(No Model.) 2 Sheets—Sheet 1.

J. S. METCALF.

GRAIN SPOUT.

No. 358,052. Patented Feb. 22, 1887.

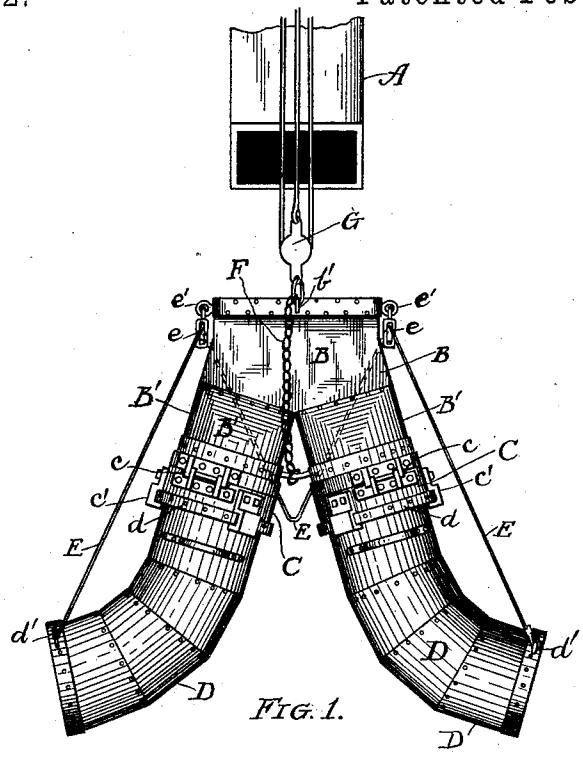


FIG. 1.

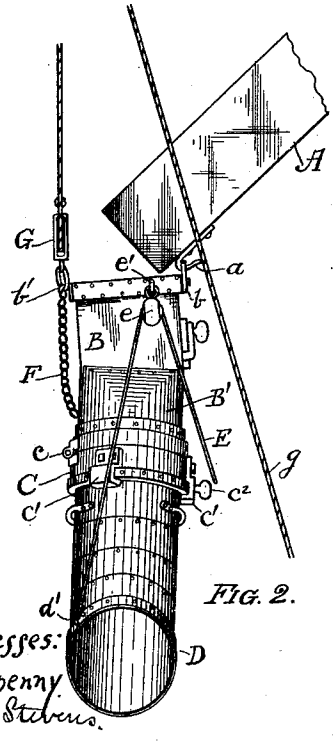


FIG. 2.

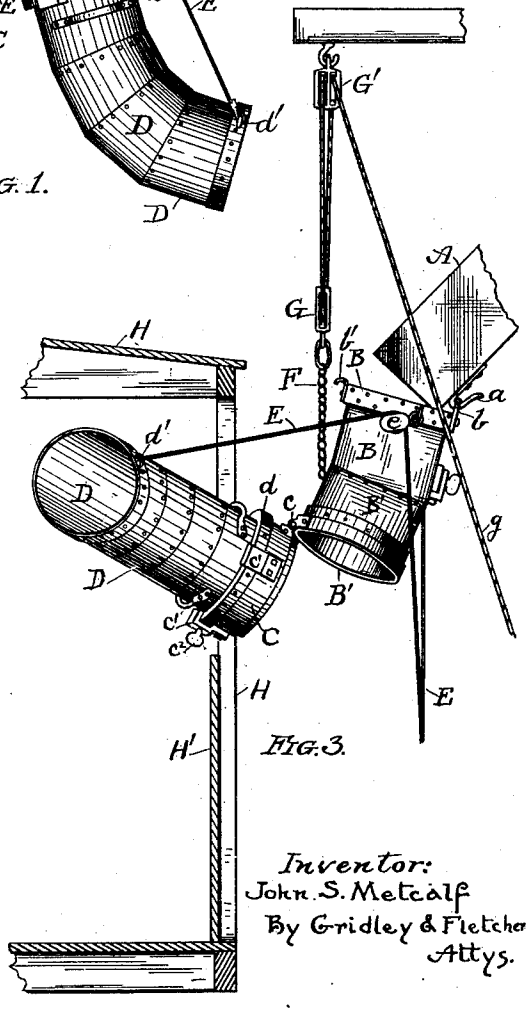


FIG. 3.

Witnesses:
J. B. Halpenny
David Stevens.

Inventor:
John S. Metcalf
By Gridley & Fletcher
Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. S. METCALF.

GRAIN SPOUT.

No. 358,052. Patented Feb. 22, 1887.

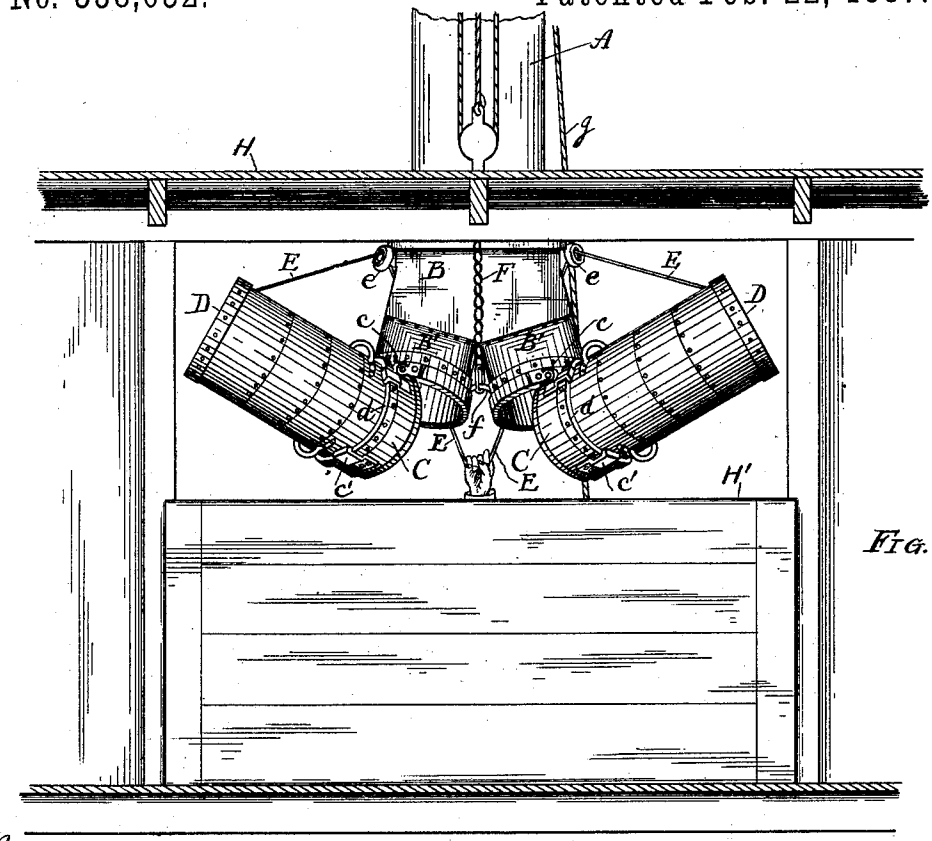


FIG. 4.

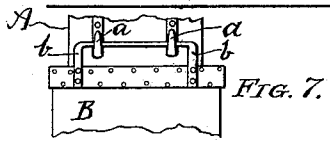


FIG. 7.

FIG. 5.

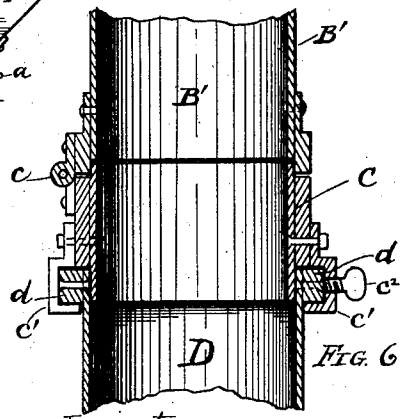


FIG. 6

Witnesses:
J. B. Halpenny
David Stevens

Inventor:
John S. Metcalf
By Gridley & Fletcher
Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN S. METCALF, OF BURLINGTON, IOWA.

GRAIN-SPOUT.

SPECIFICATION forming part of Letters Patent No. 358,052, dated February 22, 1887.

Application filed July 22, 1886. Serial No. 208,717. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. METCALF, of Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Grain-Spouts, of which the following is a description, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of said spout suspended from a tackle, but detached from the main or down spout. Fig. 2 is a side view of the same as it appears when first hooked to the downspout. Fig. 3 is a like view of said spout as it appears when drawn up to be thrust into a car above the grain-door. Fig. 4 is a front view thereof as it appears upon looking into the car from the opposite side. Fig. 5 is a side view of said spout as it appears when finally adjusted for use within the door of a freight-car. Fig. 6 is an enlarged central longitudinal sectional view, in detail, of a portion of said spout, showing the hinged and swiveled joints therein for use in making the respective adjustments; and Fig. 7 is a rear view, in detail, of the device for detachably connecting the spout with the downspout.

Like letters of reference indicate like parts in the different figures.

In the use of bifurcated grain-spouts, as commonly constructed for loading freight-cars from elevators, great difficulty has been heretofore experienced in attaching and detaching them to and from the downspout and in introducing them into the car above the grain-door. This has usually required the efforts of two or more men and a corresponding loss of time.

The object of my invention is to so construct a bifurcated grain-spout and to provide such appliances in connection therewith that it may readily and easily be attached to and be detached from a downspout and projected into a freight-car by one man.

A further object is to so construct the joints of said pipe, with means for manipulating the same, that it may not only be adjusted for insertion into the car without interference in any way therewith, whether detachable from the downspout or not, but may be capable of a secondary or swivel movement and adjustment, to adapt it to the fall of the grain, or what is commonly known as "high" and "low" drop, all of which I accomplish substantially in the manner hereinafter described and claimed.

In the drawings, A represents the usual downspout of an elevator, provided with hooks *a a*, Figs. 2, 3, 5, and 7, for attaching my improved spout thereto.

B represents the trunk or body of said spout, to the back of which and projecting somewhat above the top is rigidly attached a bail, *b*, adapted to engage with the hooks *a*. The part B is provided with diverging tubes B′ B′, to which are hinged, respectively at *c c*, short sections C C, to which are in turn attached, by means of a swivel-joint, curved pipe-sections D D, preferably constructed from sheet metal, substantially as shown. Each of said sections D is provided with a ring, *d*, riveted thereto, which is loosely embraced or overlapped by gibs *c′*, bolted or riveted to the short cylindrical sections C. A set-screw, c^2, is provided for one of said gibs upon each of the sections C. This construction enables each of the branch pipes D to be rotated at will, and when properly adjusted to be secured in place by means of said set-screws. At the same time, being hinged at *c c*, they are capable of being tilted over upon the body of the part B, or partially elevated, as occasion may require.

To the extremities of the pipes D D are rigidly attached staples *d′ d′*, to which are secured the respective ends of a loose cord, E, which is passed through blocks or pulleys *e e*, suspended from eyes *e′ e′*, which are in turn attached to the sides of the part B, said cord being sufficiently long, so that the middle may hang down in the rear of and below the part B, substantially as shown in the respective figures.

Extending between the parts B′ B′, and rigidly attached thereto near their point of juncture, is a bar, *f*, to which I attach a chain, F, to the opposite end of which is connected a block and tackle, G, one member of which is adapted to be suspended from a beam above, as shown in Fig. 3. Upon the front and at or near the top of the part B, I attach a hook, *b′*, upon which the link connecting the chain F with the tackle G may be hooked, when desired.

H, Figs. 3, 4, and 5, represents an ordinary freight-car, of which H′ is the grain-door.

Said mechanism is manipulated as follows: Assuming the spout to be made detachable and to be upon the ground, the tackle is suspended in place and the chain link attached to the hook *b′*. It is then drawn up by the tackle, as shown in Fig. 1, and as it hangs substantially in a perpendicular position, when it reaches the proper height the bail *b* is readily attached to the hooks *a*, as in Fig. 2, said hooks being preferably formed substantially as shown, so that the attachment may be easily effected. The tackle G is then loosened, when it is readily disconnected from the hook *b′*, after which it is drawn up until the chain F is taut, as in Fig. 3. As this changes the center of gravity of the spout, the bottom of the latter is caused to swing forward far enough, so that it cannot be raised out of the hooks *a*. This attachment being first secured by means of the tackle, the operator then grasps the cord E at its middle, as shown in Fig. 4, and raises the branches D D sufficiently to enable them to pass over the grain-door. The tackle G is then drawn up to its limit, when the parts A B form a perfect connection with each other, as shown in Fig. 5, the parts D D having likewise assumed their normal position upon releasing the rope E. Upon securing the free end of the rope *g*, which may be fastened to any suitable object, the spout is ready for use.

So far as the device for tilting the branches is concerned, it is obvious that said bifurcated spout need not be detachable from the downspout; but when so arranged it enables a single workman, without assistance, to load a series of cars in succession by transferring the spout B from one downspout to another, as required.

I am aware that bifurcated grain-spouts are not new, and that it is not new to swivel a single spout so that it may be deflected and adjusted for high and low drop. I am also aware that it is old to hinge said branches that are not swiveled, to permit them to be tilted, and I do not, therefore, claim either of these features broadly; but

What I do claim, and desire to secure by Letters Patent, is—

1. The combination, with the downspout of a grain-elevator, of a detachably-hinged bifurcated trunk, branches hinged to the respective branches of said trunk, curved extensions swiveled to said respective branches, and cords attached at or near the ends of said extensions, respectively, and trained over pulleys upon said trunk, whereby said branches may be bent or folded for introduction to a car, and the swiveled branches afterward adjusted to meet the requirements of the drop of the elevator, substantially as described.

2. The combination, with a detachable grain-spout provided with a rear supporting-bail, of a downspout having hooks adapted to engage said bail, and means, as the hook *b′* and chain F, for alternately suspending said spout from points thereon having a varying relation to its center of gravity, substantially as and for the purposes set forth.

3. In a detachable grain-spout, the combination of the curved branches D D, swiveled to the sections C C, said sections being in turn hinged to the diverging branches of the main spout, the cord E, and pulleys *e*, arranged and constructed substantially as and for the purposes specified.

4. The combination, with a downspout, of a bifurcated grain-spout, and means, as a bail and hook, for detachably connecting the same, hook *b′*, connected to the top, and chain F, connected thereto, substantially as and for the purposes described, a block and tackle adapted to be attached to one or the other at will, curved branches D D, hinged as described, cord E, and pulleys *e e*, substantially as specified.

JOHN S. METCALF.

Witnesses:
D. H. FLETCHER,
J. B. HALPENNY.