G. W. WARNER.

DEVICE FOR ADJUSTABLY HOLDING FLEXIBLE SPOUTS.

APPLICATION FILED MAR. 2, 1908.

908,715. Patented Jan. 5, 1909.

2 SHEETS—SHEET 1.

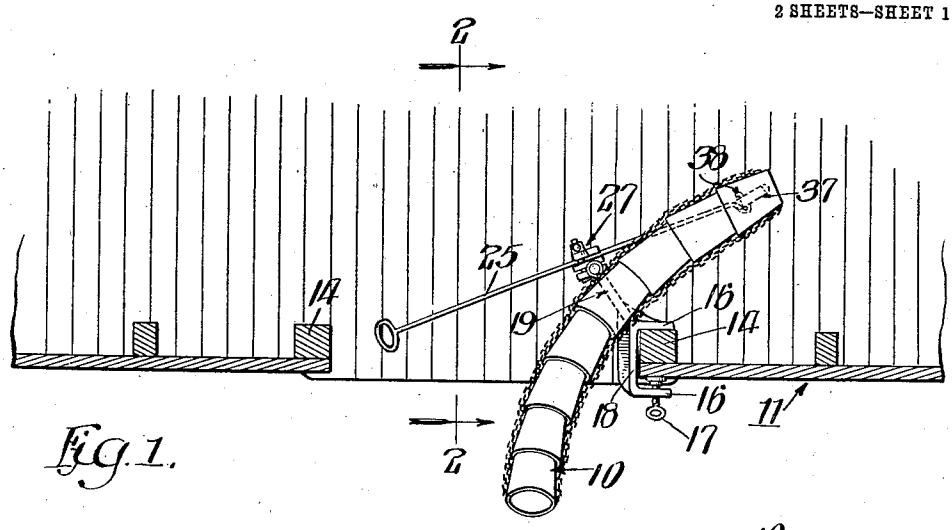


Fig. 1.

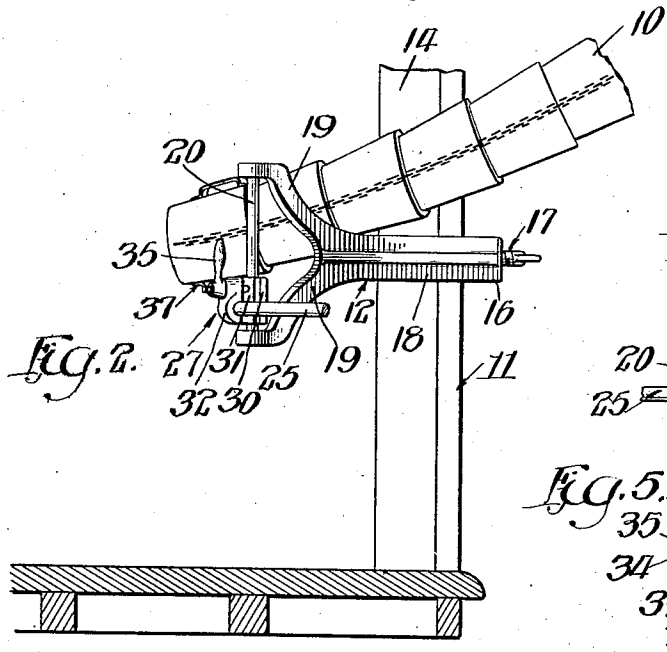


Fig. 2.

Fig. 4.

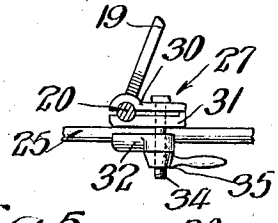
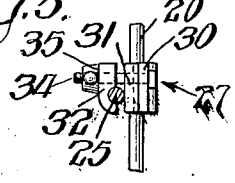


Fig. 5.



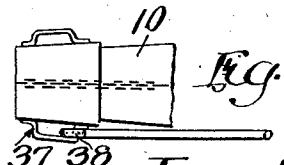
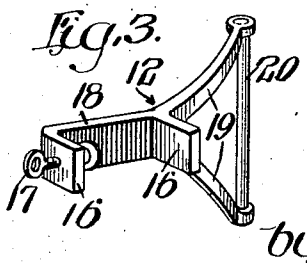


Fig. 6.

Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 7.

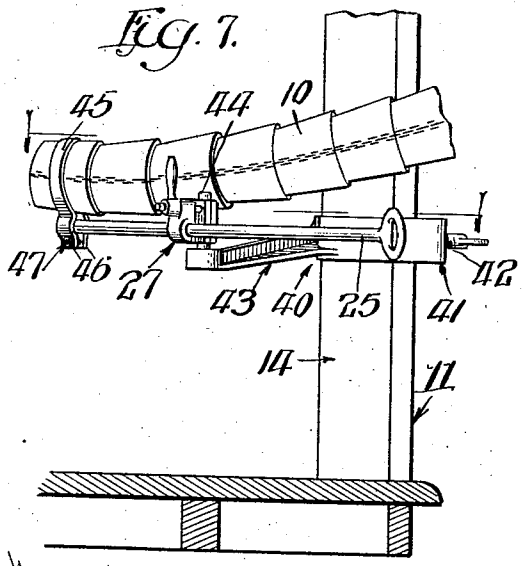
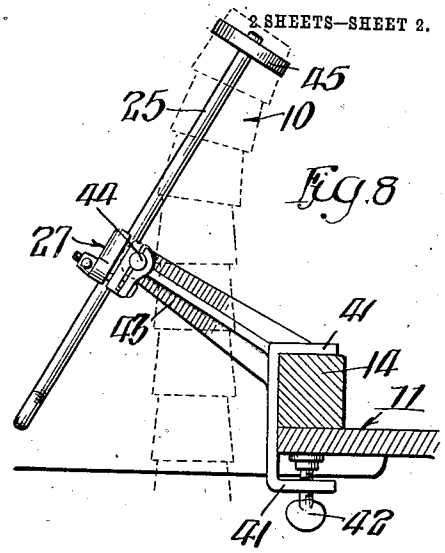


Fig. 8



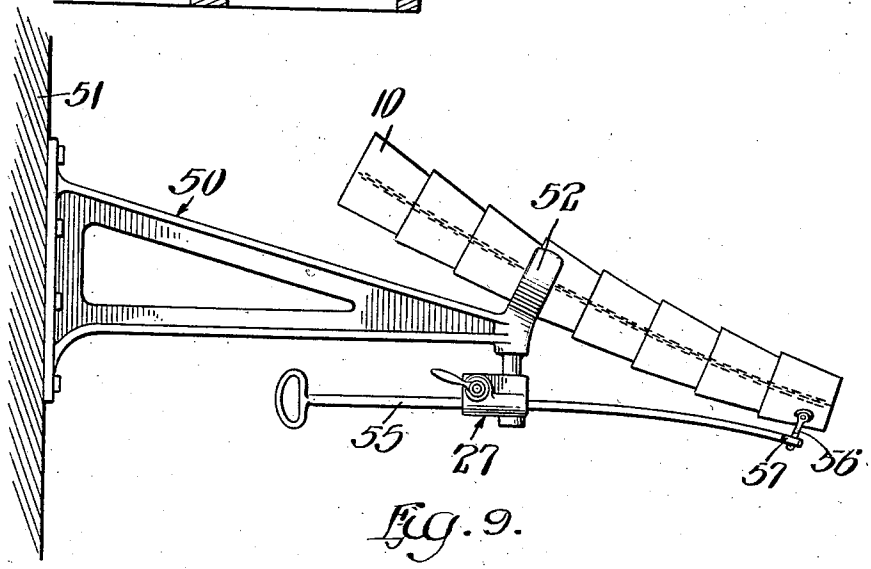


Fig. 9.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR ADJUSTABLY HOLDING FLEXIBLE SPOUTS.

No. 908,715. Specification of Letters Patent. Patented Jan. 5, 1909.

Application filed March 2, 1908. Serial No. 418,655.

To all whom it may concern:

Be it known that I, GEORGE W. WARNER, a citizen of the United States, and a resident of Beatrice, in the county of Gage and State of Nebraska, have invented certain new and useful Improvements in Devices for Adjustably Holding Flexible Spouts; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a novel device for supporting and holding in adjusted positions the discharge end of a flexible spout such as is used in loading grain into railway cars from grain elevators, and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

Among the objects of my invention is to provide a device which is so constructed and arranged as to enable the discharge end of a loading spout, which extends into the door of the car, to be so adjusted as to deliver grain to all parts of each end of the car and to be locked to support the discharge end of the spout in any adjusted position. To this end said adjusting device is so arranged as to be capable of being both vertically and horizontally shifted throughout its range of adjustment, thus giving the discharge end of the spout a universal adjustment.

In the drawings:—Figure 1 is a partial horizontal section of a railway car, showing a flexible loading spout extending into the car and my improved supporting and adjusting device therefor. Fig. 2 is a section taken on line 2—2 of Fig. 1. Fig. 3 is a perspective view of a bracket which constitutes means for supporting the adjusting means and also the flexible spout. Figs. 4 and 5 are detail views illustrating an adjustable device for supporting an adjusting rod by which the spout is adjusted to different positions. Fig. 6 is a detail illustrating the manner of connecting the inner end of the adjusting rod with the inner end of the flexible spout. Fig. 7 is a perspective view illustrating a modified arrangement of the supporting and adjusting device. Fig. 8 is a horizontal plan view of the adjusting rod and supporting bracket therefor shown in Fig. 7, illustrating the manner of fastening the bracket to the car door frame. Fig. 9 illustrates a further modification of the adjusting and supporting device, arranged to be supported exterior to the car, as on an adjacent elevator wall.

First referring to the construction shown in Figs. 1 to 6, inclusive, 10 designates a flexible spout of common form which is made of short jointed sections and is designed to flex or bend in all directions. Said spout is, in practice, supported at its receiving end on the elevator structure in position to receive grain from a suitable discharge spout or hopper (not shown) and to extend downwardly at its other end into the door of a car 11 which is to be loaded. In the arrangement shown in Figs. 1 to 6, inclusive, the said spout is supported between its ends on a bracket 12 which is attached to and supported on the door frame post 14 at the side of the car door at any desired height. The said bracket is attached to the door frame by being provided at one side thereof with parallel laterally extending lugs 16, 16 which fit on the opposite sides of the door frame and a screw-threaded clamping screw 17 extends through one of the lugs and impinges against one side of the door frame, or the car wall as herein shown, to clamp the bracket in place.

The form of bracket herein shown embraces, in addition to the attaching lugs described a shank 18 which extends into the car and is provided at its inner end with upwardly and downwardly inclined branches or arms 19, 19 which have rounded or concave upper and lower surfaces and are connected by a vertical post 20. In this form of bracket the upper side of the shank 18 and the rounded upper side of the upper arm or branch 19 constitutes a cradle on which the flexible spout rests and is supported between its ends.

The inner end of the flexible spout which extends beyond said bracket into the car is supported and is adjusted at varying horizontal and vertical angles with respect to its point of support by means of an adjusting rod 25 which is connected at its inner end with the inner section of the pipe and is supported between its ends by an adjustable clamping device designated as a whole by 27 carried by the post of the spout supporting bracket. The said adjusting device 27 is so arranged that it and the adjusting rod 25 may be swung horizontally about the post 20, and the adjusting rod may be swung vertically about a horizontal axis perpendicular

to said post. The rod thus has the function of a lever which swings or vibrates in the two directions referred to to adjust the spout, and also to hold the free or discharge end of the spout stationary when the clamping device 27 is locked or clamped thereon. The said device 27 constitutes a universal joint or connection between the bracket and rod which permits the rod to adjust the flexible spout in all directions from its point of support, within the range of its adjustment. The said adjustable clamping device is arranged to lock the rod in any desired position of adjustment, and comprises three jaw members 30, 31 and 32 the two former of which are fitted to the vertical post 20 as best shown in Fig. 4, and the two latter of which are fitted to the adjusting rod 25. The said jaws 30, 31 and 32 are so arranged that the single clamping bolt 34, extending transversely through the jaws, (Figs. 4 and 5) serves to clamp the jaws 30 and 31 upon the post 20 and the jaws 31 and 32 upon the operating rod 25. Said clamping bolt is provided with a handled nut 35. The proximate faces of the jaw members 30 and 31 are formed with oppositely disposed, vertical recesses which form a socket to receive the post 20, whereby the device may be turned on said post as a pivot. The inner side of the jaw member 32 is formed with a horizontal recess to partially receive the adjusting rod 25, the proximate face of the jaw member 31 being smooth, as shown in Fig. 5. Said clamping bolt 34 constitutes a horizontal pivot about which the adjusting rod and the jaw member 32 swings vertically. When said bolt 34 is loosened, the operating rod 25 is to be adjusted horizontally or vertically to direct the discharge end of the spout to the part of the car desired and at a desired horizontal or vertical angle; and said parts are held in their adjusted positions by again tightening the nut 35 on the clamping bolt 34. The connection between the inner end of the adjusting rod 25 and the spout comprises a bail 37 fixed to the inner section of the spout and a hook or eye 38 on the inner end of the rod which interlocks with said bail. By reason of the provision of the upwardly and downwardly curved arms 19, 19, at the outer end of the bracket and the provision of the post 20 which extends between the outer ends of said arms, the said bracket 12 may be reversed and attached to the opposite side frame of the car door from that shown in Fig. 1 so as to support the spout in position to direct grain to the opposite end of the car. When such change of position of the bracket is made the adjustable supporting clamp 27 will be slid to the opposite end of the post 20. When said parts are so reversed the parts will assume the same relative positions with respect to each other and the flexible spout as before.

In Figs. 7 and 8 I have shown an arrangement of a bracket, designated as a whole by 40, in which the function of the bracket to support the spout intermediate its length is omitted. In this construction, said bracket 40 is provided with lugs 41, 41 which engage the side frame of the car door in the same manner as does the bracket shown in Fig. 1, and the bracket is fixed in place by means of a clamping screw 42. The bracket 40 is provided with a single inwardly extending arm 43 which is provided at its inner end with a short upright post 44 on which is mounted an adjusting supporting clamp 27, in all respects like the supporting clamp 27 of the construction before described. The sole support for the flexible spout 10 in this instance consists of the adjusting rod 25 which is supported between its ends on the clamping device 27 and is attached at its inner end to the inner section of the flexible spout. As herein shown, the inner section of the spout is provided with a band 45 which encircles the same and said band is formed at its ends to provide lugs 46, 46 between which the end of the adjusting rod extends, the adjusting rod being connected with said lugs by a transverse pin or bolt 47 extending through the lugs and through the end of said rod.

In Fig. 9 I have shown an arrangement of the spout supporting and adjusting device wherein the supporting bracket, designated in said figure by the reference character 50, is attached to the wall 51 of the elevator from which the car is loaded, said bracket extending towards the track on which the car stands but terminating short of the car. The bracket is provided at its free end with a cradle or seat 52 on which the spout is supported between the ends thereof. The bracket is provided at its free end with a downwardly extending lug or post, corresponding in function to the posts 20 and 40 of the previously described constructions, on which is mounted an adjustable supporting clamp 27 made like the clamps before described. The said clamp 27 supports an adjusting rod 55 which is connected at its inner end with the inner section of the flexible spout. As herein shown, said inner section of the spout is provided with a rigidly connected eye or ring 56 and the inner end of the rod is provided with a corresponding ring 57 which interlocks therewith. In this arrangement it will be noted that the inner end of the flexible spout may be adjusted at any desired horizontal or vertical angle to direct the grain from the spout towards either end of the car without the necessity of changing the position of the supporting bracket 50. Said supporting bracket 50 may, if desired, be detachably or otherwise connected with the elevator structure in a manner to be moved out of the way when not in use. Inasmuch, however, as the bracket does not

extend to the car it may, in most instances, safely remain as a rigid supporting bracket.

A general advantage of the supporting and adjusting device described is that the discharge end of the spout may be directed towards any part of the car and at any desired angle without the necessity of the person attending to the same getting into the car during the loading operation. A further advantage of the form of the device shown in Figs. 1 to 6, inclusive, and Figs. 7 and 8 is the ease with which the device may be applied to and detached from the car and adjusted to load either end of the car.

I claim as my invention:—

1. A device for supporting and adjusting a flexible grain loading spout and the like comprising a bracket arranged to engage and support the flexible spout between the ends of the latter, and means carried by said support and extending inwardly therefrom for adjusting the discharge end of the spout both horizontally and vertically relatively to its support.

2. A device for supporting and adjusting a flexible grain loading spout and the like comprising a bracket arranged to engage and support the flexible spout between the ends of the latter, means carried by the support for adjusting the discharge end of the spout beyond said support both horizontally and vertically relatively to the support, and means for locking the spout in adjusted positions.

3. A device for supporting and adjusting a flexible grain loading spout and the like comprising a bracket arranged to engage and support the flexible spout between the ends of the latter, a vibratery adjusting rod provided with means for connecting it with the discharge end of a spout, and an adjustable support carried by said bracket and engaging said rod between the ends of the latter and arranged to permit both vertical and horizontal adjustment of the rod and to lock the rod in adjusted positions.

4. A device for supporting and adjusting a flexible grain loading spout and the like comprising a bracket provided with means for attaching it to the side frame of a car door and provided with a seat on which the spout is supported between the ends of the latter, and means engaging the discharge end of the spout for adjusting said spout both horizontally and vertically with respect to said seat.

5. A device for supporting and adjusting a flexible grain loading spout and the like comprising a bracket provided with means for attaching it to the side frame of a car door an adjusting rod provided at its end with means for connecting it with the discharge end of the spout and an adjusting device carried by the bracket and engaging the rod between the ends of the latter to adjust the rod and spout both horizontally and vertically, said bracket being provided on both its upper and lower sides with seats to support the flexible spout between the ends of the latter and the adjusting device for the rod being loosely connected with the bracket, whereby said bracket may be attached to either side frame of the car door to support the spout for loading either end of the car.

6. A device for supporting and adjusting a flexible grain loading spout and the like comprising a stationary bracket an adjusting rod provided at its end with means for connecting it with the discharge end of a spout, a clamping device engaging the adjusting rod between the ends of the latter comprising two jaws arranged for clamping engagement with a part on said bracket and designed to swing horizontally with respect thereto, a third jaw designed to clamp said supporting rod between itself and one of said first mentioned jaws and a single clamping bolt for clamping said jaws against said supporting rod and the bracket, said third clamping jaw and rod being arranged to swing vertically about said bolt as a pivot.

7. A device for supporting and adjusting a flexible grain loading spout and the like comprising a bracket provided at one end with means for attaching it to the side frame of a car door and provided at its other end with upwardly and downwardly curved arms and between said arms with a vertical post, an adjusting rod provided at its end with means for connecting it with the discharge end of a spout, and a clamping device supported on said post and engaging the rod between the ends of the latter and arranged to permit both horizontal and vertical adjustment of the rod.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 15th day of February A. D. 1908.

GEORGE W. WARNER.

Witnesses:
E. E. BUTLER,
CLIFFORD E. BUTLER.