

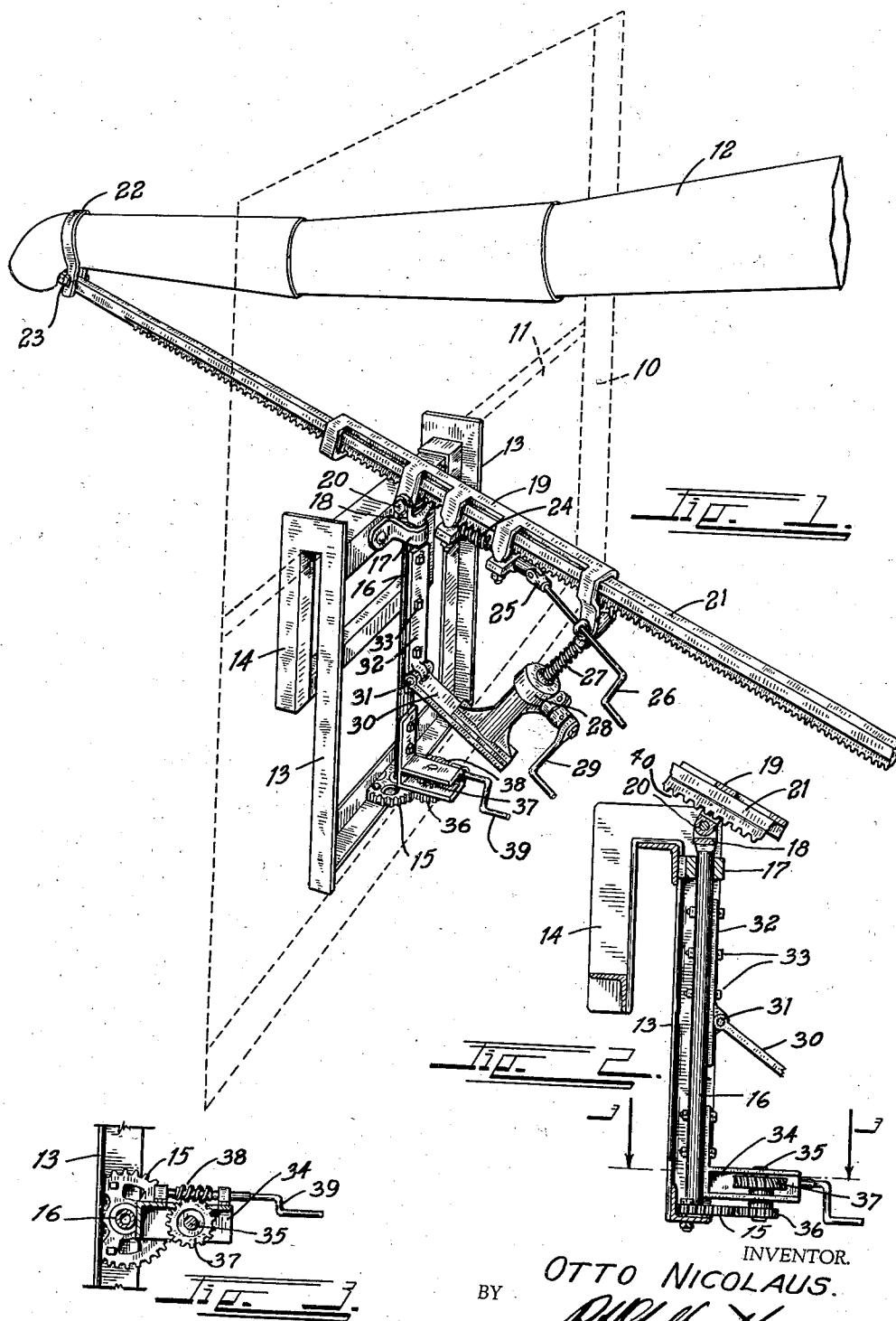
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LOADING SPOUT HOLDER

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LOADING SPOUT HOLDER

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4 Claims. (Cl. 248—215)

This invention relates to a grain spout holder for loading bulk grain into box cars. The side doors of such cars are partially closed by means of a grain door filling the lower portion of the door opening. The grain is fed into the car from an elevator spout. It is extremely difficult to support the extremity of this spout within the closed car and control its position so that all portions of the car will be uniformly filled with grain.

The principal object of this invention is to provide a spout support which can be easily operated to position and support the discharge extremity of the grain spout at any desired point with the grain car.

Other objects of the invention are: to provide a device of this character that can be easily operated by one man regardless of the weight or size of the spout; and to provide a device which can be quickly and easily applied to the grain door without the use of tools, clamps, or other attachment devices.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a perspective view, illustrating the invention applied to a grain spout. In this view the side door opening of a box door and the grain door thereof are indicated in broken lines.

Fig. 2 is a vertical section through the device.

Fig. 3 is a cross section thereof taken on the line 3—3, Fig. 2.

In the drawing the numeral 10 indicates the position of the box car door and the numeral 11 indicates the position of the grain door thereof. The grain spout is shown at 12.

The invention comprises a frame 13 formed with two vertical side angle-irons which are bent to form hooks 14 at their upper extremities. When the device is in place the hooks 14 are hooked over the upper edge of the grain door 11.

At the middle of the bottom of the frame 10 is a fixed segment gear 15, which is secured permanently to the frame. The gear 15 forms a lower bearing for a vertical, tubular, pivot shaft

16, the upper extremity of which, is mounted in a bearing 17 on the frame 13.

The shaft 16 terminates at its top in a yoke 18, to which, a rack bar guide member 19 is pivoted on a suitable pivot bolt 20. The rack bar guide 19 slidably supports a relatively long rack bar 21, the forward extremity of which is secured to the forward extremity of a grain spout in any desired manner, such as by means of a strap 22 and attachment bolt 23. The rack bar 21 may be moved in either direction by means of a worm 24, which is journaled on the bottom of the guide 19, and which can be rotated, through a universal joint 25, by means of a crank 26. The worm 24 is constantly in mesh with rack teeth 40 on the bottom of the rack bar 21.

The rear extremity of the bar guide 19 is supported on a jack screw 27 projecting from a jack housing 28. The housing 28 contains a rotatable nut (not shown) similar to the usual automobile jack, which can be rotated by means of a crank 29 to raise or lower the rear extremity of the rack bar so as to position the forward extremity at any desired height. The jack housing 28 is carried on a hinged plate 30, which in turn is hinged at 31 to a hinge strap 32. The hinge strap 32 is secured to the shaft 16 by means of suitable bolts 33.

A gear frame 34 is also secured to the shaft 16 adjacent to the bottom thereof and carries a gear shaft 35, on the bottom of which, is mounted a spur gear 36 which is in constant mesh with the segment gear 15. The gear 36 is rotated through the medium of a worm gear 37, also secured on the shaft 35 and rotated from a worm 38 on a crank 39.

It can be readily seen that the spout 12 can be swung to any desired horizontal angle by means of the crank 39. It can be swung to any desired vertical angle by means of the crank 29, and it can be projected any desired distance into the car, or withdrawn therefrom, by means of the crank 26. Thus firm support and complete control are possible at all times.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention:

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. Means for supporting a grain spout from

a grain door comprising: a supporting frame; a vertical shaft journaled in said supporting frame; a hinge upon the upper extremity of said vertical shaft; a bar guiding member supported by said hinge so that it may swing in a vertical plane; and a spout supporting bar slidable in said bar guiding member.

2. Means for supporting a grain spout from a grain door comprising: a supporting frame; a vertical shaft journaled in said supporting frame; a hinge upon the upper extremity of said vertical shaft; a bar guiding member hingedly supported upon said hinge and projecting outwardly from said frame; an expansible brace member extending from said shaft to the outwardly projecting portion of said bar guiding member; and a spout supporting bar slidably mounted in said bar guiding member; and means for securing a grain spout to the extremity of said supporting bar.

3. Means for supporting a grain spout from a grain door comprising: a supporting frame; a vertical shaft journaled in said supporting frame; a hinge upon the upper extremity of said vertical shaft; a bar guiding member hingedly

supported upon said hinge and projecting outwardly from said frame; an expansible brace member extending from said shaft to the outwardly projecting portion of said bar guiding member; a spout supporting bar slidably mounted in said bar guiding member; rack teeth on said slidable bar; a rotatable member journaled in said guiding member in mesh with said teeth; means for rotating said rotatable member to cause it to slide said bar in said guiding member; and means for attaching the inner extremity of said bar to a grain spout.

4. Means for supporting a grain spout from a grain door comprising: a supporting frame; a vertical shaft journaled in said supporting frame; a hinge upon the upper extremity of said vertical shaft; a bar guiding member supported by said hinge so that it may swing in a vertical plane; a spout supporting bar slidable in said bar guiding member; a segment gear attached to said frame concentric with said shaft; and means engaging the teeth of the latter to rotate said shaft.

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