

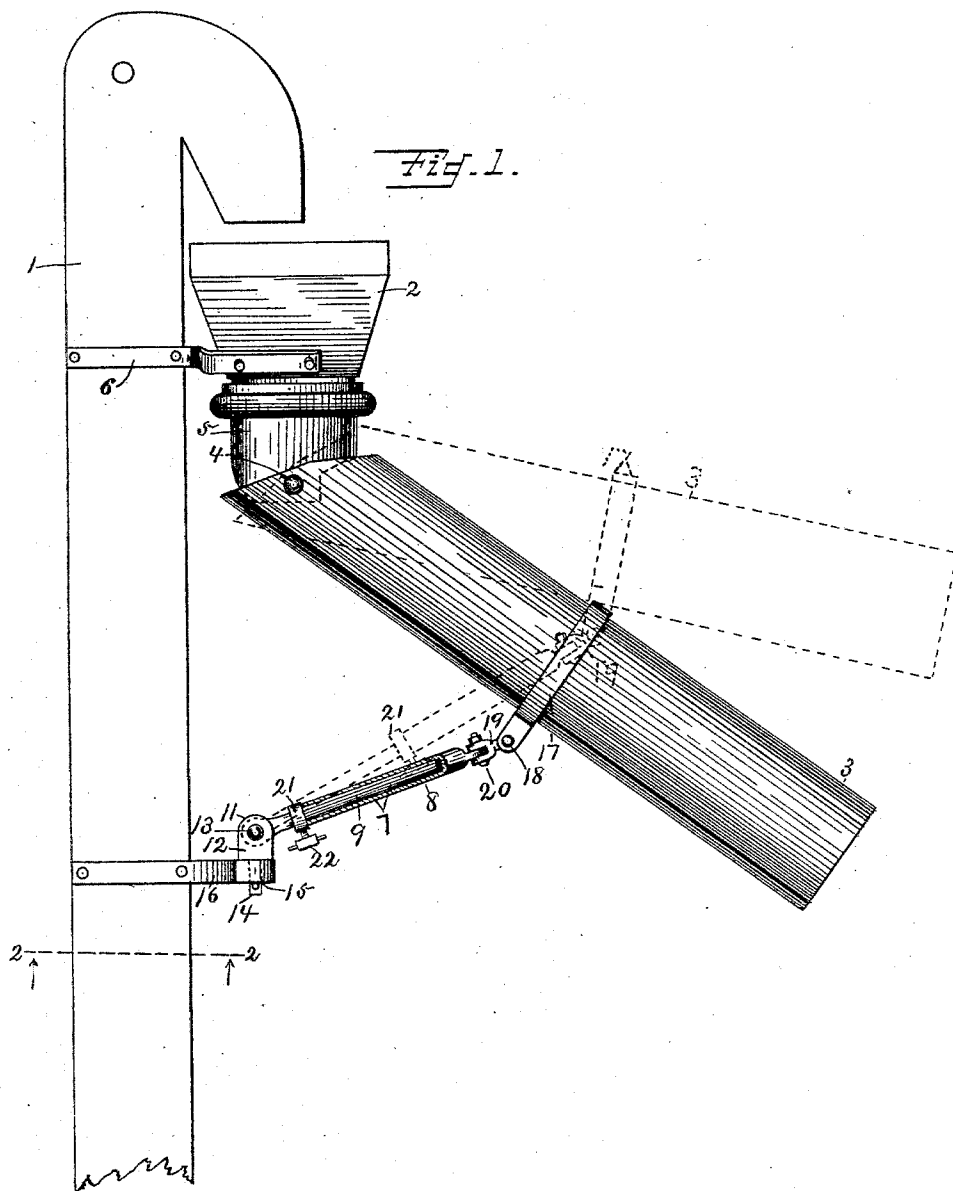
(No Model.)

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J. R. HARRISON.
COMBINED GRAIN ELEVATOR AND CONVEYER.

No. 565,076.

Patented Aug. 4, 1896.



Witnesses:

G. B. Richards.

H. M. Richards.

Inventor:

James R. Harrison,
By W. B. Richards,
Atty.

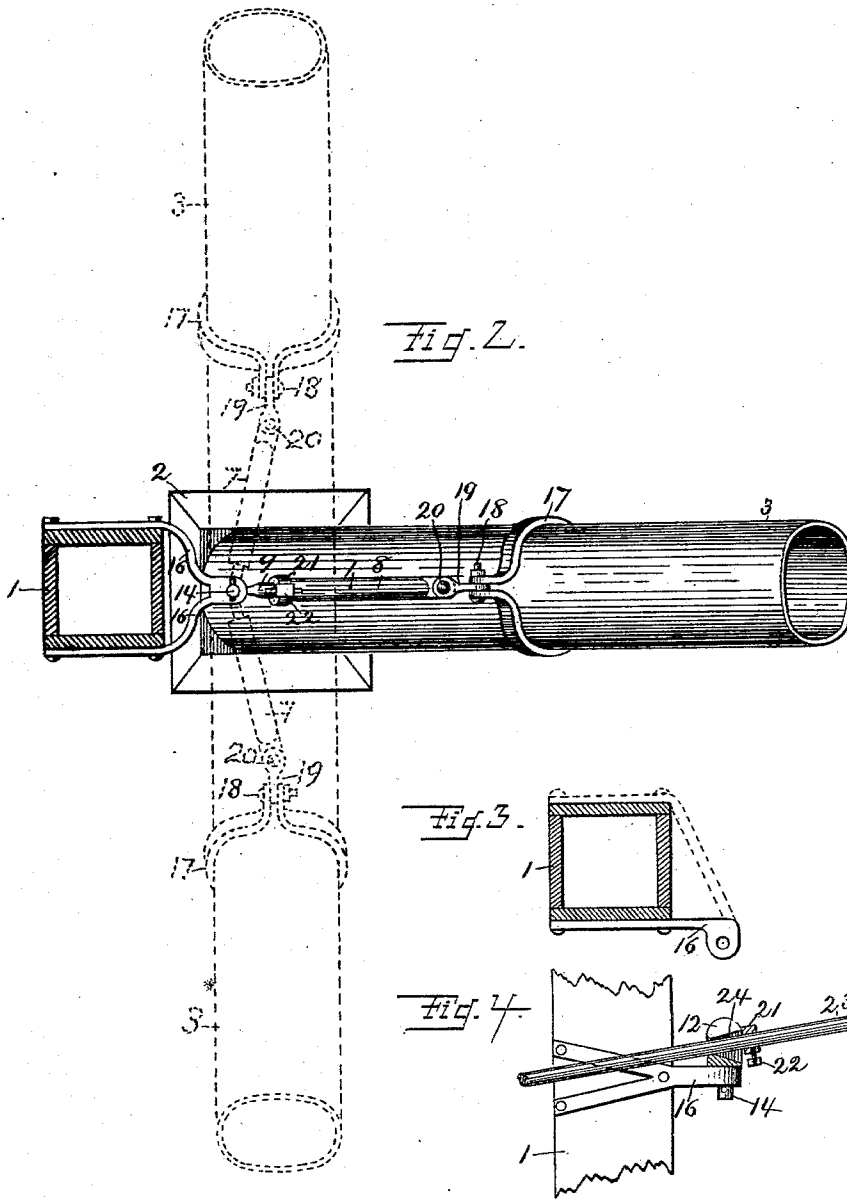
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By O. R. Richards,
att'y.

UNITED STATES PATENT OFFICE.

JAMES R. HARRISON, OF PEORIA, ILLINOIS, ASSIGNOR TO SELBY, STARR & CO., OF SAME PLACE.

COMBINED GRAIN ELEVATOR AND CONVEYER.

SPECIFICATION forming part of Letters Patent No. 565,076, dated August 4, 1896.

Application filed March 31, 1896. Serial No. 585,594. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. HARRISON, 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 a Combined Grain Elevator and Conveyer, of which the following is a specification.

The combined grain elevator and conveyer to which the invention that is herein described pertains belongs to that general class of grain elevators and conveyers in which the conveyer-spout is adjustably fixed to the grain-elevator tube or leg in such manner as to receive the grain elevated either from the elevator-tube direct or from a grain-weigher interposed between the elevator and the adjustable conductor-spout and to deliver the grain at different points, as desired.

My present invention is intended more especially for the improvement of that class of elevators and conveyers which are used with grain thresher and separator machines, and the leading object of the invention is to provide improved means for adjusting the conveyer-spouts of such class, by which means the conveyer-spouts can be readily, easily, and quickly adjusted to deliver grain at different heights and in different radial directions from the elevator-tube, and which means permit of easily and quickly raising and lowering the outer end of the conveyer-spout and swinging it laterally for the purpose of changing its delivery into different receivers without any readjustment of its supporting parts.

The invention consists in constructions and combinations hereinafter described and made the subject-matter of claims hereto appended.

In the accompanying drawings, which illustrate my invention constructed and combined in the best manner now known to me, Figure 1 is a side elevation showing the upper portion of a grain-elevator tube, the box of a grain-weigher, a conductor-spout, and my improved means for supporting and adjusting said conductor-spout; Fig. 2, a sectional plan of the elevator-tube in line 2 2 in Fig. 1 and plan of the other parts shown at Fig. 1, seen from below, looking upward; Figs. 3 and 4,

mechanical modifications of parts of the apparatus hereinafter described.

The numeral 1 designates the upper portion of an ordinary grain-elevator tube, the grain-elevating mechanism and its driving-gear not shown. Neither is the thresher and separator shown, to which the elevator-tube is fixed and by which it is sustained in position. The box 2 is part of an ordinary grain-weigher which receives and weighs grain and delivers it to the conveyer-spout in an ordinary manner. The weigher-box 2 may be fixed to the elevator-tube by means of the bracket-arm 6, as shown, or may be supported in any other practical manner.

The conveyer-spout 3, without departure from the purview of my invention, may be either hinged to the discharge end of the elevator-tube direct or to the discharge of the grain-weigher in any desired or preferred manner which will permit of adjusting the outer end of the elevator-tube at different heights and in different radial directions from the elevator, as shown, respectively, by dot lines at Figs. 1 and 2 of the drawings. In this instance I have shown the conveyer-spout as supported by and hinged by pivot-bolts 4 to the lower end of a short tube 5, Fig. 1, to permit of adjusting the conveyer-spout at different heights at its outer end and have shown the tube 5 as pivotally mounted on the lower part of the weigher-box 2 to permit of adjusting the conveyer-spout in different radial directions, as indicated by dot lines at Fig. 2.

An essential feature of the means for supporting the conveyer-spout below its upper support 4, and for adjusting its lower end in different positions, is the rod or bar 7, adjustable in length, and also adjustable both radially and vertically with reference to the elevator-spout. The bar 7 is formed, preferably, of a tubular part 8 and a part 9, which may be tubular or solid. The part or rod 9 is slidably seated in the tubular part 8 to form a telescopic joint, whereby the bar 7 may be lengthened or shortened, as hereinafter described. The lower end of the rod 9 is pivoted between jaws 11 on the upper end part of a block 12 by a pivot-bolt 13 to per-

mit of swinging the bar 7 in a vertical plane on the pivot-bolt 13 as a center of motion. The lower end of the block 12 has a journal 14 projecting downwardly therefrom through a bearing 15 in the outer end of a bracket 16, which projects laterally from the elevator-tube 1, and is preferably secured to said tube, as shown at Figs. 1 and 2, by means of its forked ends. The journal 14, in turning in the bearing 15, will permit of adjusting the bar 7 at different angles radially from the elevator-spout, and with the hinge connection to the jaws 11 will form an ordinary two-way joint.

The upper end of the part 8 is pivotally and adjustably connected with the conveyer-spout 3 by means of a split clip 17, which is clamped on said spout by a bolt 18, and by a short coupling-block 19, which is pivotally connected at one end with the bolt 18, and at its other end is pivotally connected with the upper end of the part 8 by a bolt 20, which passes through it and the block 19 transversely to the bolt 18. By loosening the nut on the bolt 18 the split clip 17 may be adjusted lengthwise of the conveyer-spout 3, and again be fixed after such adjustment by tightening the nut. The collar 21 is loosely mounted on the part or rod 9 to permit of adjusting it in different positions lengthwise of said rod. After such adjustments as may be required the collar is fixed in position on the rod 9 by a thumb-screw 22.

At Figs. 3 and 4 I have shown a mechanical modification of the means hereinbefore described for supporting and adjusting the conveyer-spout—that is, a modification not embodying any invention over what is shown in the other figures of the drawings—a mere mechanical and not an inventive modification. In this modification the bracket-arm may be as shown by full lines at Fig. 3, or it may have a bracing-arm, as shown at Fig. 4. The outer end of this bracket has a head 12 journaled therein, so that it will permit the rod 23 to oscillate laterally therewith. The rod 23 passes through a V-shaped slot 24 in the head 12, which slot, while its narrow end aligns the rod 23, will permit said rod to swing in a vertical plane by the gradual widening of said slot toward its other end. The rod 23 of Fig. 4 may be pivotally connected with the split clip 17 by means of the plate 19 in same manner as the part 8 is connected therewith. The collar or stop 21 is mounted on the rod 23 and can be adjusted and fixed thereon to project the rod 23, more or less, at its right-hand end from the elevator-spout 1.

By adjusting the collar or stop 21 at different positions on the rod 9 it will hold the tubular rod 8 in different positions on the rod 9, and thereby lengthen or shorten the rod or bar 7, as may be desired or required to hold the conveyer-spout 3 with its lower end at different elevations for the discharge of grain into wagons or other receivers at different heights. One of these elevated posi-

tions is shown by dot lines at Fig. 1. In adjusting the conveyer-spout laterally, as indicated by the dot lines at Fig. 2, the block 12 will turn freely in its bearing 15 to permit of such adjustment, and the joint with two axes of flexure, formed by the block or plate 19, pivoted to the tubular rod 8 and the clip 17, will permit of extended adjustments of the conveyer-spout, such as shown by the dot lines at Fig. 1. The rod or part 8 may be hinged directly to the clip 17 by the bolt 18, and thus dispense with the bolt 20 and the hinged joint formed thereon, by fitting the end of the rod 8 loosely between the ends of the clip 17, or by connecting the rod 8 with the ends of the clip by a ball-and-socket or other universal joint.

By means of the adjustments of the conveyer-spout described grain may not only be delivered at different heights, but at different points and at different sides of a thresher and separator.

In delivering grain to wagons, as is the general practice in threshing in the field, an empty wagon is kept standing by the side of the wagon receiving grain from the conveyer-spout. With my improved support for the conveyer-spout 3, when one wagon has received its load, the discharge end of the conveyer-spout may be lifted (the tubular rod sliding outwardly on the rod 9 to permit thereof) and the conveyer-spout then be swung on the pivot 14 and with the tube until its discharge end is located over the empty wagon. When this last-referred-to wagon is loaded, the conveyer-spout may again be raised and swung back over another wagon occupying the place of the first one referred to above. This operation of raising and changing the conveyer-spout from one wagon to another without any adjustments of the collar 21 is one of the novel features of my improvement.

For adjustment of the conveyer-spout in its very highest position, the clip 17 can be adjusted nearer the upper end of said spout than shown in the drawings.

Still other mechanical modifications than those I have herein described and various changes in the form, proportion, and details of construction may be made without departure from the purview of my invention.

Having thus described my invention, what I claim is—

1. The combination with a grain-elevator, and a grain-conveyer spout pivotally connected therewith to be swung in both lateral and vertical directions, of a support for the conveyer-spout, comprising a bar adjustable lengthwise of itself, a hinge or pivotal connection of one end of said support with the elevator-spout, a hinge or pivotal connection with the conveyer-spout, and means whereby the length of the support may be adjusted, substantially as described.

2. The combination with a grain-elevator, and a grain-conveyer spout pivotally con-

5 nected therewith to be swung in both lateral
and vertical directions, of a support for the
conveyer-spout, comprising a bar adjustable
in its length, a hinge or pivotal connection of
one end of said support with the elevator-
spout, a two-way hinge or pivotal connection
with the conveyer-spout, and an adjustable
stop which stop when fixed in position while
10 permitting the support to be lengthened will
limit the extent to which it can be shortened,
substantially as described.

3. The combination with a grain-elevator,
and a grain-conveyer spout pivotally con-
nected therewith to be swung in both lateral
15 and vertical directions, of a support for the
conveyer-spout, comprising a bar in two parts
adjustable lengthwise of each other, a two-way
hinge or pivotal joint connection between one
of said bars and the elevator-spout, and a
20 hinge or pivotal joint connection between the
other bar and a split clip adjustably mount-
ed on the conveyer-spout, substantially as
described.

4. The combination with a grain-elevator,
25 and a grain-conveyer spout pivotally con-
nected therewith to be swung in both lateral
and vertical directions, of a support for the
conveyer-spout comprising a two-part bar
with a sliding telescopic connection, a hinge
30 or pivotal joint connection between the end
of one of said bars and the conveyer-spout, a
split clip mounted on the conveyer-spout, a
hinge or pivotal connection between said clip
and the other of said bars, and a stop adjust-

ably mounted on one of said bars, substan- 35
tially as described.

5. The combination with a grain-elevator,
and a grain-conveyer spout pivotally con-
nected therewith to be swung in both lateral
and vertical directions, of a support for the 40
conveyer-spout, comprising a two-part bar
with a sliding telescopic connection, a two-
way-joint connection between the end of one
of said bars and the conveyer-spout, a split
clip adjustably mounted on the conveyer- 45
spout, a hinge or pivotal connection between
said clip and the other of said bars, and a
stop adjustably mounted on one of said bars,
substantially as described.

6. The combination with a grain-elevator, 50
and a grain-conveyer spout pivotally con-
nected therewith to be swung in both lateral
and vertical directions, of a support for the
conveyer-spout, comprising a bar 7 in two
parts 8, 9, connected by a telescopic joint, a 55
collar 21, a bracket 16, a block 12 pivotally
mounted on said bracket and pivotally con-
nected with the bar 9, a split clip 17 adjust-
ably mounted on the conveyer-spout, and a
pivotal connection between the bar 8 and the 60
clip 17, substantially as specified.

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

JAMES R. HARRISON.

Witnesses:

W. A. SELBY,
S. N. O'SHAUGHNESSY.