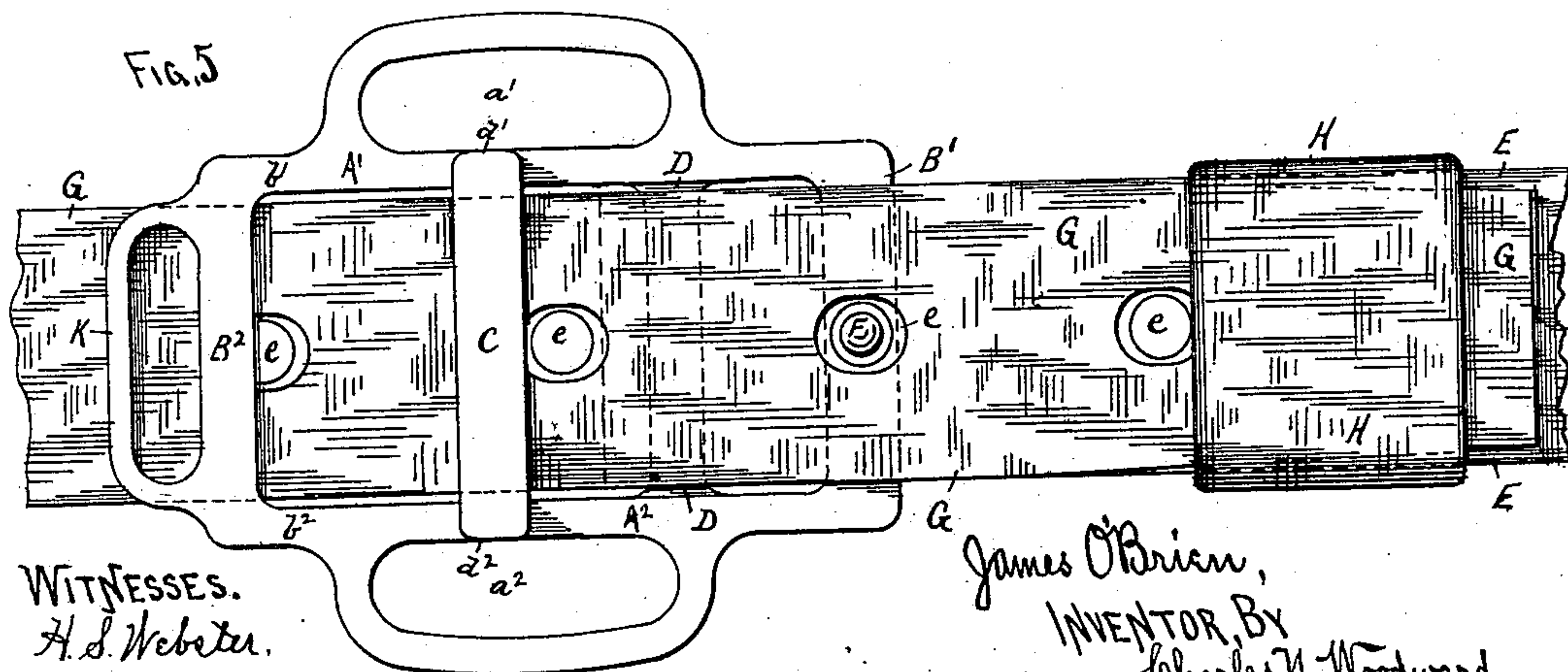
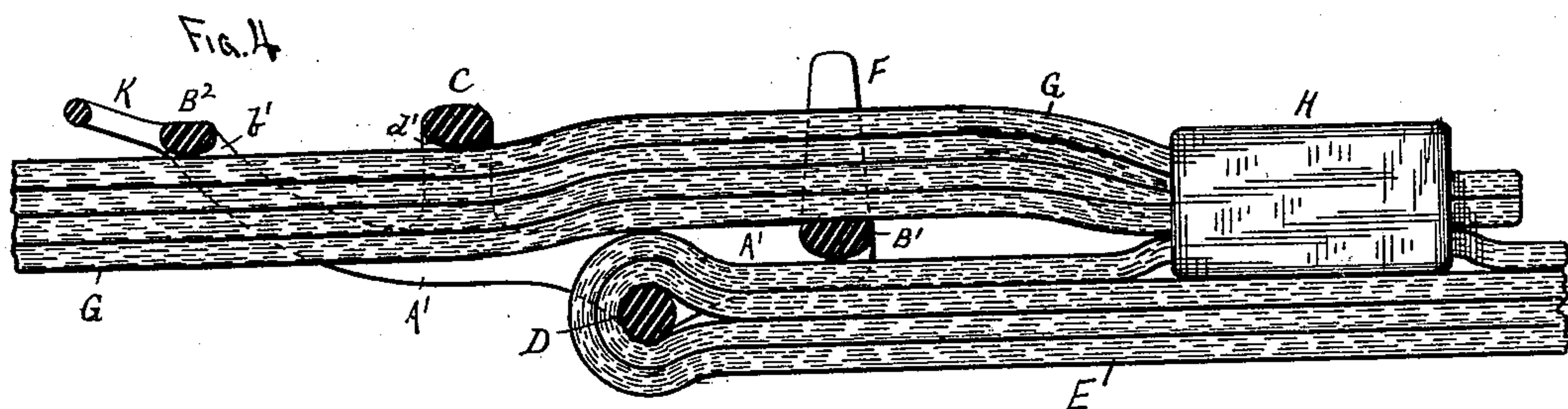
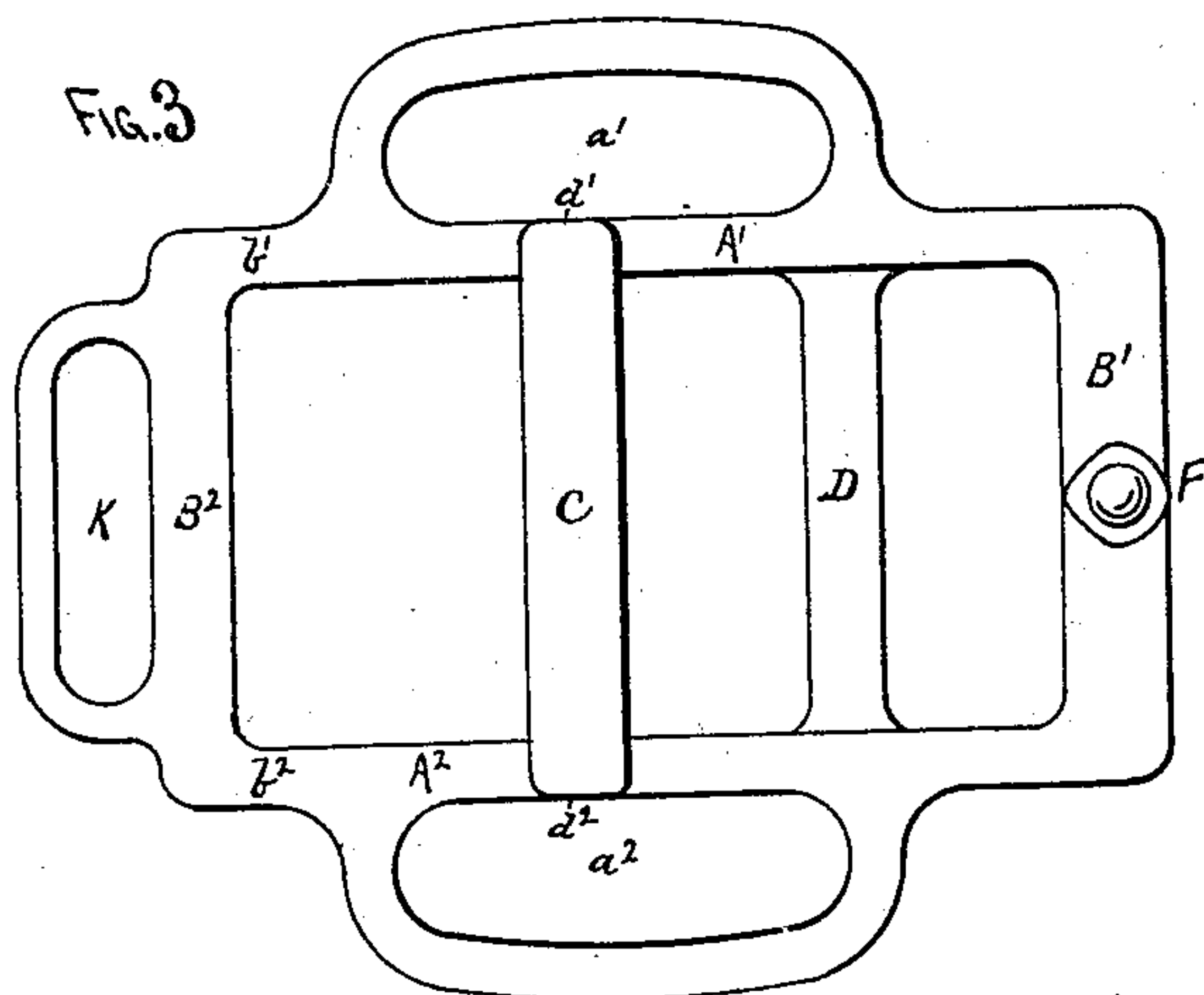
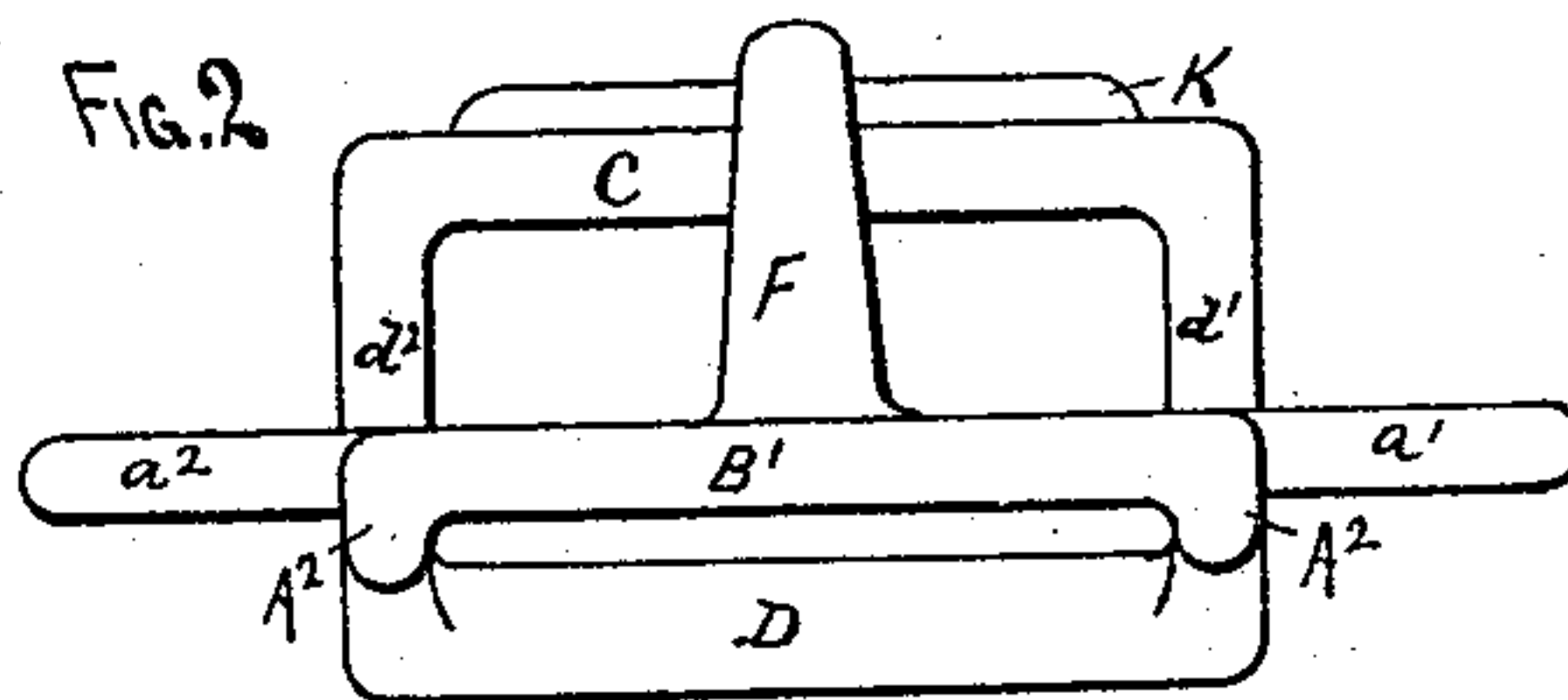
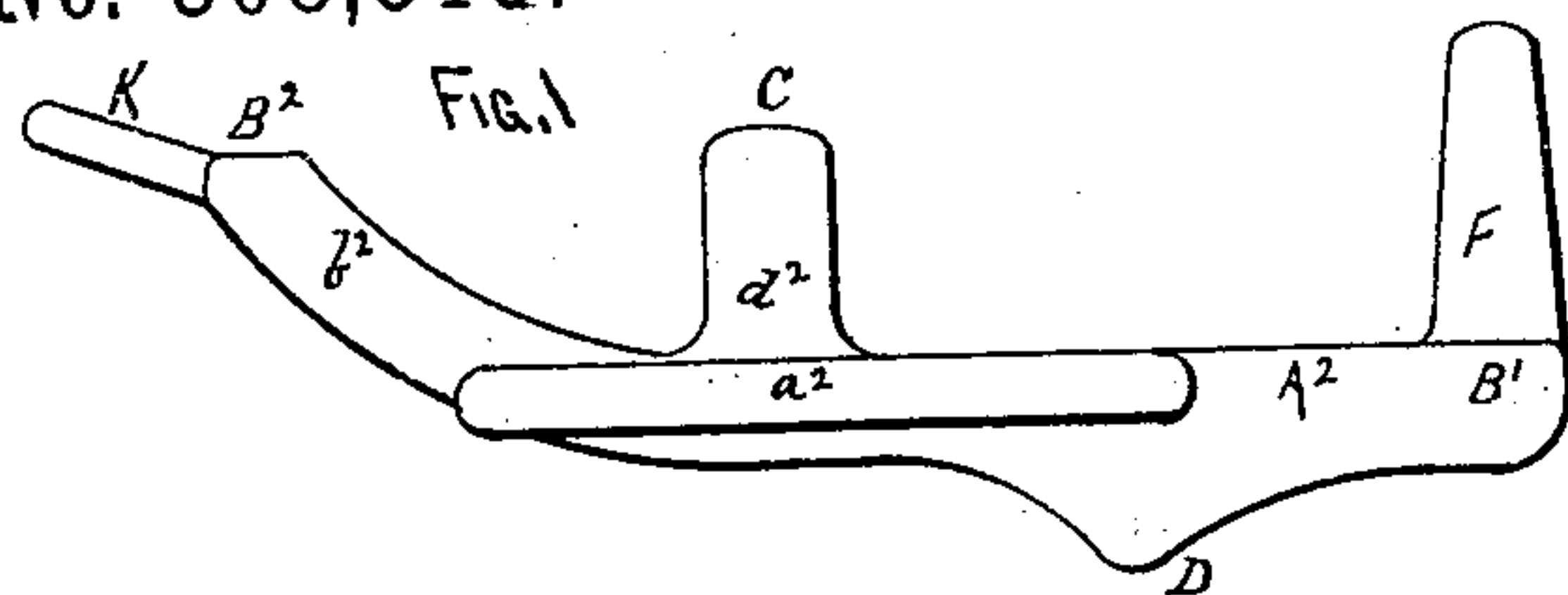


(No Model.)

J. O'BRIEN.  
TRACE BUCKLE.

No. 308,515.

Patented Nov. 25, 1884.



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

JAMES O'BRIEN, OF MINNEAPOLIS, MINNESOTA.

## TRACE-BUCKLE.

SPECIFICATION forming part of Letters Patent No. 308,515, dated November 25, 1884.

Application filed October 3, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES O'BRIEN, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and the State of Minnesota, have invented certain new and useful Improvements in Trace-Buckles, of which the following is a specification.

Figure 1 is a side view. Fig. 2 is a front view, and Fig. 3 is a plan view, of the buckle disconnected from the trace and other parts of the harness. Fig. 4 is a central vertical longitudinal section of the buckle, showing the trace and hame-tug arranged therein; and Fig. 5 is a plan view of the same.

A' A<sup>2</sup> represent the side bars or main frame, having the usual side loops, a' a<sup>2</sup>, on the outer edges. The front and rear ends of these side bars, A' A<sup>2</sup>, are connected, respectively, by a front bar, B', and a rear bar, B<sup>2</sup>, while a loop-bar, C, connects the upper edges of the sides A' A<sup>2</sup> about midway between the bars B' and B<sup>2</sup>.

D is the tug-bar, to which the hame-tug E is attached, as shown in Figs. 4 and 5. The rear ends of the sides A' A<sup>2</sup> curve upward, as shown at b' b<sup>2</sup>, so that the rear bar, B<sup>2</sup>, will be above the plane of the main parts of the bars A' A<sup>2</sup> and the front bar, B'. The loop-bar C will be connected at its ends to the side bars, A' A<sup>2</sup>, by small standards d' d<sup>2</sup>, (see Figs. 1, 2, and 4,) so that it will come in substantially the same plane as the bar B<sup>2</sup>, as shown. The tug-bar D is arranged in a line below the plane of the side bars, A' A<sup>2</sup>, as shown, so that the hame-tug E will pass freely below the bar B' without bending. The bar B' is provided at its center with a stud or tongue, F, projecting at right angles therefrom, over which the trace G will be caught by the graduated holes e, as shown in Fig. 5. The ends of the trace G will be carried underneath the bar B<sup>2</sup> and loop C, and over the tops of the bars D and B', and caught by one of its holes e over the tongue F, while the extreme end will be inserted beneath a loop, H, on strap E. By merely bending the trace G outward at a point opposite the tongue F until the trace is free from the tongue the trace may be moved along and shortened or lengthened at will.

K is the breeching-strap loop, which is formed upon the rear bar, B<sup>2</sup>.

All the parts of the buckle are formed in one piece, usually of malleable iron, but may be made of any desired metal.

I claim several very important advantages by this arrangement of the parts of the buckle. By arranging the tug-bar D forward of the rear bar, B<sup>2</sup>, the trace pulls toward the tug-bar, while the hame-tug pulls toward the tongue-bar B'; hence the strains on the buckle are of a crushing or compressing nature, while in all other buckles with which I am acquainted the strains are "tensile" or expansive. This arrangement permits me to use less metal in the frame of the buckle and in the bars, and thereby form them at less expense and of a less weight. By this arrangement, also, the hame-tug E passes backward beneath the tongue-bar B'; hence the latter is more firmly supported thereby and prevented from sinking away from the trace G and disconnecting the tongue F from the trace. The loop C also serves an important function in this connection, as it also assists in holding the trace down upon the bar B' and prevents the accidental disunion of the trace and tongue.

It frequently happens that the harness becomes entangled when horses are being turned too short, or in event of runaways or other accidents, under which circumstances the disunion of the hame-tugs and traces leads to serious results; but by my arrangement this cannot occur, as the pressure of the loop C on the upper side of the trace, and the support given to the under side of the tongue-bar B' by the hame-tug E, prevent such accidental disunion. Another important advantage is that so large a space exists between the bar D and loop C that the thickest trace may be inserted therein, while at the same time it is equally available for thin traces.

Having thus described my invention, what I claim as new is—

1. A trace-buckle composed of side bars, a cross-bar provided with a tongue connecting said side bars at one end, a loop-bar connected with said side bars back of said cross-bar, substantially as set forth, whereby it is in a plane above that of the cross-bar, and a tug-bar con-

5 nected with said side bars between the cross-bar and loop-bar, substantially as set forth, whereby it is in a plane below that of the cross-bar, substantially as and for the purpose herein set forth.

10 2. A trace buckle composed of side bars, A' A<sup>2</sup>, a cross-bar, B', provided with an upwardly-extending tongue, F, a tug-bar, D, and a loop-bar, C, all of said bars connecting said side bars, and being located, substantially as set forth, so that the tug-bar is between the other two bars, and the three bars are in different vertical planes, the loop bar being in the highest plane, the tug-bar in the lowest plane, and the cross-bar in an intermediate plane, in combination with a hame-tug secured

to the tug-bar, and a trace, provided with a series of holes, which passes beneath the loop-bar and over the tug-bar and cross-bar, its holes engaging with the tongue F, substantially as and for the purpose set forth. 20

3. The combination of the side bars, A' A<sup>2</sup>, cross-bar B', having tongue F, loop-bar C, tug-bar D, and rear bar, B<sup>2</sup>, substantially as set forth. 25

In testimony whereof I have set my hand in presence of two subscribing witnesses.

JAMES O'BRIEN.

Witnesses:

C. N. WOODWARD,  
H. S. WEBSTER.