(No Model.) 2 Sheets—Sheet 1.

D. A. ROBINSON.

SWIVEL SPOUT FOR ELEVATORS.

No. 524,984. Patented Aug. 21, 1894.

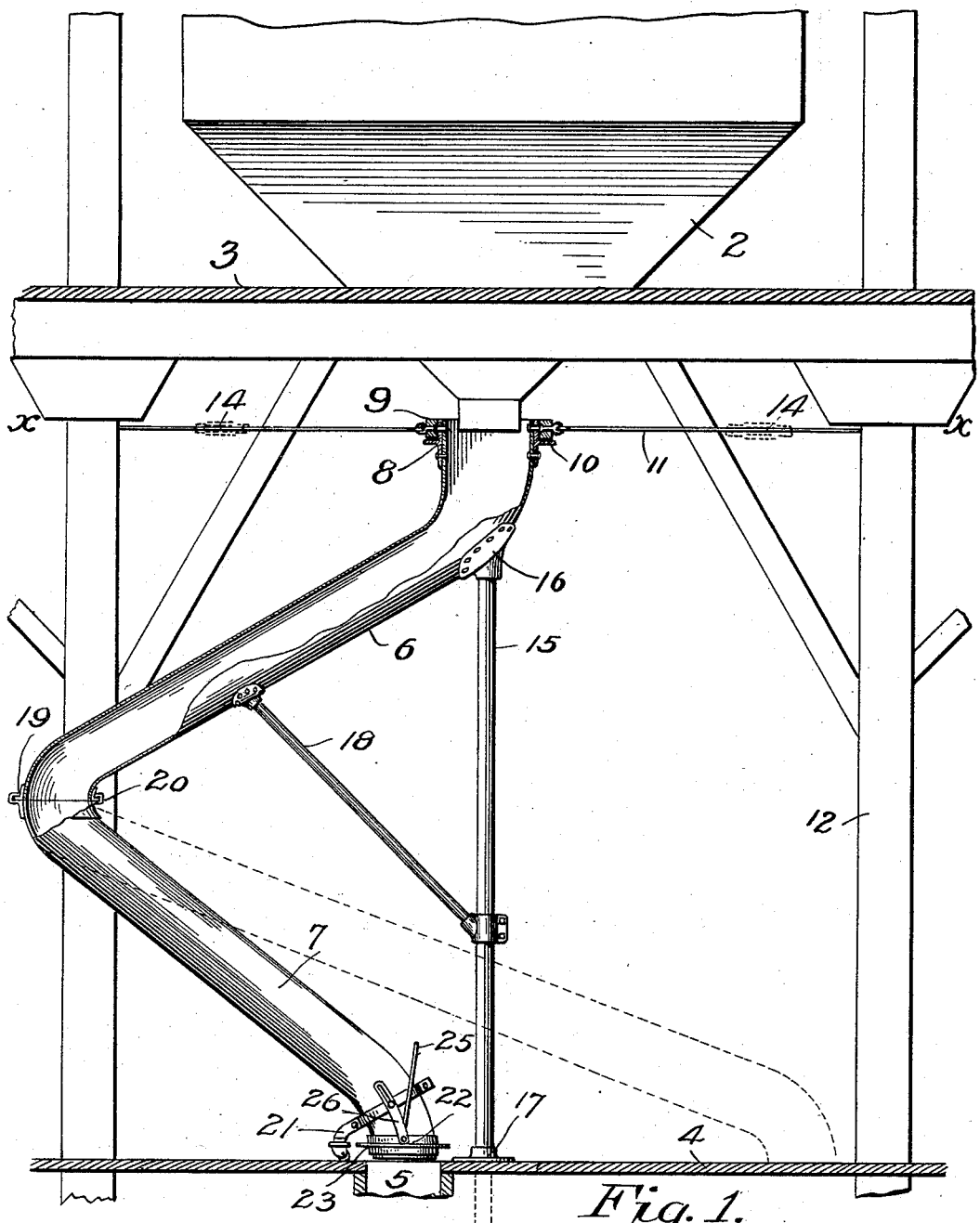

Fig. 1.

Witnesses,
Chas. E. Van Dorn,
F. S. Lyon

Inventor,
Dighton A. Robinson.
By Paul & Hawley
his Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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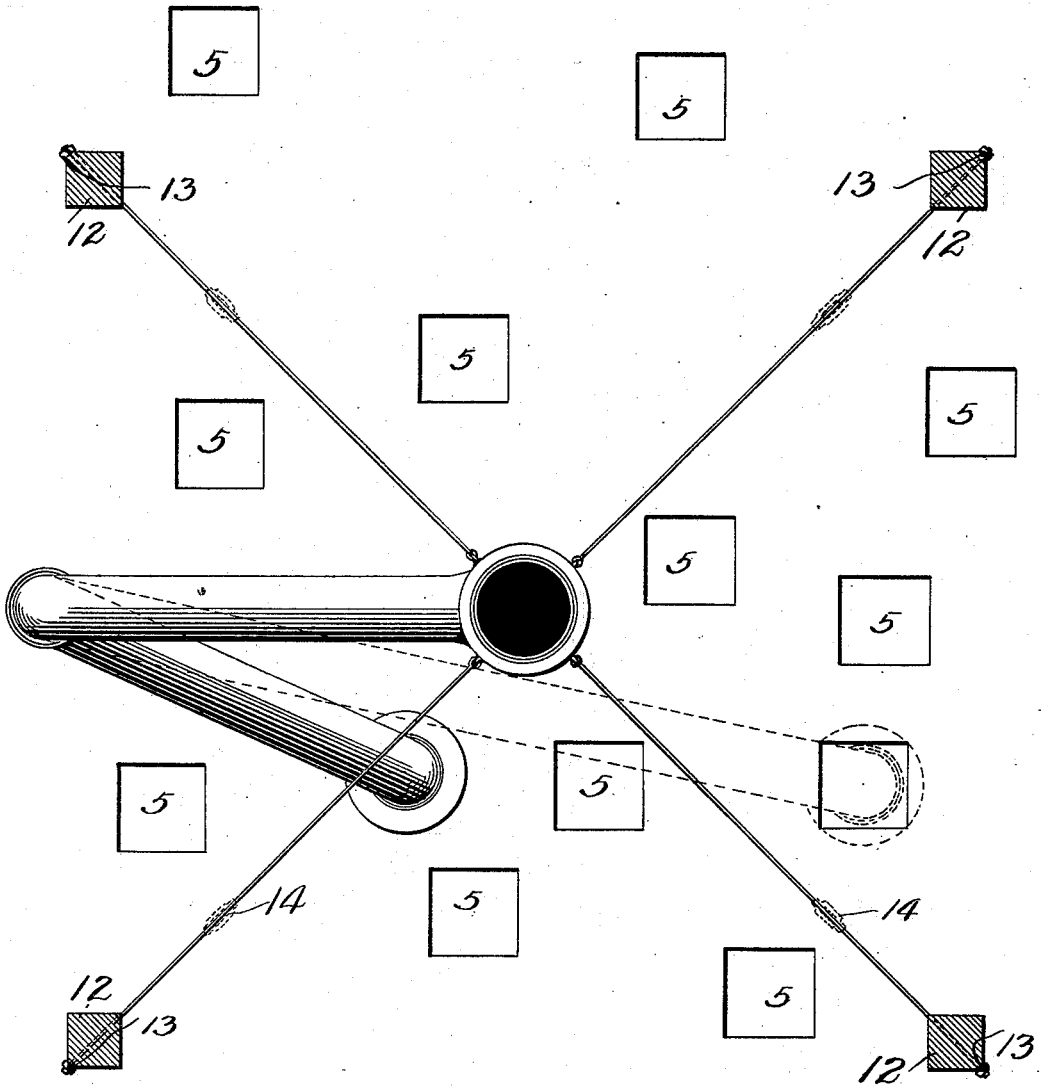

Fig. 2.

Witnesses,
Chas. E. Van Dorn,
W. B. Lyon

Inventor,
Dighton A. Robinson,
By Paul & Hawley
his Attorneys.

UNITED STATES PATENT OFFICE.

DIGHTON A. ROBINSON, OF MINNEAPOLIS, MINNESOTA.

SWIVEL-SPOUT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 524,984, dated August 21, 1894.

Application filed October 30, 1893. Serial No. 489,548. (No model.)

To all whom it may concern:

Be it known that I, DIGHTON A. ROBINSON, of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Swivel-Spouts for Elevators, of which the following is a specification.

This invention relates to swivel spouts for grain elevators, and particularly to spouts adapted for use between the weighing hoppers or garners of the upper floors and the storage bins beneath.

The particular object which I have in view is to provide improvements upon the spout shown and described in the patent to John Simpson, issued February 3, 1891, No. 445,645; and further, a spout which shall be considerably cheaper both to manufacture and to place in position and which will be more distinctly portable.

To this end my invention consists in the combination with an upper inclined section with a lower section swiveled thereon, and a central mast or shaft stepped upon the floor and supporting the upper section of the spout.

My invention consists further in the various constructions and combinations hereinafter described and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a vertical elevation of a spout embodying my invention, portions thereof being broken away to more clearly show its construction. Fig. 2 is a sectional plan view on the line *x*—*x* of Fig. 1.

As shown in the drawings, 2 represents a garner bin or weighing hopper, the lower end of which extends down through the floor 3, between which floor and the lower floor 4 provision is made for distributing the grain or other material from the hopper 2 to the several bins underlying the floor 4 and into which suitable spouts, extending from the floor holes 5, extend. The holes in the floor are arranged irregularly and it is therefore necessary that the distributing spouts have perfect freedom of movement in all their actions. The distributing spout is preferably made in two inclined sections 6 and 7. The upper section 6 is somewhat enlarged at the top to surround the lower end of the hopper 2 and carries the flanged ring 8. The upper end of the spout is held concentric of the hopper by a suitable ring 9 which is slipped down over the end of the ring 8 and rests upon the flange 10 thereof. The retaining ring or, as it may be termed, journal is itself held by any suitable means, such as the guy-rods or wires 11 which are adjustably secured in the posts or frame work 12. The ring is made adjustable laterally by means of nuts 13 on the outer ends of the guy-rods or by means of turn-buckles 14, as shown in dotted lines, and by the use of which the ring may be moved in any direction to compensate for settling of the building or change of construction. The ring, it will be seen, in no way aids in the support of the spout which is alone supported by a central mast or shaft 15, secured in the angle casting 16 on the bottom of the spout and concentric with the upper end thereof, while the lower end of the shaft is journaled in the step or block 17 provided on the floor. The brace 18 extending from the shaft to a lower point on the spout, holds the same at the proper angle. At the lower end of the part 6 I provide the flanged ring 19 which, through the channeled or grooved ring 20 secured upon the upper end of the lower part, supports the lower part of the spout. At the floor line the end of the distributing spout is supported upon the fixed cast 21, which permits the easy movement of the spout from one position to another.

To close the opening between the end of the spout and around the hole in the floor I employ the ring or collar 22, having the wide flange 23 and arranged to be dropped to the floor. For raising the ring I provide a ball 25, and to hold the ring in place upon the end of the spout I ordinarily provide curved links 26 having the slotted upper ends retained on pins in the sides of the spout. The lower section of the spout is preferably short enough to pass by the supporting mast, but if the floor holes are widely separated the longer section may be employed, as indicated by dotted lines in Fig. 1.

By simply providing a long bearing or a double bearing for the lower end of the shaft or mast it may be given sufficient rigidity to

render the use of the retaining or journal ring 9 unnecessary. Such a double bearing is shown by dotted lines in Fig. 1.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the inclined upper part of the spout, of a central vertical mast or shaft whereon the same is supported from beneath, and the lower inclined part of said spout having its upper end swiveled in the lower ends of said upper part, and a brace extending between said shaft and the upper part of the spout, to support the same and therewith the lower part of the spout, all as and for the purpose specified.

2. The combination, with the upper inclined part of the spout, of the lower part also inclined and swiveled thereon, a central mast or shaft supporting said upper part from beneath, and a stationary ring wherein the upper end of the spout is held against lateral movement, substantially as described.

3. The combination, with the upper inclined part of the spout, of the lower part also inclined and swiveled thereon, a central mast or shaft supporting said upper part from beneath, a stationary ring wherein the upper end of the spout is held against lateral movement, and guys extending from said ring to suitable fastenings, substantially as described.

In testimony whereof I have hereunto set my hand this 25th day of September, 1893.

DIGHTON A. ROBINSON.

In presence of—
F. S. LYON,
M. E. GOOLEY.