

L. O. BERG.
HOISTING DEVICE.
APPLICATION FILED MAY 22, 1914.

1,180,690.

Patented Apr. 25, 1916.
2 SHEETS—SHEET 2.

Fig. 2.

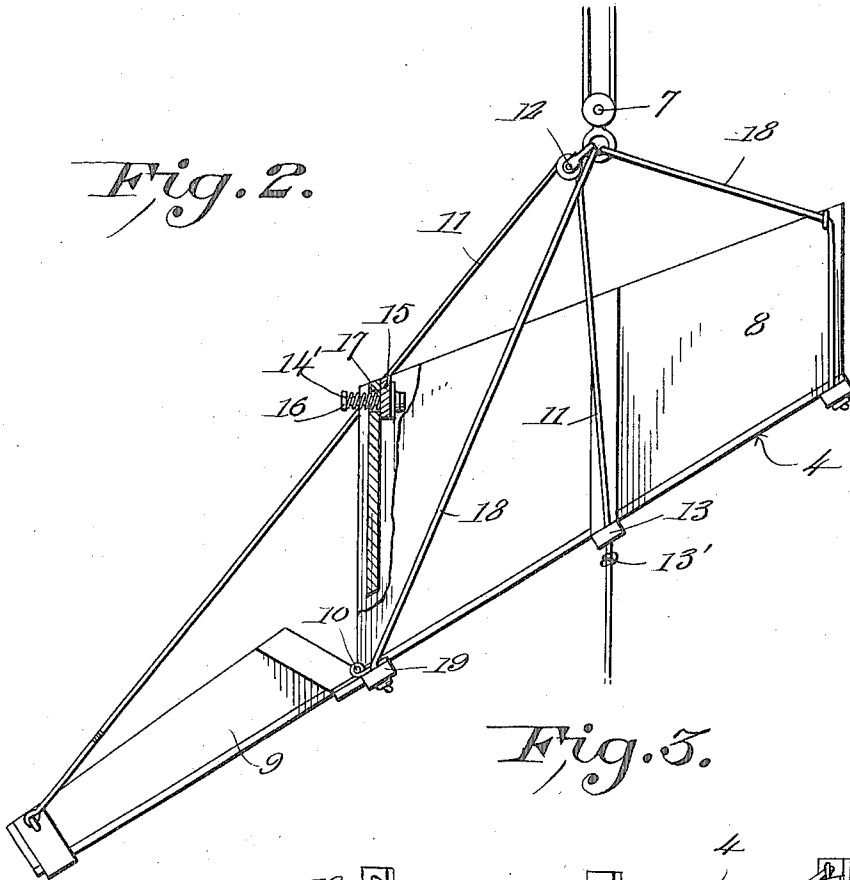
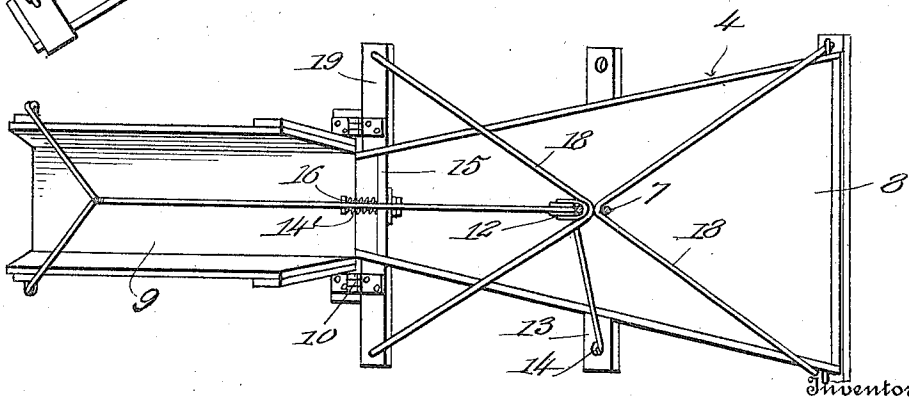


Fig. 3.



Witnesses

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LUVINE O. BERG, OF LETCHER, SOUTH DAKOTA.

HOISTING DEVICE.

1,180,690.

Specification of Letters Patent.

Patented Apr. 25, 1916.

Application filed May 22, 1914. Serial No. 840,279.

To all whom it may concern:

Be it known that I, LUVINE O. BERG, a citizen of the United States, residing at Letcher, in the county of Sanborn and State of South Dakota, have invented certain new and useful Improvements in Hoisting Devices, of which the following is a specification.

My invention relates to improvements in hoisting devices, and more particularly to an improved and simplified grain hoist.

As its primary object, the invention contemplates a device wherein a sectional bucket or receptacle is so constructed as to be utilized in one arrangement as a receptacle for the grain, and in another arrangement as a chute or conveyer, the latter arrangement providing for a discharge of the receptacle or bucket contents into a suitable bin or receptacle arranged at one side of the bucket preferably at a point remote therefrom.

As a further object, the invention contemplates means, such in its nature, as to provide for the raising and lowering of the bucket or receptacle, means also being provided whereby movement of the discharge chute may be easily controlled from a point upon the ground, the bucket or receptacle having been raised or elevated to the desired degree.

The above and additional objects are accomplished by such means as are illustrated in their preferred embodiment in the accompanying drawings, described in the following specification, and then more particularly pointed out in the claims which are appended hereto and form a part of this application.

In describing my invention in detail reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a side elevation of a grain hoist constructed in accordance with the present invention, the dotted lines indicating the position of the bucket as the contents thereof is being discharged; Fig. 2 is a side elevation of the bucket or receptacle, the chute or movable bucket section having been thrown into operative position; and

Fig. 3 is a top plan of the bucket or receptacle as illustrated in Fig. 2.

Before proceeding with the description of the drawings, I desire to call particular attention to the fact that while I have evolved my invention with reference to its application in connection with the hoisting of grain, the same may be readily utilized as a hoisting device for various articles of merchandise capable of being discharged in a manner apparent upon a continued reading of the descriptive matter relating thereto.

Referring now to the drawings by numerals, and to illustrate the application of the invention, 1 designates a barn or warehouse into the loft of which the grain or other material acted upon is to be stored. A loft door or opening 2 is formed in the sides of the barn 1, said door having arranged directly thereover a beam or support 3 from which the device comprising my present invention is suspended.

The grain bucket or receptacle, designated as an entirety by the numeral 4 is suspended from the beam or support 3 by means of a rope or like flexible element designated 5, said rope being attached at one end to a pulley 6 mounted to slide longitudinally of the beam 3 from which point it depends, as illustrated in Fig. 1 to be arranged over a second pulley 7 carried by the bucket or receptacle 4. From the pulley 7, the rope extends upwardly again to the pulley 6, passing thereover and depending to a point upon or adjacent the ground, from which point the said rope is operated to provide for a raising and lowering of the bucket or receptacle in a manner common to the art. Said bucket or receptacle in its preferred embodiment is composed of a pair of bucket sections designated respectively 8 and 9, the latter being movable relatively to the former and hinged as at 10 to the said section 8 in a manner apparent in Fig. 2. Section 8 is so formed as to provide, when suspended or elevated, a sloping floor or bottom, the sides of the said section 8 converging from one end toward the hinge point 10 to provide for the retention of a predetermined quantity of grain or the like therein. Section 9, when moved into the position indicated in Fig. 1,

forms a closure for the bucket or receptacle, said section being held in such closed position by means of a rope or like flexible element 11 secured at one end to the said section 9, said rope or element being arranged over a pulley 12 carried by pulley 7, from which point it depends to an extension 13 of the section 8, passing through an opening 14 of the said extension and depending therefrom to a point upon or adjacent the ground.

If desired, a knot 13' may be made in the rope 11, said knot, when section 9 of the bucket is opened, abutting the extension 13 of section 8 to in this manner limit movement of section 9 and hold said section alined with the floor or bottom of section 8, the said section 9 when thus positioned forming a chute from which the grain is discharged.

As a means whereby movable section 9 is forced outwardly or away from section 8 when it is desired that the said section 9 be used as a discharge chute, I provide a spring 14 abutting at one end a strip 15 extending transversely of section 8 and at its opposite end the head 16 of a pin, bolt or the like 17 movable relatively to said strip 15, said bolt or pin forming an abutment for the said movable section 9, the latter, of course, being closed. In addition to the pressure brought to bear upon section 9 by the tension of the said spring 14, the weight of the grain within the receptacle being directed, by reason of the sloping bottom, upon the said movable section will provide for an automatic opening of the latter, the moment element 11 is slackened.

Receptacle or bucket 4 is suspended from pulley 7 by means of ropes 18 attached to both the pulley and the receptacle and to the pulley and an extension 19 at the converged end of the receptacle. The side walls of the bucket section 8 converge toward the chute or movable section 9 to direct, in a discharge operation, the contents thereof onto the chute.

Operation of the device is as follows:—
Receptacle 4 is first filled with grain, movable section 9 being closed against tension of spring 14' and so held by drawing rope 11 taut. After having been filled, bucket or receptacle is raised through operation of rope 5 into the position indicated in dotted lines of Fig. 1, in which event, said rope 11 is slackened, permitting, by the weight of the receptacle contents and the tension of spring 14' movable section 9 to open or swing from hinge point 10 into the position illustrated in Fig. 2, in which event, said movable section 9 is alined at an inclination with the sloping floor or bottom of section 8 thus forming a chute onto which the receptacle contents is directed by the converging walls

and sloping bottom, said chute discharging the grain into a bin or receptacle (not shown) arranged at one side of the loft preferably at a point remote from the bucket support. The contents of the receptacle having been fully discharged, element 11 is again drawn taut thereby permitting movable section 9 to close, and, by lowering the entire bucket, the device is again ready to be a second time filled and elevated in the manner above set forth.

From the foregoing, taken in connection with the accompanying drawings it is apparent that the person operating element 11 not only control movement of section 9, but also, during a raising of the bucket holds the latter against turning and swinging against the side of the barn or other structure in connection with which the device is used; that the said section 9 automatically opens the moment element 11 is slackened; and that when opened, said movable section 9 is alined with the sloping bottom of section 8 and, by reason of its novel formation, effects the discharge chute or trough onto which the grain acted upon is directed and from which it is discharged.

In reduction to practice, I have found that the form of my invention, illustrated in the drawings and referred to in the above description, as the preferred embodiment, is the most efficient and practical; yet realizing that the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of my invention, as defined in the appended claims.

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

1. In a hoisting device, a receptacle having a discharge opening formed therein, a discharge chute hingedly connected to the said receptacle at a point adjacent said opening, a spring abutment mounted on the receptacle, means operable to maintain said chute in a vertical position and in engagement with said spring abutment to form a closure for said opening, said spring abutment operating automatically upon a release of said last mentioned means to move said discharge chute into a position alined with the base of the receptacle whereby to form a continuation thereof, as and for the purpose set forth.

2. In a hoisting device, a receptacle having a discharge opening formed therein, a discharge chute hingedly connected to said receptacle at a point adjacent said opening, a yielding abutment mounted on said re-

ceptacle for engagement with said discharge chute when moved to a position closing said opening, a means to move said discharge chute into the position stated, said abut-
5 ment operating automatically to remove said discharge chute from engagement therewith upon a release of said last mentioned means, and a means to maintain said discharge chute when released in alinement
with said receptacle whereby to form a con- 10
tinuation of the body thereof at the opening therein, substantially as described.
In testimony whereof I affix my signature
in presence of two witnesses.
LUVINE O. BERG.

Witnesses.

W. P. BOTKIN,
JOHN VAN METRE.

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