

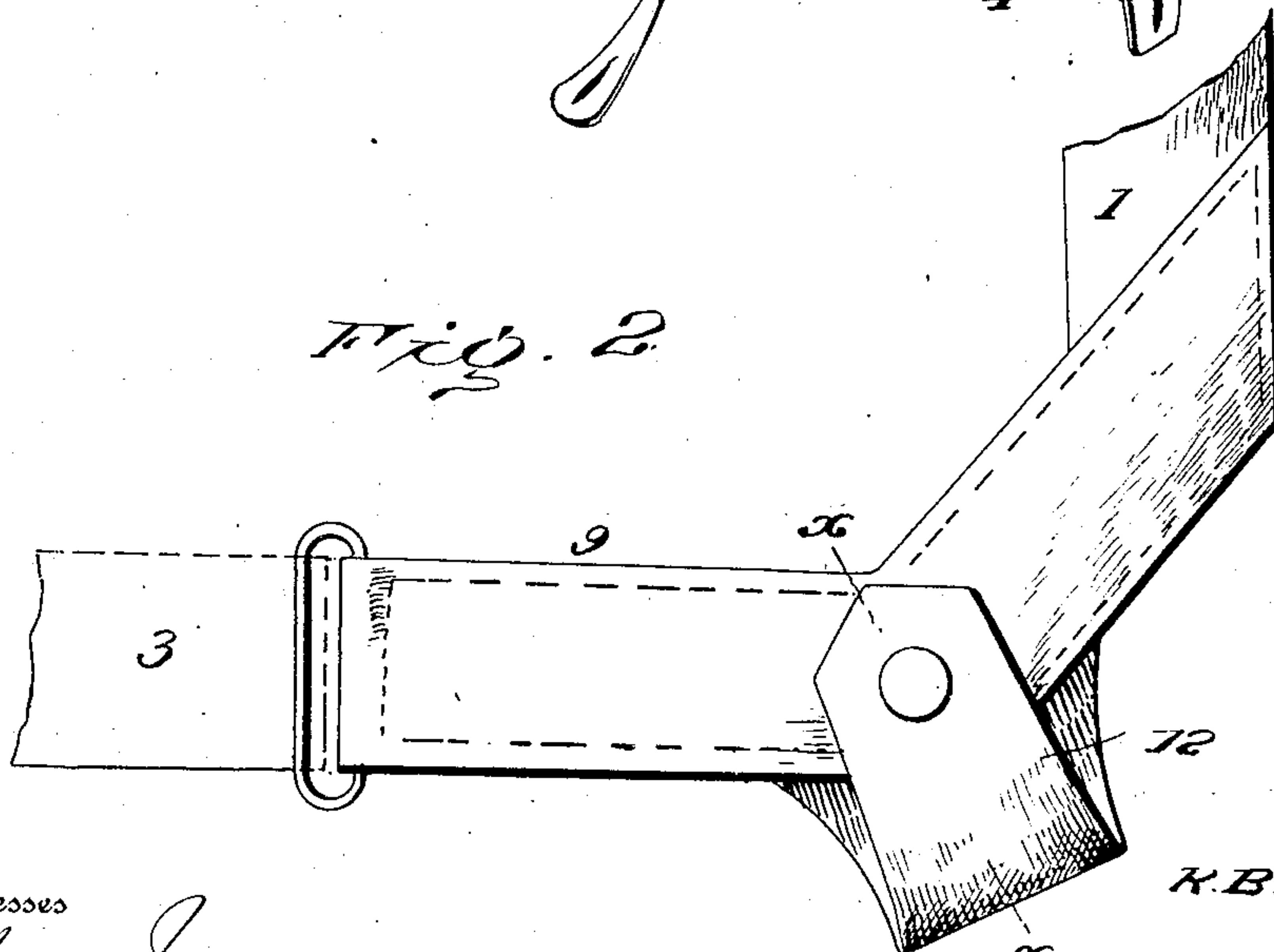
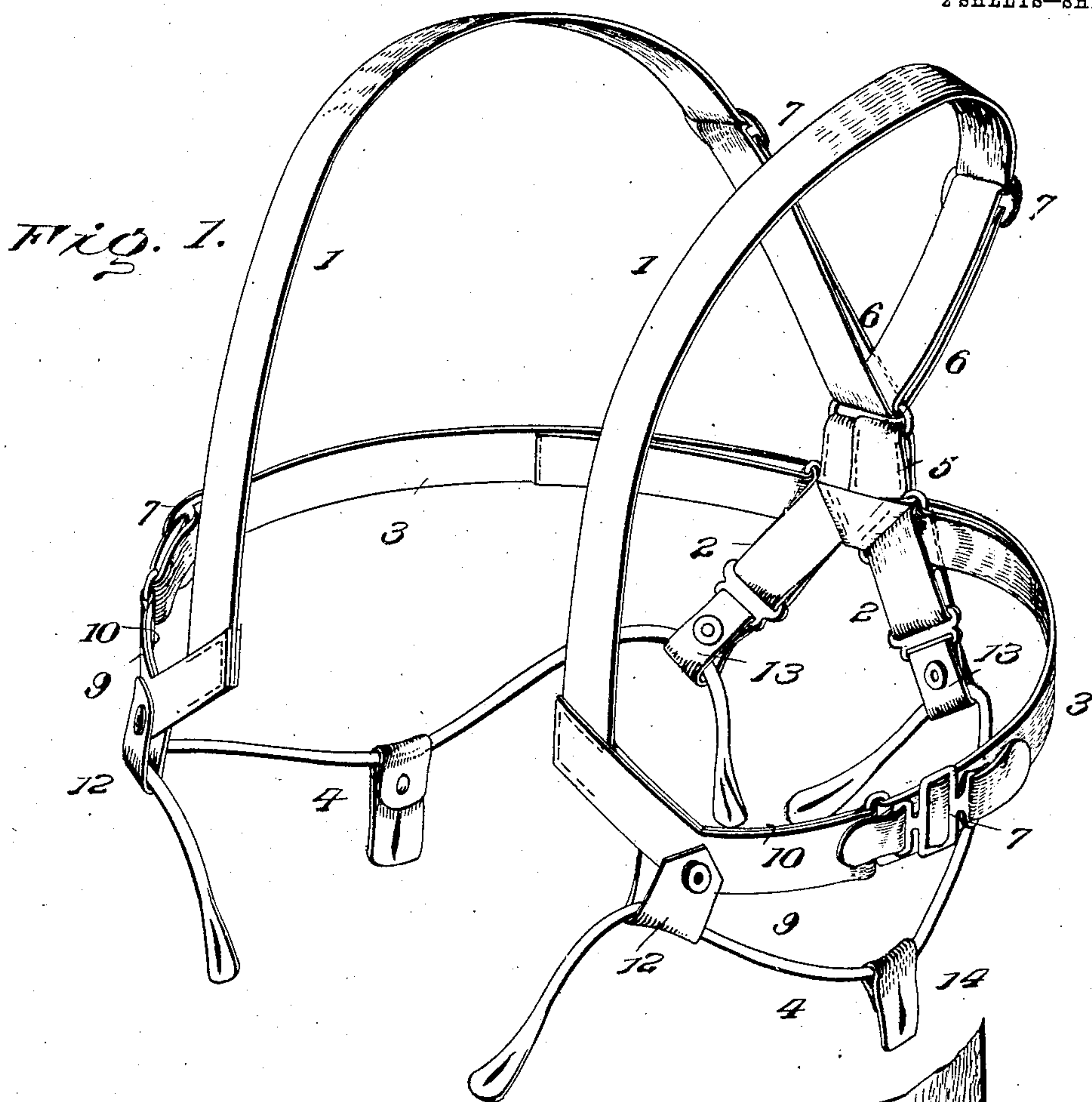
No. 786,153.

PATENTED MAR. 28. 1905.

R. B. RICHMOND.
SHOULDER BRACE AND SUSPENDERS.

APPLICATION FILED MAY 20, 1904.

2 SHEETS—SHEET 1.



Witnesses

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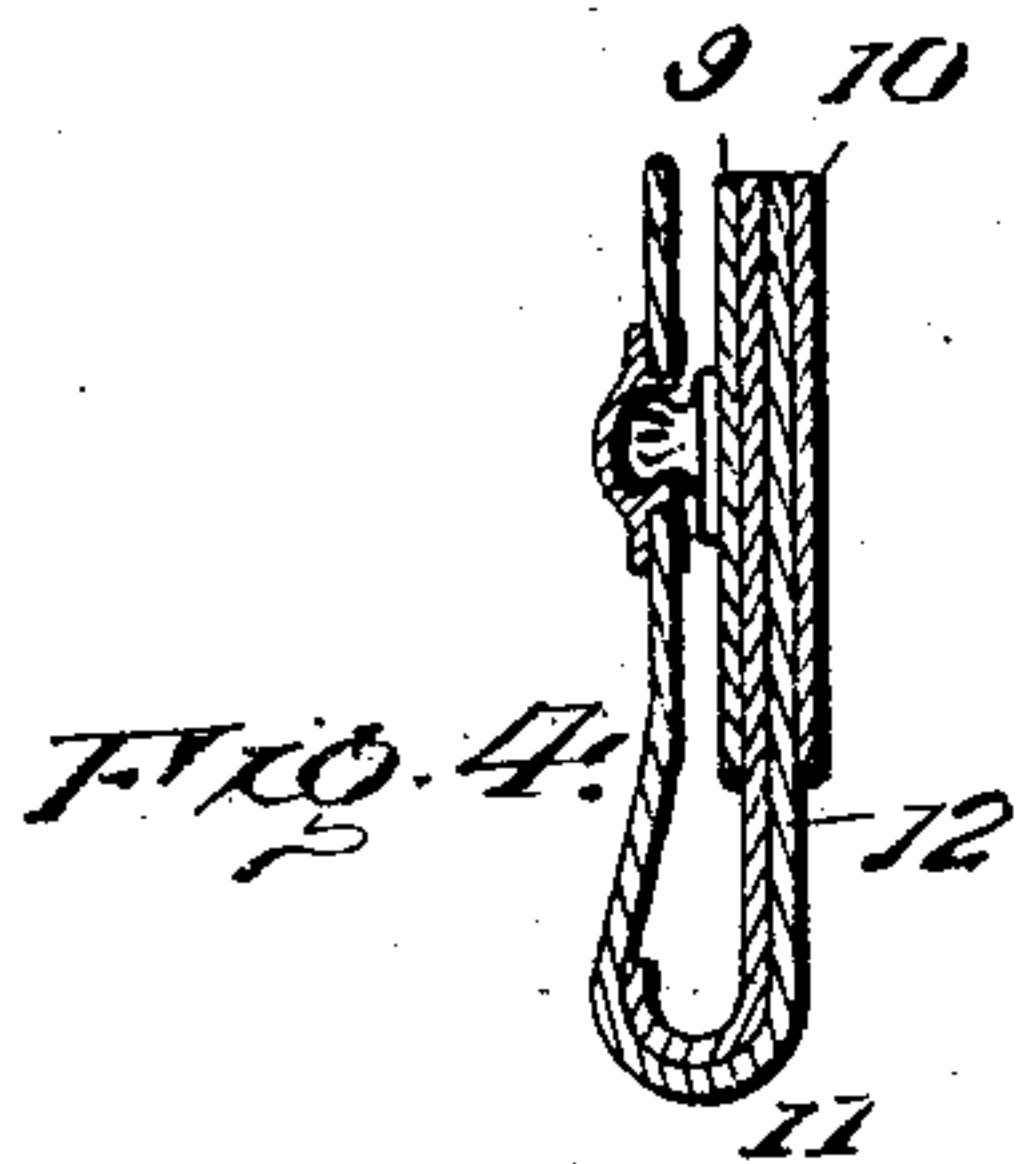
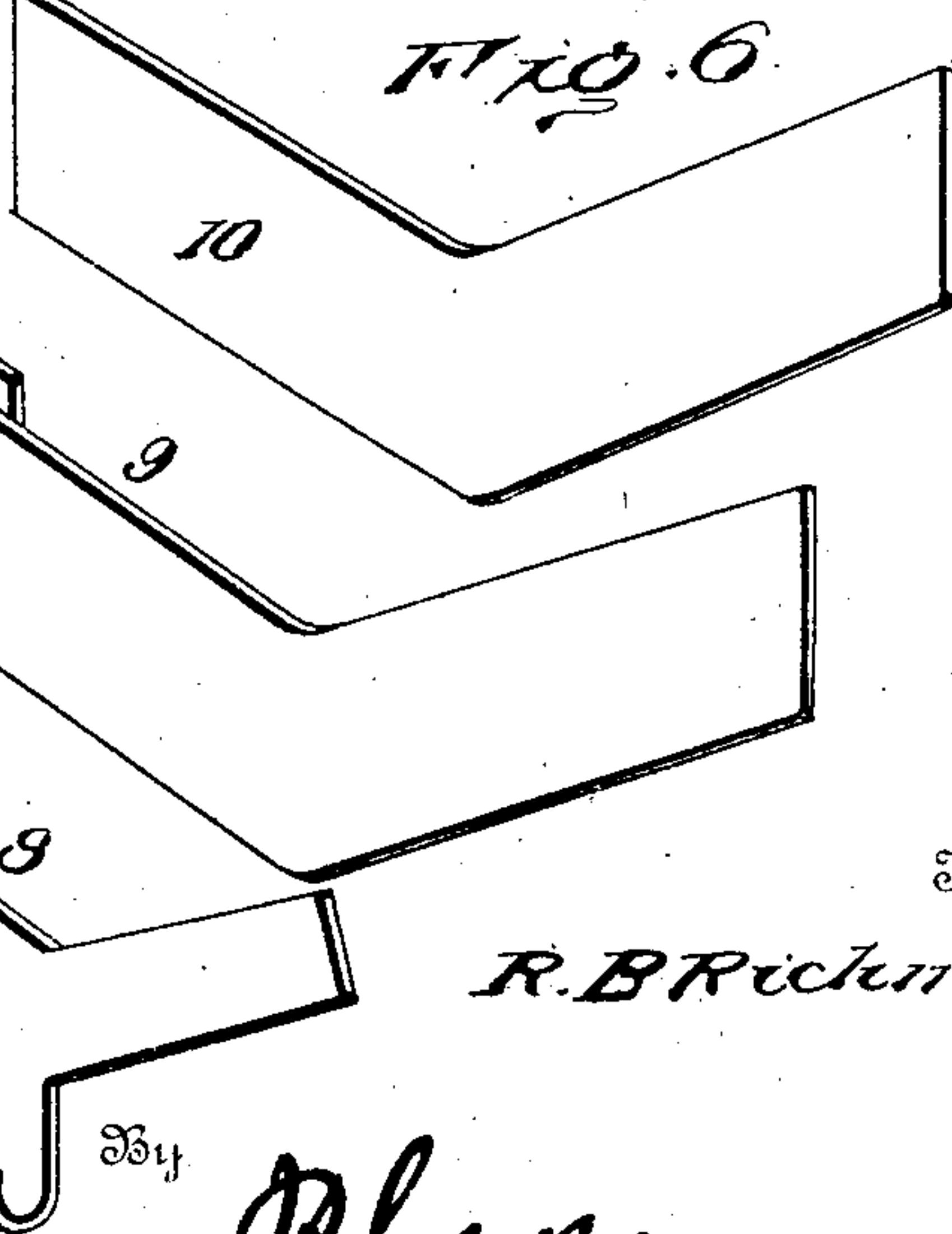
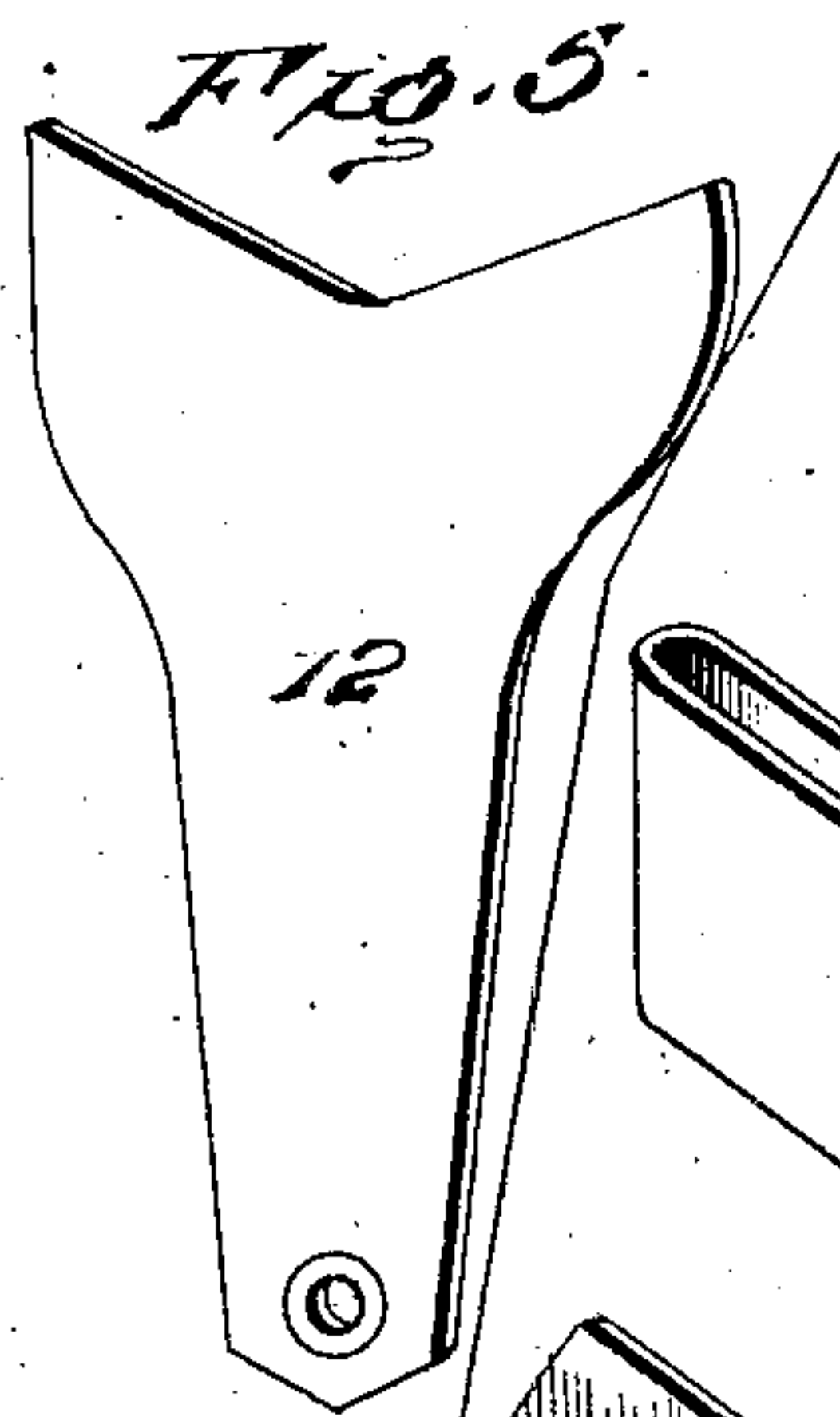
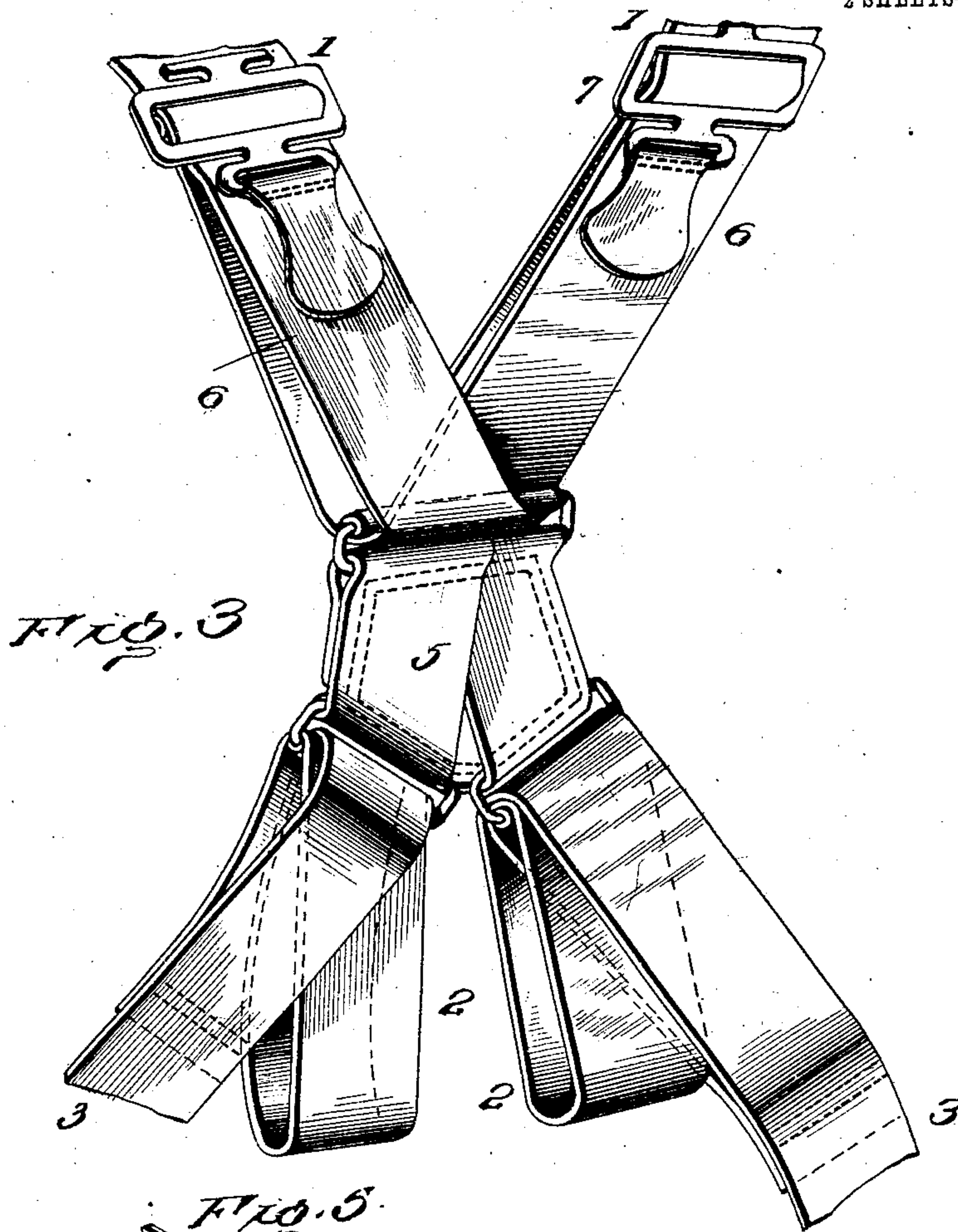
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

REXFORD B. RICHMOND, OF MALVERN, IOWA.

SHOULDER-BRACE AND SUSPENDERS.

SPECIFICATION forming part of Letters Patent No. 786,153, dated March 28, 1905.

Application filed May 20, 1904. Serial No. 208,930.

To all whom it may concern:

Be it known that I, REXFORD B. RICHMOND, a citizen of the United States, residing at Malvern, in the county of Mills and State of Iowa, have invented certain new and useful Improvements in Shoulder-Braces and Suspenders, of which the following is a specification.

In the common forms of shoulder-braces at present in use the chafing of the straps which engage the body, beneath the arms particularly, is such as to make it impracticable in many instances for those involved in occupations necessitating freedom in movement of the body to use the braces to an extent sufficient to derive substantial benefit.

It is therefore an essential object of my invention to provide a supporting-brace which embodies a novel and advantageous arrangement of strap connections which freely adjust themselves to the movement of the wearer, at the same time equalizing the strain so as to admit of the said movement in any direction and always firmly holding the shoulders from forward drooping.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a shoulder-brace constructed in accordance with my invention. Fig. 2 is a view in elevation, partially broken away, showing the brace-plate connecting the front end of each shoulder-strap with the side strap adjacent. Fig. 3 is a perspective view showing the connections between the back straps, side straps, and the shoulder-straps and the back-pad. Fig. 4 is a vertical sectional view taken about on the line X X of Fig. 2. Fig. 5 is a perspective view of the securing-tab carried by each brace-plate. Fig. 6 is a combined view in perspec-

tive of the brace-plate and covering-straps therefor.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In the actual use of my invention the same may be connected with a belt firmly attached about the waist, so as to be used solely in the capacity of a shoulder-brace. However, it is also contemplated that the brace be attached directly to garments for the purpose of supporting the same, and in this use the brace would perform not only its function of bracing the shoulders, but would constitute suspenders for holding the garments of the wearer also.

As shown in Fig. 1, the brace consists of a pair of shoulder-straps 1, back straps 2, side straps 3, and equalizing attaching-cords 4. The shoulder-straps 1 are connected at their rear ends by a running or slip connection with the back-pad 5, the rear ends of the said shoulder-straps being provided with the running-loops 6 to afford the above-mentioned connection. The side straps 3 are integral with the back straps 2, the rear ends of said side straps 3 being formed with loops which are connected with the back-pad 5 in such a manner as to form the back straps 2 dependent therefrom.

The loops of the side straps 3, which are connected with the back-pad 5 and which form the back straps 2, afford a running or slip connection between the straps 2 and 3 and the back-pad, and since the back straps 2 form continuations, virtually, of the side straps 3 it will be readily noted that the back straps also have a running action with reference to the side straps. The shoulder-straps 1 are adjustable, so as to admit of use of the brace upon different-sized persons, and the side straps 3 are also adjustable for the same reason. The adjusting devices for the shoulder and side straps 1 and 3, respectively, are indicated at 7.

The side straps 3 are connected with the front ends of the shoulder-straps 1 by means of connecting brace-plates 8, which plates are

made, preferably, of suitable metal, being covered by fabric, leather, or the like. The covering-straps which inclose the plates 8 are indicated by the numerals 9 and 10, respectively, and these straps afford a means for attaching the plates 8 to the side and shoulder straps. The plates 8 are rigid, as before premised, and projected from the lower portions of the said plates are curved extensions 11, which extensions receive the attaching-cords 4, so as to connect said attaching-cords with the side straps 3. The curved extensions 11 have folding tabs 12, which are secured between the covering-straps 9 and 10 of the plates 8 and which are adapted to detachably secure the attaching-cords 4 to the extensions 11 of the said plates. The tabs 12 are of a type commonly in use, though they are sufficient to support the attaching-cords 4, yet the provision of the curved extensions 11 upon the plates 8 is advantageous, in that the tabs 12 are reinforced and not subject to the wear otherwise occasioned. The attaching-cords are also connected with the back straps 2 by means of folding tabs 13, carried by the lower ends of the back straps, and between the ends of the attaching-cords are carried the adjustable button-tabs 14, which are provided with button-holes similar to those provided upon the ends of the attaching-cords for attachment of the attaching-cords to a garment, belt, or similar part.

The tabs 12 and 13 above described are loosely connected with the attaching-cords 4 and are thus freely slidable thereon, so that as straps 2 adjust themselves relative to each other the side straps 3 and the said straps 2 will also adjust themselves relative to the attaching-cords 4 in the various movements of the body of the wearer, so that the strain is evenly distributed upon the various strap connections without the slightest impediment to a free exercise of the portions of the body which are designed to be braced by the invention. Further, the use of the brace-plates 8 is essentially important in the contemplation of my invention, in that the connections between the attaching-cords 4 and the said plates 8 are such as to hold the side straps away from beneath the armpits of the wearer, and the downward-pulling tendency of the attaching-cords is such as to hold the shoulder-straps 1 and the side straps 2 from chafing or galling action against the body. The plates 8 hold the straps 1 and 3 apart in relative disposal, as the attaching-cords are connected with the plates at a point between the ends thereof, thereby accomplishing the desired results which have been hereinbefore dwelt upon. The strain of the supporting action of the brace is centralized in the back-pad, in which the shoulder-straps, side straps, and back straps are all connected, though centralized in the back-pad 5, yet the strain is equalized by the

slip running connections of the various straps with the back-pad. 65

Having thus described the invention, what is claimed as new is—

1. In a shoulder-brace of the class described, the combination of shoulder-straps, side straps and back straps, attaching-cords connecting the respective back straps and side straps, button-attaching means at the ends of the attaching-cords, and button-tabs adjustable upon said attaching-cords. 75

2. In a shoulder-brace of the class described, the combination of a back-pad, shoulder-straps connected at their rear ends with the back-pad, side straps connected at their rear ends with the back-pad, plates connecting the front ends of the side straps with the front ends of the shoulder-straps, back straps connected with the back-pad, and attaching-cords connected with the back straps and the connecting-plates aforesaid. 85

3. In a shoulder-brace of the class described, the combination of a back-pad, shoulder-straps connected at their rear ends with the back-pad, side straps connected at their rear ends with the back-pad, plates connecting the front ends of the side straps with the front ends of the shoulder-straps, back straps connected with the back-pad, and attaching-cords connected with the lower ends of the back straps and with the connecting-plates aforesaid at a point between the ends of said connecting-plates. 95

4. In a shoulder-brace of the class described, the combination of shoulder-straps, side straps, back straps, plates connecting corresponding ends of the side straps with corresponding ends of the shoulder-straps, and attaching-cords connected with the back straps and with the connecting-plates aforesaid. 100

5. In a shoulder-brace of the class described, the combination of a back-pad, shoulder-straps connected at their rear ends with the back-pad, side straps having a running connection with the back-pad, back straps forming continuations of the side straps, connecting means between the front ends of the side straps and the shoulder-straps, and an attaching-cord connected with the back straps and with the side straps. 110

6. In a shoulder-brace of the class described, the combination of a back-pad, shoulder-straps connected at their rear ends with the back-pad, side straps having a running connection with the back-pad, back straps forming continuations of the side straps, connecting-plates between the front ends of the side straps and the front ends of the shoulder-straps, and attaching-cords connected with the lower ends of the back straps and the connecting-plates aforesaid. 120

7. In a shoulder-brace of the class described, the combination of a back-pad, shoulder-straps connected at their rear ends with the back-pad, side straps having a running connection with 125

the back-pad, back straps forming continua-
tions of the side straps and having a running
connection with the back-pad, connecting-
plates between the front ends of the side
5 straps and the front ends of the shoulder-
straps, an attaching-cord loosely connected
with the lower ends of the back-straps, and
securing means carried by the connecting-

plates aforesaid and connected with the at-
taching-cords. 10

In testimony whereof I affix my signature in
presence of two witnesses.

REXFORD B. RICHMOND. [L. s.]

Witnesses:

Mrs. J. H. RETELSDORF,
HETTIE HÜLLE.