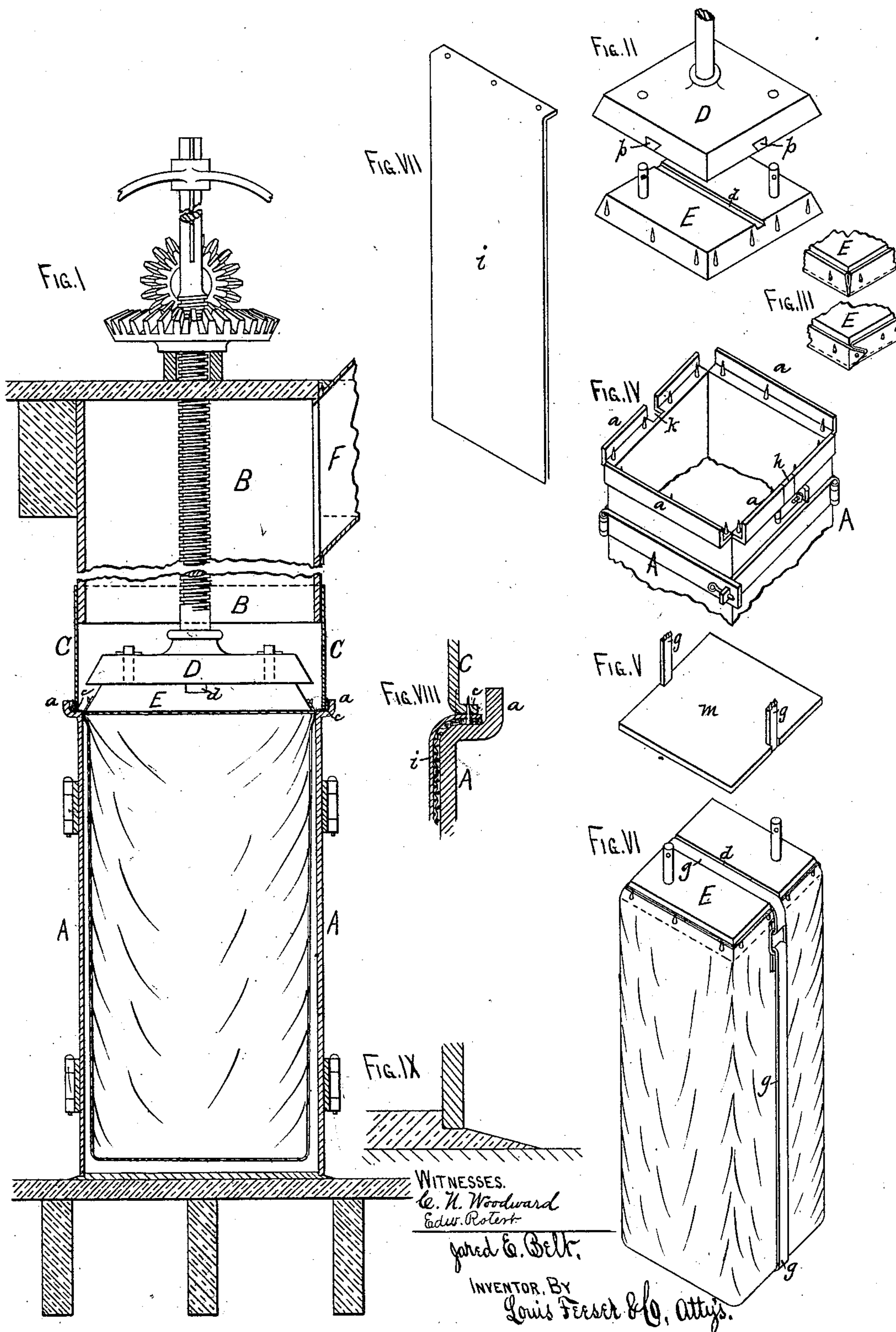


J. E. BELT.
Bran-Packer.

No. 215,787.

Patented May 27, 1879.



UNITED STATES PATENT OFFICE.

JARED E. BELT, OF ST. PAUL, MINNESOTA, ASSIGNOR TO MARY I. BELT.

IMPROVEMENT IN BRAN-PACKERS.

Specification forming part of Letters Patent No. 215,787, dated May 27, 1879; application filed February 7, 1879.

To all whom it may concern:

Be it known that I, JARED E. BELT, of St. Paul, in the county of Ramsey and State of Minnesota, have made certain new and useful Improvements in Bran-Packers, &c., which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a sectional elevation, with a portion broken out, of the reservoir and guide-rod to reduce the height. Fig. 2 is a perspective view of the follower and movable plate detached. Fig. 3 is a perspective view of a portion of the corner of the follower-plate, showing the methods of securing the cloth covers thereto. Fig. 4 is a perspective view of the upper portion of the hinged casing. Fig. 5 is a perspective view of the auxiliary bag-protecting plate detached. Fig. 6 is a perspective view of one of the sacks after being packed and removed from the casing, ready for sewing. Fig. 7 is a detached perspective view of one of the auxiliary linings for rough bags. Fig. 8 is an enlarged sectional view of a portion of the mouth of the casing, sack, auxiliary lining, and the sleeve or spout, showing the method of connecting them. Fig. 9 is an enlarged detached view of the bottom of the casing.

A is the frame or casing, adapted to receive the bag or other receptacle for the bran, &c., and made of any desired form, and hinged or otherwise secured together so that it may be taken apart for the removal of the bag after being pressed. This casing will be set upright, and be provided at the top with shoulders *a*, in which pins or hooks are set to support the bag.

A spout or reservoir, B, of the same shape and size as the casing A, extends up above it, and is provided with a collar or slide, C, adapted to fit down upon the shoulder *a* of the casing A, and thus not only close up the opening between the spout B and casing A, but also to assist in holding the bag in place and prevent its sagging between the pins.

D is a follower or piston-head, made to fit the interior of the reservoir B, and adapted to be run up and down inside of it, to press the bran into the casing A. It may be operated by a screw, lever, or other suitable device, and

will be provided on its lower surface with a plate, E, to which the cover for the bag will be attached by hooks, pins, or other devices. This plate will be attached to the follower D in any suitable manner, either by pins and keys, as shown, or in any other manner that will admit of its being easily and quickly attached and detached.

d is a groove cut in the upper side of the plate E, through which a temporary binding-strap, *g*, will pass, as hereinafter described.

The operation is as follows: The follower D being set opposite the space between the reservoir B and casing A, the sleeve C being raised up, one of the plates E, having a cover attached, will be inserted and secured to the follower, as before described. The follower and plate will then be run up to the top of the reservoir B, above the point where the bran is to be run in. A metallic or other band, *g*, will then be bent and set inside the casing A, so as to bring one end opposite a small hinged door or slide, *h*, in the center of one side of the top of the casing A, as shown in Fig. 4. This end of the band will be provided with a bale-tie, while the other side of the band will run up on the other side of the casing A, and be bent over the edge of the shoulder *a*, through a small slot, *k*. (See Fig. 4.) A thin plate, *m*, will then be laid on the bottom of the casing A, to protect the bag from the action of the band, which would otherwise form a crease in the bottom. (See Fig. 5.) A bag for holding the bran will then be suspended in the casing A by means of the hooks or pins on the shoulders *a*, and the sleeve C dropped down into place, as shown in Figs. 1 and 8. The bran will then be allowed to run in through the spout F until the bag and the reservoir B are filled, when the follower and plate will be run down until they reach the top of the casing A, as shown in Fig. 1. The long end of the band *g* will then be run through the groove *d* in the top of the plate E, the door *h* opened, and the two ends of the band secured together by any of the well-known bale-ties.

By this means the bag will be firmly held together by the plate E and band *g*, so that when the sleeve C is raised, the casing A separated, and the bag removed, it will be in the shape shown in Fig. 6, and ready to have the top

sewed on. When this is accomplished, the band *g* and plate *E* being removed, the bag will be ready for shipment.

By providing a number of the plates *E* and bands *g* the work will be greatly facilitated, as in that case a second bag may be filled while the first is being sewed.

The edges of the follower *D* and plate *E* will be inclined, as shown, to prevent their catching upon the lower edge of the reservoir *B*, as well as to enable the pins for holding the cover to be inserted without projecting beyond the edge.

When rough bags are used it may be found necessary to use temporary metal or other smooth-surfaced linings, to prevent the bran adhering to the cloth. One of these pieces of lining is shown in Fig. 7, and consists of a sheet of metal, wood, paper, or other substance, *i*, having a smooth surface, with the edge bent over and adapted to be suspended from the same pins upon the shoulders *a* to which the bag is attached, and running down inside of the bag to the bottom. By this means a smooth surface is presented to the bran, and no danger of adhesion and clogging exists.

When the follower has completed its downward stroke the smooth linings may be secured to it by any suitable clamps, so that when the follower is returned to the top of the reservoir the linings will be pulled out of the sack; or they may be pulled out by hand after the bag is removed from the casing *A*.

On the sides of the bag where the bands *g* occur the smooth linings will be made in two pieces, to enable them to be removed from either side of the band; or they may be made entirely of narrow strips, to facilitate their removal by hand.

Thin paper to be left in the bags may be employed, if desired.

When it is desired to pack bran for shipment to long distances permanent bands are required. In this case the cloth cover is fastened directly to the follower *D* and grooves or slots *p* made in the lower side of the follower, (see Fig. 2,) and supplied with temporary keys, so as to present a smooth surface to the bran. These grooves will be cut of a sufficient depth so that when the keys are removed the pressure of the bran upward will not cause the cloth to completely fill them; but space enough will be left for the insertion of the band *g*, which will be arranged in the casing *A* before the bag is put in, as before described, except that no plate *m* will be required. When the bags are packed in this manner the band or bands *g* alone will be depended upon to support the cover until sewed, and any desired number of bands may be employed.

Another point to be observed in packing bags where permanent bands are used is, that the follower should be forced down enough lower than is required to equal the depth of the grooves *p*, so that when the bands are on and the follower removed the reaction will

cause the portions of the bag not covered by the bands to project beyond them, and thus present a smooth surface to the wear and still be tight.

The casing *A* may be hinged or otherwise secured together, and may be made to open wholly or only partially to permit the bag to be removed.

The bag will be made slightly shorter and smaller than the casing *A*, so that it will be stretched to its fullest capacity, and thus conform to and keep the shape of the casing.

The movable sleeve *C* may be dispensed with, and the whole reservoir *B* moved up and down, if required; but I prefer it as shown.

The corners of the covers of the bag may be cut out to enable them to be folded smoothly upon the corners of the plate *E*, as shown in the upper view of Fig. 3, or the corners left uncut and folded around the corners, and caught upon the nearest pins, as shown in the lower view of Fig. 3, the object being to present a smooth surface to the reservoir *B* and sleeve *C*.

An opening may be left through one side of the reservoir *B*, above the spout *F*, if desired, through which the plate *E* may be passed and secured to the follower, or allowed to rest loosely upon the bran.

The plate *E* will be made thick enough to allow a sufficient quantity of the cover to be folded over its edges to reach the edge of the bag, while at the same time it should not reach above the plate to interfere with the follower *D*.

A thin wedge-shaped plate may be used instead of the plate *E* by sewing one side of the cover fast to the bag, or leaving one side of the bag long enough to form the cover, and then, after the wedge-shaped plate has been clamped fast upon top of the bran, in the same manner as when the plate *E* is used, or in any other suitable manner, the cover is to be brought over the outside of the plate and bands or clamps, and two of the remaining edges of said cover sewed fast to the respective top edges of the sides of the bag, leaving the edge next the thick side of the plate and that portion over the band *g* on the opposite side unsewed. The band is then removed, the plate pulled out, and the remainder of the sewing completed to fully close the bag.

When wooden receptacles are used instead of cloth for the bran, the cover or head will take the place of the cloth top upon the follower, and the hinged casing *A* be dispensed with.

A groove will be formed in the bottom of the casing *A*, in which a bar may be inserted to raise the bag up after it is pressed, and the bands are clasped upon it to release it from the pins upon the shoulders *a*, to enable the casing to be opened.

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

1. The method herein shown and described for securing the covers or tops of bran and

similar packages after being filled, consisting of attaching a plate, E, to which the cover is secured, to the bag by a temporary band, *g*, applied in the manner substantially as herein shown and described.

2. The combination and arrangement of the plate E, band *g*, and follower D, in the manner and for the purpose herein set forth.

3. The plate E, follower D, casing A, and reservoir B, in combination with a receptacle for bran, &c., arranged and operating substantially as herein set forth.

4. The casing A, having the shoulders *a* and pins for supporting the bran-receptacle, in combination with the sleeve C, having the flange *c*, whereby the bag is held firmly at all points, as herein set forth.

5. The metallic or other smooth-surfaced linings *i*, whereby the bran is prevented from adhering to the sides of the receptacle, arranged and operating substantially as herein set forth.

6. The combination and arrangement of the casing A, door *h*, and band *g*, in the manner and for the purpose substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JARED E. BELT.

Witnesses:

C. N. WOODWARD,
LOUIS FEESER.