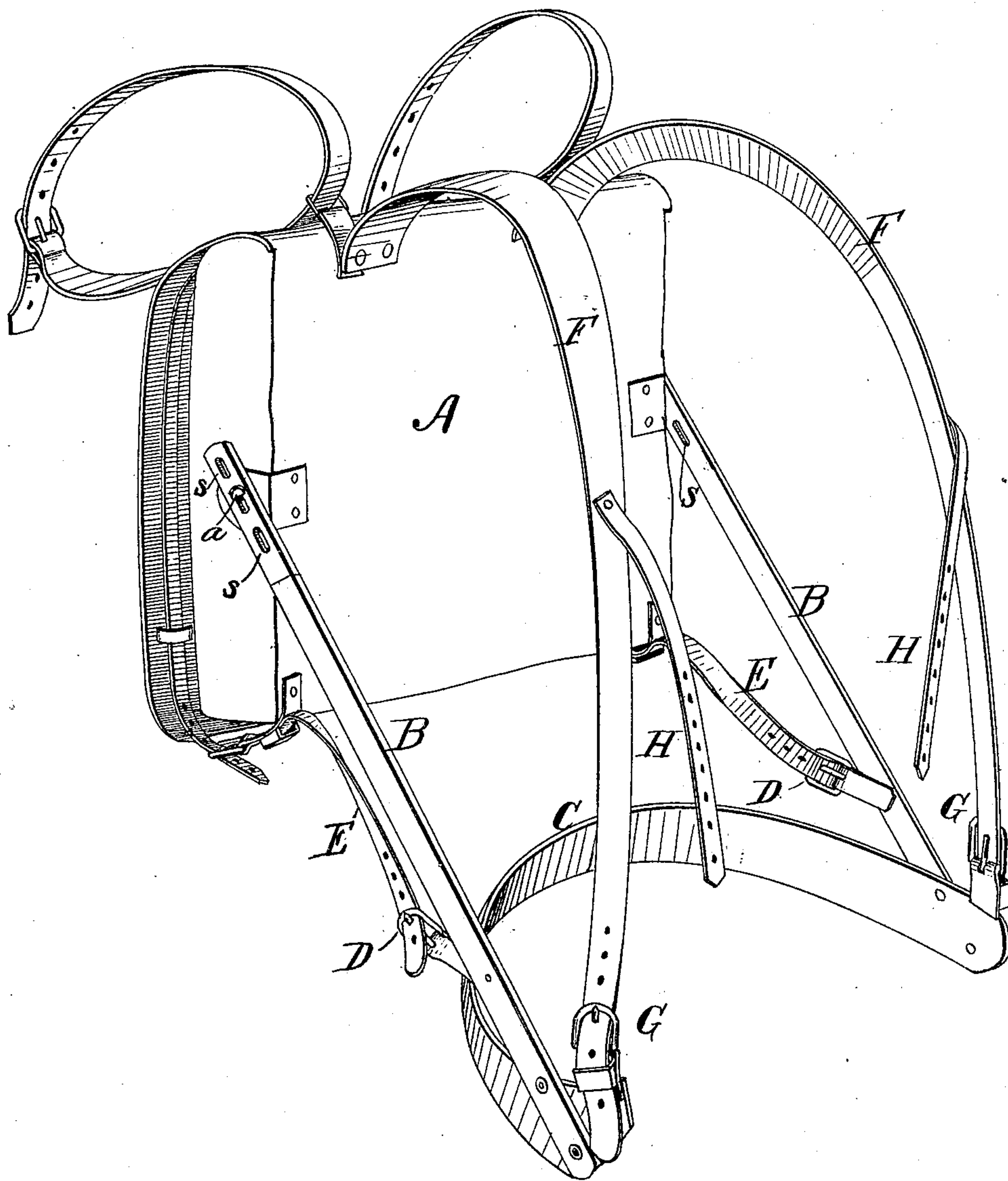


H. C. MERRIAM.
KNAPSACK-SUPPORTS.

No. 178,545.

Patented June 13, 1876.



WITNESSES;

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UNITED STATES PATENT OFFICE.

HENRY C. MERRIAM, OF UNITED STATES ARMY.

IMPROVEMENT IN KNAPSACK-SUPPORTERS.

Specification forming part of Letters Patent No. **178,545**, dated June 13, 1876; application filed April 8, 1876.

To all whom it may concern:

Be it known that I, HENRY C. MERRIAM, United States Army, have invented certain new and useful Improvements in Knapsack-Supporters; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which my invention is represented by a perspective view.

This invention has for its object to improve, generally, the construction of knapsack-supporters; and consists in certain devices and combinations, which I will now proceed to describe.

In the drawing, A represents the knapsack made of duck or other suitable material, and provided with a wooden frame inside, composed of four pieces of hickory or other strong wood, about one inch by five-sixteenths, placed flatwise against the back on that side to come next the wearer, and confined by rivets passing through the overlapped ends and through the back of the knapsack, the latter being stretched as tight as possible. To the sides of the knapsack thus prepared are attached two side braces, B B, of hickory or other strong wood, by means of metallic buttons *a*, resembling at one end the letter T, and hung in flexible leather ears a little below the center of the knapsack. These side braces are made longitudinally adjustable by means of three or more elongated slots, *s*, at the upper ends, fitting the T-buttons, and they are also covered with sheet metal to a point below the slots, to guard against splitting or breaking.

The lower ends of the side braces are riveted at points about opposite the hip-joints to a leather hip-strap, C, about two and one-half inches wide, which passes upward and across the back considerably below the waist. Small buckles D are also attached to the side braces about one-third above the hip-strap to receive stay-traps E from the lower corners of the knapsack, by which means the knapsack may be adjusted to any desired angle to the wearer. The shoulder-straps F, which are about two inches wide at the upper ends and curved for about one-third their length, then gradually narrowed to one inch, and straight to the lower ends, are riveted to the top of

the knapsack through the stretched back and frame, then pass over the shoulders, the outer edges of the curves being toward the neck and down to the hip-joints, when they are received by buckles G, attached to the extreme ends of the hip-strap close beside the lower ends of the side braces. Small straps H are attached to the shoulder-straps at about the lower extremities of the curves, which pass diagonally downward and connect by snap-hooks to the buckle of the waist-belt for the purpose of supporting the cartridge-boxes, if worn.

Among the many advantages attending the use of my knapsack-supporter, the following may be enumerated: First, a large proportion of the weight of the knapsack is placed directly upon the lower limbs of the wearer, to that extent relieving the shoulders and vertebral column from strain. Second, the entire shock of the knapsack occasioned by the act of marching, hitherto sustained by the shoulders and vertebral column at a distressing leverage, is received by the side braces, which stand in the direct line of the shock, viz., that of the advanced leg at the instant of its contact with the ground, and is so transferred to the hip-strap and sustained by the lower limbs without perceptible inconvenience. Third, by my brace system the knapsack is kept from touching the back of the wearer, except very lightly at the extreme top to insure steadiness, thereby leaving the shoulder-blades entirely free for action, and the whole back unencumbered and perfectly cool. Fourth, by the curvature of the shoulder-straps, as well as by their vertical attachment at the hips, they no longer interfere with the free circulation of blood to the arms, nor with the free action of the shoulder-joints, while the chest is left also free from oppressive cross-belts, so free that the entire front of the coat and even the waist-belt may be thrown open on the march without deranging in the slightest degree the adjustment of the knapsack. Fifth, by the equable and comfortable distribution of weight and shock, the knapsack may be arranged to contain the rations as well as the clothing, &c., of the wearer, and thus, in the military service, rid the soldier of that most cumbersome and

bungling part of his equipment—the haversack—and, besides, even the musket may be hung, butt upward, by its sling upon the top of one of the side braces, being simply steadied in its place by the hand at the muzzle, and may be changed from side to side at will, and all greatly to the relief of the soldier.

I claim as my invention—

1. The side braces B, provided with elongated slots *s*, combined with the knapsack A, having T-buttons *a* and the waist-belt C, substantially as described, for the purpose specified.

2. The adjusting-straps E, combined with

the knapsack A, adjustable side braces B, and waist-belt C, substantially as described, for the purpose specified.

3. The curved shoulder-straps F, provided with straps H, in combination with the knapsack A, waist-belt C, and adjustable side braces B, substantially as described, for the purpose specified.

HENRY C. MERRIAM.

Witnesses:

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