

(No Model.)

J. E. GRAUWILER.

WOVEN BAG.

No. 264,526.

Patented Sept. 19, 1882.

Fig. 1.

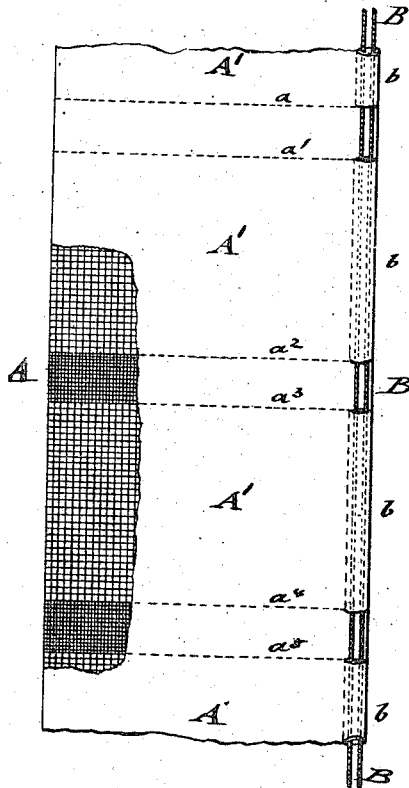


Fig. 2.

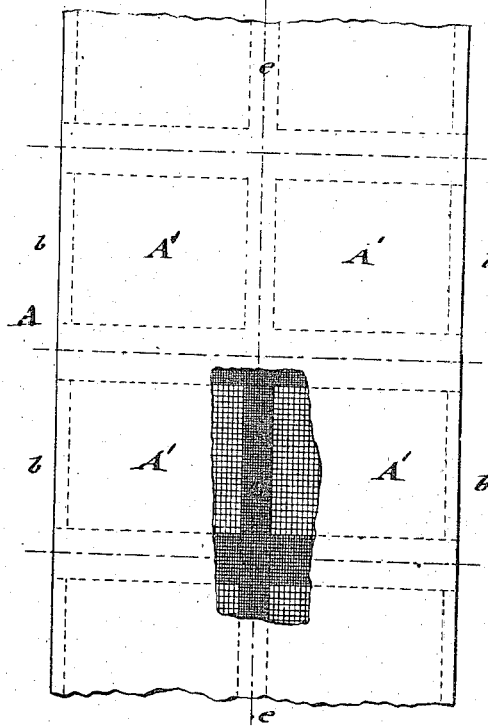
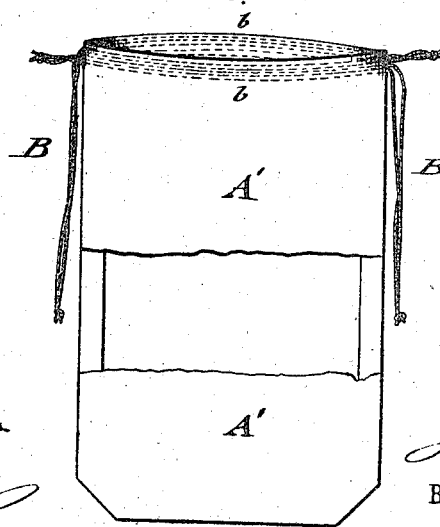


Fig. 3.



WITNESSES:

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WOVEN BAG.

SPECIFICATION forming part of Letters Patent No. 264,526, dated September 19, 1882.

Application filed January 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. GRAUWILER, of the city, county, and State of New York, have invented certain new and useful improvements in Woven Bags, of which the following is a specification.

This invention relates to woven bags or pouches for holding tobacco and other articles; and it consists of a bag woven complete and provided at the open side or mouth with a tube or hem woven in one piece with the body of the bag, said tube containing two shirring-strings which move freely inside of the tube.

In the accompanying drawings, Figure 1 is a top view of a web comprising a series of bags woven together, each bag occupying the width of the web. Fig. 2 is a top view of a similar web, in which two bags woven bottom to bottom occupy the width of the web; and Fig. 3 is a perspective view of my improved bag, a part being cut away to show the interior of the bag.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a woven web which comprises a series of bags, A'. This web A is woven on the loom in the usual well-known manner, as shown in Fig. 1, with two fabrics at that part forming the body of the bag, and a double thickness at the intermediate portions or webs which connect the bags. For this purpose the jacquard or other devices are so arranged that all the warp-threads of the entire fabric are woven into strips $a' a^2 a^3 a^4 a^5$, &c., of double thickness. After each strip is formed the warp-threads are then divided respectively at $a' a^3 a^5$, &c., into two equal and distinct parts, which are then woven, independently of each other, into two distinct and separate fabrics, one lying above the other. This is continued until the two fabrics are wide enough to form the bag, when the whole body of the warp is again woven into a strip of fabric of double thickness previous to the formation of the next bag, and so on. While the two fabrics forming the sides of the bags are in the process of formation the left edges of the fabrics are so controlled by the jacquard of the loom as to interweave them into one edge, thus forming the

bottoms of the bags. The edges at the opposite side remain separate, and thus form the mouth or opening of the bag. At the mouth of the bag, and running from a' to a^2 , a^3 to a^4 , &c., the warp-threads are so operated as to form a woven tube or hem, b , along the edges of both the upper and lower fabrics which constitute the bag. These tubes or hems $b b$ are woven simultaneously with and in one continuous piece with the body of the bag. Into each tube or hem at the mouth of the bag are placed two shirring-strings, B, which form part of the warp, and which enter the tubes as soon as the weaving of the double fabric begins and leave them immediately before the weaving of the double portion of fabric preceding the next bag commences. The shirring-strings are thus completely inclosed by the tubes or hems formed at the mouth of the bags, but are not in any manner interwoven or interlaced with the fabric of the bag. The tubes or hems are woven around the strings, so that they remain in the center of the same, in the same manner as if they were drawn through the hems. The shirring-strings therefore move as easily in the woven tubes of the bag as in the hems of common bags, without tearing or otherwise injuring the fabric of the bag. The woven tubes or hems $b b$ can be made of any desired width, and any number of strings can be made to move in them. After the bags are thus woven consecutively on the loom, each bag occupying the entire width of the fabric, they are separated by cutting across the middle of the strips of double thickness, then turned inside out, after which the shirring-strings are tied and the bag is ready for use. The fabric can also be woven so that two bags are made to occupy the width of the fabric, in which case the mouths of the bags are formed along opposite edges, while the bottoms are formed adjoining each other by weaving a strip of double thickness throughout the middle of the fabric, as shown at $c c$. In this case the bags are separated by cutting between the bottoms and sides, in the same manner as before between the sides of the bags.

I do not claim a bag woven in the manner described without sewing, as this is well

known. Neither do I claim bags provided with shirring-strings which form part of the warp and are woven or interlaced in the fabric.

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

As an article of manufacture, a bag having a circumferential seamless tube woven integral therewith at its mouth and provided with shirring-strings, the woof and warp of said
10 tube being uniformly distributed along its

length and throughout its circumference, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN E. GRAUWILER.

Witnesses:

PAUL GOEPEL,
CARL KARP.