No. 668,707. Patented Feb. 26, 1901.

E. D. BEAN.

BAG.

(Application filed May 4, 1900.)

(No Model.)

Fig. 1.

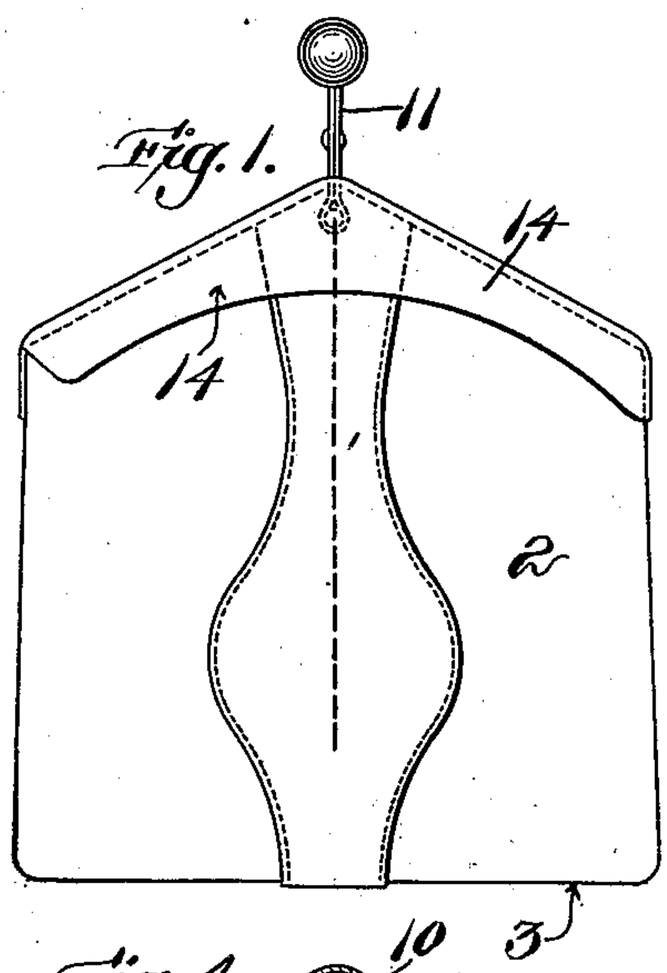


Fig. 2.

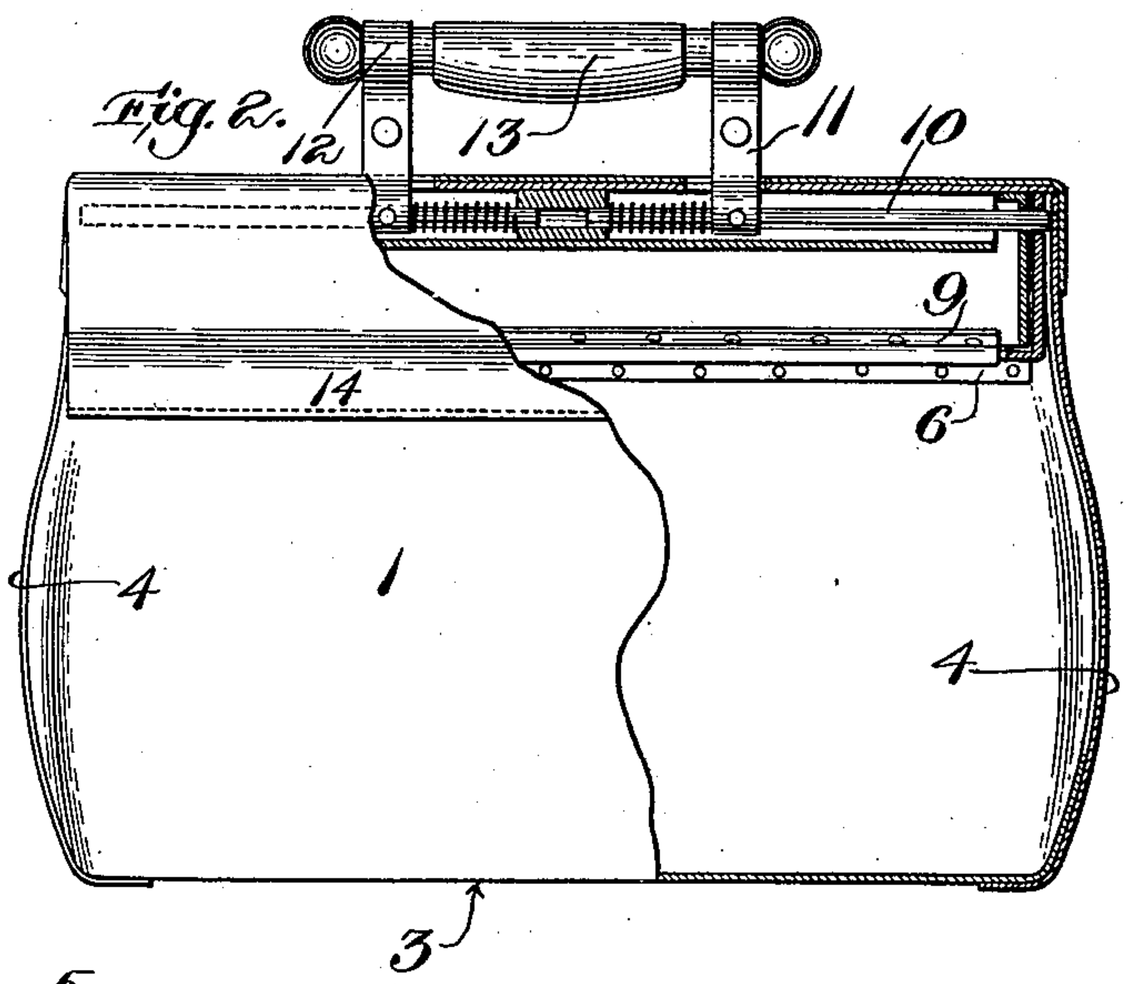


Fig. 4.

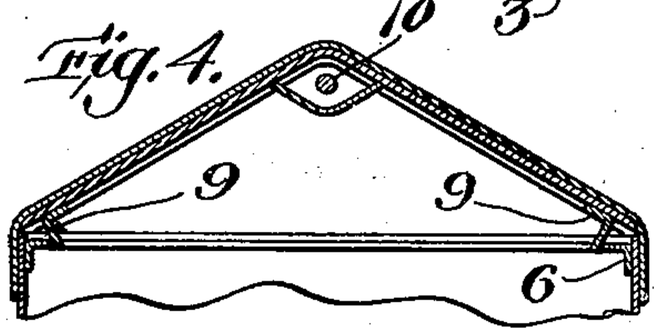


Fig. 5.

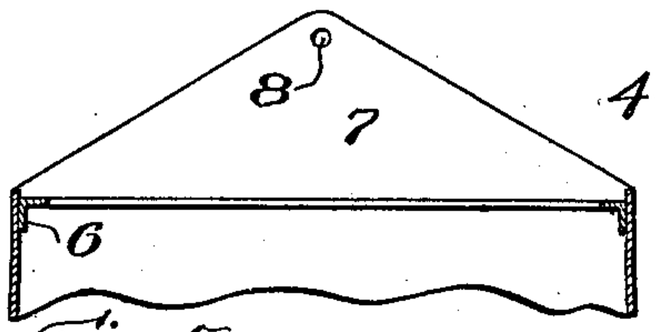


Fig. 6.

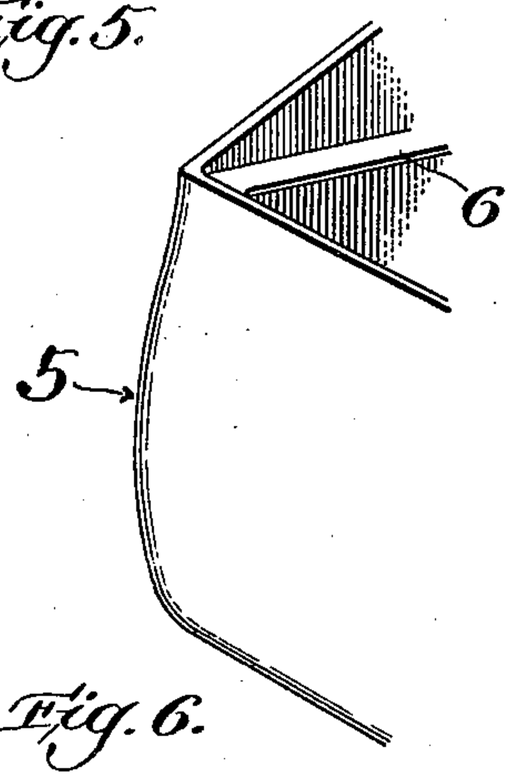
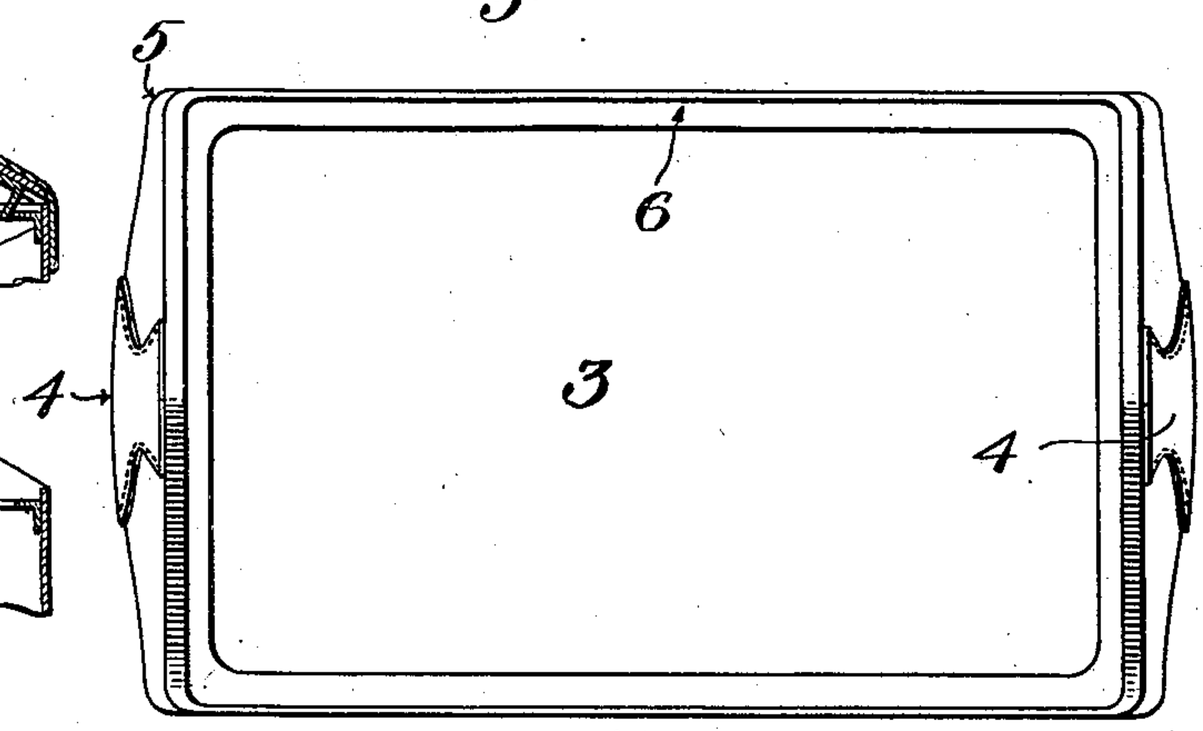


Fig. 3.



Witnesses:
Arthur D. Randall.
Ernest Ekern

Inventor:
Edward D. Bean,
by Oliver R. Mitchell,
Attorney.

UNITED STATES PATENT OFFICE.

EDWARD D. BEAN, OF ARLINGTON, MASSACHUSETTS, ASSIGNOR TO OLIVER R. MITCHELL, TRUSTEE, OF BOSTON, MASSACHUSETTS.

BAG.

SPECIFICATION forming part of Letters Patent No. 668,707, dated February 26, 1901.

Application filed May 4, 1900. Serial No. 15,505. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. BEAN, of Arlington, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Traveling-Bag, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an end view of my improved bag. Fig. 2 is a side view, partly in section. Fig. 3 is a top view with the cover removed. Fig. 4 is a cross-section of the cover and the upper part of the bag, showing the coöperating frames. Fig. 5 is a view of the wing-piece. Fig. 6 is a perspective view of one corner.

My improved bag is a seamless molded bag, the ends of which in its best form are so constructed as to be, in effect, struts resisting all end thrusts.

In traveling-bags as heretofore constructed it has been the ordinary practice to form the bag of several pieces suitably shaped to form the sides and ends and bottom of the bag, these several pieces being sewed together at their edges and so cut and shaped as to form a bag of the required dimensions when assembled and sewed together.

The first and salient peculiarity of my improved bag is the fact that it is made of one piece of leather and has no seams at the corners or at the bottom-side edges or the bottom-end edges. The only break in continuity in my improved bag is, as I construct it in what I consider the best manner, from a point near the bottom of each end to the top of the end along the medial line of the end.

The next peculiarity and novelty of my new traveling-bag is in the shape of the ends, which shape gives the ends a graceful appearance and increases the carrying capacity of the bag; but also, and this is the principal utility of the peculiar shape which I give to the ends of my bag, the shape gives mechanical advantages and results, whereby I am enabled to make a bag which while stronger and more durable than other bags made of like materials heretofore is also much lighter in weight—a very important and desirable result.

The novelty in my new one-piece construction is attained through a new method of manufacture, which consists in forming the leather of which the bag is constructed upon an interior mold or block. This is shaped in any desirable form, and the leather is then formed into a blank, the shape of which will be somewhat dependent upon the shape of the block. For purposes of full and clear explanation it will be best and sufficient if I select as a typical example a bag of some well-known form and size and show the shape of the blank sheet of leather of which the bag is built upon the mold. For this purpose I have selected for description and illustration what is known as a "cabin-bag."

The leather before being worked over the mold is thoroughly and properly soaked until the fiber of which it is composed is sufficiently soft to render the process of crimping which I apply to it effective. The ends of the leather are then pulled over the end-side and the end-bottom ends of the mold, and the leather is pushed and crowded to the center line of the end. At the top the leather is more or less thinned by stretching in its soft and pulpy condition. At the bottom, where the leather of the bottom end meets the leather from the side ends, there is a tendency to form wrinkles, and the leather is here pushed and pulled and beaten and pressed until it is crowded upon itself and somewhat thickened and until in the opinion of the operator it is sufficiently smooth. The soft and pulpy leather lends itself easily to this treatment, and the ends are brought together at the medial line at the end of the block and secured in any suitable manner. The best means that is known to me is to cement over these ends a connecting-strip. The leather is allowed to dry and afterward may be, if desired, slightly oiled. The result will be a bag having no seams.

In making my improved bag in its best form I form the ends of the block or mold with a swell 4 (see Figs. 2 and 3) from top to bottom and also from side to side. The leather when crimped and molded over this end thus shaped in the manner I have above described and the edges of the leather properly secured the one to the other will when

the leather is dry permanently retain the shape given to it by the mold on which it is formed. The corners of the mold are also slightly curved, with the result that the corners 5 of the bag are also curved in the same way. (See Fig. 6.) The result of the formation above described is, as above stated, to give a graceful and novel appearance to the exterior of the bag, as will be obvious; but the important result of this formation is to give a very considerable stiffness to the ends 2 of the bag, which stiffness arises from the fact that the crowning shape given to the leather achieves the mechanical result that would be attained were a perpendicular strip or angle-piece secured by one edge to the inner surface of a plane sheet of leather and at right angles thereto. The crowning shape given to the ends gives to the leather strength in the same way (the nature of the material being taken into consideration) that the angular member of an angle-iron gives stiffness to the other member to which it is attached. The result of this construction is practically somewhat aided by some change in the material induced by the softening and crimping processes. The practical result is that the ends 2 of my improved bag have a stiffness against perpendicular stresses which is not in any other bag with which I am acquainted. The effect of this is that a bag which will hold its shape may now be made without the use of any frame except that required about the upper edge of the sack or bag, which is a mere rectangular frame 6 to keep the bag open and define its shape. The peculiar arching of the corners 5 is also a contributing factor to the new results obtained by me in my improved bag. These corners may be described as "buckled pillars," and their mode of operation is as follows: While an ordinary pillar when composed of suitable material will resist longitudinal stresses so long as it is perfectly straight until the crushing-point is reached, it is not feasible to employ such a mechanical element in the construction of a bag on account of the weight necessitated. Any ordinary sheet material which would be suitable for a frame is likely under such stresses as a bag may be subjected to to buckle or bend. In my improved bag I have recognized this fact and utilized it to increase the strength and stiffness of the ends, with the result that I am enabled to decrease the weight and parts of which the bag is composed, for I buckle the corner at the outset in a given direction and provide sustaining elements which will prevent it from buckling beyond the determined point. The sustaining element in the present case is the sides 1 of the bag, which in the process of forming my molded one-piece bag are tightly stretched. The result of this is that the tensile strength of the sides of the bag is utilized to resist any further buckling of the corners in the direction in which the buckling tends, owing to the shape given to the corner—that is, outwardly.

The advantages of the structure, construction, and method of manufacture which I have just described are many and important. The bag made as I have described may be made of very light leather with an advantageous result in the cost of material and the more advantageous result in the resulting lightness of the article when made. The process of crimping one-piece leather into the desired shape for a bag and molding the bag over a mold, as described, is cheaper in the labor cost, as well as more effective in result, than the sewing process. Furthermore, in all sewed bags the first part to fail is a seam, owing, of course, to the fact that the stitches are not as strong as the integral stock of which the bag is made, and, secondly, to the fact that the seams usually project more or less and suffer from abrasive contact. It is desirable, therefore, and an advantageous result to do away as far as possible with seams.

In the drawings I have shown a bag provided with a frame of peculiar shape and construction—that is to say, the rectangular frame 6, which is secured within and close to the upper edge of the bag in any convenient manner, is provided at each end with a V-shaped wing 7, the point of which is upward and at the longitudinal medial line of the bag. At these points are provided bolt-holes 8 at the inner surface of the wing. The lid or cover of the bag is provided with a frame 9, designed to fit within these wings, the said frame rising from the sides to the longitudinal medial line, and at the medial line and at the end thereof, upon the inner surface of the lid, are provided spring-bolts 10 to engage the bolt-holes at the upper corner of the wings, above mentioned. These bolts are controlled by suitable means upon the outer surface of the lid and serve to lock the lid and the bag together, one side of the lid being hinged to one side of the bag. The advantage of this construction is that the draft of the weight is properly balanced and distributed and there is no tendency, as there is in some bags as heretofore made, to draw apart, the weight being carried by the bolts, and, furthermore, the frame of the lid fitting within the frame of the bag that frame is further supported and strengthened. A flap or skirt 14 is attached to the outer edge of the lid, which when the bag is closed is outside the upper edge of the bag, this upper edge of the bag fitting between the frame of the lid and the outer flap. As shown in the drawings, these lock-bolts are controlled by levers 11, projecting through the top of the bag, having eyes 12 at their upper ends, into which eyes are fitted the ends of the handle 13. (See Fig. 2.)

If desired, before stretching the leather over the mold a core of cheaper material may be formed by much the same method above de-

scribed—that is to say, of fabric of some kind or of some leather substitute. This material may be bent and formed about the core and a cover of leather formed outside the core by the method above described.

What I claim is—

1. The one-piece bag formed from softened leather or other fictile material upon an interior mold and continuous as to its material, save for a perpendicular seam along each end, substantially as described.

2. The method of making a bag above described, which consists in moistening leather or other fictile material and forming the same into a bag by crimping the edges over and around an interior mold, the said bag being of continuous material, save for the vertical slit upon the side thereof, substantially as described.

3. The bag above described having upwardly-projecting wings fast to the sides of the frame thereof, coöperating with corresponding projections upon the frame of the lid thereof, and a locking-bolt to connect the coöperating wings.

EDWARD D. BEAN.

Witnesses:
OLIVER R. MITCHELL,
JOSEPH T. BRENNAN.