Feb. 9, 1926. 1,572,605

W. C. HOWE

LAUNDRY BAG

Filed May 7, 1923

Fig. 1

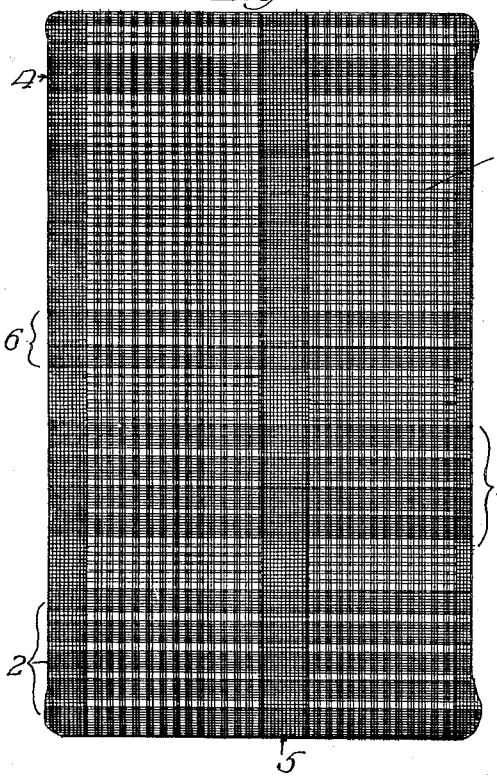


Fig. 3

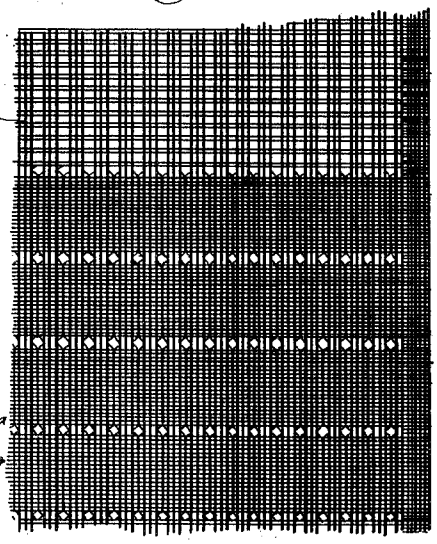


Fig. 4

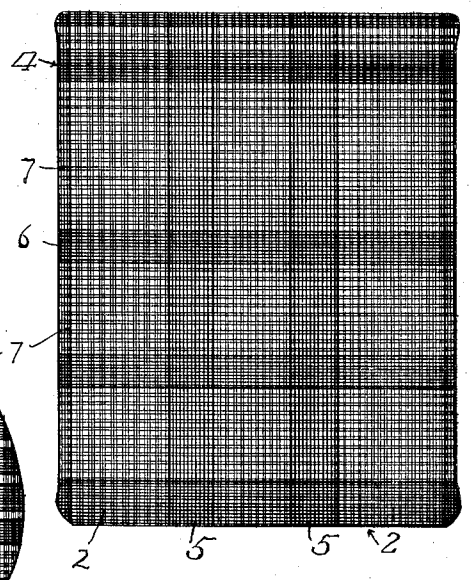
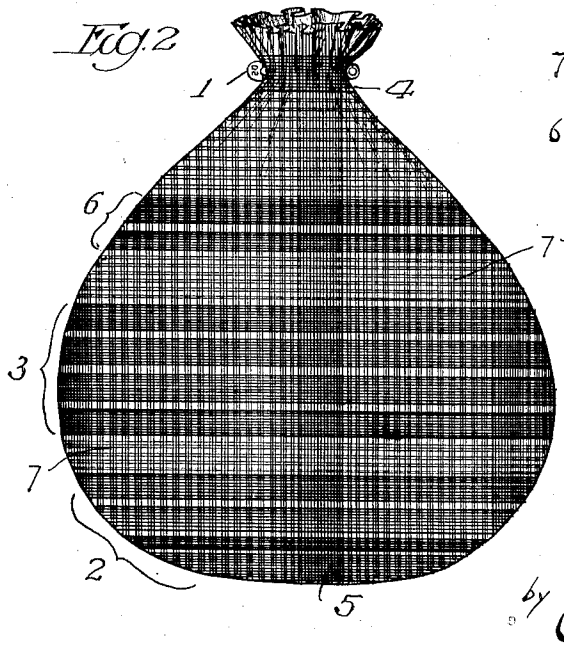


Fig. 2



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UNITED STATES PATENT OFFICE.

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LAUNDRY BAG.

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To all whom it may concern:

Be it known that I, WILLIAM C. HOWE, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Laundry Bags; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to socalled laundry nets for net-woven bags as used by laundries for protecting and separating the goods which are to be laundered, and particularly for separating and protecting individual batches of goods during the so-called wet washing. Generally speaking, my invention aims to provide a laundry bag or net for this purpose which will be suitably reinforced in those portions of the bag subjected to the greatest strains when the bag is in use, to provide these so that they can be produced as integral portions of the bag during the weaving of the latter upon an ordinary net weaving machine, and to provide them so that they will not interfere with an adequate passage of water and soap suds through the bag.

In laundering goods by the socalled wet-wash method, it is customary to separate the goods which are sent to the laundry by different parties by placing each such batch in a porous bag which will keep the constituents of that batch separate from the goods of others while the bag and its contents are subjected to the washing, rinsing and centrifugal drying. For this purpose, it has heretofore been customary to employ bags made of an open mesh, but while net-woven bags of large mesh have proven satisfactory as far as the passage of liquid into and out of the same was concerned, they have not shown the desired strength and durability. On the other hand, bags woven with meshes sufficiently smaller to afford increased strength and durability have not permitted the passage of liquid through the same with a sufficient freedom to insure the proper laundering of their contents. So also, attempts to increase the strength by affixing tapes, cords or the like to the bags have proven unsatisfactory owing to the differences in the expansion of the materials and the resulting improper distribution of the strains.

My present invention aims to overcome these difficulties by providing a net-woven bag (desirably formed from a single piece of woven meshing) with closer meshed reinforcing portions at those parts of the bag which are subjected to the greater strains, by employing a larger mesh between the said portions and in other parts of the bag so as to permit an ample passage of liquid into and out of the bag, and by also providing liquid penetrable portions to a more limited extent in the reinforcing parts. Still further and also more detailed objects will appear from the following specification and from the accompanying drawings in which

Fig. 1 is an elevation of a flattened laundry bag embodying my invention.

Fig. 2 is a perspective view of the same bag showing it as it appears when in use.

Fig. 3 is a fragmentary enlargement of Fig. 1, showing differences in the mesh formation.

Fig. 4 is an elevation similar to Fig. 1 but showing another arrangement of the longitudinal reinforcing.

In accomplishing the purposes of my invention after the manner of the accompanying drawings, I provide a bag desirably made from a single piece of netting woven from long fibre cotton, this piece being doubled upon itself along one longitudinal edge of the bag (namely the right hand edge in Fig. 1) and then having the two sides of the bag joined by overlapping web formations both along the bottom of the bag and along the other longitudinal edge which latter is shown at the left hand of Fig. 1.

When such a bag has a batch of goods inserted in the same and is closed at its neck by means of a suitable fastening (such as a large safety pin 1 passing through the puckered neck of the bag after the manner of Fig. 2) the contents will cause the bag to fill out after the manner of Fig. 2. Owing to this filling out and to the normal flatness of the bag, the strains on the material of the bag are unevenly distributed and are particularly severe adjacent to the bottom of the bag and at the somewhat higher point where the bag has its maximum bulge. To allow for the increased strains on these por-

tions, I employ a closer meshing for the same, as shown in the lower portion 2 of the bag and the bilge-forming portion 3, but space these closer meshed portions from each other by a larger meshing so as to facilitate the passage of liquid into and out of the bag.

In addition to these two strengthened portions, I also desirably provide suitable reinforcements for three other portions of the bag, one being the neck portion at which the fastening is usually accomplished by means of a safety pin. Heretofore, it has been customary to turn the material of the bagging upon itself at the upper edge thereof so as to provide a thickened hem along the said upper edge. However, it is not feasible in practice to have the fastening pin extend through the extreme upper portion, particularly as such a thickened edge cannot be tightly contracted, so that arrangement heretofore employed merely wastes good material and leaves the pin to be employed in a weak necked portion which is soon damaged and torn by the repeated insertion of the needed safety pin. As a substitute for this common but illogical arrangement, I weave the upper edge portion of the bag of a large mesh with a selvage edge and provide a small meshed neck portion 4 spaced from the said upper edge of the bag by a large meshed strip which will prevent an undue fulling of the top of the bag.

When the filled laundry bags are being lifted from their necks in the usual manner, they are also subjected to longitudinal strains, which are particularly severe along the medial portion of the normally flat bag owing to the fulling of the latter when housing its contents. To resist these strains, I also desirably provide the bag with a close meshed portion extending longitudinally of the bag and substantially medially thereof, such as the portion 5 of Fig. 2.

While the reinforcements above mentioned greatly increase the effective life of the bag, a further portion of the latter is still subjected to undue strains which occur when the emptied bag is hung over a rod for drying the same. To resist these strains, I also desirably provide the bag with a reinforced section extending transversely of the bag at the middle of the height thereof, or in other words across the portion of the bag which will rest upon the supporting rod during the drying, such as the portion 6 of Figs. 1 and 2.

To allow for the adequate passing of liquid into and out of the bag, I construct this with large meshes between the consecutive transverse and close-meshed sections above described, namely between the bottom section 2 and the bilged-formed section 3, between the latter and the midheight section 6, and between this midheight section and the neck section or fastener-receiving section 4. In practice, these spacer portions of the bag can even be constructed with somewhat larger meshes than those ordinarily employed for laundry bags woven with a uniform size of mesh, if this is desired for keeping down the cost of the finished bag. Then I also desirably provide each of the three lower reinforcing sections with auxiliary openings through which liquid can pass into and out of the bag. With this latter purpose in mind, I desirably form each of the sections 2, 3 and 6 of a plurality of bands spaced from each other by single rows of larger meshes after the manner shown in Fig. 3.

In practice, I desirably employ a single size of long fibre cotton twine for the entire bag, and by simply varying the sizes of the meshes in different portions of the woven piece of netting from which the bag is formed, I have found that I can increase the durability all out of proportion to the relatively slight additional cost of the closer weave and without materially retarding the passage of liquid into and out of the bag as required for the proper washing of the contents. That is to say, the bag is effectively reinforced in the portions which get the bumps when the bag is rolled and tossed around in the cylinder of the washing machine, namely the bottom and the bilge, while the top is cushioned by the pliable mouth portion above the pinned neck. At the same time, the longitudinal reinforcing affords added strength to resist the strains due to the lifting of the bag from its neck when it is being raised out of the machine.

However, while I have described a bag including four transverse reinforcing portions and a single longitudinal reinforcing portion and have illustrated the three lower reinforcing portions in an arrangement in which each consists of a desirable number of bands, I do not wish to be limited to the particular band arrangement thus illustrated, nor to the joint use of all of these reinforcing portions, nor to other details of the construction and arrangement here disclosed. Obviously, various modifications might be made without departing either from the spirit of my invention or from the appended claims. For example, instead of employing a single close meshed longitudinal reinforcing portion disposed substantially medial of the bag, I may employ a pair of relatively narrower longitudinal reinforcing portions of close mesh spaced from each other by a longitudinal section of larger mesh, after the manner illustrated in Fig. 4. In either case, I desirably employ a relatively larger number of longitudinal threads in the open mesh portions 7 of the bag than the transverse threads in this same

portion, so as to increase the resistance of the bag to the strains placed on it when it is being lifted from its neck.

Moreover, I do not wish to be limited as to the use of my reinforced laundry bag or net in connection with the so-called wet washing, as the bags of my invention can also be employed advantageously for protecting lace curtains, delicate shirt waists or the like against mechanical injury during the ordinary laundering thereof.

I claim as my invention:

1. A laundry bag composed of a fabric body having integral lateral reinforcements extending across the bottom, across the bilge, and across the neck portion of the body to form a pin-receiving part whereby to close the bag, and integral longitudinal reinforcements extending along the center and the sides of the body, the entire body being perforated and the perforations of the reinforcements being smaller than those of the remainder of the bag, the lateral reinforcements being composed of a plurality of bands each spaced from the adjacent band by a single row of perforations larger than the perforations of the bands.

2. A laundry bag composed of a perforated fabric body having integral perforated reinforcements, the reinforcements being composed of a plurality of bands arranged in spaced order and with a single row of perforations arranged in such space between each of adjacent bands, the perforations of said single row being of considerably greater diameter than the perforations of the bands.

Signed at Chicago, Illinois, May 5th, 1923.

WILLIAM C. HOWE.