T. CLEARY.

Bag-Fastener.

No. 211,224. Patented Jan. 7, 1879.

FIG. 1.

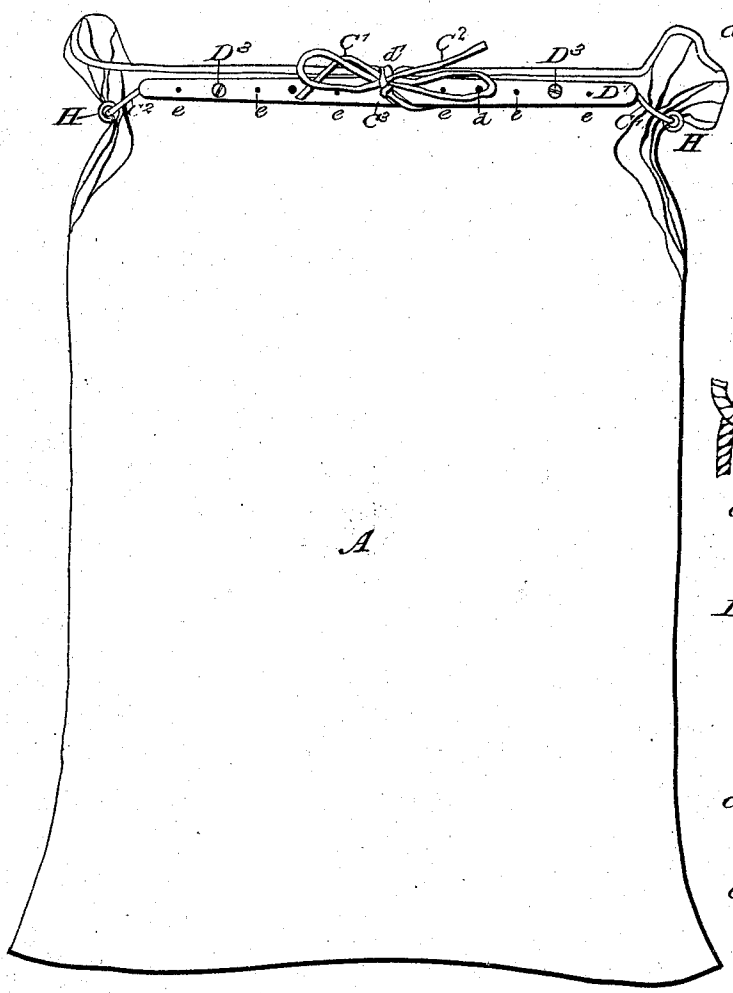


FIG. 2.

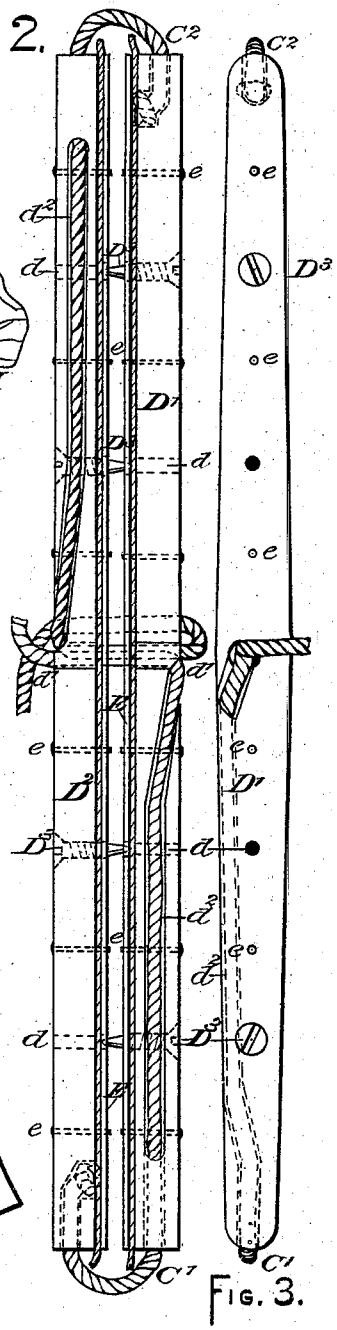


FIG. 3.

WITNESSES:

E. B. Bolton

Chas. C. Stetson

INVENTOR:

Thomas Cleary

by his attorney

Thomas D. Stetson

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS CLEARY, OF NEW YORK, N. Y.

IMPROVEMENT IN BAG-FASTENERS.

Specification forming part of Letters Patent No. **211,224**, dated January 7, 1879; application filed November 8, 1878.

To all whom it may concern:

Be it known that I, THOMAS CLEARY, of New York city, in the State of New York, have invented certain new and useful Improvements relating to Bag-Fastenings, of which the following is a specification:

When grain is carried as freight across the ocean it is necessary, for prudential reasons, to carry a certain portion of the grain in bags. Convenience requires that there shall be a gathered quantity of the bag on each side at the top to facilitate handling, and it is important for obvious reasons that the mouths of the bags shall be fastened by means which may be closed and opened with little skill or labor, and shall be reliable and durable. It is furthermore important that the fastenings shall allow the holding of the greatest quantity of grain in a bag of a given size. My invention attains all these ends.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a side elevation of a full bag, showing my improved fastening applied. Fig. 2 is a view of the under side of my device, showing the inside iron strips and a section of the bag. Fig. 3 is a side view of the near cheek.

Similar letters of reference indicate like parts in all the drawings.

A is the material of the bag. H H are rings or eyelets, lashed or otherwise strongly secured, one at each edge, a sufficient distance below the top to form the required ear or lug when that portion of the material of which the bag is composed situated above the same is drawn together. C^1 C^2 are strings, by which the mouth of the bag is ultimately secured and held firmly in the closed position. I employ, in connection, two rigid cheeks, D^1 D^2, of less length than the entire width of the closed bag, but sufficiently long to extend nearly across the top of the bag when its width is contracted by being filled. Certain parts of these cheeks D^1 D^2 will be denoted by further marks. These rigid pieces or cheeks may be of various materials, as malleable cast-iron or brass. I prefer hard wood, and will so describe these parts. Each of my rigid parts D^1 D^2 is provided with two or more spurs or projections, D^3, on its inner face, which extends through the material of the bag A and protrudes beyond. These spurs or projections are preferably of metal properly coated to protect them from oxidization. They may be strongly secured by screw-threads, as indicated in Fig. 2. Each cheek D^1 D^2 is also formed with two or more recesses or holes, *d*, adapted to receive the corresponding spurs D^3 of the opposite cheek. Each cheek is perforated, as indicated at d^1, to allow both the strings C^1 C^2 to be passed through. Each is also grooved, as indicated by d^2, the groove being deep enough near the hole d^1 to receive the string C^1 or C^2, and becoming near the end of the cheek much deeper. At the extreme end it assumes the form of a longitudinal hole in the pieces D^1 D^2.

I fasten the material of the bag firmly to the inner faces of the cheeks by rivets *e*, which engage through both the cheek and bag, and also through a thin inner piece of metal, E. The ends of the strings C^1 C^2 may be secured to their respective cheeks by being rove through and knotted, with the knots drawn into a recess in the inner face, as shown in Fig. 3, or on the outer face, or on top or bottom.

The string C^1 is permanently attached to one end of the cheek D^2. It extends out through the end thereof, and is rove, first, through the eye H, and then through the orifice in the adjacent end of the cheek, D^1; thence it follows along the groove d^2, and is passed through the hole d^1 in both cheeks. The other string, C^2, is correspondingly applied at the other end of the clamps, being permanently fastened to the cheek D^1, and rove through the eye and orifice, and finally rove through the holes *d*. It follows that the clamps D^1 D^2 will be closely and strongly held together, thus closing the central and main portion of the bag-mouth, and that on drawing the strings C^1 C^2 the flexible material of the bag will be gathered at and near each end of the clamps, thus effectually stopping the mouth of the bag and forming the proper handles for manipulating it at the upper corners. On untying the knot C^3, into which the strings C^1 C^2 are tied, the fastening is liber-

ated, and on pulling the clamps apart the strings will move through the holes d^1, grooves d^2, end holes, and rings H, and allow the bag-mouth to open freely. The same result will occur on simply inverting the bag after the string is untied, and letting the cheeks open and the strings render of their own accord by the force exerted by the contents.

I propose to especially adapt the mouth of the elevator-tube to those of the bag-fastening by forking it, and allowing the grain to be poured into the bag through two small nozzles instead of one large one. This will allow my strings C^1 C^2 to be received in the crotch between the two nozzles. In cases where this provision shall not exist I can remove, or without much trouble draw out, the ends of strings from the holes *d*, and thread them through again to retie the bags.

Modifications may be made. The cheeks may be made of sheet metal, hollowed on the inner face, and liberally punched with small smooth holes to facilitate the sewing of the bag material thereto. The bag may be glued or otherwise cemented to the cheeks, either alone or in addition to the stitching or other fastening; but I prefer the riveting described.

The loose ends of the cords C^1 C^2 may be simply knotted when it is allowable to keep them always in the hole d^1. When it is necessary to remove them at each operation their ends should be left small and properly fitted, in order to equip them for ready removal and rethreading in the holes *d*.

I believe it practicable to make the holes d^1 not in the center of each cheek, but much nearer one end than the other. This may allow my bags to be used with the ordinary elevator-nozzle without any special provision and without disconnecting the strings.

The invention is eminently adapted to rough and rapid handling in steamship work. The rigid parts are too short to interfere with the stowage when the bags are hastily rolled or otherwise compressed together, or placed many bags in one, for the return passage. The bags may be handled, if desired, by seizing directly on the clamps; but the fastening provides for the accustomed means of handling by the gathered material at the corners. Repairs may easily be made by ordinary workmen.

Instead of sewing the guide-rings on the outside of the bag, they may be recessed partly or entirely into the material of the bag; or the function may be performed by suitable small holes through the material of the bag, not large enough to allow the escape of the grain. In such case the holes should be worked or defended with a grommet or eyelet.

The strings, in running along from the end to the middle or crossing-point in each clamp, may be grooved in the bottom or top or on the outside, or in some cases, perhaps preferably, on the inside, between the material of the bag and the strap. The holes d^1, through which the strings C^1 C^2 are passed in opposite directions, may, instead of being large enough to take both strings, be two separate holes close together.

The bags fitted with my attachments will dump or empty their contents with greater rapidity than sewed bags, there being no stitches to impede the free flow of the grain, so soon as the strings are loosened.

I claim as my invention—

1. The perforated and grooved strips D^1 D^2, of rigid material, with the projecting spurs D^3 and receiving-recesses *d*, and the strings C^1 C^2, combined and arranged for joint operation, as and for the purposes herein specified.

2. A grain-bag having the strips D^1 D^2, locking-spurs D^3, and recesses *d*, and rings or string-guides H, and the strings C^1 C^2, whereby the mouth of the bag is confined at will, and at the same time lugs or ears are gathered by the act of fastening at each side of the top of the same, as herein specified.

In testimony whereof I have hereunto set my hand this 31st day of October, 1878, in the presence of two subscribing witnesses.

THOMAS CLEARY.

Witnesses:

CHAS. C. STETSON,

E. W. STAFFORD.