

(No Model.)

3 Sheets—Sheet 1.

H. C. MERRIAM.
KNAPSACK.

No. 362,302.

Patented May 3, 1887.



Fig. 1.

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C. Sedgwick

INVENTOR:

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ATTORNEYS.

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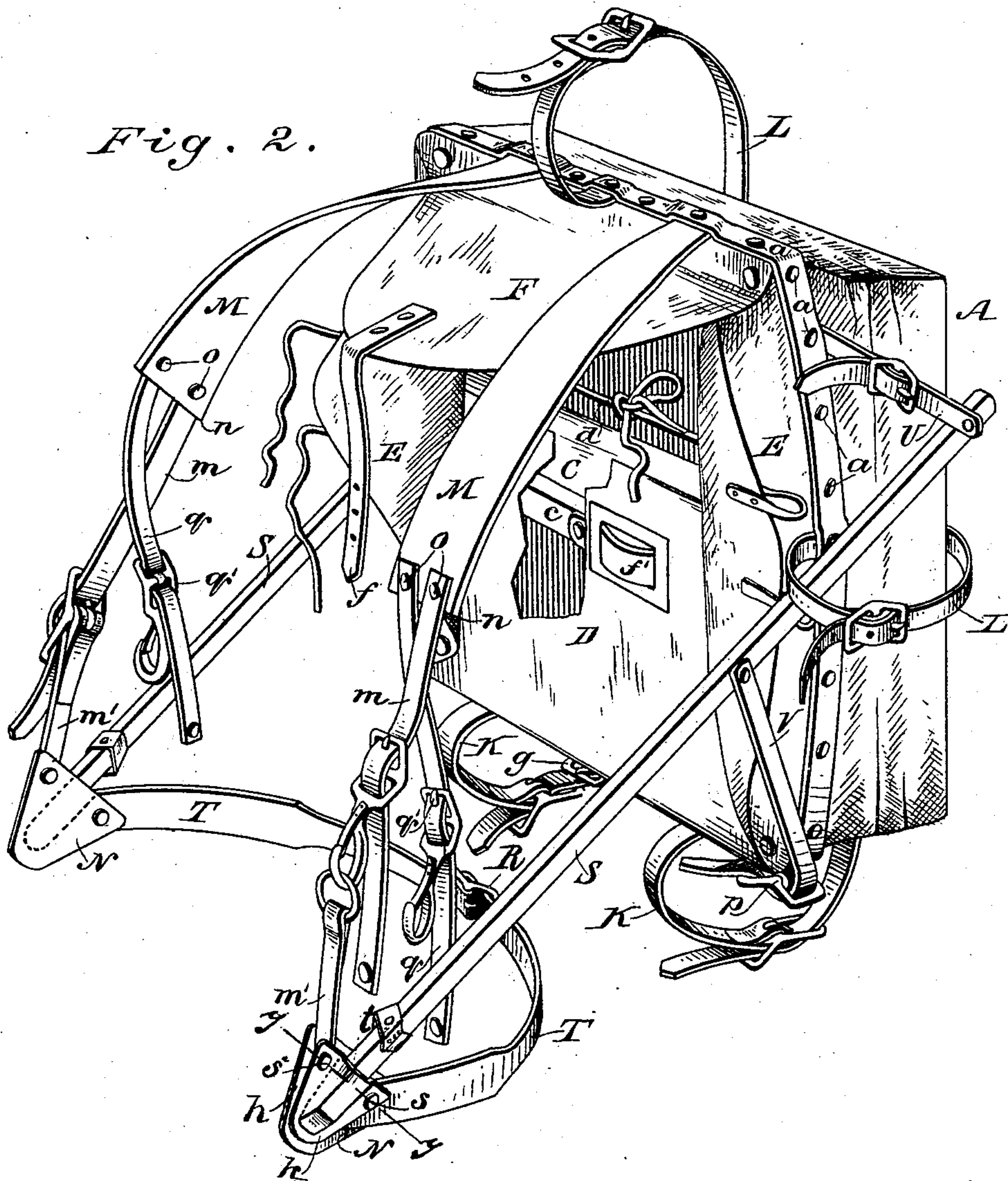
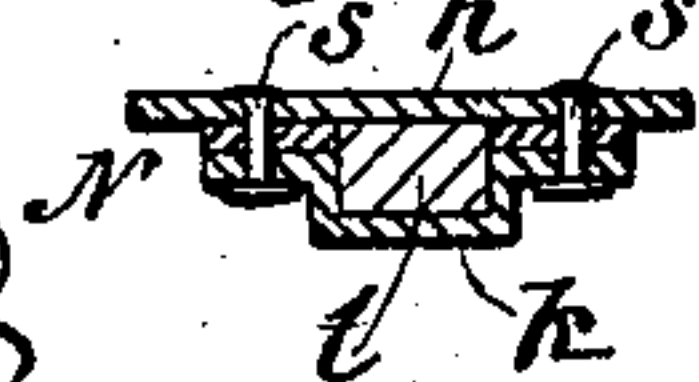


Fig. 5.



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Fig. 3

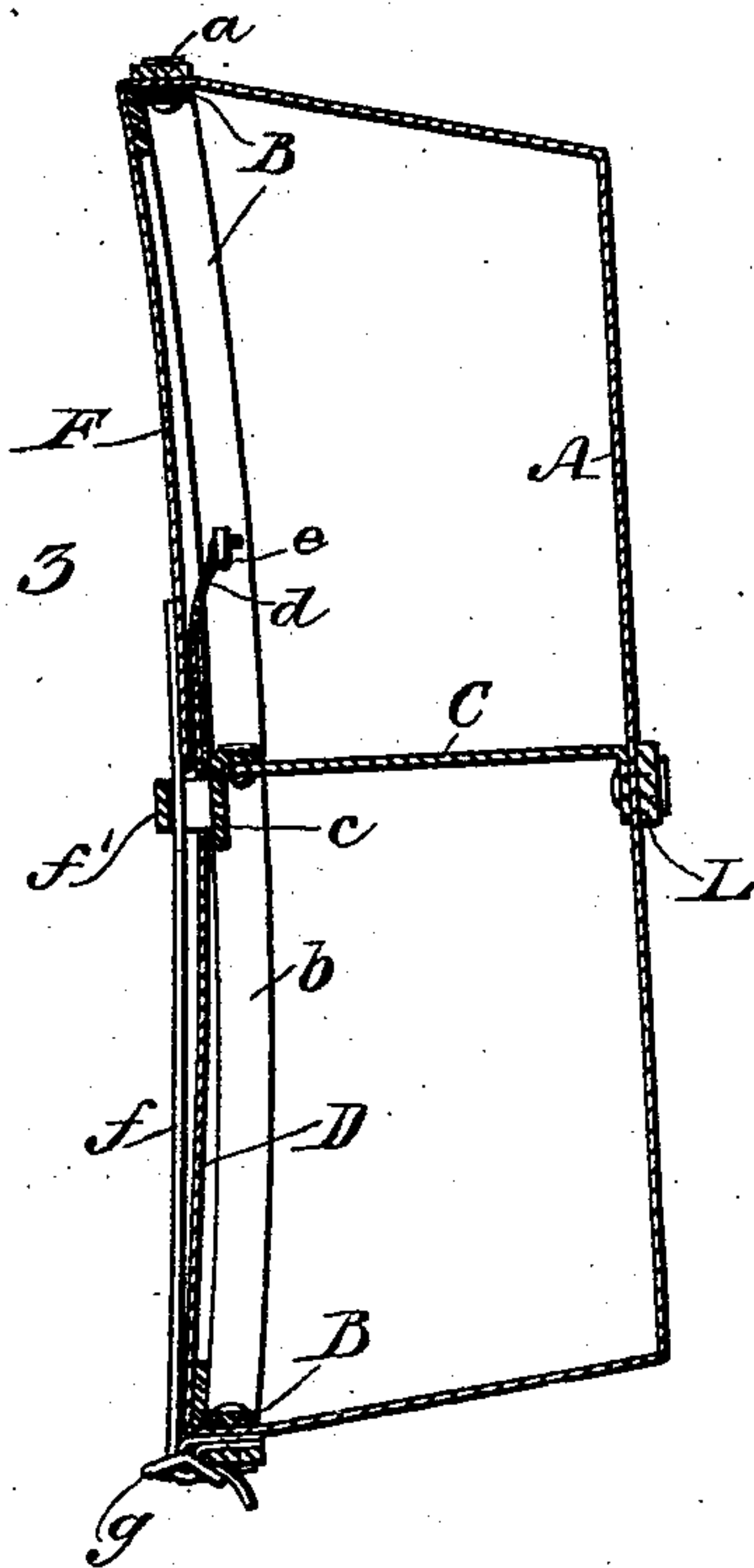
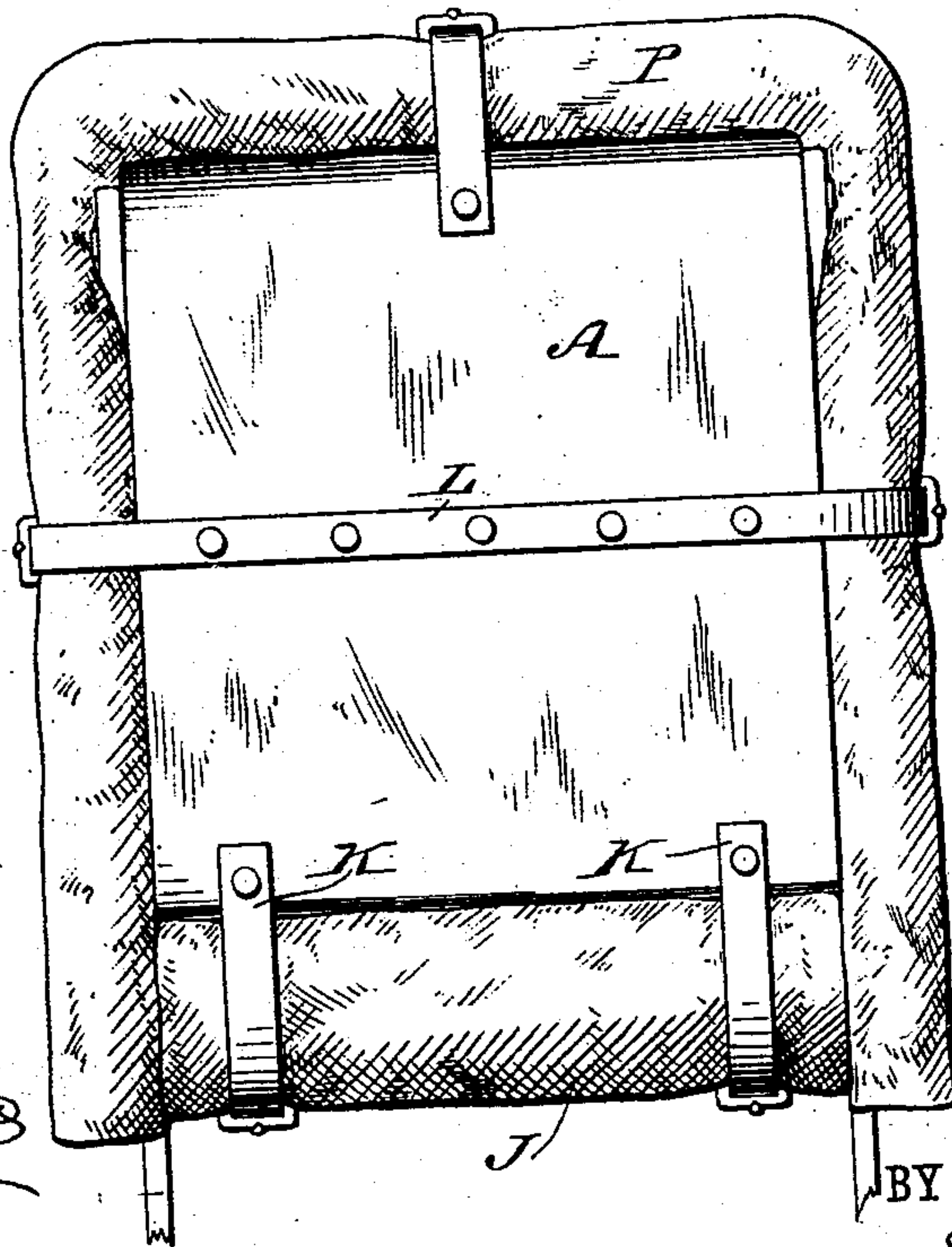


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY C. MERRIAM, OF THE UNITED STATES ARMY.

KNAPSACK.

SPECIFICATION forming part of Letters Patent No. 362,302, dated May 3, 1887.

Application filed February 3, 1886. Serial No. 190,726. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. MERRIAM, of the United States Army, have invented certain new and useful Improvements in Knapsacks, of which the following is a full, clear, and exact description.

This invention relates to the construction of that class of knapsacks forming the subject-matter of Letters Patent No. 204,066, granted to me on the 21st day of May, 1878, and also to the construction of that class of knapsack-straps shown in said Letters Patent and in Letters Patent No. 178,545, granted to me June 13, 1876, the main objects of the invention being to improve and simplify the form of pack and to render the equipment adjustable to all sizes and forms of men.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a view of my improved knapsack as it appears when applied to the person. Fig. 2 is a perspective view of the pack and its equipment. Fig. 3 is a vertical sectional view taken on line *xx* of Fig. 2, the pack alone being shown. Fig. 4 is a view of the back of the pack, and Fig. 5 is a cross-sectional view taken on line *yy* of Fig. 2.

In the drawings, A represents the pack, which is formed upon an angle-iron frame, B, arranged upon the inner or that face of the pack which is adjacent to the back of the wearer. The frame B is rectangular, but the vertical arms *b b* are slightly curved, in order that when the pack is slung to place, as shown in Fig. 1, the said inner face will approximate the contour of the wearer's back. The cross-iron *c* extends between the irons *b b*, being riveted to said irons, and this iron *c* acts as a support for a flexible partition, C, which is riveted to the iron *c*, and also to the outer wall of the pack, which outer wall is slightly stiffened by means of any proper stiffening material, such as leather or pasteboard.

The pack is closed by flaps that are fastened to the frame B by rivets *a a*, the lower flap, D, being formed to close the lower compartment of the pack and to be held in the closed position by thongs *d d*, which, when adjusted to a proper length, may be caught over hooks

e e, that are fixed to the irons *b b*. The side flaps, E E, are tied together over the flap D, while the upper flap, F, folds down over the flaps E E, and is held in place by a strap, *f*, which is passed through a loop, *f'*, that is fixed to the cross-iron *c*, an opening being formed in the flap D, as shown. The strap *f* engages with a buckle, *g*, fixed to the bottom of the pack, so that when the flaps have been adjusted, as described, they will be securely held in place, and as the outer face of the pack is permanently closed it will be readily appreciated that the contents of the pack will be most effectually protected from the weather. This pack is supported by two side braces, S S, that are stepped in sockets N N, (illustrated in detail in Fig. 5,) said sockets being carried by the forward ends of the hip-strap T, the connection between the pack and side braces being made by means of straps U V, the weight of the pack being supported by the straps V, which are also used to adjust the position of the pack vertically, while the straps U are used to adjust the angle of the braces S S. The hip-strap T is adjustable by means of a buckle, R, and this adjustability of the hip-strap I consider one of the most important improvements upon the construction illustrated in Letters Patent No. 204,066. Another important improvement upon the construction illustrated in the patent just referred to is in the formation of the shoulder-straps M M, which, instead of extending directly downward to engage with buckles carried by the hip-straps, are cut off at *n* and provided with connecting-straps *m m*, connection between the two being made by means of rivets *o o*, so that should either of the side braces become lost or broken the straps *m m* may be brought into engagement with the buckles *p p*, thereby providing an arrangement for temporarily carrying the pack, and as the connection between the straps M and *m* is made by means of the rivets *o* the straps M will not be twisted or distorted from their normal flat position. It will also be noticed that the straps M M are riveted to the frame B at the top of the pack.

In Fig. 5 I illustrate an improved form of socket for stepping the side braces, S S, where *h* is a shield, to which the end of the hip-strap T and the end of the connecting-strap *m*

are connected, the ends of said straps being cut at an angle to correspond with the angle of the socket proper. A guard-plate, *k*, is stitched upon the shield *h*, the stitches extending through the ends of the straps *T m'*, perfect security being obtained by rivets *s s*, passed through the shield, the straps, and the plate. The plate *k* is put on over the former, shaped to correspond with the beveled end *t* of the side braces, *S*, which ends are the ones stepped in the sockets; and as the braces are rectangular in cross-section, it follows from the construction described that the sockets are not liable to be forced out of shape, so as to produce a bunch upon the under side of the shield *h*, so that a flat surface is always presented to the person of the wearer of the equipment.

Referring now to Fig. 4, it will be seen I provide straps *L L*, arranged so as to hold the blanket *P* in the position shown, while other straps, *K K*, are arranged to hold the overcoat *J*. - If the overcoat is not to be carried upon the pack, the ends of the blanket *P* may be caught up by the straps *K*. One of the straps *L* extends across the back of the pack, and is secured thereto by rivets, and, not being very tightly stretched, affords a means for the attachment of any loose articles which the wearer desires to carry and which are too bulky to be placed within the pack. By forming the partition *C* of flexible material I am able to provide a pack wherein a preponderance of material may be packed in either of the compartments, as desired, it being understood that the lower compartment is designed more particularly as a haversack or ration-receptacle, while the upper compartment is designed for the reception of clothes and extra cartridges. The straps *q q*, which are fur-

nished with combined snap-hooks and buckles *q'*, are designed to support the cartridge-boxes. With such a pack and supporter as has been described a large proportion of the weight is thrown directly upon the strong bones of the hips, thus relieving the shoulders and the spinal column from strain and preventing all pressure upon the shoulder-blades, thereby leaving the shoulders and arms entirely free for action, and preventing all undue compression of the nerves and vessels of the armpits, and consequently preventing numbness and swelling of the hands. It will also be noticed that all cross-belts are done away with, so that, if desired, the coat of the wearer may be thrown open without deranging the equipment.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a knapsack, of side braces held thereto by straps, an adjustable hip-strap carrying sockets in which the side braces are stepped, and shoulder-straps connected to the forward ends of the hip-strap and to the pack, substantially as described.

2. The combination, with a knapsack, of side braces adjustably connected thereto, a hip-strap adjustable at the back, and shoulder-straps connected to the forward ends of the hip strap, substantially as described.

3. A knapsack formed upon a metallic frame, said frame consisting of light outer irons and a central cross angle-iron, substantially as described.

HENRY C. MERRIAM.

Witnesses:

JAMES H. GRIDLEY,
 SOLON C. KEMON.