITED STATES PATENT OFFICE.

HOWARD W. RUSSELL, OF COLLINGSWOOD, NEW JERSEY.

BUCKLE.

Application filed February 5, 1926. Serial No. 86,114.

This invention relates to a buckle, clasp or fastener for use on brief cases or bags having one or more straps whereby the flap is connected with the front wall of the case or bag.

Heretofore the connection between each of these straps and the front wall was usually effected by means of a buckle permanently connected with the front wall and provided with a longitudinal row of perforations adapted to receive the tongue of the buckle. This form of fastening, while reliable and capable of longitudinal adjustment so as to increase or decrease the capacity of the case or bag, is objectionable in that the opening and closing of the case or bag can only be accomplished slowly and therefore is not well suited for use where it is desirable to open and close the case or bag quickly or promptly.

It is the object of this invention to provide a buckle which not only possesses the capacity of longitudinal adjustment for the purpose of adapting the capacity of the bag to the amount of material which is to be carried therein but also permits of quickly disconnecting the strap from the front wall of the case so as to enable access to the contents thereof to be obtained promptly and without delay, this being particularly necessary when a salesman wishes to display a line of goods to a prospective customer or a lawyer wishes to submit materials contained in the brief case to a court.

With this object in view this invention consists generally in a fastening or buckle which can not only be readily adjusted lengthwise for varying the capacity of the case or bag but also permits of quickly opening or closing the case or bag when this is necessary.

In the accompanying drawings:

Figure 1 is a fragmentary front elevation of a brief case or bag equipped with one form of my invention.

Figure 2 is a cross section of the same taken on line 2—2, Fig. 1.

Figure 3 is a perspective view of the rear section of the buckle or fastener shown in Figs. 1 and 2.

Figure 4 is a similar view of the front section thereof.

Figure 5 is a fragmentary rear view of the rear section of the buckle or fastener shown in Fig. 4.

Figure 6 is a longitudinal section taken on line 6—6 Fig. 1.

Figure 7 is a perspective view of a modified form of the rear section of the buckle or fastener embodying my improvements.

Figure 8 is a perspective view of the front section of such a modified form.

Figure 9 is a cross section of the buckle containing the modified form of rear and front sections shown in Figs. 7 and 8, this section being taken on the line corresponding to Fig. 2.

Figure 10 is a rear view of the front buckle section shown in Fig. 8.

Figure 11 is a fragmentary longitudinal section of the buckle shown in Figs. 7 to 10 and corresponding to Fig. 6.

Figure 12 is a perspective view of another modification in the form of the rear buckle section containing my invention.

Figure 13 is a cross section of a buckle containing the modified form of rear section shown in Fig. 12, this last mentioned section being taken on a line corresponding to Figs. 2 and 9 and showing the front and rear sections of the buckle in an interlocked position.

Figure 14 is a fragmentary rear elevation of a modified form of the front buckle section adapted to cooperate with the modified or rear buckle section shown in Fig. 12.

Figure 15 is a fragmentary cross section similar to Fig. 13 but showing front and rear sections in the position in which they have been unlocked from each other.

The numeral 10 represents the front wall of a brief case, traveling bag or similar article, 11 the front flap of the same and 12 one of the fastening straps which is permanently connected at its upper end with the flap and adapted to be adjustably and detachably connected at its lower end with the front wall for the purpose of varying the capacity of the bag and also to permit of opening the bag in order to gain access to its interior. The strap for use in connection with the preferred form of my buckle is provided with a longitudinal row of openings 13 which by preference are arranged midway between the longitudinal edges of the same.

In its general organization this buckle comprises a front section which is mounted on the strap so that the latter is capable of longitudinal adjustment on this front section and also capable of complete detachment therefrom, and a rear section which is permanently connected with the front wall of the brief case or bag and with which said front section may be quickly connected and disconnected and also adjusted lengthwise thereof for aiding in increasing or decreasing the capacity of the case or bag.

In the form of the front buckle section as shown in Figs. 1 to 6 of the drawings the same is constructed as follows:

The numeral 14 represents a base plate which is adapted to engage with the rear side of the strap 12 and is provided about midway of its length with a forwardly projecting adjusting pin 15 adapted to engage with one or another of the row of openings 13 in the strap for the purpose of positively interlocking the latter with the front buckle section. On its opposite longitudinal sides the base plate 14 is provided with flanges 16 which receive the strap between them. Pivotally mounted upon the upper ends of the flanges 16 and arranged between the same is a clamping cam 17 which may be turned so that the salient part of this cam or eccentric engages with the front side of the strap and presses it against the base 14 so that this strap is clamped between the cam and base and thereby held against longitudinal movement independently of or in addition to the effect which is produced by the adjusting pin 15 engaging with a hole 13 of this strap. The construction of this cam or eccentric 17 is such that an upward pull of the strap will cause the cam to become tighter in proportion to the increasing pulling effect on the same so that the strap will be reliably clamped on the base and held against longitudinal movement thereon even though the strap does not fit tightly over the pin 15.

The turning of the cam 17 into and out of its operative position is preferably effected by means of an operating arm 18 which preferably projects downwardly therefrom and is constructed of springy sheet metal which in the locked or clamping position of the cam lies close to the front side of the strap. In order to hold the operating arm in this position the lower part of the same is provided with a locking opening 19 which receives the front end of the adjusting pin 15 and is interlocked with the latter by engagement of the upper or inner edge of the opening 19 with a locking notch 20 on the upper side of the adjusting pin. This notch forms a shoulder underneath which the upper edge of the arm opening 19 is sprung upon moving this arm inwardly into its closed or locking position and therefore necessitating again springing this arm somewhat in order to detach the same from the adjusting pin. In addition to this the flanges 16 on the base plate are provided adjacent to opposite sides of the adjusting pin with inwardly projecting locking lips 21 the under sides of which form shoulders which are adapted to engage with opposite longitudinal edge portions of the operating arm 18 in the locked position of the latter and therefore aid in holding this arm in this operative position in addition to the locking effect which is produced by an engagement of this arm with the adjusting pin 15. Upon pressing the operating arm inwardly or backwardly toward the strap its opposite longitudinal edge portions are flexed in order to clear the locking lips 21 and when this arm has reached the end of its inward motion its edges due to the resilience of the material of which this arm is made again spring apart and engage with the under side of these lips. Such flexing of the edges of this operating arm again occurs when the same is moved outwardly in order to enable this arm to clear these lips and release the same from the adjusting pin 15 as well as swinging the cam 17 into its opened or unclamped position.

The closing of the front buckle section is effected by a pressure of the hand or fingers against the operating arm 18, but the opening of the same may be effected quickly, easily and conveniently by simply pulling the free lower end of the strap forwardly or away from the base of the front buckle section.

The rear buckle section and the means whereby the same is detachably and adjustably connected with the front buckle section are constructed as follows:

The numeral 22 represents a longitudinal adjusting or coupling plate which is arranged in front of the wall 10 of the brief case or bag but spaced apart therefrom by making this adjusting plate as a part of a channel shaped member, the web of which forms the adjusting plate 22 and the legs 23 of which project rearwardly from opposite longitudinal edges of the web 22 and are connected with the wall of the case or bag 10 by means of rivets 24 or other suitable means.

The adjusting plate or web 22 is provided with a longitudinal row of transverse locking slots 25 each of which is preferably enlarged at its center and reduced at its opposite ends, as shown by full lines in Fig. 3 and by dotted lines in Fig. 1. On its underside the base of the front buckle section is provided with a coupling button which has an elongated head 26 and a reduced neck 27 connecting the central part of this head with the rear side of the base 14 so that this button has generally a T-shaped form and is enlarged at its center while its opposite

ends are narrow in order to conform to the shape of the transverse slots 25 in the coupling plate 22. The head of the coupling button and the slots of the adjusting plate 22 are so arranged that in the normal operative position of the front and rear buckle sections these slots and the head of the coupling button are arranged at an angle relatively to each other. In the preferred construction the slots in the web or adjusting plate of the rear section are arranged at right angles to the length of this web, and the head of the coupling button is arranged obliquely relative to the length of the base plate 14 and to the length of said web. Due to this construction it is necessary to turn the front buckle section sufficiently in a plane parallel with the rear buckle section in order to bring the head of the coupling button into register with one of the transverse slots of the rear buckle section. When thus brought into register the head of the coupling button may be moved rearwardly or inwardly through the respective slot of the rear buckle section and after this head has passed inwardly beyond the rear side of the adjusting plate or web 22 the front buckle section may be then moved in a reverse direction into its normal position whereby the opposite ends of the coupling head are carried underneath the diagonally opposite edge portions or locking faces 28 of the respective slot in the adjusting plate or web, whereby the front section of the buckle is interlocked with the rear buckle section. For the purpose of detaching the front buckle section from the rear buckle section the operation above described is reversed, namely, the front buckle section is turned so as to carry the opposite ends of the coupling head from underneath the edge portions of the adjusting plate or web and into line with the respective slot 25 after which the coupling head may be withdrawn through said slot and the front buckle section detached from the rear buckle section.

Such connection and disconnection of the front and rear buckle sections can be effected very quickly and the front buckle section can also be adjusted lengthwise on the rear buckle section by shifting the coupling head from one slot to another in the rear section. It will therefore be apparent that the actual opening and closing of the brief case or luggage can be effected very quickly without disturbing the adjustment of the front buckle section on the strap and that an increase or decrease in the capacity of the bag can be accomplished when desired by shifting the coupling head from one slot 25 to another and also by shifting the front buckle section lengthwise on the strap the required extent.

For the purpose of facilitating the disengagement of the coupling head of the front buckle section from the slot of the rear buckle section means are provided which operate automatically to lift the coupling head of the front buckle section out of the respective slot of the rear buckle section as this coupling head is turned backwardly, and also to arrest such backward movement of the head when the same is in register or alinement with the respective slot so that withdrawal of this head from the respective slot can be made quickly, conveniently and without annoyance. Various means may be provided for thus stopping the rotary movement of the coupling head as the same is turned backwardly from underneath the edge portions of the web or adjusting plate 22 and also automatically lifting this head out of the respective slot in this web or plate. In the construction shown in Figs. 2, 3 and 6 this is accomplished by providing the web or plate 22 with inclines 29 on the underside of the diagonally opposite edge portions of the slots 25 which are the reverse of the diagonally opposite edge portions of these slots which are normally engaged by the opposite ends of the coupling head 26 while the latter is interlocked with this adjusting plate or web 22. These inclines 29 are formed in the construction shown in Figs. 2, 3 and 6 by bending downwardly portions of the metal of the plate 22 at diagonally opposite ends of the opening which forms each of the slots 25, thereby concealing these inclines on the inner side of the rear buckle section and leaving the front side of the same free and unobstructed and producing a structure which can be produced at low cost and capable of being wiped off and kept clean easily. After the coupling head is brought opposite the desired coupling slot 25, an inward or backward pressure against the front buckle section will cause the coupling head 26 to pass through this slot and engage its ends with the inclines 29 so that these ends are shifted underneath the locking edges 28 of the web. This movement is aided by the resilience or torque of the strap 12 which operates automatically to again turn the front buckle section forwardly so that its opposite ends engage with the inwardly facing locking faces 28 on the under side of the web and thereby hold the front and rear buckle sections in an interlocked position. Upon manually turning the front buckle section backwardly while the same is thus interlocked with the rear section the opposite ends of the coupling head 26 will engage the inclines 29 and obstructs the turning movement of this head upon coming into register with the respective slot 25 and upon continuing this backward rotary motion of the front buckle section these inclines 29 will lift or move the head 26 outwardly through the respective slot 25 and automatically disengage the same from the rear buckle sec-

tion, whereby the two sections of the buckle are uncoupled and the brief case or luggage bag is free to be opened.

This automatic guiding of the coupling head into engagement with the locking faces of the coupling plate and the automatic disengagement of said head therefrom may also be effected by the equivalent means which are shown in Figs. 7 to 11 in which case inlines 30 are formed on diagonally opposite edge portions of the slots 25 by bending up portions of the metal which is displaced or struck out of the stock of the plate 22 in the formation of the end portions of the slots 25. When the inclines 30 are thus formed on the upper side of the web 22 the same are engaged by rearwardly facing inclined lugs 31 formed on the rear side of the base plate 14, on diametrically opposite sides of the coupling button, as shown in Figs. 8, 9, 10 and 11. The operation of guiding the coupling head into each of the slots 25 and also moving the same outwardly automatically is the same with reference to the construction shown in Figs. 7 to 11 as set forth with reference to the construction shown in Figs. 1 to 6, and the same description as to this operation therefore applies to both of these constructions.

Another modified means for automatically guiding the coupling head into the slots 25 and also lifting the same therefrom is shown in Figs. 12, 13, 14 and 15. In this last mentioned construction the coupling or adjusting plate 14 is provided on its under or rear side and on diametrically opposite sides of the adjusting pin 15 with inclined lugs 32 which are adapted to engage with longitudinal ribs 33 on opposite edges of the web 22, and each of the lugs 32 is provided at the rear end of its inclined face with a stop shoulder 34 adapted to engage with the inner side of one of the ribs 33, as shown in Fig. 15 and thereby limit the backward rotation of the front buckle section when the same has been turned sufficiently in this direction to lift this head out of the respective slot 25 in the rear buckle section. These inclined lugs 32 also assist in guiding the coupling head 26 into the slots 25 upon assembling the front and rear buckle sections in the manner described with reference to Figs. 1 to 11.

The various forms of this invention above described and illustrated in the drawings provide a buckle, fastening or clasp for use on brief cases and luggage bags which permit of quickly, easily and conveniently opening the case or bag and also enable the capacity of the case or bag to be readily adjusted to suit various requirements. Furthermore this buckle can be produced at comparatively low cost so that its advantages may be built into a case or bag without any substantial increase in cost of manufacture. Moreover this buckle is of simple construction and capable of being operated without requiring special skill or instruction and therefore is not objectionable as would be the case if previous experience were necessary in order to manipulate the same and secure its full advantage.

I claim as my invention:

1. A buckle comprising front and rear sections which are adapted to be mounted respectively on the parts to be connected, said rear section having a web which is raised above the surface of the part to which it is secured and which is provided with a longitudinal row of slots, said front section being provided on its rear side with a T-shaped coupling button the head of which is connected by a neck with the front section, said head being adapted to pass through one or another of said slots and to be turned into engagement with the underside of said web, said head and each of said slots being normally arranged at an angle relatively to each other, and cooperating cam surfaces arranged on said front and rear sections for moving said head out of each slot by a rotary movement of said front and rear sections relatively to each other.

2. A buckle comprising front and rear sections which are adapted to be mounted respectively on the parts to be connected, said rear section having a web which is raised above the surface of the part to which it is secured and which is provided with a longitudinal row of slots and said front section being provided on its rear side with a T-shaped coupling button the head of which is connected by a neck with the front section, said head being adapted to pass through one or another of said slots and to be turned into engagement with the underside of said web, said head and each of said slots being normally arranged at an angle relatively to each other, and said web being provided on its underside adjacent to each slot with an incline adapted to be engaged by said head upon turning the latter in one direction for moving said head out of the respective slot.

3. A buckle comprising front and rear sections which are adapted to be mounted respectively on the parts to be connected, said rear section having a web which is raised above the surface of the part to which it is secured and which is provided with a longitudinal row of slots, and said front section being provided on its rear side with a T-shaped coupling button the head of which is connected by a neck with the front section, said head being adapted to pass through one or another of said slots and to be turned into engagement with the underside of said web, said head and each of said slots being normally arranged at an angle relatively to each other and said web being provided on its under side adjacent to diagonally opposite edge

portions of said slot with inclines adapted to be engaged by opposite ends of said head upon turning the latter in one direction for moving said head out of the respective slot.

4. A buckle comprising front and rear sections which are adapted to be mounted respectively on the parts to be connected, said rear section having a web which is raised above the surface of the part to which it is secured and which is provided with a longitudinal row of slots, and said front section being provided on its rear side with a T-shaped coupling button the head of which is connected by a neck with the front section, said head being adapted to pass through one or another of said slots and to be turned into engagement with the underside of said web, said head and each of said slots being normally arranged at an angle relatively to each other and said web being provided on its underside adjacent to diagonally opposite edge portions of said slot with inclines adapted to be engaged by opposite ends of said head upon turning the latter in one direction for moving said head out of the respective slot, said inclines consisting of parts which are bent from the stock of said web in forming said slots therein.

In testimony whereof I hereby affix my signature.

HOWARD W. RUSSELL.