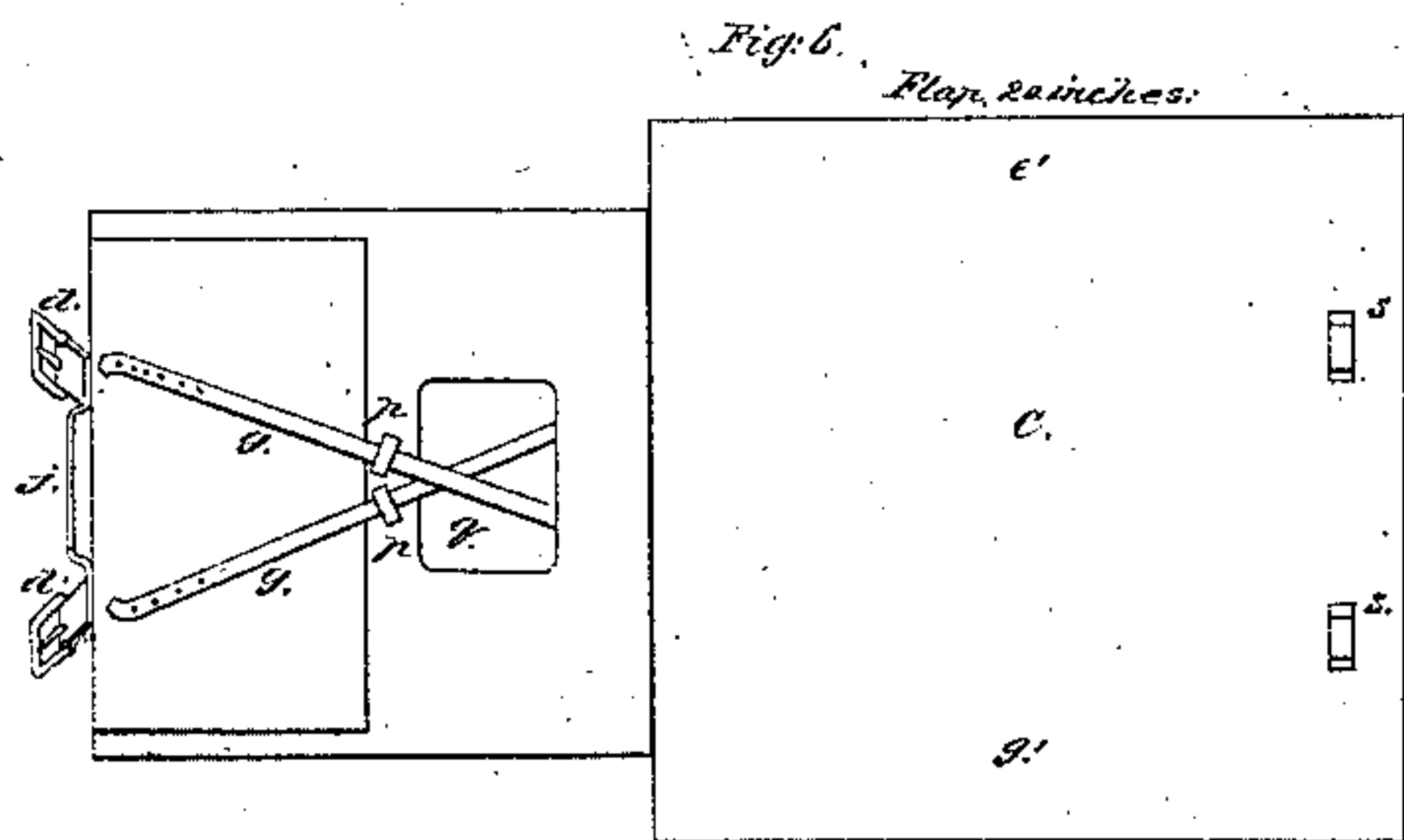
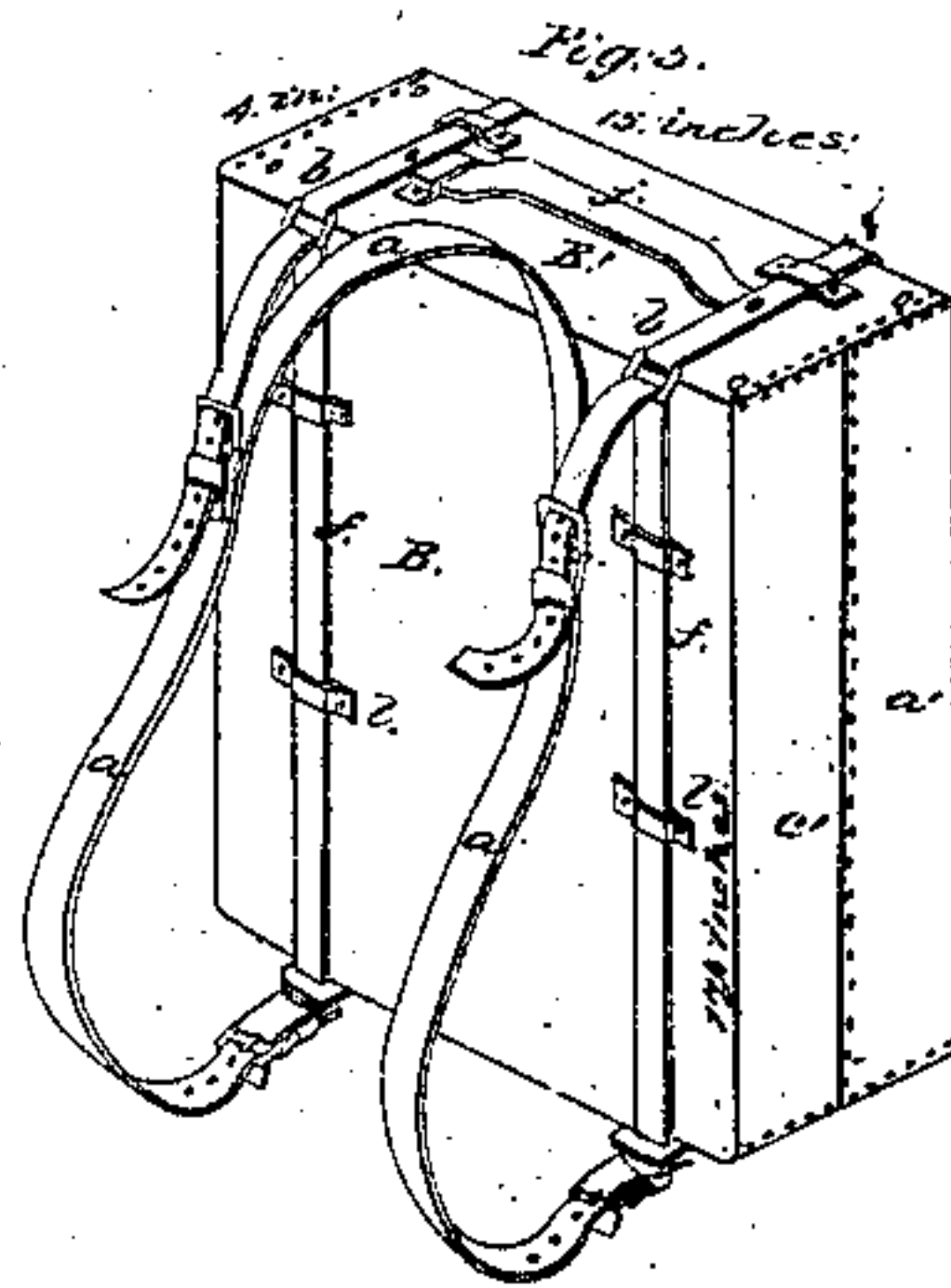
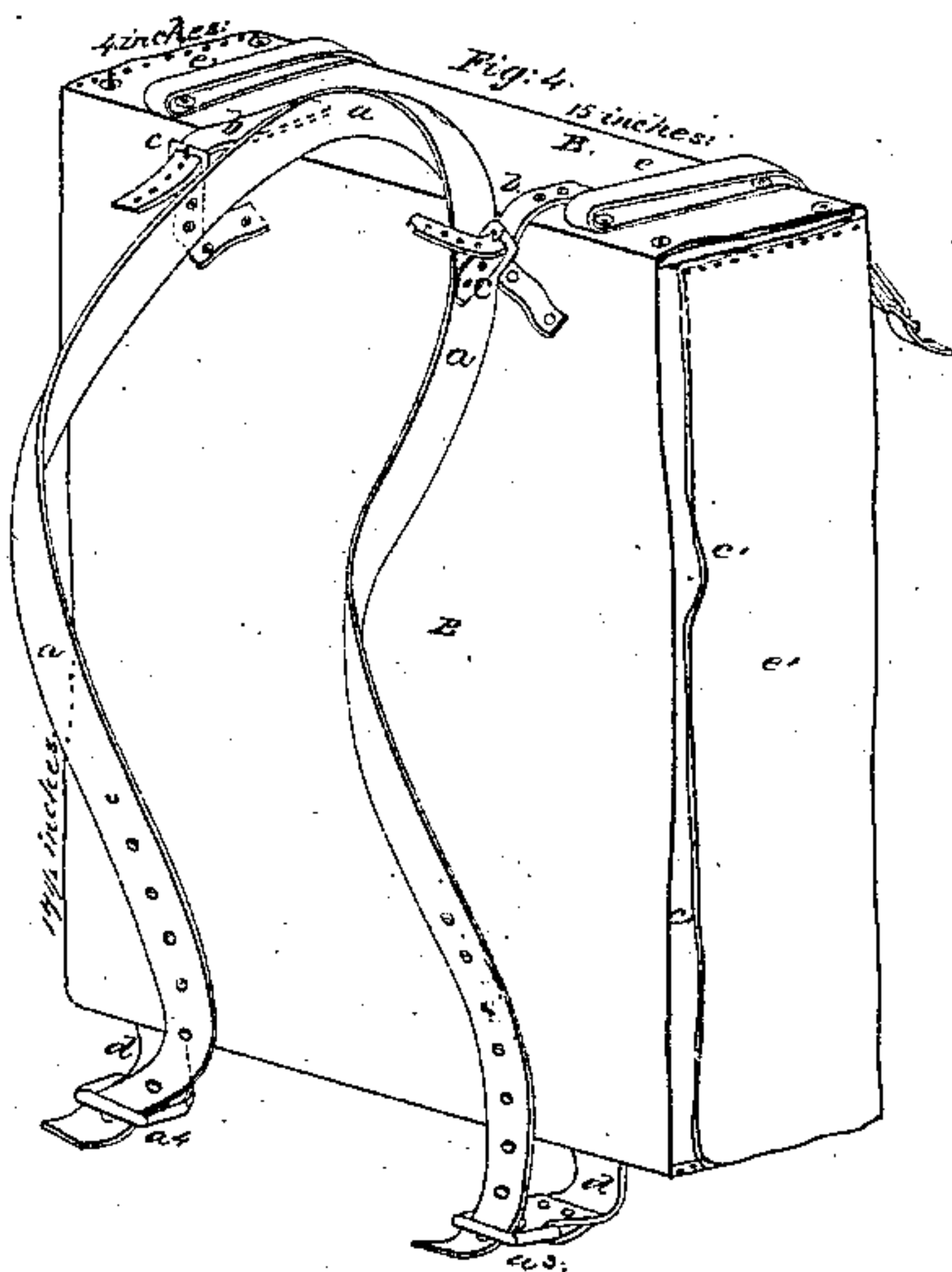
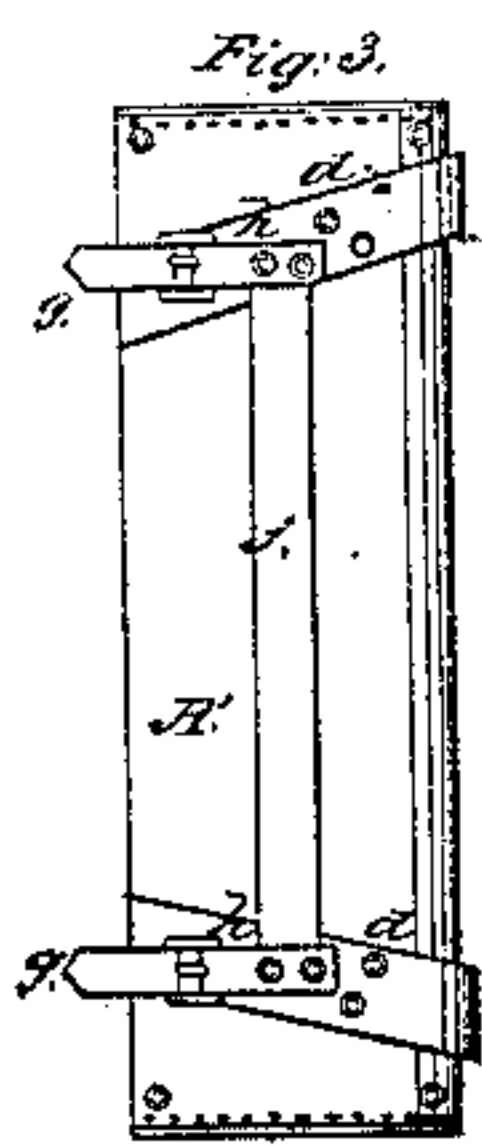
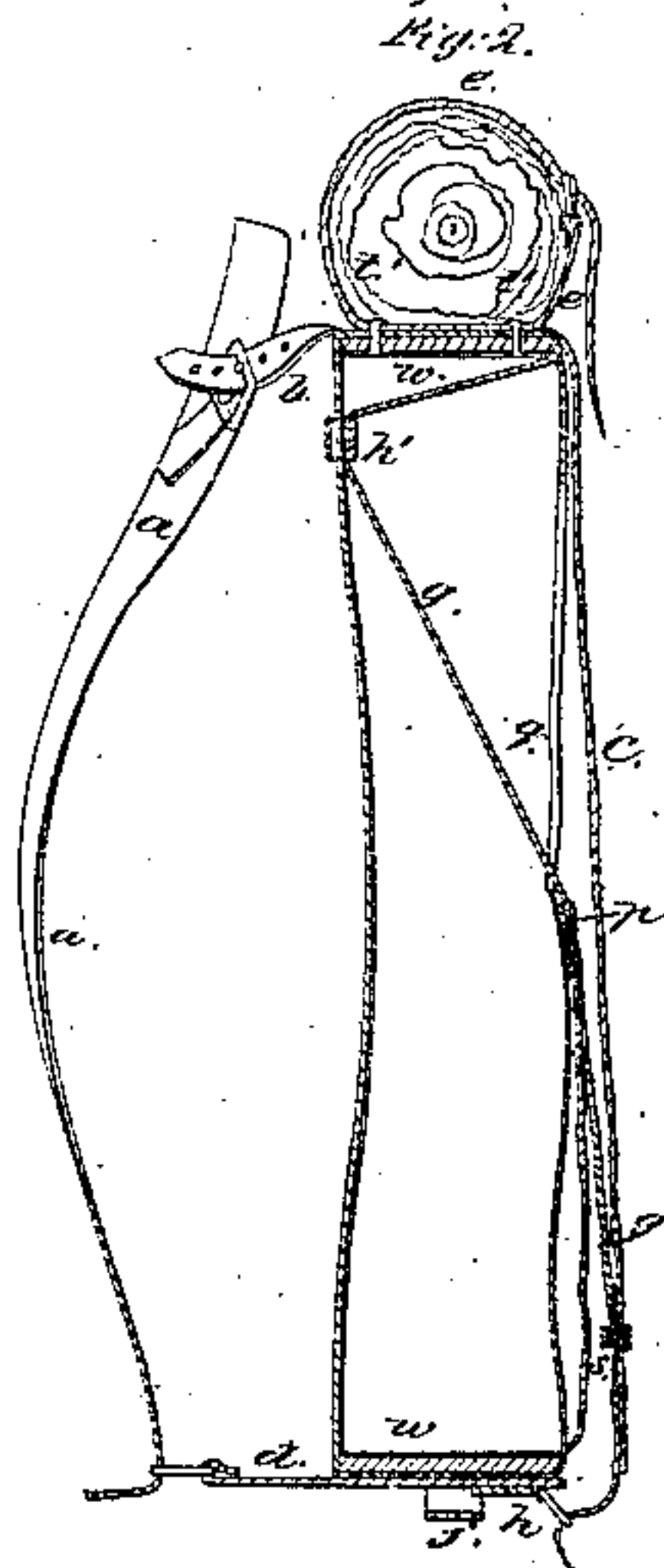
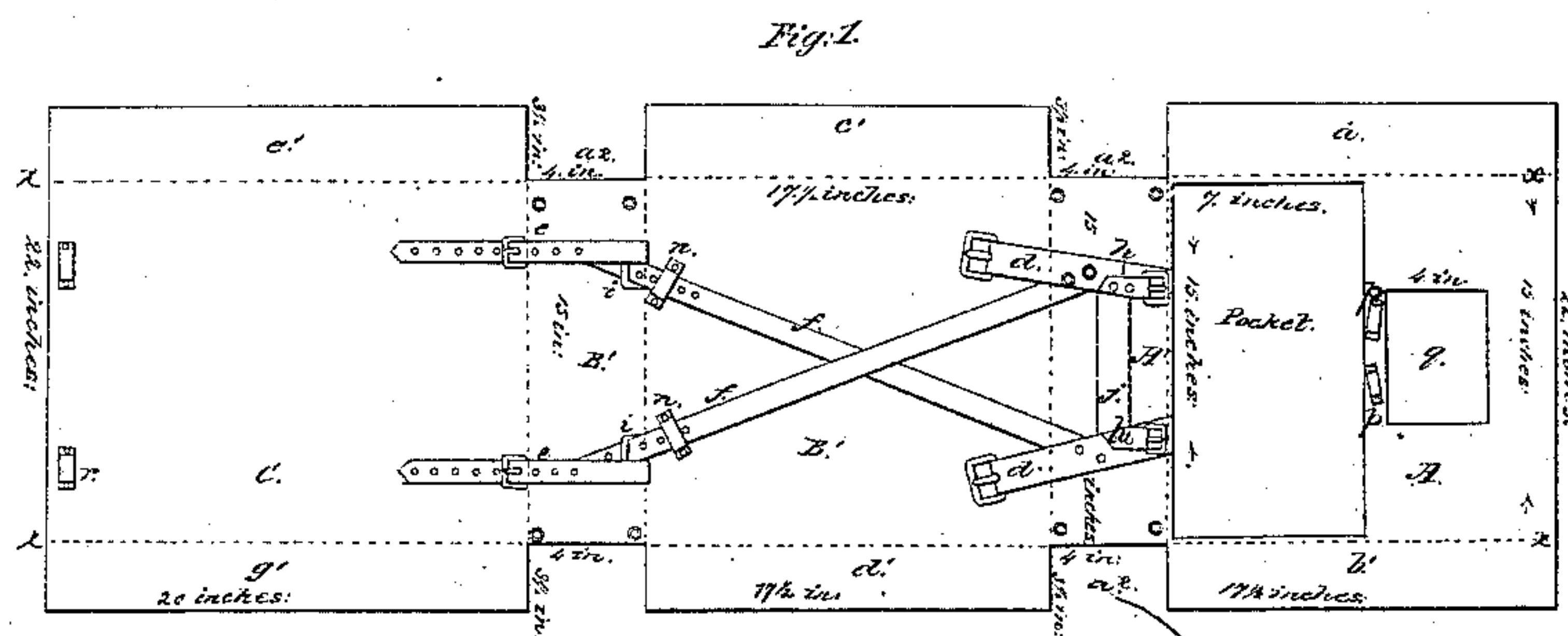


Patented Jan. 28, 1862.

Sheet 1-2 Sheets.



Witness:
Gustavus Dietrich

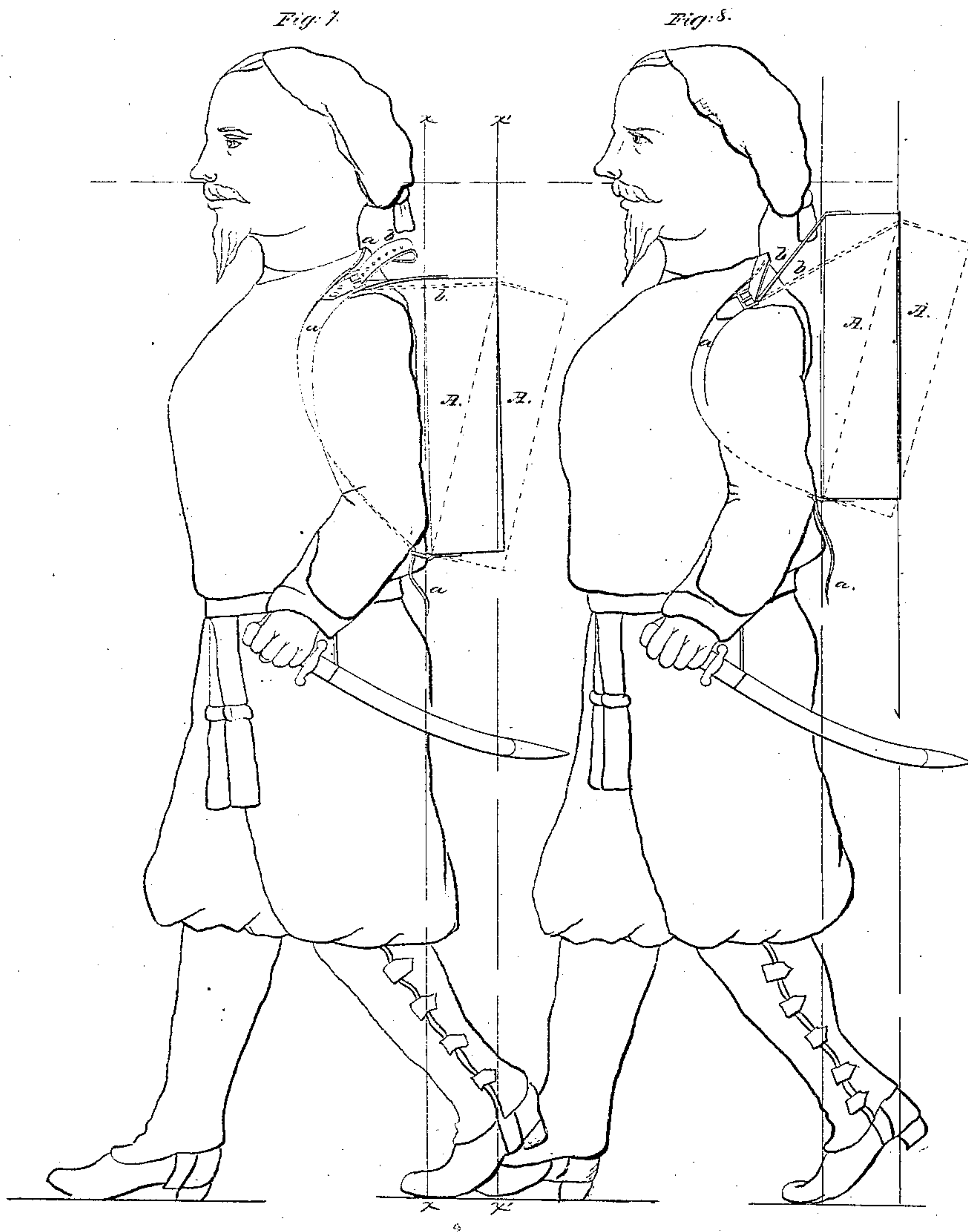
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UNITED STATES PATENT OFFICE.

JOSEPH SHORT, OF BOSTON, ASSIGNOR TO CHARLES SHORT, OF SALEM,
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IMPROVEMENT IN KNAPSACKS.

Specification forming part of Letters Patent No. 34,272, dated January 28, 1862.

To all whom it may concern:

Be it known that I, JOSEPH SHORT, of the city of Boston, in the State of Massachusetts, have invented a new and Improved Mode of Slinging Knapsacks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon.

The nature of my invention consists, first, in so arranging straps upon and attaching them to a knapsack that its top may be allowed to fall away from contact with the shoulders and spine of the wearer in order to prevent the overheating of the spine of the wearer, substantially as described; second, in an improved mode of arranging and adapting straps to support and confine a knapsack to the shoulders and back of the wearer, so that it can be raised and lowered in a vertical line, or nearly in a vertical line, upon the back and shoulders of the wearer, and be held at varying heights on such vertical line, as herein fully described; third, in the use of a single strap, which acts as a neck and shoulder strap, so that it shall have effective action to sustain a knapsack by means simply of connections formed with the top and base of a knapsack or with points near the top and base of a knapsack; fourth, in so forming the side walls of a knapsack as to accommodate the points of contact with the back and shoulders of the wearer to the outline or form of those parts of the wearer, give and preserve proper form to the knapsack, and prevent it from "bagging" in its several adjustments.

No portion of the accouterments of an "infantry" soldier becomes so burdensome on a long march as the knapsack worn upon his back and shoulders, and particularly if it is heavy laden, as is usually the case. To supply the means whereby the weariness engendered by carrying such burden may be relieved while the soldier is yet upon the march is the object of my invention, at the same time overcoming the well-known objections to the use of the ordinary knapsack. These objections, enumerated in brief, are—

First. The knapsack under one of the modes of ordinary construction maintains upon the back and shoulders of the wearer but one position. It therefore calls into play only a

given set of muscles of the body of the wearer and soon tires the soldier.

Second. Under another mode of construction the knapsack slips down from the shoulders to the "small of the back," thus bringing the greatest exertion to sustain its weight directly upon the weakest part of the body of the soldier.

Third. Those knapsacks which obviate the "slipping down" and yet maintain practically but one position upon the back and shoulders inevitably in very hot weather and on a long march overheat the spine and thus induce sunstroke, the result of which, as is well known, is almost certain death.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, reference being had to the accompanying drawings, and to the letters and notes marked thereon, like letters in the several figures indicating the same or analogous parts, in which drawings—

Figure 1 is a plan view of a piece of canvas, of which a knapsack is composed, and showing certain portions thereof cut away in its sides, together with a portion cut out near the center of one of the main divisions of the canvas to form the clothes-hole. Fig. 2 is a longitudinal vertical central section of Figs. 1, 4, and 6. Fig. 3 is an inverted plan of Fig. 2, showing the handle and short straps attached to the bottom of a knapsack, as seen in section in last-named figure. Fig. 4 is a perspective view, with the neck and shoulder strap attached, as shown in section in Fig. 2, and with the crossed back-straps dispensed with, as shown in Fig. 1. Fig. 5 is a perspective with the neck and shoulder straps attached to back-straps running lengthwise of a knapsack and not crossed, as seen in Fig. 1. Fig. 6 is a plan of a knapsack shown in section in Fig. 2 with the flap thrown back and showing the flap-straps crossed over the clothes-hole. Fig. 7 is a view of a knapsack in ordinary position, as shown in black ink, upon the back and shoulders of a soldier, the line of its gravity, as shown in red ink, varying from the line of its gravity, as shown in black. Fig. 8 is a view in black ink of a knapsack shown in black ink in Fig. 7 and elevated on a vertical line upon the back and

shoulders of the wearer, the red lines showing a variation from the line of gravity of the knapsack shown in black in Fig. 8 while the knapsack is in an elevated position.

In the drawings, Fig. 1 is designed to represent a piece of canvas of the proper dimensions for making a medium-sized knapsack, and is twenty-two inches wide by sixty-three inches in length, certain parts thereof being cut away, as shown at a^2 and q . The portions a^2 , cut away from the sides of the canvas, are in dimensions three and one-half inches in width by four inches in length, and the dimensions of the opening q , by reason of the part cut away, are four inches in width by eight inches in length. This figure then represents the canvas properly cut into an outline or form ready to be manipulated and sewed into the permanent condition to constitute the body of a knapsack. The canvas so cut forms three major divisions A, B, and C, and two minor division A' and B'. Division A within the dotted lines is seventeen and one-half inches in length by fifteen inches in width and constitutes the back of the knapsack, and when in permanent position is overlapped or covered by the "flap." Division B within the dotted lines is of the same dimensions as A and constitutes the front of the knapsack, and rests against the back and shoulders of the soldier when in use. Division C within the dotted lines is twenty inches in length by fifteen inches in width, and, in connection with its edges e' and g' , forms a piece of canvas twenty inches in length by twenty-two in width to constitute the flap, which overlaps the back and sides of the knapsack and extends down to and slightly below the bottom of the knapsack when complete. The minor divisions A' and B' are situate intermediate between divisions A and B and B and C, and are four inches in width by fifteen inches in length and constitute in part the top and bottom foundations of the knapsack. These foundations are rendered of the proper stiffness for maintaining the form of the knapsack by securing to their under surfaces strips of sole-leather of the same dimensions. These strips are clearly shown in section at w in Fig. 2.

In manipulating the several parts of the canvas, as shown in Fig. 1, into the requisite position in which they are to be permanently secured the parts a' , b' , c' and d' , (shown outside of the red dotted lines xx , Fig. 1, and on either side of divisions A and B) are turned up at right angles to said positions. The parts a' , b' , c' , and d' are thus utilized to form the sides of the knapsack, and as the front division A is turned up over division B its projecting edges a' and b' inclose and overlap the projecting edges c' and d' of the rear division B of the knapsack, as shown in Fig. 5. The flap C is then turned up over the two major divisions A and B, with the minor or foundation division B' abutting against or adjoining the upper ends of the projecting

edges a' , b' , c' , and d' of the knapsack, whereupon the said projecting edges are sewed to each other and to the ends of the foundation A' and B', as shown in Figs. 3 and 5 and in section Fig. 2, and, if desired, the said sewing may pass through and confine the upper ends of the projecting edges e' and g' to the upper foundation or minor division B', as shown in Fig. 4, thus leaving said edges e' and g' below their upper ends to loosely overlap and protect the sides of the knapsack, as shown in last-named figure.

For slinging a knapsack of a medium size, the body of which is constructed as above described or in any other of the well-known manners, I use a main leather strap a , Fig. 4, which from end to end is two feet eight inches in length by an inch and a quarter in width, perforated with a series of buckle-holes, commencing at the ends and running lengthwise of the strap to the extent of seven inches from each end, the buckle-holes being one and a half inch apart. This strap in use, when connected with a knapsack, constitutes a neck-and-shoulder strap, its ends being passed through buckles a^3 and a^4 , attached to straps d , eight inches in length and of the same width as the neck-and-shoulder strap, and which straps d are secured by rivets to the sole-leather of the foundation A' in the same manner as straps b are attached by rivets t and t' to the top foundation B' through sole-leather w , as seen in section Fig. 2.

The straps b , Figs. 2 and 4, may be six or eight inches in length and perforated, commencing from their outer ends, with buckle-holes an inch and a half apart, a distance equal to the extreme extent it is desirable to have the knapsack fall away from the back and shoulders of the wearer when in use, as will be hereinafter described.

On each side, and four and one-half inches distant from a point midway of the length of the neck-and-shoulder strap a , I attach a buckle-strap c , as shown in said Fig. 4, through which the straps b are passed and secured, thus connecting by the means described said neck-and-shoulder strap to the top and bottom of the knapsack.

The neck-and-shoulder strap when in use as designed embraces the nape of the neck, passes over and in front of the right and left shoulders, and down beneath each arm of the wearer, as indicated in Figs. 7 and 8 of the drawings.

Blanket-straps e are likewise attached to the top foundation B by rivets passed through the sole-leather w of said foundation, as shown in Figs. 2 and 4.

In the inverted plan Fig. 3 of Fig. 2, is shown the relation of the straps d , Fig. 4 to the lower foundation A' of the knapsack, together with the handle j and short buckle-straps h , which receive the ends of flap-straps g . (Shown in Figs. 2 and 6.) These flap-straps at their upper ends are secured between the canvas and the sole-leather w of

foundation B'—say five inches from the ends of the sole-leather—by rivets passing through them and the sole-leather. They then pass through the loops p' , one of which is shown in section in Fig. 2, attached to the inside of the canvas of division B and situate just beneath the face of the sole-leather of the foundation B'. They thence pass down obliquely, crossing each other as they pass out of the clothes-hole q , pass on through p , Figs. 2 and 6, then through loops s on the inside of the flap, and finally enter and are secured at their lower ends in buckle-straps h , as shown in Figs. 2 and 3.

Fig. 1 of the drawings shows the same principle of clothing or slinging knapsacks, with the addition of back-straps f , crossed midway of division B, their lower ends being secured by rivets to the sole-leather w of the bottom foundation A', and between the buckle-straps d and the outer surface of said foundation. The outer ends of said back-straps f , as shown in Fig. 1, pass through loops n , attached to the canvas of division B, and thence through loops i , attached by rivets to the sole-leather w of the upper foundation B', and thence are intended to pass into and be secured in buckles c , Fig. 4, attached to the neck-and-shoulder strap a , as seen in said last-named figure, such neck-and-shoulder strap, as shown and applied in Fig. 4, being as equally applicable to the outer ends of straps f in Fig. 1 as to straps b in Fig. 4, the ends of said neck-and-shoulder straps passing through and being secured in buckle-straps d in both cases.

I have thus shown two modes of carrying out my invention, both of which illustrate the principle of supporting a knapsack at its bottom and both being capable of adjusting in various fixed elevated positions a knapsack upon the back and shoulders of the wearer in a vertical line, or nearly so, corresponding with the erect position of a soldier's body, and also permitting the knapsack to assume variable lines of gravity with reference to the back and shoulders of the wearer when in any one of the several elevated positions of which it is capable. These functions of a knapsack, when slung with straps after my mode, is clearly illustrated by Figs. 7 and 8, Sheet 2 of the drawings, Fig. 7 showing a knapsack A in black lines occupying the usual position on the back of a soldier, with the line of gravity, as shown at xx in blue ink, and a variation therefrom, as shown in same figure by $x'x'$, effected by merely letting out or lengthening the straps b between their points of attachment to the knapsack and the neck-and-shoulder strap.

Fig. 8 shows still another variation in the position of the knapsack A of Fig. 7, effected by buckling up the ends of neck-and-shoulder strap a and letting out or lengthening the straps b between their points of attachment to the neck-and-shoulder strap and the knapsack, the ends of a being buckled up the same length that the straps b are "let out," thus causing the knapsack to rise in a vertical line,

or nearly so, above the horizontal line it occupied, as shown in black in Fig. 7; and while in this elevated position, as shown in black lines in Fig. 8, the knapsack may still be made to vary its position, as illustrated in red, by simply still further letting out the straps b , the bottom of the knapsack retaining the same point of elevation previously given it.

It is thus obvious that very many changes may be given to a knapsack constructed and operated upon my mode over and above the ordinary knapsack, each variation in the position readily made, and while the soldier is on the line of march bringing into play either a different set of the muscles of his body or causing the strain upon one set of muscles to be transferred to others, thus relieving him from the monotonous and long-continued strain upon a given set.

Fig. 5 shows the application of my neck-and-shoulder strap to the top and bottom of a knapsack, which has back-straps f running lengthwise instead of being crossed upon division B, said straps at their bottom and top ends passing loosely through loops attached to the top and bottom foundations of the knapsack, and thereafter being connected to the neck-and-shoulder strap a , as shown in said figure.

Fig. 9 represents the form of wooden side walls which are to be adjusted inside the knapsack, their ends abutting against the ends of the upper and lower foundations B' and A', their length being the same as the length of the knapsack inside and their width at their extremities the same as the inside width of the knapsack to which they are intended to be applied. They may be three-eighths of an inch in thickness and hollowed out on their inner face edge, as at x^3 , thus measurably conforming that part of the knapsack which adjoins the back and shoulders to the outline of those parts of the body of the wearer. They thus cause the knapsack to present to the back and shoulders an outline of abutment which affords under some positions of a knapsack greater ease and comfort, prevent the bagging of the knapsack, at the same time subserving the purpose, in a general sense, of securing to it proper form and stability. Said walls are held in place simply by contact with a portion of the interior surface of a knapsack and are removable at pleasure.

Having thus described my improved mode of slinging knapsacks, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. Arranging, disposing, and attaching straps to and upon a knapsack so that its top may be allowed to fall away from contact with the shoulders and spine of the wearer for the purpose of ventilating the back and shoulders of the wearer, and at the same time cause a different set of muscles to be brought into action, in the manner substantially as described.

2. Arranging and adapting straps to support and confine a knapsack to the shoulders and

back of the wearer so that it can be raised and lowered in a vertical line or nearly in a vertical line upon the back and shoulders of the wearer and be held in the desired fixed position on such line at the will of the operator, in the manner substantially as described.

3. A combined neck-and-shoulder strap having connections with a knapsack by intermediate straps at points which are at or near the top and base of the knapsack, for the purpose specified.

4. The combination of the removable curved side walls with the adjusting-straps, whereby

the body of the knapsack is adapted to the back and shoulders of the wearer in its different positions, as and for the purpose described.

Witness my hand and seal, in the matter of my application for a patent for an improved mode of slinging knapsacks, this 4th day of November, A. D. 1861.

JOSEPH SHORT. [L. s.]

Witnesses:

F. P. HALE, Jr.,

J. R. BAMPTON.