W. W. MacDONALD.

FORMER FOR SELF CLOSING POUCHES.

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1,156,847. Patented Oct. 12, 1915.

Fig. 1.

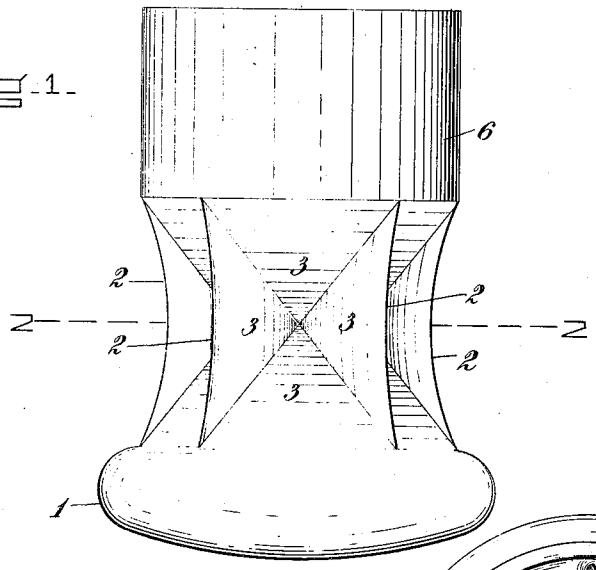


Fig. 3.

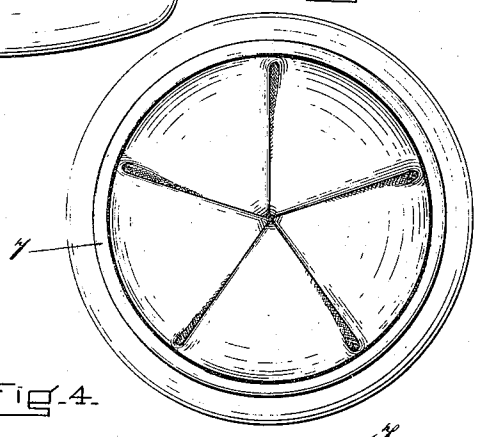


Fig. 2.

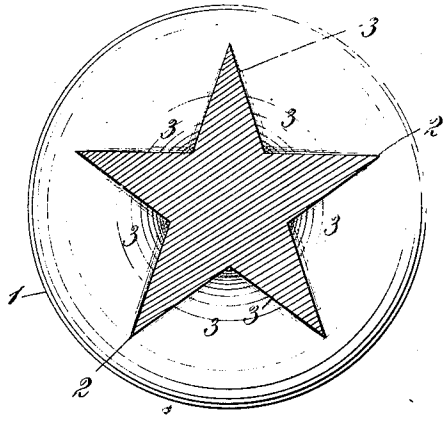
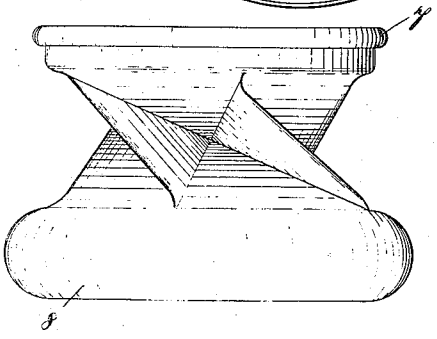


Fig. 4.



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FORMER FOR SELF-CLOSING POUCHES.

1,156,847. Specification of Letters Patent. Patented Oct. 12, 1915.

Application filed May 4, 1915. Serial No. 25,831.

To all whom it may concern:

Be it known that I, WILLIAM W. MacDONALD, a citizen of the United States, and a resident of Somerville, in the county of Middlesex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Formers for Self-Closing Pouches, of which the following is a specification.

My invention relates to a former for making that type of rubber pouch commonly used for tobacco which has a neck which is twisted and creased in the process of manufacture in such a way that when the pouch has been opened its neck will, upon being released, collapse automatically into a closed position.

The method heretofore commonly employed in making such pouches has been to form the bottom or pouch part separately and then vulcanize the top part thereto in the form of a plain cylindrical band. A former is then inserted inside the band, which former is provided with longitudinal corrugations with sharp edges. A collar provided with longitudinal ribs corresponding to said corrugations is then strapped tightly about the neck so as to form longitudinal corrugations and creases in the neck. The collar and former are then removed and the neck is twisted so as to close the opening therein and the neck is at the same time flattened against the body of the pouch. The performance of this twisting operation requires much skill in order to produce a symmetrical neck closing exactly in the center. It will be readily understood that the twisting and flattening of the neck make diagonal creases or folds between the extremities of the longitudinal creases therein. After the rubber has finally been "cured" or vulcanized with the pouch closed so that the various folds and creases have been permanently fixed therein it will be apparent that the pouch will normally assume a closed position.

It has been the special object of my invention to provide a former whereon a pouch of the type described may be formed in its entirety by the "dip" process with a neck so creased and shaped that it may be readily twisted and flattened so as to close accurately with folds and creases which are regular and symmetrical and wholly predetermined by the structure given to the rubber by the former. Hence dexterity and precision in twisting and flattening the neck prior to the final vulcanizing process are not required of the maker.

My device may be best understood by reference to the accompanying drawing in which—

Figure 1 is a side view of my device. Fig. 2 is a horizontal cross-sectional view on line 2—2 of Fig. 1. Fig. 3 is a top view of a pouch formed on my device with the neck thereof closed. Fig. 4 is a side view of said pouch with the neck partly closed showing the disposition of the folds therein along structural lines created by the former, after a slight twist has been given to the neck.

Referring now more specifically to the drawing in which like reference figures indicate like parts, 1 is the body-forming portion of my device above which are rib-forming edges 2 for the neck of which there are preferably five as shown in the drawing, or more. Between these rib-forming edges 2 are recesses having four facets 3 the angularly disposed surfaces of which form diagonal grooves which meet and cross at centers each of which is an apex of its recess and forms the deepest part thereof. Above the rib-forming edges 2 for the neck is the cylindrical rim-forming portion 6 which is preferably elongated for convenience in handling when dipping in the compound of rubber or other material in solution and for a purpose which will be hereinafter described. It will be observed that the distance from the extremities of edges 2 to centers along the diagonal grooves formed by the angles of facets 3 is substantially equal to the radius of the annular rim 7 of pouch 8 made on my former, thus insuring the closing of the pouch when the neck is folded into position by depressing it with a slight twist as indicated in Fig. 4, thus accentuating the creases formed by edges 2 and by the grooves formed by the meeting of the angularly disposed facets 3.

A pouch is made upon my former by repeatedly dipping the same in a solution of rubber compound or other similar material until a coating of the desired thickness is obtained thereon. This coating is partly "cured" or vulcanized and the part about the rim-forming portion 6 is then trimmed off evenly and rolled back or "hemmed" so as to form the rim 7. The pouch thus formed is then stripped off my former and the neck is slightly twisted and flattened

into the position shown in Fig. 3, after which the pouch is wholly vulcanized. It will be readily seen that the creases which must necessarily be established upon the twisting and folding of the neck are already properly located and existing in the pouch as soon as it is stripped from the former so that the folding and closing of the neck of the pouch prior to the final vulcanizing process is a very simple matter requiring no trained dexterity.

While I have shown in my drawing the arrangement of my former which I think most advantageous still I do not limit the scope of my invention to this precise form as an effective arrangement of the neck fold-forming members may be had without developing so fully every crease-forming element so long as a central depression is made between each of the rib-forming edges 2 in a manner whereby the diagonal folds, upon the twisting of the neck, are caused to be located in the proper radial relation to the annular rim 7.

Having thus fully described my invention what I claim is—

1. In a pouch former of the character specified, the combination of a body-forming part, a neck-forming part comprising a plurality of rib-forming members having recesses between them arranged to assist the proper location of folds and creases necessary to close the neck upon the twisting and flattening of the neck of the pouch formed thereon, and a rim-forming part.

2. In a device of the character specified a neck-forming part having a plurality of recesses, each having a plurality of angularly disposed facets arranged to form a neck, which, upon the twisting and flattening thereof, folds so as to close.

3. In a device of the character specified a neck-forming part having a plurality of recesses, each having four angularly disposed facets forming radial grooves from the centers of said recesses for the purpose specified.

WILLIAM W. MacDONALD.