

J. F. McGAFFEE.  
SILO CHUTE.  
APPLICATION FILED MAR. 7, 1916.

1,208,345.

Patented Dec. 12, 1916.

Fig. 1.

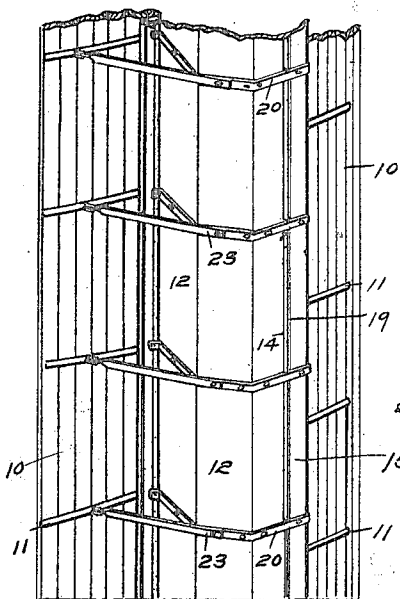


Fig. 2.

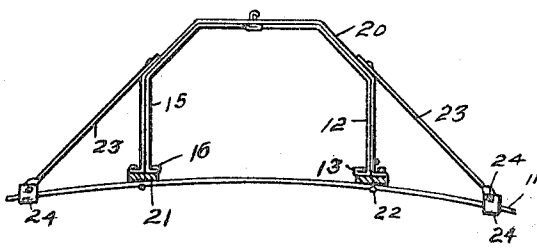
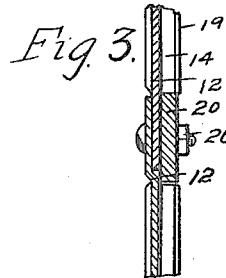


Fig. 4.

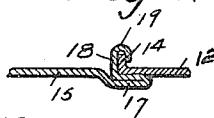


Fig. 5.

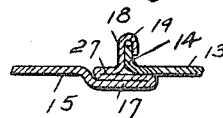


Fig. 6.

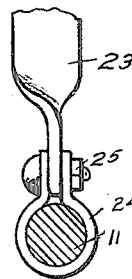
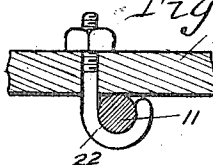


Fig. 7.



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# UNITED STATES PATENT OFFICE.

JAMES F. McGAFFEE, OF DES MOINES, IOWA.

## SIL0-CHUTE.

1,208,345.

Specification of Letters Patent.

Patented Dec. 12, 1916.

Application filed March 7, 1916. Serial No. 82,653.

*To all whom it may concern:*

Be it known that I, JAMES F. McGAFFEE, a citizen of the United States, and resident of Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Silo-Chute, of which the following is a specification.

The object of my invention is to provide a sheet metal sectional silo chute of simple, durable and inexpensive construction, in which the component parts of the chute may be readily, quickly and easily made at comparatively low cost, and nested in very small sections for shipment, and which may also be readily, quickly and easily set up and applied to a silo for use, and when applied will be strong, durable and able to withstand all of the strains to which silo chutes of this character are ordinarily subjected.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a perspective view of a part of a silo having my improved chute applied thereto. Fig. 2 shows a top or plan view of a chute embodying my invention. Fig. 3 shows an enlarged, detail, sectional view, illustrating the means for connecting the upper and lower chute sections together. Fig. 4 shows an enlarged, detail, sectional view, illustrating my preferred form of joint for connecting together two side by side chute half sections. Fig. 5 shows a modified form of the joint illustrated in Fig. 4. Fig. 6 shows an enlarged, detail view illustrating the means for connecting the brace rods of my improved chute with the silo hoops, and Fig. 7 shows an enlarged, detail, sectional view illustrating the means for connecting the wooden upright members of my improved chute with the silo hoop.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate that portion of the silo shown, having surrounding it the customary metal hoops 11. My improved silo chute is formed of sheet metal sections separated transversely, each transverse section being also separated vertically into half sections, the half sections of one side being capable of nesting into the half sections of the other side, for convenience in shipping and packing. Each half

section is composed of a single piece of sheet metal 12, having at one edge a flange 13 designed to engage the adjacent portion of the silo. The other vertical edge is provided with an outstanding flange 14.

The mating half section comprises a body portion 15 having a flange 16 to rest against the silo, and the other vertical edge is provided with a part 17 folded backwardly upon itself, and an outstanding flange 18 having at its outer end a curved portion 19. The flange 18 and the curved portion 19 are so shaped and proportioned that the flange 14 of the half section 13 may readily and easily be received into the curved portion 19 between said curved portion and the doubled portion 17, as illustrated in Fig. 4. These parts are so arranged that they can only be connected or disconnected by being telescoped into each other. That is to say, the member 15 may be first placed in position and then the member 13 may be inserted from above and slipped down through between the curved portion 19 and the doubled portion 17. The joint thus formed between the two half sections will obviously prevent either section from movement relative to the other except up and down. I provide against this up and down movement by having a series of transverse metal bars 20 fitted to the exterior of the chute sections, with their ends fixed to the silo and their central portions passing between the adjacent portions of the ribs formed by the parts 14 and 19. That is to say, the rib thus formed rests on top of one of said bars 20, as clearly illustrated in Fig. 3, thus preventing up and down movement of the silo half sections relative to each other.

In order to connect the entire chute with the silo I preferably provide two upright wooden members 21 to rest against the side of the silo on opposite sides of the door openings thereof. The inner ends of the bars 20 are then secured to these upright wooden pieces and the upright wooden pieces in turn are secured to the silo hoops or bands by means of hoops 22, shown in Fig. 7. The entire chute structure is further braced and supported in position by means of the brace bars 23 secured to the bars 20 at one end and then extended outwardly and secured to the silo hoops 11 by means of the clamping devices 24, illustrated in Fig. 6. These clamping devices each comprise a circular body portion with flanges at its

ends. The braces 23 are inserted between these flanges and held in place by the bolts 25.

In the modified form illustrated in Fig. 5, I have shown a form of connection between the two chute half sections so arranged as to give additional strength to the chute sections at the chute connecting joint. In this form of the invention one half section 15 is provided with a doubled portion 17, which doubled portion extends inwardly away from the edge of the half section. An additional doubled portion 27 is provided, which doubled portion has the outstanding rib 18 and the curved portion 19 formed at its outer edge. The advantage of the single doubled portion 17 illustrated in Fig. 4, or of the portion illustrated in Fig. 5, is that the silo sections are thereby greatly strengthened and reinforced at the joint, and where additional strength is required I employ the modified form illustrated in Fig. 5.

In practical use, it is obvious that the chute proper may be constructed very readily, quickly and cheaply, because the sheet metal half sections are of similar size and all of those on one side are counterparts of the others. These half sections may then be nested very easily into small, compact form for convenience in shipping and handling.

When erecting a silo chute the lower brace rod is first placed in position and then one half section placed in position with its flange resting on top of the supporting brace, then the other half section is slipped into the rounded portion 19 from above, then when a second brace member is placed in position on top of the first section, the parts of the first section are firmly and securely held in place against all strains.

For purposes of additional strength to the chute sections, I have provided bolts 26 to extend through the braces 15 and the overlapping parts of the sheet metal chute sections, although in some instances these bolts may be dispensed with if desired.

I claim as my invention:

1. An improved silo chute comprising a number of sheet metal sections separated transversely, each sheet metal section being

formed of two half sections, the adjacent edges of the half sections being provided on one side with an outwardly extended flange having a rounded portion at its outer end, and the other half section being provided with an outwardly extended flange capable of entering the rounded outer end of the other flange when inserted from the top, and brace rods extended transversely around the silo chute and having the said outwardly extended flanges of the half sections resting on top of them.

2. An improved silo chute comprising a number of sheet metal sections divided transversely, each section being formed of two half sections, the adjacent edges of the half sections being formed one with an outstanding flange and the other with a doubled portion, an outstanding flange and a rounded portion, said parts being so arranged that the first mentioned part may enter between the rounded portion and the doubled portion of the other part, when inserted from the top, and supporting bars for the chute sections arranged with the rib formed by said outstanding flanges resting on top of them.

3. The combination with a silo having hoops thereon of a silo chute comprising wooden uprights, hooked bolts connecting the wooden uprights with the said hoops, a silo chute comprising a series of sheet metal sections divided transversely, each section being formed of two half sections, the joints between the half sections being so arranged that one may be telescoped into another from above, a series of supporting braces extending around the silo sections at the transverse joints thereof and covering the overlapping upper and lower edges of the silo sections, and being arranged between the vertical joints of the chute half sections so that the material of said joints may rest upon the said braces, brace rods connected to each of the braces and extended outwardly, and clamps fixed to said brace rods and attached to the said hoops substantially as set forth.

Des Moines, Iowa, August 16, 1915.

JAMES F. McGAFFEE.

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