

F. J. THULL.
FLOUR PACKER.
APPLICATION FILED NOV. 30, 1917.

1,282,318.

Patented Oct. 22, 1918.

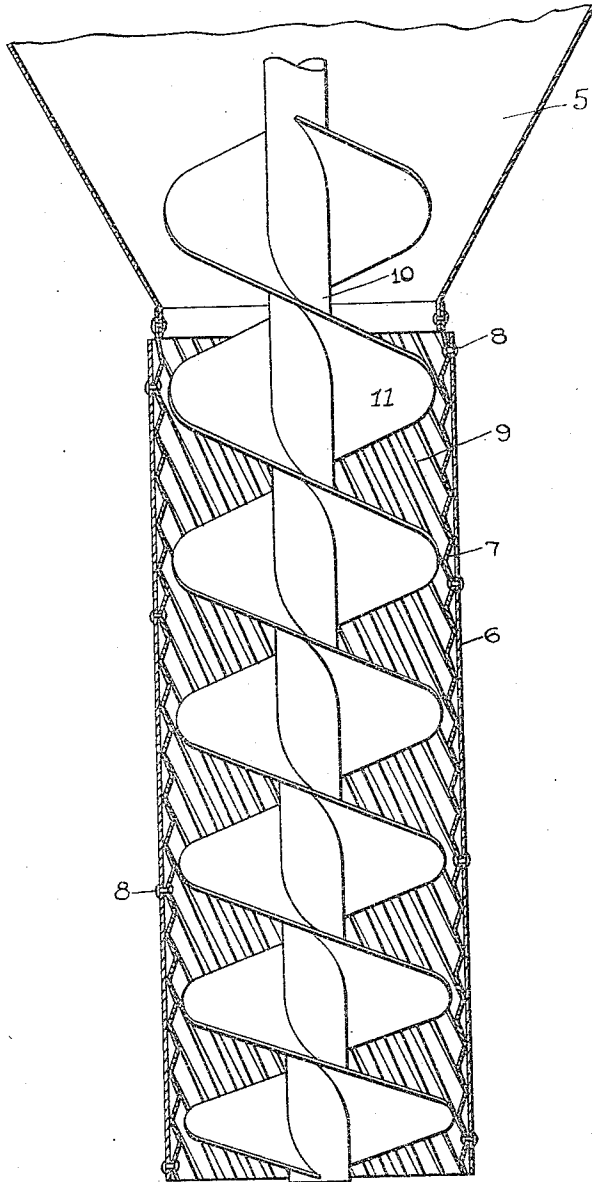


FIG. 1.

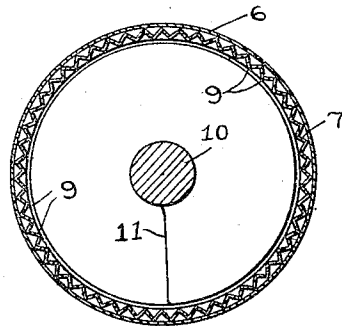


FIG. 2.

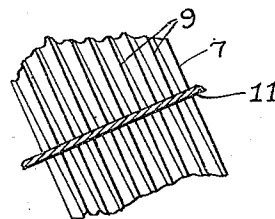


FIG. 3.

WITNESSES:
B. S. Hall
M. P. Delaney

INVENTOR:
FRANK J. THULL.
BY
Paul H. Hall
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK J. THULL, OF MINNEAPOLIS, MINNESOTA.

FLOUR-PACKER.

1,282,318.

Specification of Letters Patent.

Patented Oct. 22, 1918.

Application filed November 30, 1917. Serial No. 204,659.

To all whom it may concern:

Be it known that I, FRANK J. THULL, a citizen of the United States, resident of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Flour-Packers, of which the following is a specification.

In packing paper flour sacks, the pressure of the flour in the sack often bursts the walls, thereby spilling the flour and damaging the sack. It also often happens that a vacuum will be formed in the sack when it is filled and necessitate pulling the wall of the sack away from the packer tube.

The object of my invention is to provide a means for packing the flour progressively within the packer tube and eliminating the lateral pressure on the walls of the sack.

A further object is to prevent the formation of a vacuum in the sack during the packing operation.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a vertical sectional view through the packer tube and hopper,

Fig. 2 is a transverse sectional view through the tube, showing the arrangement of the spirally corrugated lining therein,

Fig. 3 is a detail sectional view, showing the relative position of the webs of the auger and the spirally arranged corrugations.

In the drawing, 5 represents the hopper and 6 a tube depending vertically from the hopper, the lower end of the tube entering the sack preparatory to filling, the sack being lowered as the filling operation progresses. Within the tube is a lining 7 secured to the tube by suitable means, such as rivets 8, and this lining is provided with spirally arranged corrugations 9. The packing auger 10 has a thread 11 thereon, the pitch of which decreases toward the lower end of the auger, the effect of which is to pack the flour progressively from the top to the bottom of the auger within the

tube instead of packing it in the sack, and thereby eliminate the tendency to burst the walls of the sack by the pressure of the flour therein.

As shown in Fig. 3 the thread of the auger moves past the corrugations of the lining at such an angle that the flour in these corrugations will be fed downwardly toward the sack instead of rotating with the auger within the tube and being packed in the bag with extreme lateral pressure. The flour is packed through the pitch of the auger thread and the shape of the corrugations within the tube instead of within the bag. The corrugations in the lining are open at the top so that currents of air may pass downwardly between the lining and the wall of the tube and prevent the formation of a vacuum in the bag, which often happens in packing augers as ordinarily constructed and results in delaying the packing operation.

I have found with the packing apparatus described that the flour will be delivered to the bag properly compressed and packed and no lateral pressure being exerted on the walls of the bag, there will be no danger of bursting. I have also found that the arrangement of the corrugations increases the feed of the flour downwardly into the bag, and greatly facilitates the packing operation and that the admission of air between the lining and the wall of the tube positively prevents the formation of a vacuum in the bag.

I claim as my invention:

1. A flour packer tube and a packing auger therein in combination with a lining interposed between said tube and auger and having spirally arranged corrugations therein.

2. In combination, with a packer tube and a lining therefor having spirally arranged corrugations, of a packing auger having its thread at such an angle to said corrugations that the flour will be fed downwardly therein by the revolution of said auger.

3. In a flour packer, a packer tube, a lining therefor having spirally arranged corrugations, and a packing auger having a thread which decreases in pitch from the

upper toward the lower end of said auger, the revolution of said auger feeding the flour downwardly in said corrugations.

4. In a flour packer, a tube and a packing auger therein, a lining interposed between said tube and auger and having spirally arranged corrugations, said corrugations be-

ing open at the top of said tube for admitting air between said tube and lining to destroy the vacuum in the top of the bag. 10

In witness whereof I have hereunto set my hand this 14th day of November, 1917.

FRANK J. THULL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."