(No Model.)

H. BOWER.

PACKING BRAN, &c.

No. 282,045. Patented July 31, 1883.

FIG. 1.

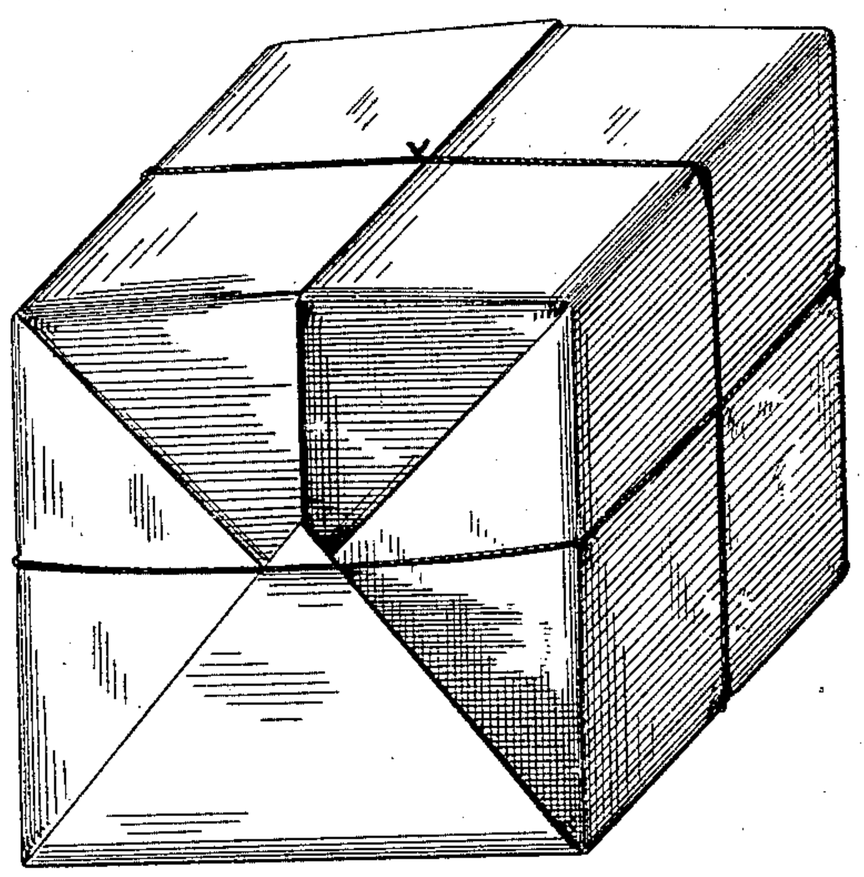
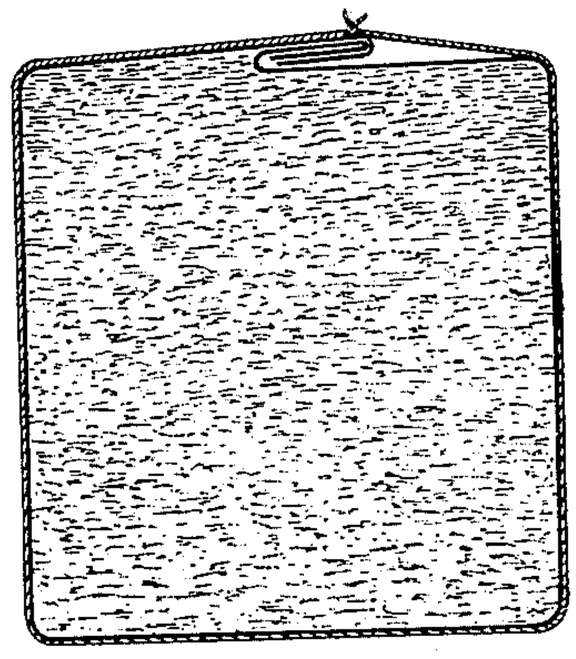


FIG. 2.



WITNESSES:

A. Hewbert

Geo. T. Kelly

INVENTOR

Henry Bower.

by Collier & Bell

Attys.

UNITED STATES PATENT OFFICE.

HENRY BOWER, OF PHILADELPHIA, PENNSYLVANIA.

PACKING BRAN, &c.

SPECIFICATION forming part of Letters Patent No. 282,045, dated July 31, 1883.

Application filed June 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY BOWER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Packing Bran or other Flaky or Scaly Materials, of which improvement the following is a specification.

The object of my invention is to facilitate and economize the storage and transportation of bran or other comminuted material of analogous flaky or scaly character by providing a package in which shall be contained a quantity of said material reduced to and retained in as far as may be the smallest practicable compass, and in proper condition for use whenever required upon opening the package, the latter to be of such form and size relatively to the weight of the contained material as will render it capable of being readily and cheaply handled, stored, and transported.

To this end my improvement consists in a bale or package of bran or analogous material which has been first adjusted, settled, or laid, and afterward compressed and secured within a wrapper or inclosing-casing, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a view in perspective of a bale of bran embodying my invention, and Fig. 2 a longitudinal section through the same.

In the practice of my invention I take a strip or sheet of paper or other material suitable for the formation of a wrapper or inclosing-casing and fold it into an open-ended tube, which is preferably of rectangular cross-section. Stout Manila paper, or that which is used in the manufacture of sand or emery paper, I have found well adapted to the purpose, as possessing in a sufficient degree the necessary qualities of strength, toughness, and pliability. The tube so formed, having been closed at one end by folding over the bran or other material to be packed, is fed into said tube up to its open top, or thereabout, and during the feed is subjected to the action of a series of adjusting and settling rods, prongs, or fingers, by which the particles of material which stand on edge relatively to the mass are adjusted, settled, or laid, and are caused to assume a horizontal position one upon another, in lieu of being allowed to remain standing on edge, in which last-named position their elasticity would cause them to act as a series of springs to resist any force applied to compress the mass. By such adjusting and settling operation two results are effected, first, such an arrangement of the separate particles as will enable compression to be more effectively exerted upon the mass by reducing its capacity of resistance thereto; and, secondly, a preliminary condensation or reduction without pressure of the bulk of the material. The filled wrapper of adjusted and settled material is next subjected to the action of any suitable compressor, by which the bulk of its contents is reduced to the required minimum, and in such reduction the upper level of the compressed material is carried so far below the top of the tube as to leave sufficient of the stock of the latter adjacent to its open end free to be folded over and closed upon itself to form a cover for the tube or wrapper. The tube is then folded over and closed at its open end and securely fastened, preferably while under compression, by tying cords or bands and clasps, and there is then presented a completed bale or package, as shown in the drawings, the same being a new and useful article of manufacture, which may be conveniently handled and transported with the same degree of economy as ordinary freight, and from which the contents may be readily removed for use whenever required without any alteration of or deterioration in their character or condition.

The several steps of the process involved in the formation of my improved bales may obviously be facilitated and expedited by the employment of proper mechanism for the purpose, an example of which is shown and described in an application for Letters Patent of the United States filed by me under date of May 22, 1883, serial No. 95,783.

My invention differs essentially from a bale the contents of which have been subjected to preliminary compression by a blow or series of blows, as in the operation of adjusting and settling practiced by me no ramming or compressing action is designed to be or is exerted; and, on the other hand, preliminary compres-

sion, as above referred to, fails to effect the reduction of the resistance of the material to final compression which results from my said adjusting and settling operation.

I claim as my invention and desire to secure by Letters Patent—

As a new article of manufacture, a bale or package consisting of a charge of bran adjusted, settled, or laid, and compressed and secured within a wrapper or inclosing-casing, substantially as set forth.

HENRY BOWER.

Witnesses:
J. SNOWDEN BELL,
WALTER S. GIBSON.