Jan. 23, 1968 W. D. HEEREN 3,365,043

GONDOLA LOADING DEVICE

Filed June 20, 1966 2 Sheets-Sheet 1

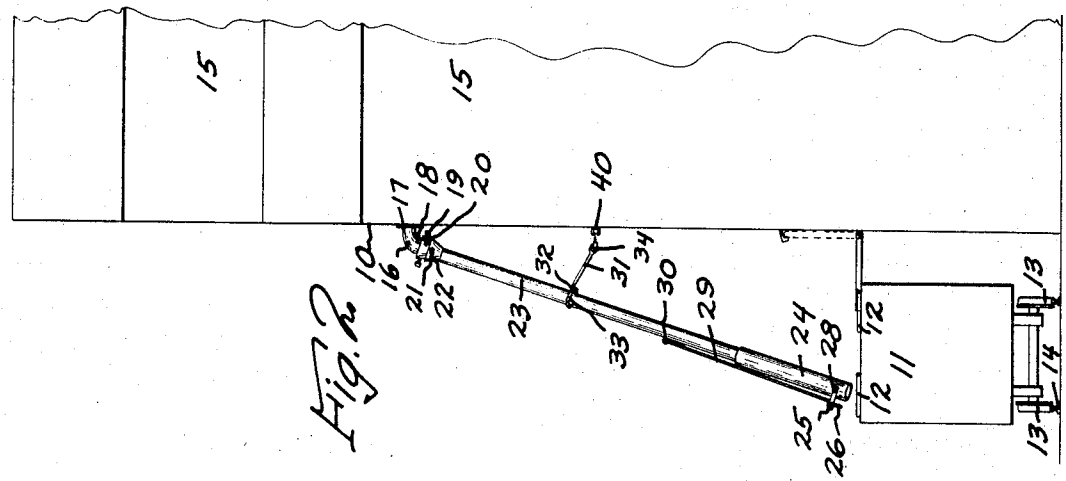


Fig. 2

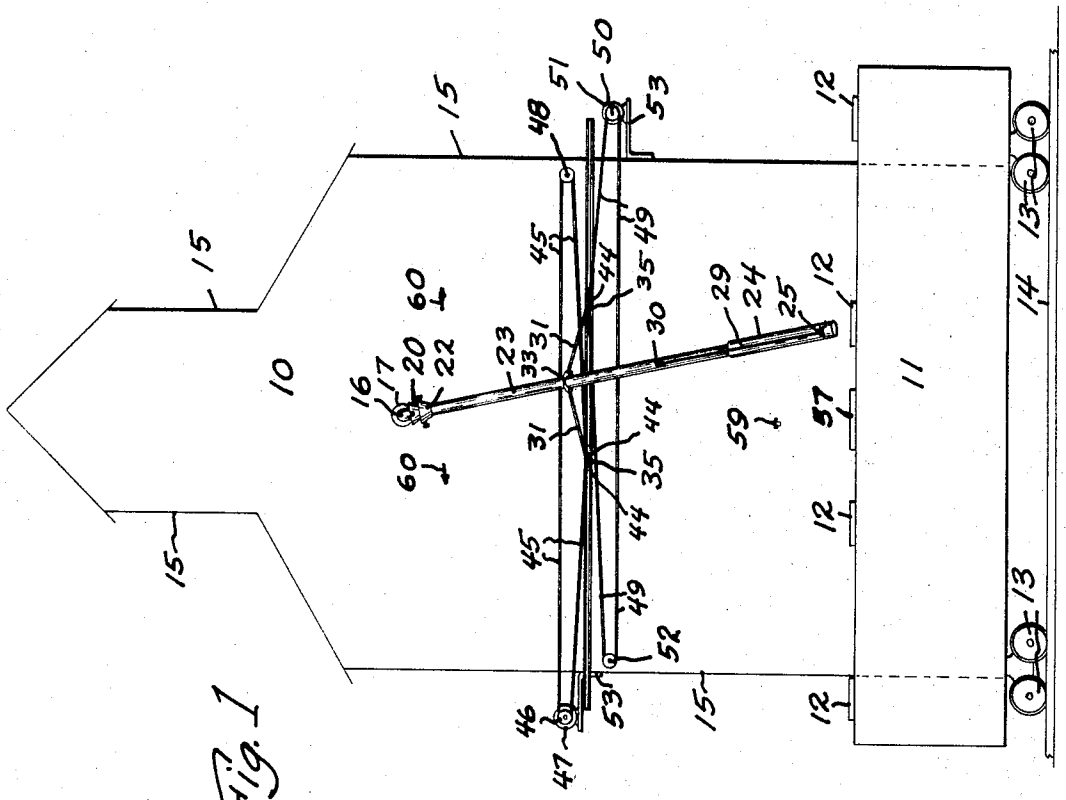


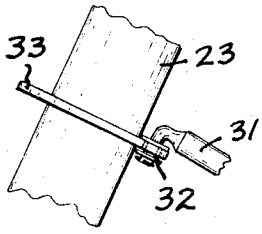
Fig. 1

INVENTOR.
Walter D. Heeren
BY
Sam J. Slotsky
ATTORNEY

Jan. 23, 1968 W. D. HEEREN 3,365,043

GONDOLA LOADING DEVICE

Filed June 20, 1966 2 Sheets-Sheet 2



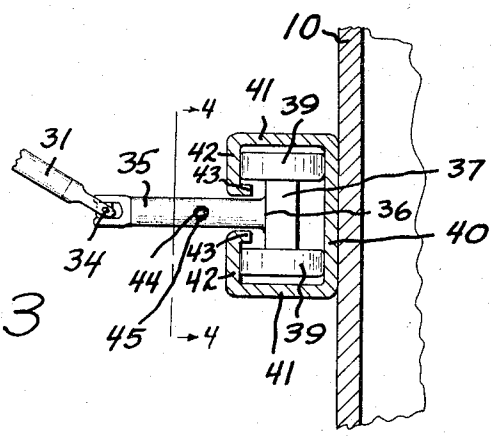


Fig. 3

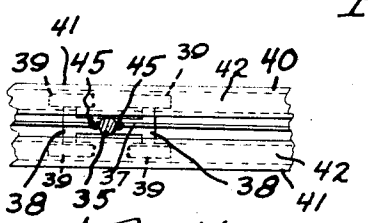


Fig. 4

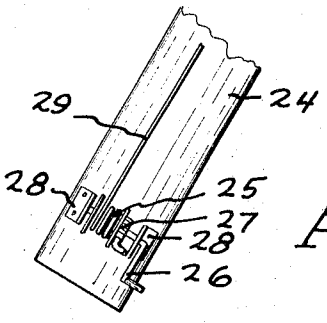


Fig. 6

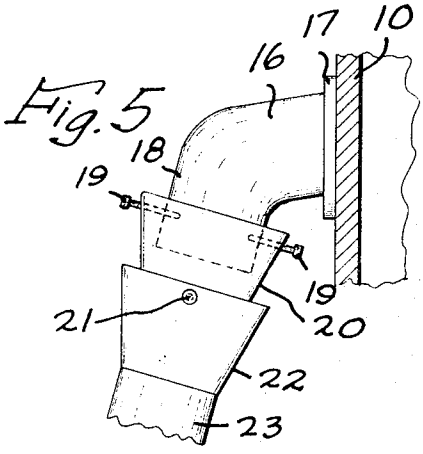


Fig. 5

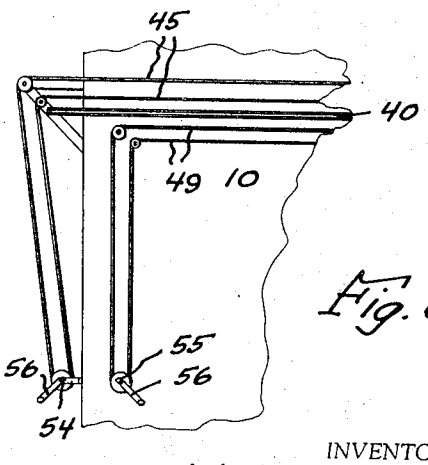


Fig. 8

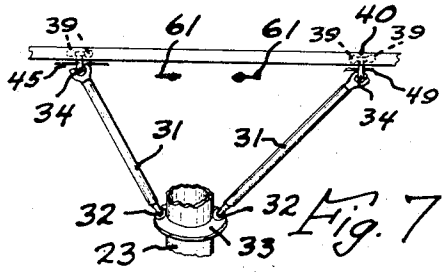


Fig. 7

INVENTOR.
Walter D. Heeren
BY
Sam J. Slotky
ATTORNEY

United States Patent Office 3,365,043
Patented Jan. 23, 1968

3,365,043

GONDOLA LOADING DEVICE

Walter D. Heeren, Rte. 3, Dell Rapids, S. Dak. 57022

Filed June 20, 1966, Ser. No. 558,937
3 Claims. (Cl. 193—3)

My invention relates to a gondola loading device, or a device for loading other units from elevators and the like.

An object of my invention is to provide a loading device whereby the contents of the elevator can be conveniently emptied into openings of railroad cars of the gondola type, or other vehicles, and wherein the discharge spout for the unloading operation can be conveniently moved longitudinally as well as laterally by the operator with a minimum of time and effort being expended.

A further object of my invention is to provide such an arrangement wherein the arrangement can be operated electrically or mechanically.

A further object of my invention is to provide an arrangement whereby the lower end of the said discharge spout will be automatically positioned at pre-selected locations by means of simple controls and the like.

With these and other objects in view, my invention consists in the construction, arrangement, and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

FIGURE 1 is a forward elevation of my device as attached to a grain elevator showing its position when filling a gondola,

FIGURE 2 is a side view of FIGURE 1,

FIGURE 3 is an enlarged sectional detail,

FIGURE 4 is a reduced scale sectional view of FIGURE 3 taken along the line 4—4 thereof,

FIGURE 5 is an enlarged detail of the jointed spout entrance unit,

FIGURE 6 is a detail of the raising winch and movable lower section,

FIGURE 7 is an enlarged sectional view taken substantially along the line 7—7 of FIGURE 2, and

FIGURE 8 is a modification.

My invention contemplates the provision of an arrangement wherein a gondola or other car, etc., can be filled from a grain elevator and with attendant means for placing the lower end of a discharge spout wherever desired and by means of simple manipulations.

In describing my invention I have used the character **10** to designate the forward wall of a grain elevator from which the grain is to be removed to fill the gondola, which is indicated by the character **11**, such gondola or car having the various openings **12** which are longitudinally as well as laterally spaced as shown.

The character **13** indicates the car wheels, the character **14** the tracks and the character **15** indicates the side walls of the grain elevator.

The character **16** indicates an upper hollow elbow attached by means of the flange **17** to the wall **10** through which elbow the grain will pass, and the elbow **16** includes the downwardly projecting portion **18** through which are received the pins **19** which also pass through the walls of a further spout portion **20** and passing through the walls **20** are the further pins **21** which are secured to the further walls **22** which walls **22** extend into the lengthened discharge spout **23** which is received within the lower spout portion **24**.

The character **25** indicates a reeling mechanism operated by means of the handle **26**, the character **27** indicating a suitable ratchet, the reel being secured at **28** to

the lower pipe section **24**, and passing over the reel **25** is the cable **29** which is secured at **30** to the upper section **23**. The character **31** indicates a bar or rod which is pivotally attached at **32** to a collar **33** which collar is securely attached to the spout section **23**, and the connection at **32** is made loose enough to permit movement in any direction, and the rod **31** is connected to a suitable universal joint at **34** which is attached to the post or rod **35** which is attached at **36** to the bar **37** which extends into the portions **38**, upon which portions **38** are suitably journalled the rollers **39**. The rollers **39** are received within the channel member **40** which is securely attached to the wall **10** of the grain elevator, the channel member **40** including the side walls **41** and further walls **42** and **43**. It will be noted (see FIGURE 7) that there are two of such rods **31** as well as the attendant joints **32** etc., and being attached to these carriage frameworks including the rollers **39** above described. Attached at **44** (see FIGURE 2) at either side of one rod **35** is a cable **45** which is wrapped around a pulley **46** which is driven by means of an electric motor **47** which cable thence passes about a further pulley **48** in a similar manner and thence passes to the post **35** as above described, and similarly attached to the other post **35** at **44** is a further cable **49** which passes about a further pulley **50** in a similar manner which is driven by means of an electric motor **51**, the cable **49** passing about the further pulley **52**, the character **53** indicating suitable brackets for supporting the motors, etc. The motors **47** and **51** are reversible.

FIGURE 8 illustrates a modification whereby the same cables can be operated by means of the winches **54** and **55** having the handles **56**, this arrangement pertaining to a mechanical arrangement for performing the necessary operations instead of the electrical arrangement. The arrangement operates in the following manner:

The unit can be operated by means of the electric motors above described with suitable switches or contacts for the same, or can be operated mechanically through the arrangement shown in FIGURE 8 although the electrical operation may be the preferred type.

If desired, a platform **57** which can be pivotally mounted at **58** to the wall **10** of the elevator can be employed, which platform normally can be supported vertically by the means of the member **59** and when the arrangement is used, the platform will lie upon the top of the gondola **11** as shown by the solid lines upon which the operator can stand for manipulating the switches to the motors etc.

For moving the combined spout members **23** and **24** in either direction of the arrows **60**, the electric motors **47** and **51** are operated in such a direction whereby the cables **45** and **49** will draw the carriage members comprising the posts **35**, wheels **39**, etc. along through the channels **40** in the proper direction which will thereby swing the spouts to any angle desired, and so that the bottom of the spout portion **24** will be positioned at any desired opening **12**. The spout **24** can be lowered to compensate for the angle by means of the winch or reeling structure **25** so that the said bottom will be practically within or just above the opening. In other words, through this structure and by means of manipulating the motor switches properly, the spouts can be swung from one side to the other and can be stopped whenever desired at the proper opening. The various pulleys **46**, **48**, **50** and **52** provide stabilizing means whereby the carriages including the rollers **39** will be securely held in stabilized position wherever desired and since the cables are tied to either side of the posts **35**, the spouts will be thus positioned at any desired angle. For swinging the spout outwardly to any angle desired, the arms **31** are merely changed in angularity by causing the motors to spread the carriages further

apart or to draw the carriages closer together. In other words, if the electric motors are operated so as to draw the arms **31** together in the direction of the arrows **61**, the spout will then be positioned at a greater angle from the vertical wall **10** and by operating the motors reversely, the angle of the spout from the wall will be decreased. Therefore, by virtue of this construction, the operator can position the lower end of the spout **24** at any location desired both laterally as well as longitudinally.

The operation of the mechanical winches **55** is obvious wherein the same results could be accomplished and it will be noted that the arms **31** can be operated individually with respect to each other as desired. It will now be noted that I have provided the advantages mentioned in the objects of my invention with further advantages being apparent.

Some changes my be made in the construction and arrangement of the parts of my invention without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim as my invention:

1. A loading device comprising a grain receiving structure, a lengthened spout pivotally attached to said structure, means for swinging said spout longitudinally along said structure, and means for swinging said spout at an angle to said structure, including a track attached to said structure, arms pivotally attached to said spout, carriages adapted to roll in said track attached to said arms, movement of said carriages in unison providing longitudinal swinging movement of said spout, and means for causing divergence and convergence of said arms for swinging said spout to a lateral angle with respect to said structure.

2. The structure of claim **1** and wherein the means for causing said carriages to roll in said track comprises cables attached to said carriages, power means for operating said cables, selective positioning of said carriages in said track causing a varied angle between said arms for providing preselective angular lateral positioning of said spout with respect to said structure, an auxiliary spout member attached at the lower terminal of said spout for providing compensatory length to said spout at various positions.

3. The structure of claim **2**, and wherein said cables include stabilizing means for retaining said carriages in desired positions.

References Cited

UNITED STATES PATENTS

1,791,371	2/1931	Onstad	193—3
1,814,618	7/1931	Carter	193—3
3,019,879	2/1962	Wenschlag	193—16

ANDRES H. NIELSEN, *Primary Examiner.*