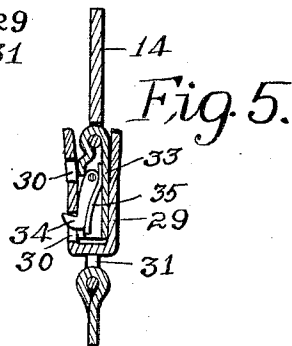
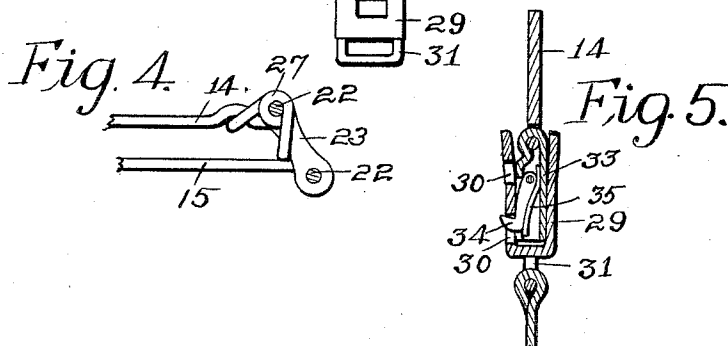
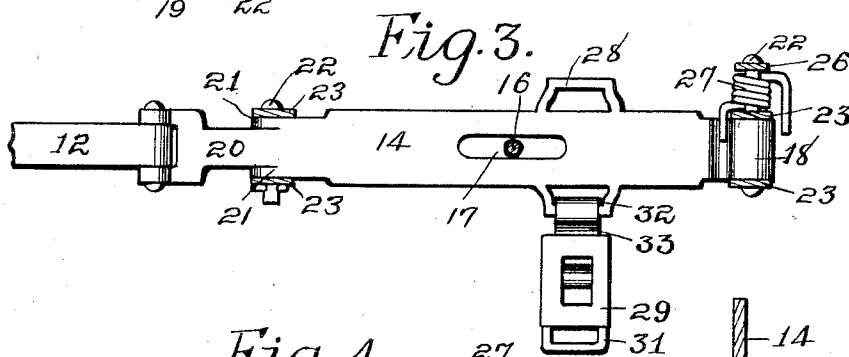
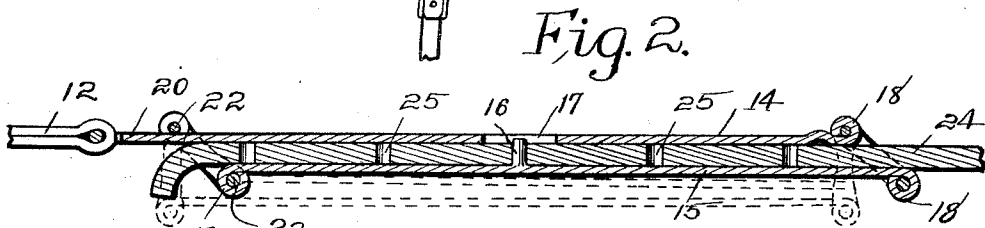
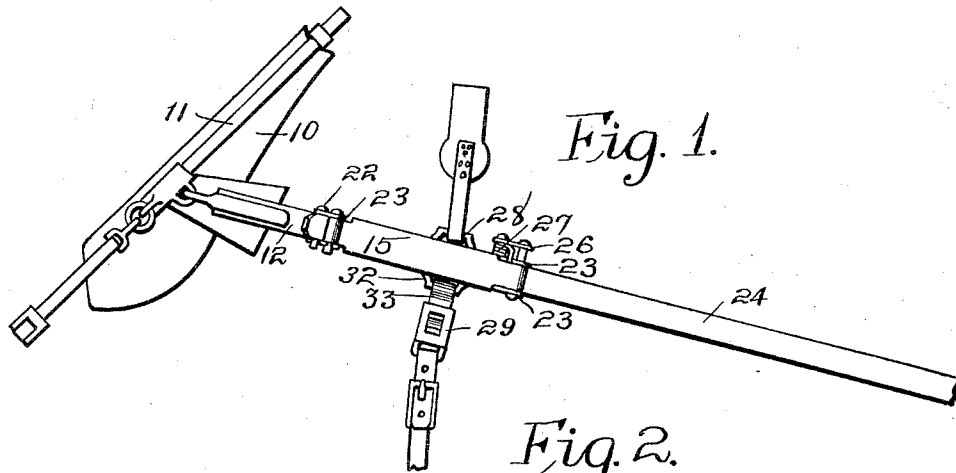


S. E. CROWL.
HARNESS BUCKLE.

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SAMUEL E. CROWL, OF STUART, IOWA.

HARNESS-BUCKLE.

1,044,503.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL E. CROWL, a citizen of the United States, residing at Stuart, in the county of Guthrie and State of Iowa, have invented a certain new and useful Harness-Buckle, of which the following is a specification.

The object of my invention is to provide a harness buckle of simple, and inexpensive construction which is practically free from wear to which a tug can be easily, quickly and firmly secured and from which a tug can be easily released.

A further object is to provide a harness buckle to which a tug can be secured whereby the friction and wear on the tug is spread over a considerable area.

More particularly it is my object to provide a harness buckle having parallel plates between which a tug is gripped and having its parts so constructed and arranged that any pull on the tug increases the friction between the plates and the tug and thereby increases the tightness of the grip of the buckle on the tug.

A further object is to provide means for exerting yielding pressure to hold said plates in engagement with a tug.

My invention consists in certain details, in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim and illustrated in the accompanying drawings, in which:

Figure 1 shows a side elevation of a part of a set of harness equipped with my improved harness buckle and catch device. Fig. 2 shows a central, horizontal sectional view of my improved harness buckle, the dotted lines showing the buckle in its open position. Fig. 3 shows a side elevation of my buckle, the outer plate being removed. Fig. 4 shows a detail view partly in section of one end of my buckle showing the spring thereon for holding the plates together. Fig. 5 shows a central vertical, transverse, sectional view of my improved catch device for securing my buckle to a belly band or other strap.

In the accompanying drawings, I have used the reference numeral 10 to indicate the collar of a set of harness on which is mounted a hame 11. Secured to the hame is a short hame tug 12.

My improved harness buckle proper, consists of two metal plates 14 and 15 which I shall call the inner and outer plates respectively and which are arranged in parallel planes. Centrally located on the inner surface of the outer plate 15 is an inwardly extending lug 16. The plate 14 is constructed with a longitudinal slot 17 in which the lug 16 is received in certain positions of the movement of the plates 14 and 15.

One end of the inner plate 14 is designed to be secured to the hame tug 12 or to the hame pieces and I shall call the end of the buckle designed to be adjacent to the hame, its forward end. I preferably bend the plates 14 and 15 at their rear ends to form vertical bearings 18 which in each case are located on the side of the respective plates farthest removed from the other plate. At the forward end of the plate 15 is a bearing 19 similar to the bearing 18 at the rearward end of said plate. At the forward end of the plate 14 is preferably formed an extension 20 which may be secured to the hame tug 12 in any suitable way. Above and below the point where the extension 20 begins, the plate 14 is bent to form bearings 21 which stand on the inner side of the plate. Rotatably mounted in the bearings 18, 19 and 21 are bolts 22. Rotatably mounted on the bolts 22 above and below the plates 14 and 15 at each end thereof, are short cross pieces 23. It will be seen that the plates 14 and 15 may be moved longitudinally with the relation to each other within certain limits on account of the way in which the bolts 22 and the cross pieces 23 are mounted. For convenience of description, I will call the position of the plates 14 and 15 when they are at the farthest limit of their movement, from each other, the open position of the buckle, and the position when the plates are adjacent to each other, the closed position of the buckle.

In Fig. 2 I have shown a tug 24 secured to the buckle with the lug 16 received in one of the openings 25 in said tug. It will be seen that any rearward pull on the tug when the plate 14 is secured to a hame or a hame tug, will tend to draw the plate 15 rearwardly and to move the buckle from its open to its closed position. The greater the draft on the tug, the more tightly the plates 14 and 15 are drawn together and the

said plates will grip the tug and their friction on the tug will be spread over a considerable area thereof.

As long as there is any draft on the tug, the buckle will necessarily grip the tug tightly. When, however, the tug is loose, it might be possible for the buckle to move to its open position until the lug 16 might be released from the opening 25 in the tug and the tug released from the buckle. For preventing the release of the tug from the buckle during any ordinary use of the buckle, I have provided the following means: Rotatably mounted on the bolts 22 at one end of the buckle, I have provided a cross piece 26 similar to the cross piece 23 except that the cross piece 26 is preferably somewhat smaller and thinner than the cross piece 23. Mounted on one of the bolts 22 in the plate 14, between the cross piece 26 and the adjacent cross piece 23 on the same bolt, I have placed an expansible coil spring 27. One end of said spring is in engagement with the inner surface of the plate 14 and the other end is in engagement with the cross piece 23 at a point spaced apart from the bolt 22 as clearly shown in Fig. 4. The tendency of the coil spring 27 is to move the plate 15 longitudinally with the relation to the plate 14 and to exert constant yielding pressure to move the buckle from its open to its closed position. By locating the spring 27 between the cross pieces 23 and 26, the spring will move with said cross pieces during the movement of the spring from its open to its closed position or vice versa and the friction between the cross pieces and the spring is reduced to a minimum. The coil spring 27 will prevent the accidental release of the tug from the buckle on account of the effect of its yielding pressure heretofore described. When, however, the user desires to release the tug, he can manually move the buckle to its open position and take out the tug. On the upper side of the plate 14, I have located a loop 28 to which the back band may be secured.

For quickly, easily and readily fastening the buckle to the belly band, I have provided the following means: A receptacle 29 open at one end is provided with a plurality of openings 30 on one side. At its closed end, the receptacle 29 is provided with an extension 31 designed to be secured to a strap in any suitable way. On the lower side of the plate 14, I provide a loop 32 which may be similar to the loop 28. Pivotaly mounted on the loop 32 is a body 33. Pivotaly mounted on the body 33 is a dog or catch member 34. I have secured to the body 33, a spring 35 designed to exert yielding pressure to hold the free end of the dog 34 in its position spaced apart from the body 33. The body 33 and the dog 34 are designed to be received in the receptacle 29

as clearly shown in Fig. 5. When they are inserted in said receptacle the dog 34 and the spring 35 are pressed against the body 33 until the dog 34 reaches a point opposite one of the openings 30, when the spring 35 pushes the dog away from the body 33 into the opening 30 and causes the dog to firmly engage the receptacle. To release my catch device just described, the user may push the dog 34 inwardly and the body 33 may then be withdrawn from the receptacle 29.

It will be seen that a considerable number of variations in the construction of my device from the forms shown herein, can be made without departing from the principle of my invention as defined by the appended claim.

In the practical construction and use of my improved harness buckle, it may be used with any ordinary kind of harness. The extension 20 on the plate 14 may be secured directly to the hame or to a short hame tug 12, thus the buckle may be used near the hame or in a convenient place for fastening the back band and belly band. It will also be seen that my catch device hereinbefore described, could be used for securing the buckle to the back band. The location and construction of the spring 27 may be varied without changing the principle of its operation, the purpose of said spring being to draw the plates 14 and 15 together. When my improved harness buckle has been secured to a hame or a short hame tug, it may be manually moved to its open position as shown by the dotted lines in Fig. 2 and the tug may be moved between the plates 14 and 15 until the lug 16 is opposite one of the openings 25. The plates 14 and 15 may then be released and the pressure of the spring 27 will cause the lug 16 to enter the adjacent opening 25 and will draw the buckle to its closed position. The operation of the spring 27 will prevent any accidental release of the tug. When it is desired to release the tug or to insert the lug 16 in another opening in said tug, the buckle may be manually moved to its open position and the desired operation is then easily performed.

I claim as my invention:

In a device of the class described, inner and outer substantially parallel metal plates, bearings formed at the ends of said plates, bolts in said bearings, cross pieces rotatably mounted on said bolts above and below each end of said plates, means for connecting said inner plate with a hame or a hame tug, a longitudinal slot in said inner plate and an inwardly extending lug on said outer plate designed to be received in said slot in certain positions of the movement of said buckle, an additional cross piece rotatably mounted on two of said bolts and spaced apart from the other cross piece thereon, an expansible coil spring mounted on the one

of said last named bolts which is in the inner plate between said last named cross pieces, said spring having one end in engagement with the inner side of said inner plate and the other end in engagement with the adjacent side of one of said last named cross pieces at a point spaced apart from said inner plate, said spring being designed to exert yielding pressure to move said plates longitudinally with relation to each other.

Des Moines, Iowa, October 18, 1911.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."