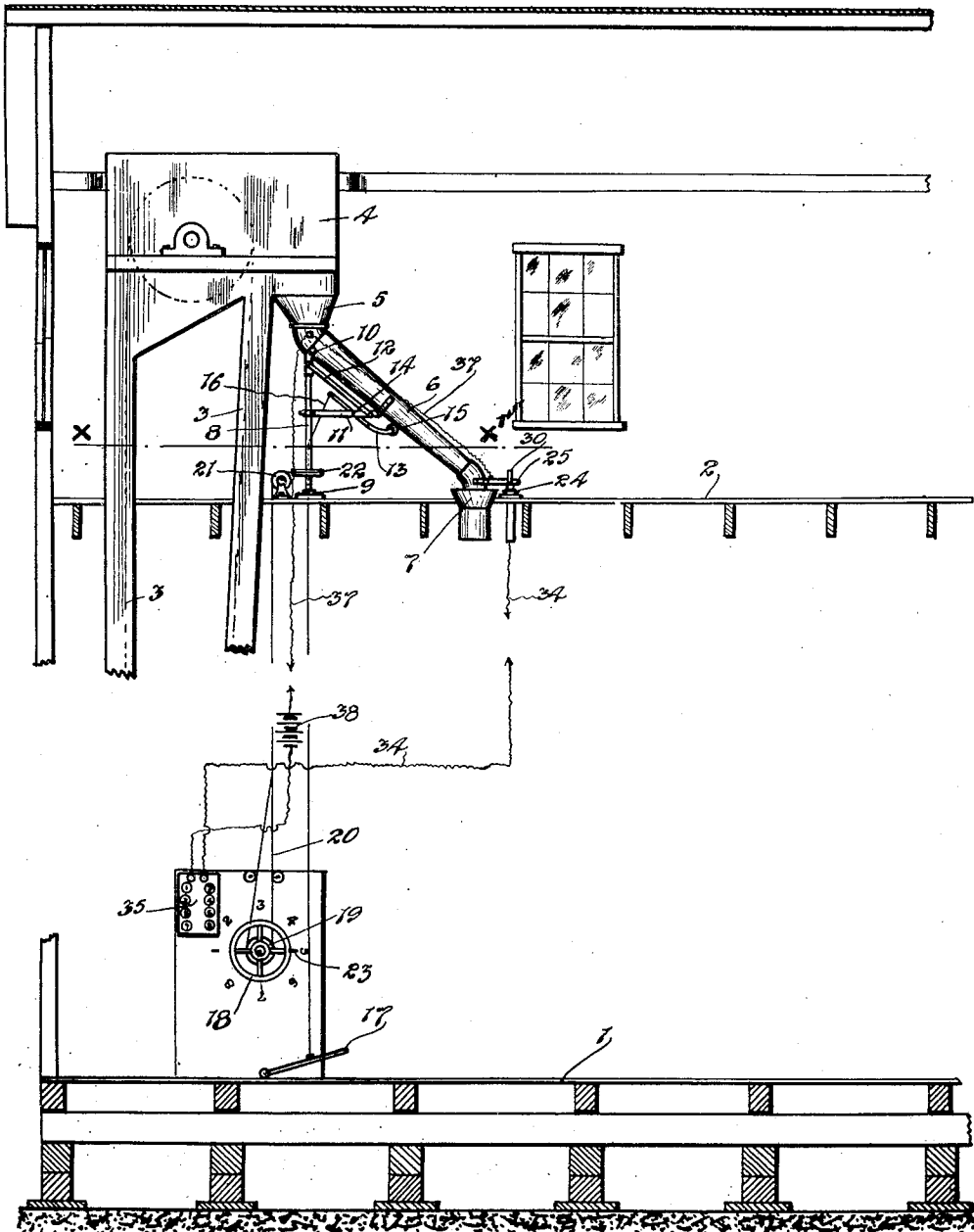


J. J. SHOTWELL.
GRAIN ELEVATOR.
APPLICATION FILED NOV. 7, 1916.

1,242,482.

Patented Oct. 9, 1917.
2 SHEETS—SHEET 1.



WITNESSES

Roland Foster

W. B. Wakefield

Fig. 1

By

INVENTOR

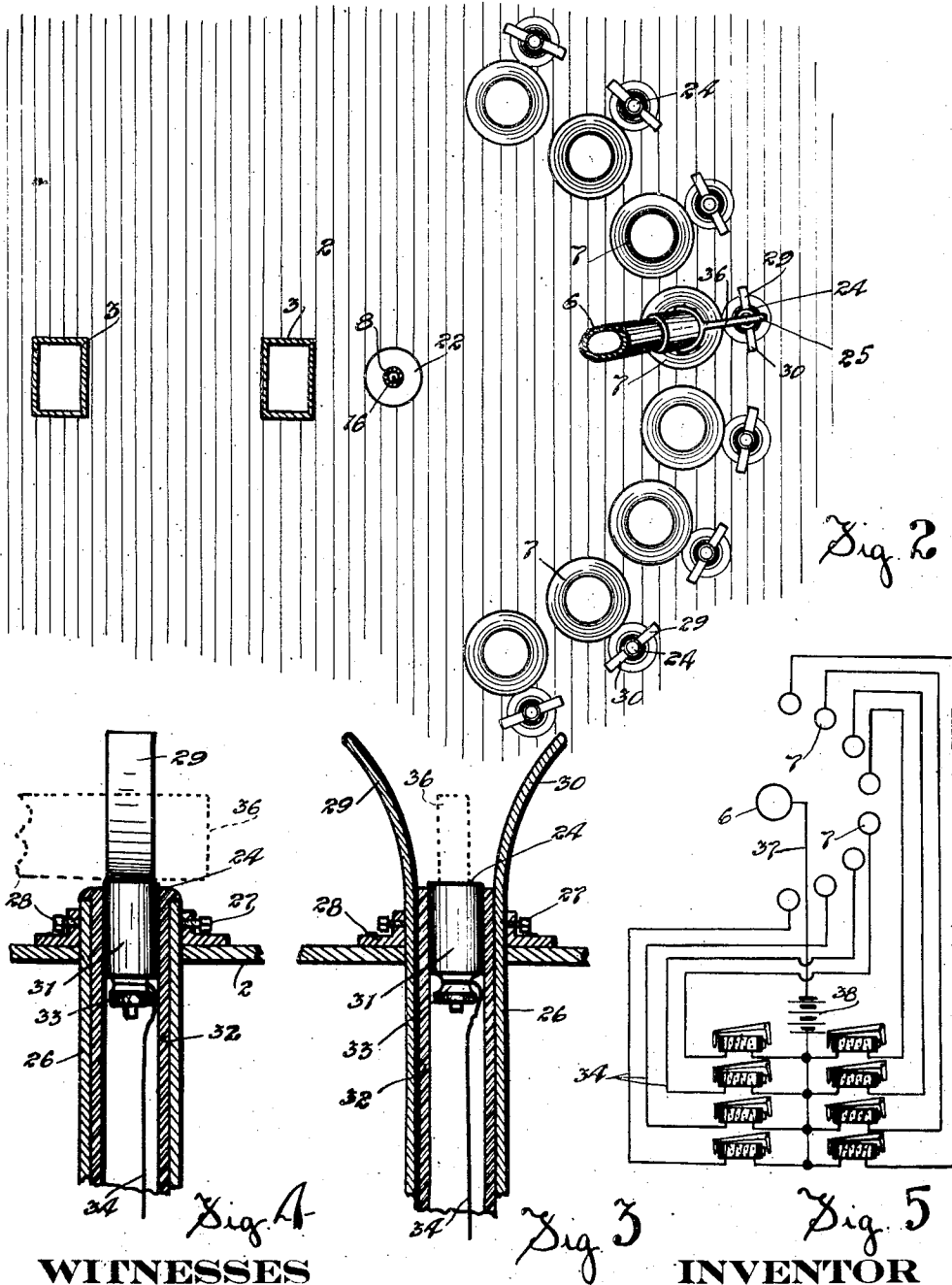
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UNITED STATES PATENT OFFICE.

JOHN J. SHOTWELL, OF WINNIPEG, MANITOBA, CANADA.

GRAIN-ELEVATOR.

1,242,482.

Specification of Letters Patent.

Patented Oct. 9, 1917.

Application filed November 7, 1916. Serial No. 130,046.

To all whom it may concern:

Be it known that I, JOHN J. SHOTWELL, of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Grain-Elevators, of which the following is the specification.

The invention relates to improvements in grain elevators and particularly to an attachment to the distributing spout commonly called the gerber spout and the object of the invention is to provide a device associated with the gerber spout which will primarily effect the positive registration of the gerber spout with the various floor funnels associated therewith and which will also positively indicate to the attendant on the working floor of the elevator the precise funnel into which the gerber spout is discharging, such device obviating any possibility of the grain being discharged into an improper bin or of grain in adjoining bins being mixed as very often occurs under present conditions.

With the above objects in view the invention consists essentially in combining with the customary shiftable gerber spout and bin funnels, contact making appliances contained in a suitable electric circuit embodying a source of electro-motive force, and an indicator or annunciator and associating with the contact making appliance a means for guiding the gerber spout positively to the proper discharging position over any selected funnel, the parts being arranged and constructed as hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawings in which:—

Figure 1 represents a side view of the device as it appears installed.

Fig. 2 represents a horizontal sectional view through the leg and gerber spout and looking downwardly, the section being taken in the plane denoted by the line X—X' Fig. 1.

Fig. 3 represents an enlarged detailed vertical sectional view through the adjustable portion of the contact making appliance.

Fig. 4 represents a vertical sectional view through the adjustable portion of the con-

tact making appliance, the section being taken in the plane at right angles to that shown in Fig. 3.

Fig. 5 represents diagrammatically the electrical circuit.

In the drawings like characters of reference indicate corresponding parts in the several figures.

1 represents the working floor of an elevator and 2 the top floor.

3 represents the ordinary elevator leg which passes upwardly through the top floor and terminates in the hood 4 which is provided with the customary discharge funnel 5 to which is attached the usual shiftable discharge or gerber spout 6 which is adapted to swing so that it can be brought to positions such that it will discharge into any one of the concentrically arranged floor funnels 7 which, in actual practice, communicate with the respective bins of the elevator.

While this gerber spout can be suspended and manipulated in any of the well known ways, I have considered it advisable for the purpose of the present specification to show one of the ordinary suspensions which comprises the following parts:—

8 represents an upright tubular shaft having the lower end rotatably mounted in a carrying bearing block 9 carried by the floor 2, this bearing being arranged such that the vertical axis of the shaft lies on the common center of the concentrically arranged floor funnels 7. The upper end of the shaft is fastened to the gerber spout as indicated at 10 and it is obvious with this arrangement that the shaft actually supports the gerber spout from the floor.

An arm 11 is attached to the shaft and has the outer end spanning the body of the gerber spout. The outer end of the arm is reinforced by a stay bar 12. 13 is a lifting lever pivotally secured to the arm 11 at 14. The lower end of the lifting lever carries a roller 15 which operates on the lower side of the gerber spout and the upper end is connected to a cable 16 which passes downwardly through the shaft to the working floor where it is attached to a foot pedal 17. I have not gone into details regarding the above parts as they are well known to

those familiar with the art and for this reason a fuller description is considered unnecessary.

In practice, one, by pressing down the foot pedal, swings the lever to raise the free end of the spout up such that it will clear the funnels 7.

In order that the gerber spout can be turned from the working floor a hand wheel 18 is provided in any suitable location on the working floor and associated with the hand wheel is a drum 19 to which an endless cable 20 is fastened, the cable passing upwardly through the top floor, around the guide pulley 21 and around the operating pulley 22 fixed to the shaft 8.

The hand wheel is supplied with a pointer 23 which is adapted in the turning of the wheel to point to numbers appearing on an adjacent board, the numbers actually indicating bins.

In the drawing I have shown the numbers 1 to 8 inclusive arranged around the indicator wheel and in this connection it is to be understood that when the hand wheel is turned to bring the pointer to any one of these numbers the gerber spout is in position over the floor funnel corresponding to that number.

The above means for raising the spout and for turning it to the various funnels are, as already stated, now in use and my invention has nothing whatever to do with these particular arrangements. They are simply shown in order that the working of my invention, shortly disclosed, can be better understood.

I wish here, however, to mention that owing to slackness occurring in the cable 20 there is always the possibility under ordinary conditions of the gerber spout not being properly positioned over the proper floor funnel even when the pointer indicates that the gerber spout is positioned directly over a certain funnel.

This fact very often causes trouble due to the mixing of the grain in adjacent bins. My invention avoids this difficulty as will be later apparent.

Adjoining each of the floor funnels 7 I locate a contact member 24 and to the gerber spout I attach a further contact member 25, these being arranged such that when they are brought together an electric circuit containing an annunciator will be closed. The contact member 24 in each instance is constructed in detail as now described.

26 represents a pipe of suitable length passed through the top floor 2 and held in adjustable relation to the floor by means of adjusting screws 27 carried by the flange 28 permanently fastened to the floor and receiving the pipe slidably. The upper end of the pipe is constructed to provide two outwardly flaring opposing guide bars 29 and

30, the object of which will be shortly apparent.

Within the tube I fit a contact piece 31 which is suitably insulated from the tube by means of a porcelain or such like insulator 32.

The contact piece is supplied with a jam nut 33 and a feed wire 34 leads from the contact piece to one of the terminals of an electrical indicator or annunciator 35.

The contact member 25 is constructed from a metallic arm 36 fastened permanently to the free end of the gerber spout and extending in a direction radial to the shaft 8. The latter member is preferably insulated from the spout.

To the contact member 36 I attach a return wire 37 which leads to the upper portion of the spout and then passes downwardly through the elevator and connects with the other of the terminals of the annunciator.

A battery 38 or other suitable source of electro-motive force is inserted in the circuit so formed.

I wish now to call attention particularly to Fig. 5 where the electrical connections for eight funnels are shown diagrammatically. In observing this figure and keeping in mind the particular arrangement of the gerber spout and contact members it will be readily seen that when the gerber spout is brought to a position over one of the funnels and dropped down the arm 36 will engage with the contact piece 31 and close the circuit through the annunciator with the result that the dial or whatever other indicating means is employed in the annunciator will show on the ground floor that the gerber spout is in proper discharging position relative to the bin, which, it will be understood, corresponds to the number presented on the annunciator.

In this way the attendant can be positive at all times by looking at his annunciator that the gerber spout is discharging into a definite bin and does not have to rely on the customary pointer 23 as is the ordinary practice.

A further feature in connection with my invention is that owing to the fact that each contact member 24 presents a pair of out-flaring guide arms 29 and 30 the gerber spout is always brought by the guide arms to a proper discharging position over the funnel as it will be obvious that when the gerber spout is dropped either to one side or the other of the center of the funnel the arm 36 thereof will be caught by one or other of the guide arms which will direct it to the proper central position, not only for discharging but also for closing the circuit containing the annunciator.

In connection with the above description I wish it to be distinctly understood that the

precise construction of the contact members is of little importance as this could be modified readily without in the least departing from the spirit of the invention which
 5 sides principally in making a contact to close an electric circuit containing an annunciator each time the gerber spout is dropped to discharge into one or other of the funnels and in providing means for guiding the gerber
 10 spout positively to the discharging position.

What I claim as my invention is:—

1. The combination with a plurality of concentrically arranged and spaced floor funnels, a pivoted distributing spout for delivering to the funnels and means for operating the spout to bring it into discharging position over one or other of the funnels, of an annunciator embodying indicators corresponding to the respective funnels, a contact
 20 member associated with each funnel, a contact member associated with the distributing spout and an electrical circuit containing a source of electro-motive force, the annunciator and the contact members and arranged
 25 such that it will be closed by the contacting of the contact members in the discharging position of the distributing spout over a funnel.

2. The combination with a plurality of
 30 concentrically arranged and spaced floor funnels, a pivoted distributing spout for delivering to the funnels and means for operating the spout to bring it into discharging position over one or other of the funnels, of
 35 an annunciator having a selective indicator corresponding to each funnel, a contact member adjacent each funnel, a contact member carried by the distributing spout and adapted to engage with the funnel contact members when the distributing spout is
 40 brought to discharging position over the respective funnels and an electrical circuit embodying a source of electro-motive force, the annunciator and the contact members
 45 and arranged such that when the distributing spout is positioned to discharge into a definite funnel the indicator corresponding to that funnel will be actuated.

3. The combination with a plurality of

concentrically arranged and spaced floor
 50 funnels, a pivoted distributing spout for delivering to the funnels and means for operating the spout to bring it into discharging position over one or other of the funnels, of
 55 an annunciator having a selective indicator for each of the funnels, a suitably insulated contact piece adjoining each funnel, a suitably insulated contact arm extending radially from the distributing spout and adapted in the discharging position of the spout over
 60 a funnel to make contact with the contact member of that funnel and an electrical circuit containing the contact members, the contact arm, the annunciator and a source of electro-motive force, said circuit being ar-
 65 ranged such that a particular indicator of the annunciator will be actuated when the distributing spout is in discharging position over a particular funnel.

4. The combination with a plurality of
 70 concentrically arranged spaced funnels, a pivoted distributing spout for discharging into the several funnels and means for raising, swinging and dropping the distributing spout to bring it into the several discharging
 75 positions, of vertically adjustable means for positively guiding the distributing spout into discharging position over the funnel when dropped.

5. The combination with a plurality of
 80 concentrically arranged spaced funnels, a pivoted distributing spout for discharging into the several funnels and means for raising, swinging and dropping the distributing spout to bring it into the several discharging
 85 positions, of an outstanding guide arm permanently secured to the discharge end of the spout and vertically adjustable flaring guide bars adjacent the respective funnels and adapted to receive the extending end of the
 90 arm in the dropping of the spout and direct the spout into a positive discharging position centered over the funnel.

Signed at Winnipeg, this 15th day of September, 1916.

JOHN J. SHOTWELL.

In the presence of—
 ROLAND FOSTER.