(No Model.)

H. G. HALL.

BRAN OR FLOUR PACKER.

No. 279,746. Patented June 19, 1883.

Fig. 1

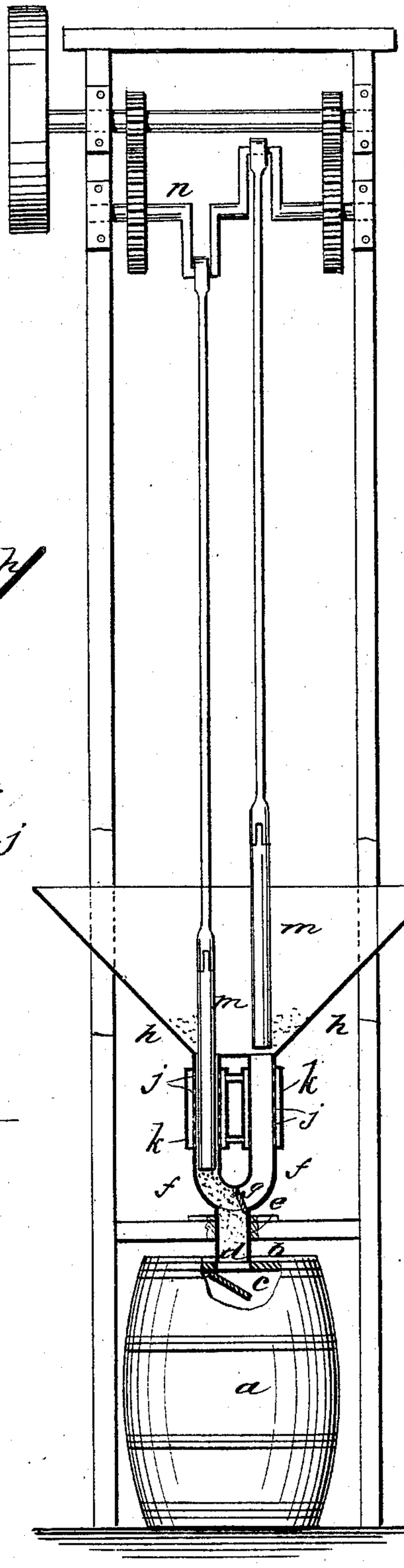


Fig. 2.

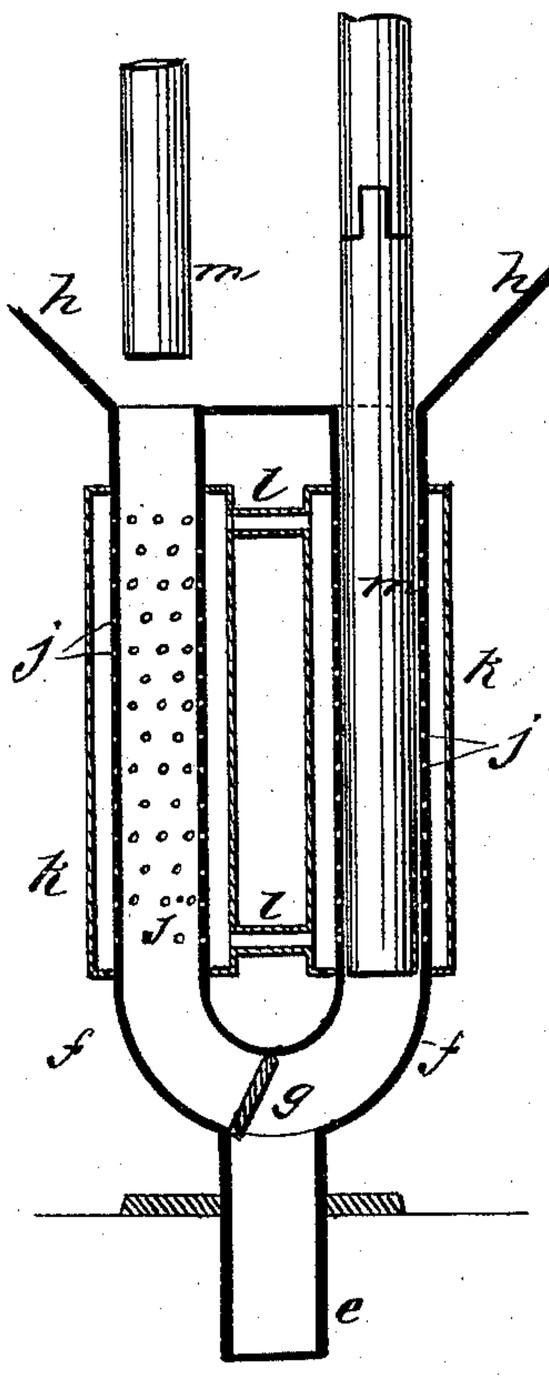
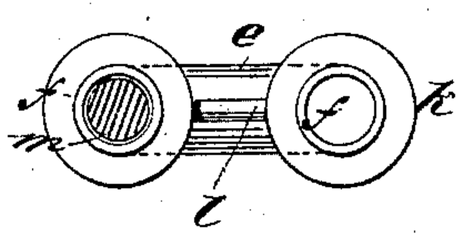


Fig. 3



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HENRY G. HALL, OF FAYETTEVILLE, NORTH CAROLINA.

BRAN OR FLOUR PACKER.

SPECIFICATION forming part of Letters Patent No. 279,746, dated June 19, 1883.

Application filed April 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. HALL, of Fayetteville, in the county of Cumberland and State of North Carolina, have invented a new and Improved Bran or Flour Packer, of which the following is a full, clear, and exact description.

My invention consists of a contrivance of plungers for forcing the bran or other ground material into the barrel, bag, or other package to be filled, together with means for effecting the escape of the air from between the particles of the substance being packed, to enable it to pack more closely than it can by the common methods of packing, as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is partly a side elevation and partly a sectional elevation of my improved packing-machine. Fig. 2 is a detail of the packing apparatus in sectional elevation and on an enlarged scale, and Fig. 3 a section of the plungers and top view of the cylinders in which they work to press the material into the barrel or other vessel to be filled.

I provide the barrels *a*, bags, or other vessels to be filled with a head or cover, *b*, having a check-valve or gate, *c*, opening inside and closing by the back-pressure of the contents of the vessel or otherwise. In case it is a bag that is to be filled, a head or cover having such a valve will be temporarily applied.

Above the orifice *d* of said valve or gate is a filling-tube, *e*, which divides into two branches, *f*, with a gate or valve, *g*, at the junction of the branches, that will automatically close either branch when the material is being forced in from the other branch. These branch tubes extend up into a hopper, *h*, into which the bran, meal, flour, or other substance to be packed is supplied, and they are perforated for the most of their length with small holes *j* for the escape of air into surrounding jackets *k*, which are connected by air-passages *l*, so that the air may flow from one jacket to the other.

For each branch tube there is a plunger, *m*, suitably connected to a crank-shaft, *n*; or it may be any other approved means for working the plungers, the cranks being set opposite to each other for working the plungers reversely to each other. The connections of the plungers are such that they rise above the upper ends of the branch tubes in which they work, to open them and allow them to fill by the falling in of the material in the hopper.

It will be seen that when a tube has filled and the plunger begins to descend and press the contents down, the perforations *j* of the tube will allow the air to escape from between the particles into the jacket *k*, from which the plunger ascending in the other tube will withdraw the air, thus enabling light ground material to be packed much more dense than by any other method, and practically enabling about double the quantity of bran to be packed in a barrel that can be by any other method.

Good results may be had without the perforated tubes and jacket arrangement, the plunger contrivance being so that the air will escape along the plungers; but it is preferred to employ it, although the air escapes very effectually from the small quantities of material compressed by the plungers at each operation. To begin with, both plungers are to be raised above the branch tubes *f* for allowing the material to flow into the empty barrel as long as it will. Then the plungers are to be set in motion by the crank-shaft or other means employed for the purpose, by which they are to make about a hundred and fifty strokes a minute each, thus enabling them to fill a barrel very quickly as well as compactly.

It will be seen that the apparatus is very simple, and therefore very cheap to build as compared with other flour, bran, or meal packers.

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

1. The combination, in a flour, bran, or middlings packer, of a hopper, filler-tube, plunger, and a head or cover for the barrel, sack, or other vessel, having a check-valve, substantially as described.

2. The combination, in a flour, bran, or middlings packer, of a filler-tube, *e*, having

branches *f* and a check-valve, *g*, a hopper connected with the branches of the tube, plungers working in said branches and hopper, and a head or cover for the barrel or other vessel, having a check-valve, substantially as described.

3. The combination, in a flour, bran, or middlings packer, of a pair of branch tubes, *f*, plungers *m*, hopper *h*, tube *e*, and a cover, *b*, having a check-valve, *c*, said branch tubes having a perforated section, and the said perforated sections being jacketed, and the jackets connected by air-pipes for the suction of the air from the material when being compressed, substantially as described.

4. The combination, in a flour, bran, or middlings packer, of a filler-tube, *e*, having branches *f* and a check-valve, *g*, and plungers working in the branches to force the material through the tube, said plungers being geared to work reversely to each other, substantially as described.

HENRY G. HALL.

Witnesses:
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