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UNITED STATES PATENT OFFICE.

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ADJUSTABLE GRAIN-SPOUT HOLDER FOR GRAIN-LOADERS.

1,090,291.

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To all whom it may concern:

Be it known that I, JULIUS A. ENGELHART, citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Adjustable Grain-Spout Holders for Grain-Loaders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an extremely simple and efficient means for adjustably supporting the delivery end of a flexible grain delivery spout of a car loader.

To this end, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a view partly in side elevation and partly in transverse vertical section, showing my invention applied in working position to a grain door, secured in the door opening of a car body, and supporting, in working position, the delivery end of a grain spout; Fig. 2 is a detail view corresponding to Fig. 1, but on a larger scale, some parts being broken away and some parts removed; Fig. 3 is a view in transverse horizontal section, taken on the line x^2-x^3 of Fig. 2; Fig. 4 is a detail view showing the connection between the operating rod and the delivery end of the grain spout; and Fig. 5 is a vertical section, taken on the line x^5-x^5 of Fig. 4.

The numeral 1 indicates the body of an ordinary box car having a grain door 2 applied to its door opening in the usual way.

The numeral 3 indicates the grain delivery spout of a car loader which is, as usual, made up of a multiplicity of tubular sections, connected so as to give both lateral and vertical flexibility to the said spout. To the under side of the lower section of the delivery end of the grain spout 3 is attached an L-shaped bracket 4 having, in its depending member, an elongated eye 5, that is adapted to receive the pointed end portion

6 of a long operating rod 7. The opposite sides of the pointed end portion 6 are flattened, to closely fit the adjacent sides of the eye 5, thereby holding the rod 7 against rotation. By reference to Figs. 4 and 5, it will be noted that the vertical distance through the eye 5 is slightly larger than the diameter of the pointed end portion 6, thereby permitting a limited vertical swinging movement of the rod 7 in the eye 5. In moving the flexible spout 3 into the car body 1, the shoulder formed at the junction of the pointed end portion 6 with the rod 7 will engage the bracket 4, which affords a base of resistance for the rod 7. In drawing the grain spout 3 toward the door opening in the car body 1, by means of the rod 7, it is necessary to move the free end of the rod 7 either up or down, to thereby move the pointed end portion 6 at an angle to the eye equipped portion of the bracket 4. This movement of the rod 7 causes said pointed end portion 6 to bind in the eye 5, as best shown in Fig. 4, and thereby lock said rod 7 against endwise removal from the grain spout 3.

Detachably secured to the grain door 1 is a supporting bracket 8 having a pair of depending laterally spaced jaws 9, adapted to embrace the upper horizontal edge portion of the grain door 2. A clamping screw 10, having screw threaded engagement through one of the jaws 9, is provided, at its outer end, with an operating crank 11, and to its inner end is swiveled a cap 12 that is adapted to be moved into and out of engagement with the adjacent face of the grain door 2, by the adjustment of the clamping screw 10. Secured to and projecting above the bracket 8 is a trunnion 13, to which is swiveled a bifurcated main head 14. Integrally formed with the bifurcated edge portions of the main head 14 is a pair of parallel, laterally projecting arms 15 and 16. These arms are laterally spaced one from the other, and suitable means will presently be described for drawing said arms toward each other, to frictionally clamp the main head 14 in different adjustments on the trunnion 13. A screw 17, having threaded engagement with the upper end of the trunnion 13, and a cooperating washer 18 are provided for holding the main head 14 against removal from the trunnion 13.

Integrally formed on the outer face of the

arm 16 is an internally tapered clutch flange 19. Swiveled to the arm 16 is a supplemental head 20, having an externally tapered end 21, that fits within the clutch flange 19. Obviously, the clutch flange 19 and telescoped portion 21 of the supplemental head 20 afford a friction clutch, and means will presently be described for drawing the friction surfaces thereof into locking engagement. The operating rod 7 is mounted, for endwise sliding movement, through a perforation 22 formed transversely through the supplemental head 20.

The arms 15 and 16 and the supplemental head 20 are provided with axially aligned perforations in which is mounted one end of a clamping screw 23. The perforation in the supplemental head 20 is considerably larger in diameter than the perforation in the arms 15 and 16, and a portion of the screw 23, mounted therein, is expanded at 24, to closely fit said perforation in said head 20. This expanded portion of the screw 23 is provided with a transverse perforation 25, through which the rod 7 works, and which is adapted to be moved, by the adjustment of the screw 23, into and out of alinement with the perforation 22 in the supplemental head 20, to frictionally clamp the rod 7 to said head 20. The intermediate portion or shank 26 of the screw 23 projects through the aligned perforations in the arms 15 and 16. Telescoped onto the outer projecting end of the shank 26 is a washer 27, and a cap nut 28 has screw threaded engagement with the screw 23 and impinges against the washer 27. Extended transversely through the cap nut 28, outward of its threaded engagement with the screw 23, is a hand rod 29.

By adjusting the cap nut 28, the screw 23 may be moved endwise in the perforations in the arms 15 and 16 and in the supplemental head 20, thereby simultaneously frictionally clamping the main head 14 on the trunnion 13, the supplemental head on the clutch flange 19, and the rod 7 on the supplemental head 20.

As is evident, when the improved grain spout supporting device is applied to the grain door 2 and to the grain spout 3, as shown in the drawings, the delivery end of the grain spout may be oscillated in both horizontal and vertical planes, so as to properly direct the grain into the car. By longitudinally adjusting the rod 7 on the supplemental head 20, the delivery end of the grain spout 3 may be projected to a greater or less distance into the body of the car. By securing the supporting bracket 8 to the center of the grain door 2, the delivery end of the grain spout may be moved longitudinally of the car, so as to deliver grain to the center or to either end of the car. These adjustments combined serve to hold

the grain spout 3 so that grain may be delivered to all parts of the car without having to readjust the supporting bracket 8 after the same is once secured to the grain door. Furthermore, the entire adjustment of the grain spout 3 and the loading of the car may be accomplished by one person and, by the manipulation of a single operating device, the rod 7 may be locked in its different adjustments.

The above described device has gone into extensive use, and has proven highly efficient for the purpose had in view.

What I claim is:

1. A support for adjustable bodies, comprising a supporting bracket, a main head swiveled to said bracket, a supplemental head swiveled to said main head for movement transversely of the swivel movement of said main head, a rod connected to said body and supported on said supplemental head, and a single operating device for locking said main head to said bracket and to said supplemental head, substantially as described.

2. A support for adjustable bodies, comprising a supporting bracket, a main head swiveled to said bracket, a supplemental head swiveled to said main head for movement transversely of the swivel movement of said main head, a rod connected to said body and supported on said supplemental head for endwise sliding movement, and a single operating device for locking said main head to said bracket and to said supplemental head, substantially as described.

3. A support for adjustable bodies comprising a supporting bracket, a bifurcated head swiveled to said bracket and having a pair of projecting flanges, a supplemental head swiveled on one of said flanges, a rod connected to said body and supported on said supplemental head for endwise sliding movement, and a clamping screw working in perforations formed in said two flanges and supplemental head, arranged to lock said two heads against swivel movement and to lock said rod to said supplemental head, substantially as described.

4. A support for adjustable bodies, comprising a supporting bracket, a bifurcated head swiveled to said bracket and having a pair of projecting flanges, a supplemental head swiveled on one of said flanges, a rod connected to said body, a clamping screw working in perforations formed in said two flanges and supplemental head, said supplemental head and clamping screw having transversely extended perforations, adapted to be moved into and out of alinement one with the other, in which perforations said rod is mounted, for endwise sliding movement, and means for adjusting said screw

to lock said two heads against swivel movement and to lock said rod to said supplemental head, substantially as described.

5 5. A support for adjustable bodies, comprising a supporting bracket, a bifurcated head swiveled to said bracket and having a pair of projecting flanges, a supplemental head swiveled on one of said flanges, a rod
10 connected to said body, said two heads having interlocking tapered clutch surfaces, a clamping screw working in perforations formed in said two flanges and supplemental head, said supplemental head and clamping screw having transversely extended perfo-

rations, adapted to be moved into and out 15 of alinement one with the other, in which perforations said rod is mounted, for endwise sliding movement, and means for adjusting said screw to lock said two heads against swivel movement and to lock said 20 rod to said supplemental head, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JULIUS A. ENGELHART.

Witnesses:

EDITH E. HANNA,

HARRY D. KILGORE.

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