

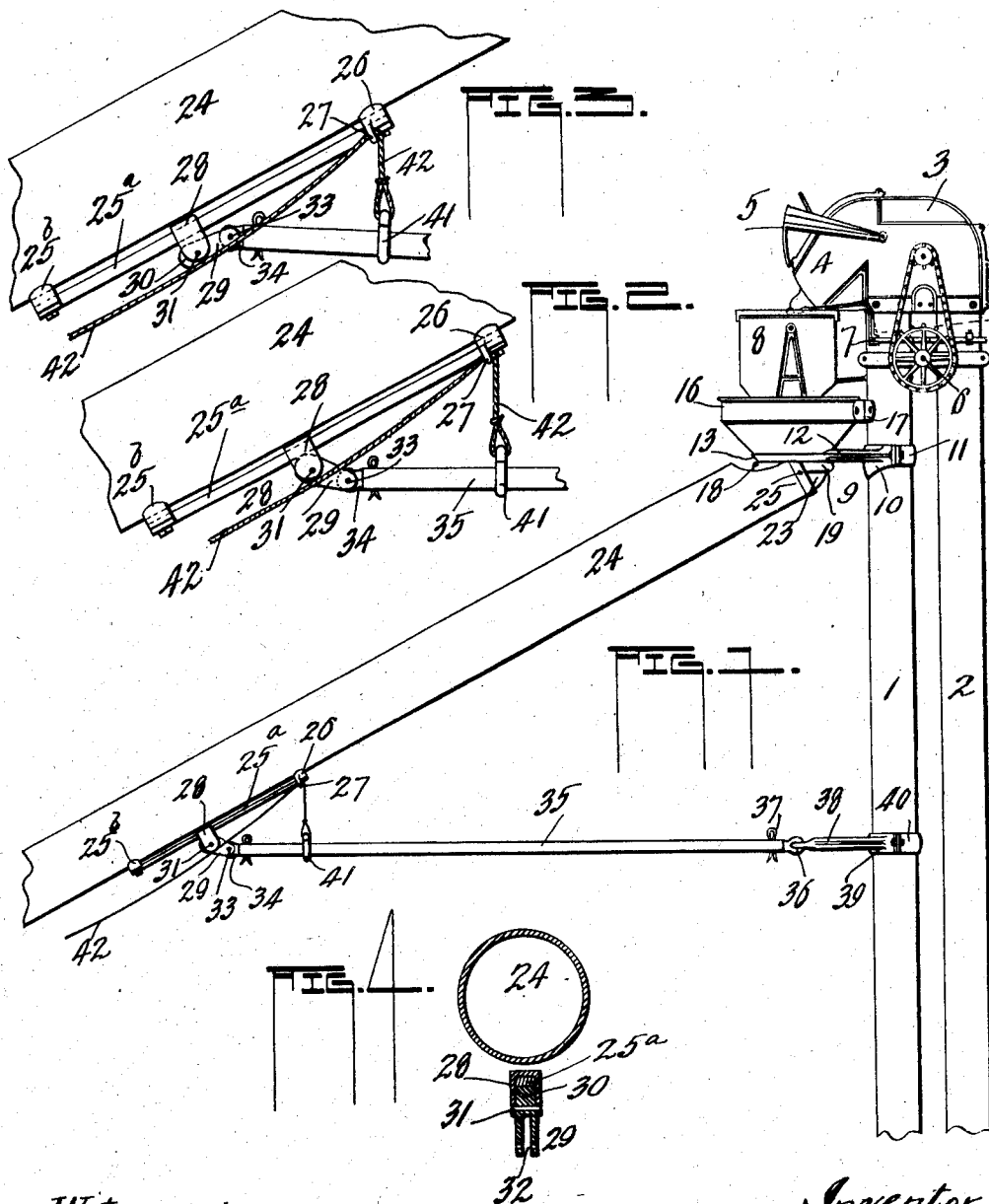
No. 878,906.

PATENTED FEB. 11, 1908.

B. M. STEELE.
SPOUT SUPPORT.

APPLICATION FILED MAY 26, 1905. RENEWED JULY 15, 1907.

2 SHEETS—SHEET 1.



Witnesses:
H. V. Gibson.
R. M. McCormick

Inventor.
Benjamin M. Steele
By John A. LePorter Atty.

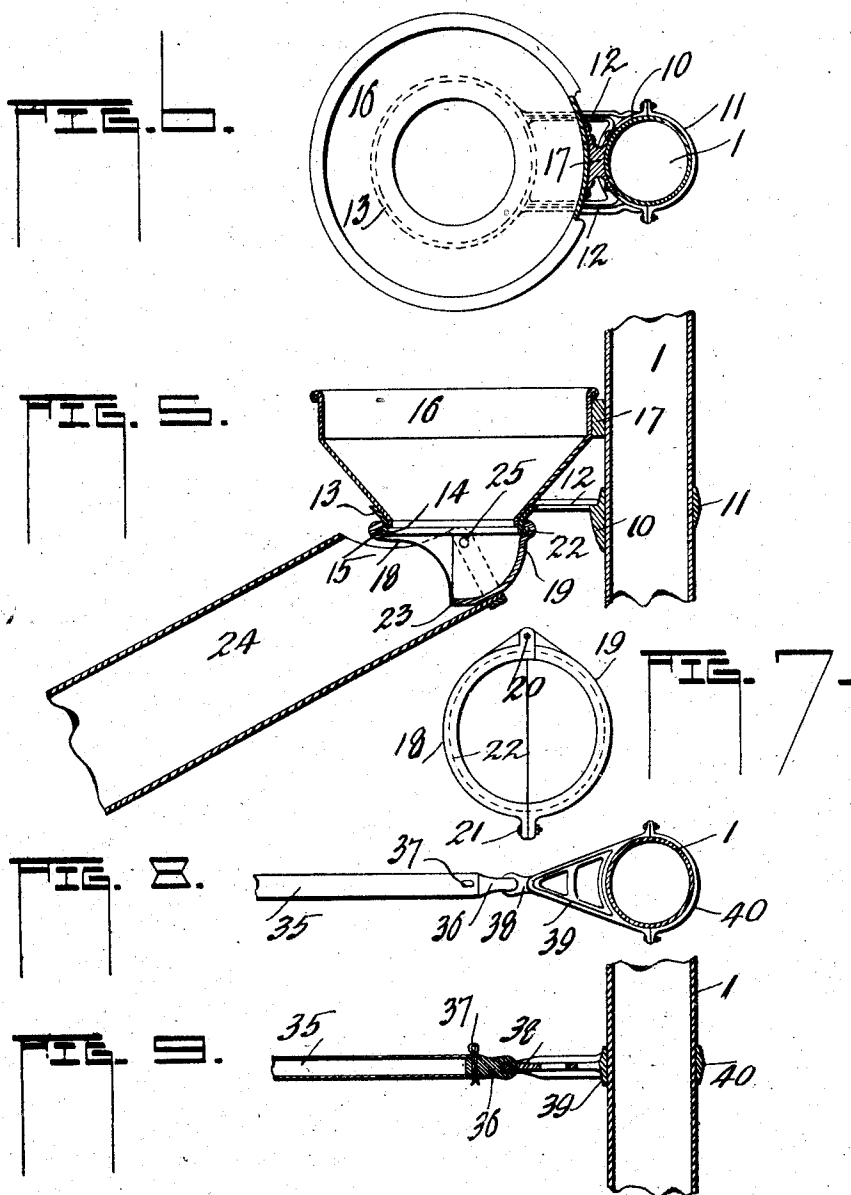
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Robert McCormick

Inventor:
Benjamin M. Steele.
By W. LaPorte Attorney

UNITED STATES PATENT OFFICE.

BENJAMIN M. STEELE, OF PEORIA, ILLINOIS, ASSIGNOR TO BEN STEELE WEAHER
MANUFACTURING COMPANY, OF PEORIA, ILLINOIS, A CORPORATION OF ILLI-
NOIS.

SPOUT-SUPPORT.

No. 878,906.

Specification of Letters Patent.

Patented Feb. 11, 1908.

Application filed May 26, 1905, Serial No. 262,331. Renewed July 15, 1907. Serial No. 383,926.

To all whom it may concern:

Be it known that I, BENJAMIN M. STEELE, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Spout-Supports; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to a new and improved spout support; and to means for connecting the head of the spout with a receiving hopper, preferably attached to a grain elevator or to the elevator tubes of a grain elevator and weigher.

The object which I have in view is to provide a simple and convenient mechanism for supporting the body of the spout and a lock which is easily manipulated for fixing the angle at which the said spout is adjusted.

The invention comprises a spout to which is attached a bar of suitable length lying parallel with the spout and secured to the spout, preferably at its opposite ends; to a yoke slidable on the said bar; to a member eccentrically pivoted to the yoke adapted to have a cam engagement with the said bar; to a rod with which one end of the member is pivotally connected, and a rope having connection with a ring slidable on the rod. A pull on the rope raising the rod and releasing the member from the bar when the spout may be lowered; the engagement of the member with the bar occurring upon the release of the rope, when the spout will remain in a fixed position, relative to vertical movement. The spout may be raised, by raising the spout independent of the rope connection, when the member will automatically adjust itself and lock immediately upon the release of the spout.

The invention consists further, in the mechanism to which the head of the spout is swiveled, whereby the same may have a horizontal as well as vertical movement. This mechanism consists preferably of a support or bracket attached to an elevator tube; to a hopper supported by the said bracket, and a spout-head revolubly connected with the bracket to which the head of the spout is pivoted.

The invention comprises details of construction to be hereinafter more particularly

referred to in the annexed specification, claimed in the appended claims and illustrated in the accompanying drawing, forming a part of the specification, in which:

Figure 1 is an elevation of a grain elevator or weigher to which is attached a spout; illustrating my improved connections between elevator and spout, also the spout support and locking device thereof; Fig. 2 is an enlarged elevation of a section of the spout, the bar attached thereto, the member and rod support; the same showing the spout in a fixed position; Fig. 3 is a view similar to Fig. 2, but showing the member released from the bar, adapting the spout to be raised or lowered; Fig. 4 is a cross-section through the spout, to illustrate the detail construction of bar attached thereto, the yoke on the bar and the member eccentrically pivoted to the yoke; Fig. 5 is an enlarged vertical section showing the detail construction of the bracket to which the hopper is attached and upon which the spout-head is revolubly carried; Fig. 6 is a plan view, partly in section, of the parts seen in Fig. 5; Fig. 7 is a plan view of the spout-head, which consists of two hinged sections; Fig. 8 is a plan view of the bracket which is secured to the elevator tube, to which the rod which supports the outer end of the spout is secured, and Fig. 9 is a sectional elevation of parts seen in Fig. 8.

In the drawings, particularly Fig. 1 is shown a double-tube grain elevator and weigher; consisting principally of the tubes 1 and 2, the head 3 connected to the said tubes. The head having a discharge spout 4 controlled by the gate or valve 5 adapted to be operated by a trip-shaft 6 carried between the tubes 1 and 2. The trip-shaft is adapted to be operated in a suitable way, carrying clutch devices (not shown) which adapt the said shaft to be intermittingly actuated. This clutch mechanism is usually controlled by a scale-beam 7 which supports a weighing hopper 8, having the usual valve and operated alternately with the spout-gate.

To the tube 1, at a suitable point below the head 3 I secure the bracket 9, which consists of the semi-circular parts 10 and 11 which encircle the tube and bolted together as shown. The section or part 10 has the two web extensions 12 which merge into the annular tapered ring 13, having the depending flange portion 14 provided with the lat-

eral and circular flange portion 15. Supported by the ring 13 is the hopper 16 having lower tapered walls conforming to the taper of the wall of the ring 13. The upper part of the hopper is braced by the bracket 17 which is bolted or otherwise suitably secured, both to the tube 1 and the hopper 16. The top of the hopper 16 is disposed beneath the lower end of the aforementioned weighing hopper 8, in such a position, that, as the weighing hopper descends and its valve is opened, the contents thereof will be discharged into the hopper 16, pass through the same and the ring 13, to the spout which will be described as being swiveled to the bracket 9 or the ring 13 thereof.

A spout-head consisting of the semi-circular parts 18 and 19 is revolubly mounted on the flange portion 15 of the ring 13 of the bracket 9. The parts 18 and 19 are hinged together at 20 and when in place on the ring are bolted together at 21 to securely hold the parts in place, and yet allow the same to rotate on the flange 15. Each part 18 and 19 is further provided with the matching semi-circular groove 22 into which the ring 15 is carried when the said parts are in place on said ring. The part 19 is also provided with an inverted hood portion 23 onto which grain falls as it passes through the head on its way to the spout which is pivoted thereto. This spout which has been referred to is indicated as 24 and is pivoted to the hood of the spout-head at 25 by being bolted or otherwise suitably secured thereto. The construction of the head end of this spout being such that it may be raised or lowered on its pivot and yet always remain in a position to receive grain from the spout-head without danger of leakage. And the spout-head being revoluble on the ring 13 of the bracket 9, adapts the spout 24 to be swung into different horizontal positions.

At a suitable point on the spout 24, preferably the under side, I have provided a rectangular bar 25^a of suitable length, spaced a short distance from the tube and has its ends secured to brackets 25^b and 26 secured to the tube, the bracket 26 being provided with an eye or ring 27 for a purpose to be described.

Slidable on the bar 25^a is a yoke 28, between the free ends of which is pivoted a link or member 29. The same has the solid head portion 30 which is eccentrically pivoted at 31 in the yoke 28. The opposite end portion of this link or member is split as at 32 to adapt it to have a pivotal connection at 33 with a plug 34 seated in the end of a tubular rod 35; the same being detachably held in the rod by means of a cotter-pin.

The rod 35 extends back to within a suitable distance of the elevator tube 1, and at its rear end has a plug 36 detachably held therein by means of a cotter-pin 37. This

plug has an eye which has a toggle connection with an eye 38 of a two part bracket, consisting of the sections 39 and 40 clamped in the manner shown to the tube 1.

The toggle connection of the rod 35 to the bracket adapts the forward end of this rod to raise or lower with the spout 24 and also, to swing as the spout 24 is swung into different horizontal positions.

On the rod 35 is slidably carried a ring or loose collar 41 to which is connected a rope 42 which is fed through the eye or ring 27 of the bracket 26 and allowed to hang in a position within easy reach of an operator.

The form of the member or link 29 is to provide a cam engagement between the head portion 30 thereof and the under side of the bar 25; the weight of the forward end of the rod 35 which has a pivotal connection with the member 29 causes the head 30 of the member to impinge the face of the bar and lock the parts in immovable position, until the member is swung on its pivot in the yoke 28 somewhat in the position seen in Fig. 3 when the spout 24 may be raised or lowered.

The rope 42 is provided, so that an operator wishing to lower the spout may pull down the same, which will raise the rod 35 and release the member. When in the position desired, the rope is released, when the rod will drop and lock the member against the bar, substantially as seen in Fig. 2.

To raise the spout 24, the operator will lift on the free end thereof, without the aid of the rope; the member 29 adapting itself to the change in position and locking against the bar automatically upon the release of the spout. Upon the raising or lowering of the spout, the yoke will slide on the bar, as is apparent, and in the same manner will the ring 41 slide on the rod 35 to adapt itself to the change of position of the rod and the spout.

Attention is directed to the mounting of the spout 24 to adapt it to be swung vertically and horizontally where it will remain until again disturbed. It is the pivotal connection of the spout with the head 25 which is located in the same vertical plane with the connection of the rod 35 with the two part bracket described. Were these connections other than in line it would be impossible to insure the spout remaining in its adjusted position horizontally, because of its tendency to return to its original position.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent of the United States, is:—

1. In a device of the class described, the combination with an elevator tube, a bracket consisting of two sections clamped to said tube, one of said sections supporting a ring having an annular flange, a hopper supported in said ring, a spout-head revolubly mounted on the flange of the ring, and a spout pivotally connected to said spout-head.

2. In a device of the class described, the combination with an elevator tube, a bracket secured to said tube, having an annular tapered ring removed outwardly from the tube, a hopper supported on said ring and tapered to conform to the ring, and a discharge spout swiveled in a suitable manner to the ring of the bracket to adapt it to have vertical and horizontal movement.

3. In a device of the class described, the combination with an elevator tube, a bracket secured to said tube, having an annular tapered ring removed outwardly from the tube, a hopper supported on said ring and tapered to conform to the ring, a bracket for bracing the upper part of the hopper from the tube, a hinged spout-head revolubly mounted on the ring, and a spout pivotally connected to the said spout-head.

4. In a device of the class described, the combination with an elevator tube, a bracket secured to said tube, and provided with an annular ring connected with the bracket by arm extensions, a hopper supported on the ring, a discharge spout swiveled in a suitable manner to the ring of the bracket to adapt it to have vertical and horizontal movement, a rod for supporting the outer end of the spout, a locking device between the outer end of said rod and spout, and means for supporting the inner end of the rod from the elevator tube.

5. In a spout support, the combination of a spout, a bar connected to the spout, a yoke slidable on the bar, a member pivotally connected to the yoke and adapted to have a cam engagement with the face of said bar, and means for holding the member in cam engagement with and releasing the same from such engagement with said bar.

6. In a spout support, the combination of a spout, a rod for supporting the outer end of the spout, a member pivotally connected to the rod and adapted to intermittingly engage means on the spout, the weight of the rod retaining the member and spout in locked relation, and means for releasing the member.

7. In a spout support, the combination of a spout, a rod for supporting the spout, a bar carried parallel with the spout and secured to the same, a yoke slidable on the rod, a member pivoted to the end of the rod and also pivoted eccentrically to the said yoke, the weight of the rod causing the member to impinge the face of the bar, and means for releasing the member.

8. In a spout support, the combination of a spout, a bar attached to the spout, a yoke slidable on the bar, a member eccentrically pivoted to the yoke and adapted to have an impinging engagement with the race of the bar, and means attached to the member for automatically causing the member to engage said bar.

9. In a spout support, the combination of

a spout, a bar attached to the spout, a yoke slidable on the bar, a member eccentrically pivoted to the yoke and adapted to have an impinging engagement with the face of the bar, a rod supported at one end and pivotally connected to the member at its opposite end, and by its weight adapted to hold the member in engagement with the bar, a rope connected to the rod, by means of which the rod may be raised to release the member from the bar.

10. In a spout support, the combination of a spout, a rod for supporting the spout, a bar lying parallel with and beneath the spout and secured at its opposite ends to brackets attached to the spout, one of said brackets provided with an eye, a member adapted to have an impinging relation with the face of the bar, connections between the member and rod, a collar slidable on the rod, and a rope secured to the collar and passing through the eye of the bracket aforesaid.

11. In a spout support, the combination of a spout pivotally supported at its upper end, a rod for supporting the main body of said spout, a bar secured to the spout, and a member pivotally connected with the forward end of the rod adapted to have an intermittent impinging connection with the face of the bar aforesaid.

12. In a spout support, the combination with an elevator, a spout pivotally connected to the elevator, a rod for supporting the body of the spout, a bracket secured to the elevator, with which the rod at one end has a toggle connection, a bar attached to the spout, a yoke slidable on the bar, a member eccentrically connected with the yoke and adapted to have engagement with the face of the bar, connections between the rod and member, and means for releasing the member from engagement with said bar.

13. In a spout support, the combination with an elevator, a spout having a swiveled connection with said elevator, a rod for supporting the body of the spout, a bracket secured to the elevator, a plug detachably connected with the rod and having a toggle connection with said bracket, a bar attached to the spout, a yoke slidable on the bar, a member eccentrically connected with the yoke and adapted to have engagement with the face of the bar, a plug having a detachable connection with the forward end of the rod, with which the member is pivotally connected, and means for releasing the member from engagement with said bar.

14. In a device of the class described, the combination of a suitable support, a conveyer spout pivotally connected to said support, a rod for supporting the body of said spout and also pivotally connected to said support, means between the forward end of the rod and the spout whereby the same may have a locked relation, the pivot of the spout

and the pivot of the rod to the support aforesaid being in the same vertical plane.

15. In a spout support, the combination of a spout pivotally supported at its upper
5 end, a rod for supporting the main body of said spout in adjusted positions, a member pivotally connected with the forward end of the rod and adapted to lock the adjusted positions of said spout and rod, and a rope con-
10 nected with the said member and adapted when pulled downwardly to oscillate the member and thereby permit the spout to be lowered.

16. In a spout support, the combination
15 of a spout pivotally supported at its upper

end, a rod for supporting the main body of said spout in adjusted positions, a member pivotally connected with the forward end of the rod and adapted to lock the rod and spout in vertically adjusted positions, the
20 said member adapted to automatically lock itself when the spout is raised, and a rope connection with the said member for actuating the same to lower the spout.

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

BENJAMIN M. STEELE.

Witnesses:

ROBT. N. McCORMICK,
CHAS. W. LA PORTE.