

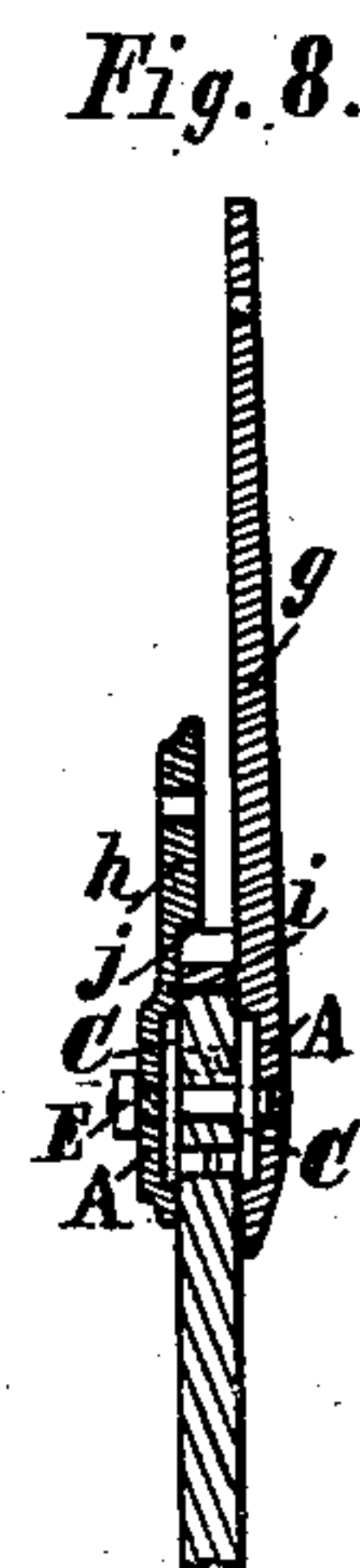
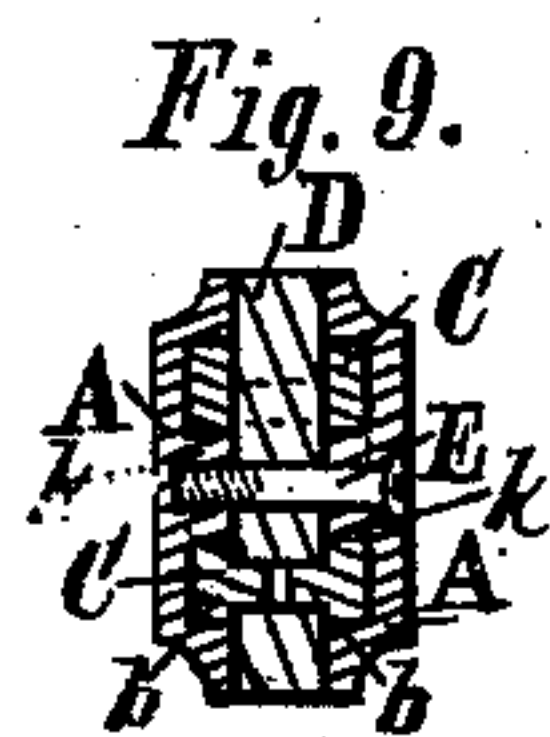
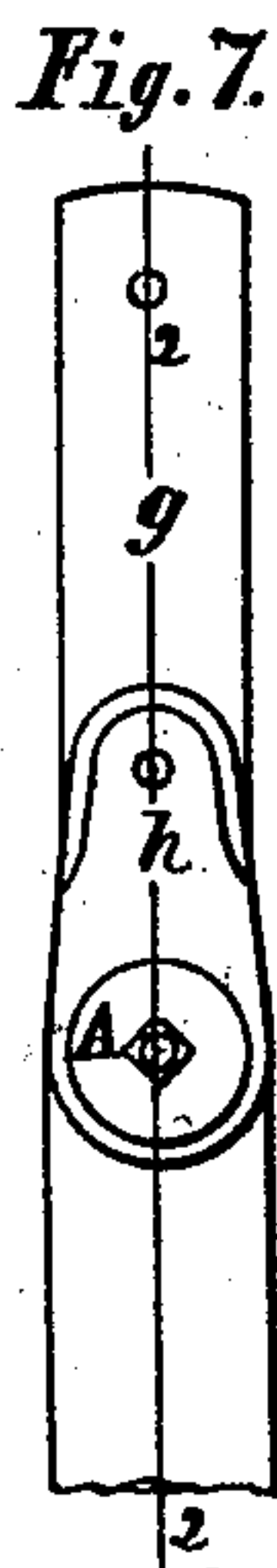
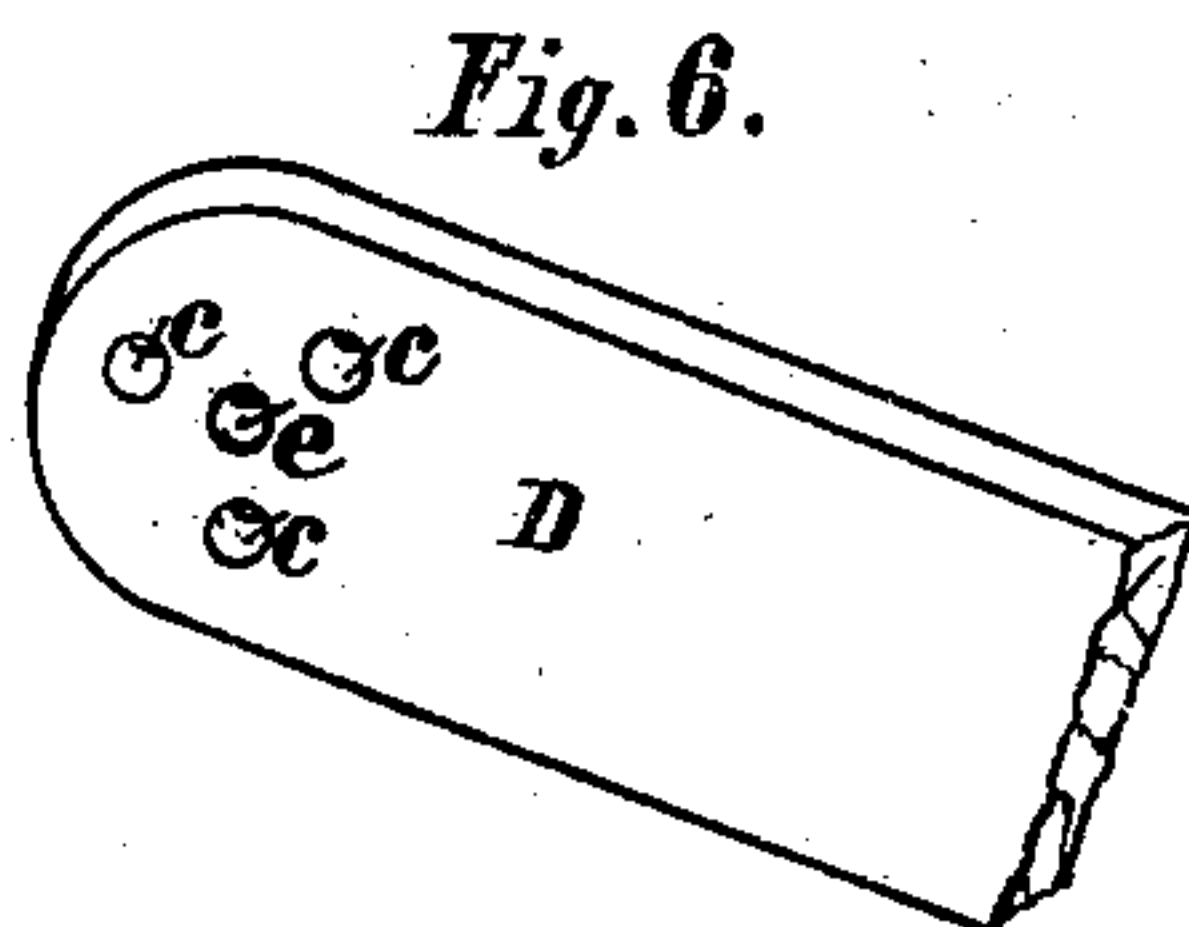
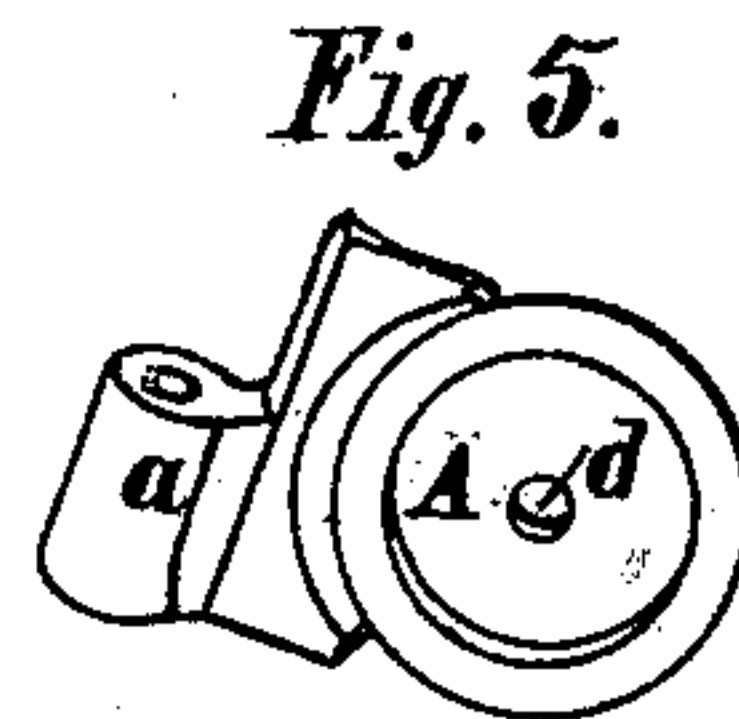
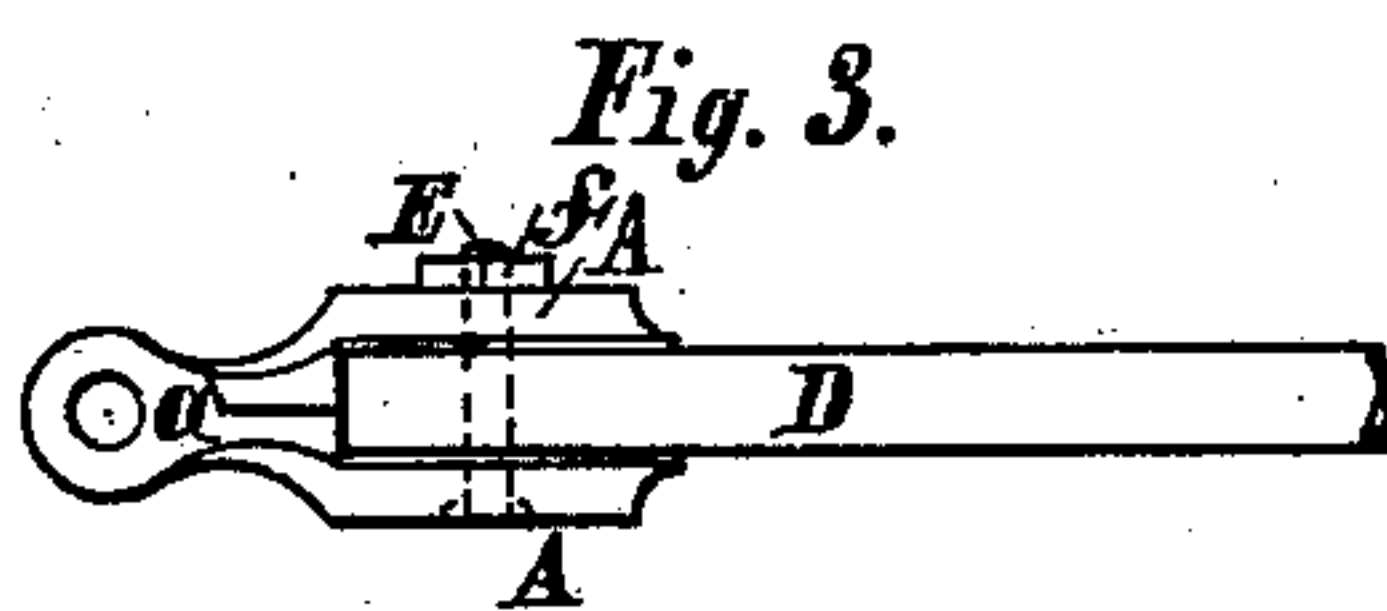
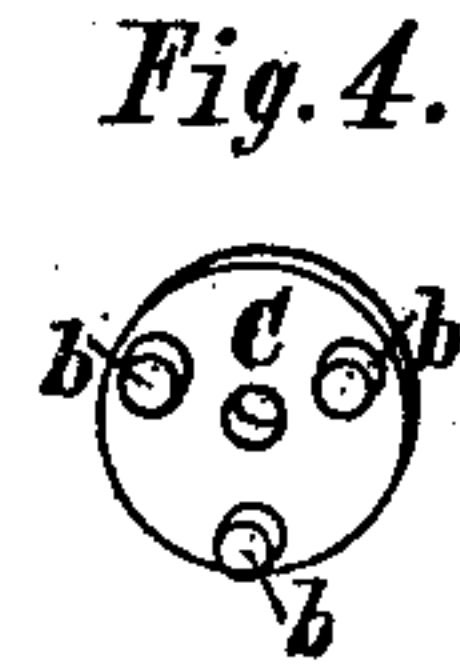
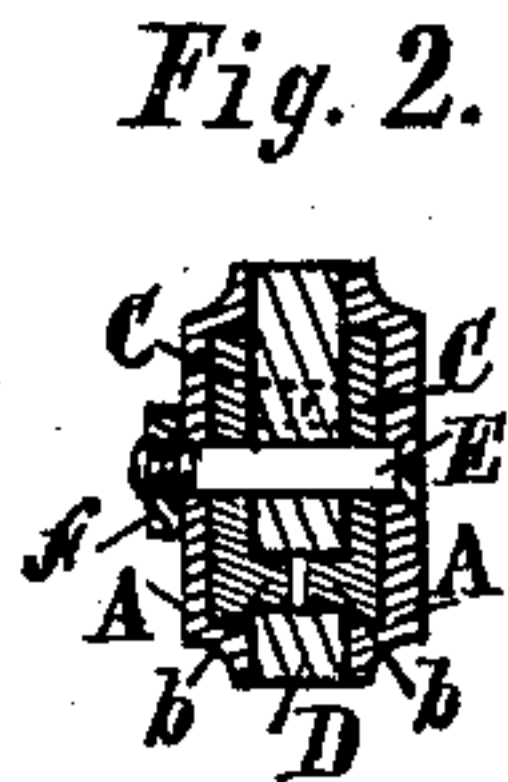
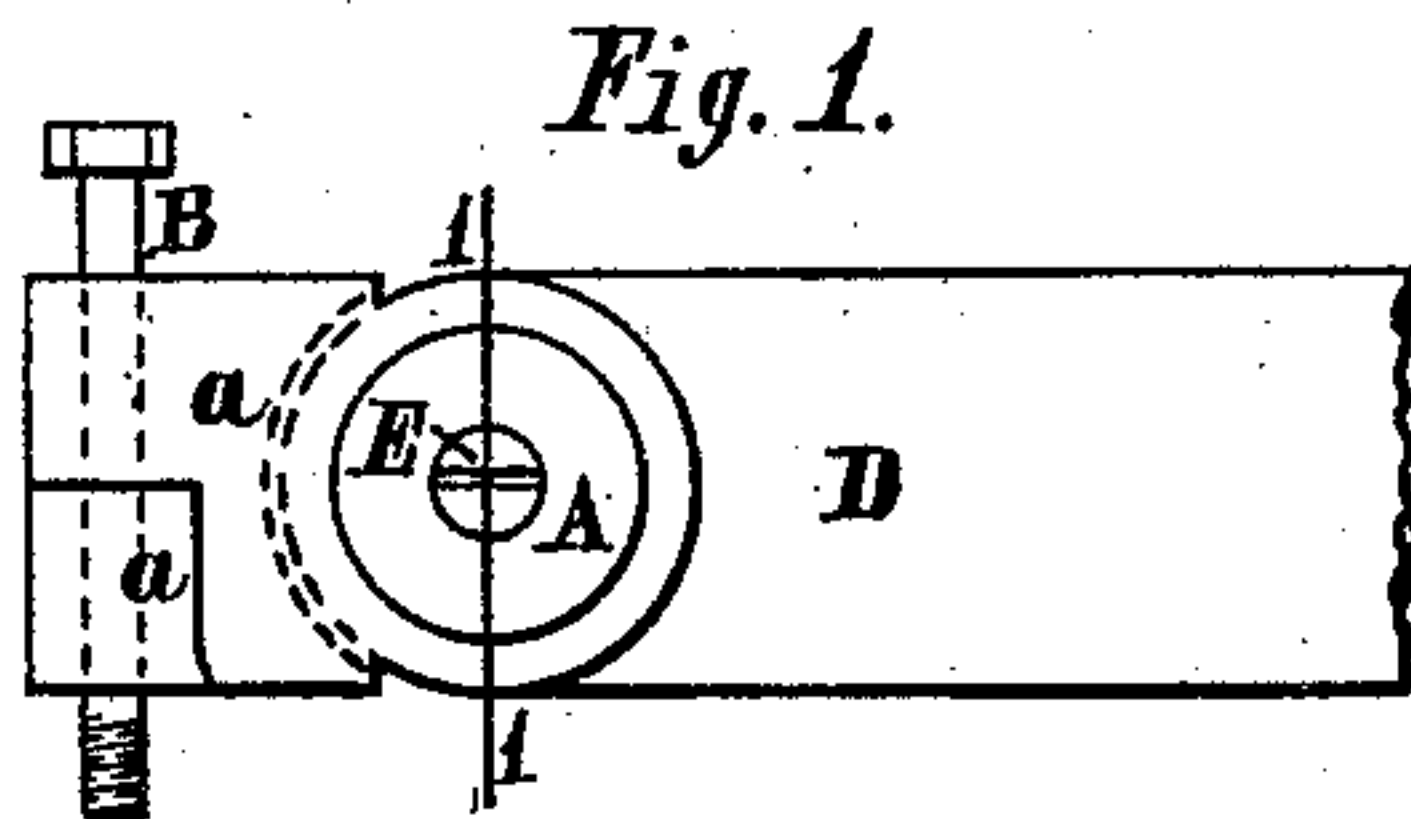
(No Model.)

I. H. RANDALL.

TRACE COUPLING.

No. 256,594.

Patented Apr. 18, 1882.



Attest;

*Louis Coker,
Joseph Selig.*

Inventor;

*Isaac H. Randall,
per Edo. Sumner,
Atty.*

UNITED STATES PATENT OFFICE.

ISAAC H. RANDALL, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO BRYANT HIGGINS, OF SAME PLACE.

TRACE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 256,594, dated April 18, 1882.

Application filed January 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, ISAAC H. RANDALL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Trace and Lug or Back-Strap Couplings, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to a device for coupling traces to the hames or lug or back-straps to the saddle of a harness, the object being to have a pivoted connection, while securing a simple and strong means of attachment.

My invention consists primarily in two plates, in which are set two disks to turn in the plates, said plates being connected to the hames or saddle and the disks to the trace or lug or back-strap, the construction and arrangement of these and other parts of the device being substantially such as are hereinafter more definitely set forth.

In the drawings, Figure 1 shows a side view of my device as employed in connecting a trace. Fig. 2 is a section taken on line 1 1 in Fig. 1. Fig. 3 is a plan of the device of Fig. 1. Fig. 4 is a perspective view of one of the disks. Fig. 5 is a perspective view of one of the plates, taken from the inner side. Fig. 6 is a perspective view of a part of a trace. Fig. 7 is a side view of the device as used in connection with a lug or back-strap. Fig. 8 is a section taken on line 2 2 in Fig. 7. Fig. 9 is a section showing a modified form for plates.

In the device adapted for use with trace and hames there are two plates, A A, of nearly a circular form, each plate having, however, an extension, *a*, so formed and so set and offset in relation to the main part of the plate that the bolt or screw B, which passes through the projections on one of the hames, will pass through both extensions, *a*, as shown. The plates A A are similar, one to the other, in form, each having a position reversed to that of the other to bring their inner faces opposite each other. In the inner side of each plate A, so as to be free to turn therein, is a disk, C. Each of these disks has projections or pins *b*, formed on one of its sides, as many as are desirable, three in the device shown.

The trace D has an end made semicircular, and has in places to correspond to the position of the pins *b* holes *c* to receive these pins. Each of the plates A has a central hole, *d*, and the trace has a corresponding hole, *e*, through which may pass a bolt, E, or a screw.

In putting the parts together a disk, C, is attached to the trace on each side by pressing the pins *b* into the corresponding holes in the trace. The plates A are then placed one on each side of the trace, so as to cover the disks C. After thrusting the bolt E through the central holes these parts may be drawn together by means of the bolt and the nut *f* with that degree of closeness required, leaving the disks C and the trace D free to turn the desired distance, the extensions *a* being in position to receive the bolt or screw B, by which the device and trace is held to the hames, as above mentioned.

It will be seen that by means of my device the trace is so pivoted that it may be swung up and down without being bent or twisted, while a simple and secure coupling is obtained. The bending or twisting which occurs when a rigid connection is made, where in my device the trace is pivoted, is especially objectionable with heavy traces, and it is with such traces that the rigid connection has hitherto been commonly used.

The device as adapted to a lug or back-strap is similar to that for a trace. The plates A A have extensions *g* and *h*, suitable for connecting with the saddle and similar to the pieces hitherto used for that purpose. The disks C are like those for the trace, and they are joined to the lug or back-strap as they are to the trace, while the bolt or screw E holds the parts together with the strap as with the trace. A projection or ledge, *i*, is formed on the extension *g*, for the extension *h* to bear against at *j*, being suitably shaped at this place, so that the pieces *g* and *h* are brought in proper relation to each other for fastening the device to the saddle. The lug or back-strap having such pivoted connection with the saddle may swing without that bending or twisting which occurs when a rigid fastening is employed at this place, and hence the necessary motion of the strap will be easier and the wear less.

In Fig. 9 each plate A is represented as hav-

ing a boss, *k*, on its inner face. This boss is
let into a hole in the trace or back-strap larger
than that required for the bolt or screw *E*. The
boss *k* gives a greater thickness to a plate, *A*,
5 at this part, so that the screw *E* may be screwed
into the plate itself, as shown, the nut *f* not be-
ing required.

I claim as my invention—

1. The combination of plates *A*, disks *C*, hav-
10 ing projections or pins *b*, bolt or screw *E*, with
means of connecting the same to hames or sad-

dle, and with a trace, lug, or back-strap, sub-
stantially as specified.

2. In combination with a trace, plates *A*, hav-
ing extensions *a*, bolt or screw *B*, for securing 15
the plates to the hames, disks *C*, having pro-
jections or pins *b*, and bolt or screw *E*, sub-
stantially as described.

ISAAC H. RANDALL.

Witnesses:

EDW. DUMMER,
LOUIS COHEN.