A. ROSENTHAL.

DISTRIBUTER ELBOW.

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1,154,658.

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Fig. 1.

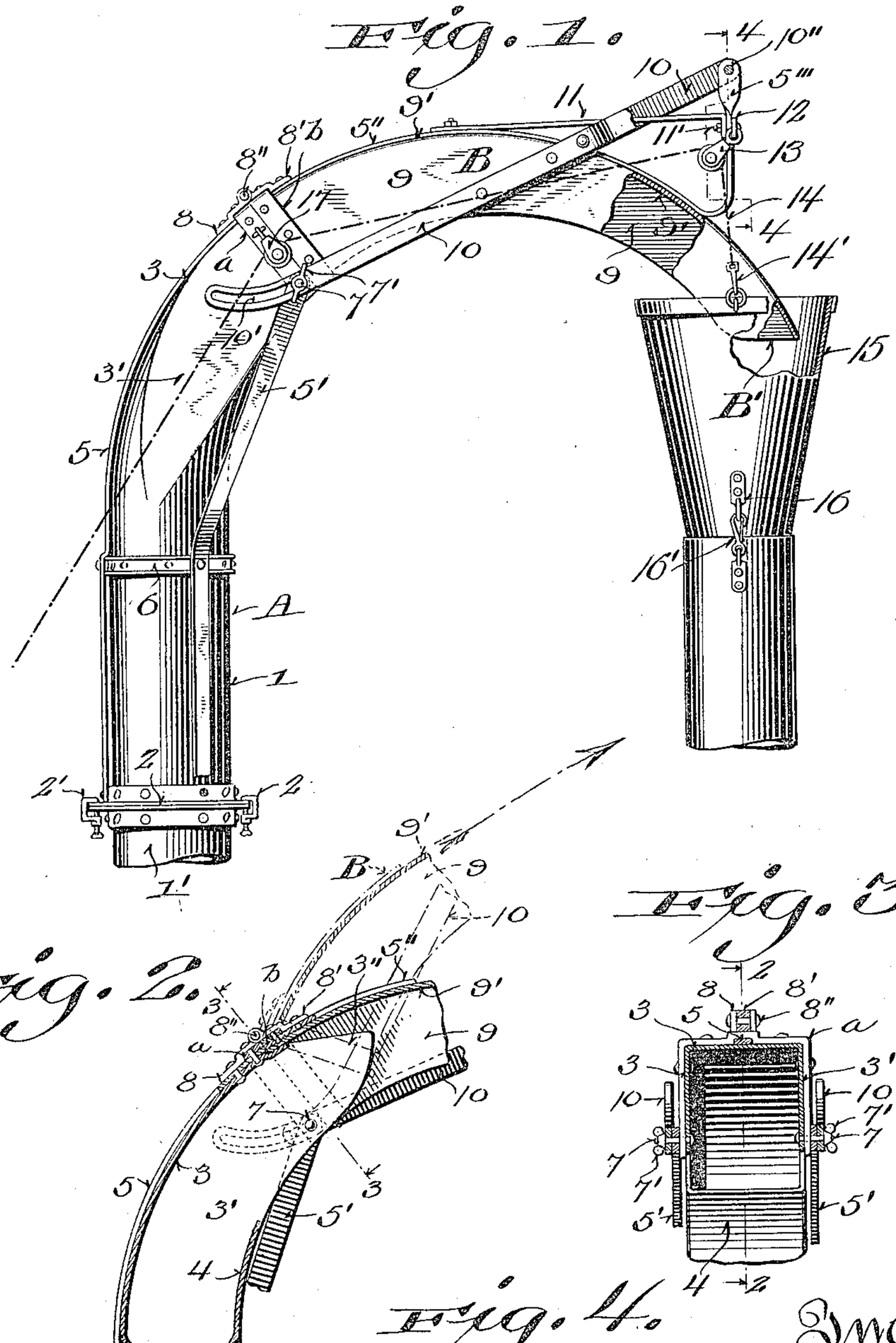
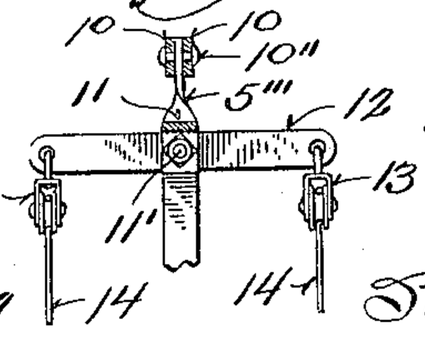


Fig. 2.

Fig. 3.

Fig. 4.



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DISTRIBUTER-ELBOW.

1,154,658. Specification of Letters Patent. Patented Sept. 28, 1915.

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To all whom it may concern:

Be it known that I, AUGUST ROSENTHAL, a citizen of the United States, and resident of West Allis, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Distributer-Elbows; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention refers particularly to the elbow connection between a blow-pipe and a distributing pipe comprising conveyer means utilized for filling silos.

The object of my invention is to provide a simple, economical and effective means for adjusting the mouth of such elbows, whereby the angle of discharge therefrom is varied, this result being attained by dividing the elbow transversely into a mouth section and a throat section, which sections are generically flexibly united to permit variation of the angle of discharge. The invention also contemplates some means for locking the throat section at a selected angle of discharge.

By utilizing an elbow embodying the features of my invention it is obvious that when the silo has been filled to the approximate normal position of the mouth of the elbow, the said mouth can be elevated so as to discharge upwardly, whereby the silo can be filled to its top. Thus the utility of the filling apparatus is materially increased as, under ordinary conditions, wherein the rigid type of elbow is utilized, when the silo is filled to the level of the hoppered end of the distributer pipe leg, the mechanism will choke and further filling, if desired, must be effected by a manual operation.

With the above objects in view the invention consists in certain peculiarities of construction and combination of parts as hereinafter set forth with reference to the accompanying illustrations and subsequently claimed.

In the drawings Figure 1 represents a side elevation of the upper portion of a silo filling mechanism embodying the features of my invention, parts being broken away and in section to more clearly illustrate the structural features; Fig. 2, a fragmentary sectional elevation of the same, the section being indicated by line 2—2 of Fig. 3; Fig. 3, a cross-section through the elbow, the section being indicated by line 3—3 of Fig. 1, and Fig. 4, a detailed cross sectional view taken through the rope and tackle suspension mechanism, the section being indicated by line 4—4 of Fig. 1.

Referring by characters to the drawings, 1 represents the upper end of a blower pipe section provided with a flanged ring 1′, which is fitted to a corresponding flanged ring 2 that is secured to the lower end of the throat section A of an elbow. The flanged rings of the elbow throat section and blower pipe are secured together by suitable clamping members 2′, it being understood that the pipe coupling mechanism of the blower leg just described forms no part of my invention. The upper end 3 of the elbow throat section is, as shown, merged from cylindrical to rectangular form in cross-section and the throat wall 4, as best shown in Fig. 2, is stopped off slightly below the upper end, whereby choking coincident to deflection of the material being fed is eliminated. The side walls 3′ of the upper end of the throat section terminate with forwardly extended segmental cheek-pieces 3″, which cheek-pieces project beyond a transversely disposed reinforcing band *a* that surrounds the roof 3 and sides of the throat, being riveted or otherwise secured thereto in any suitable manner. The throat section is further strengthened and reinforced by a longitudinally positioned back-bone strip 5 and stay-straps 5′, the lower ends of the straps being secured to the flange 2 and intermediately secured to a stay-belt 6, as best shown in Fig. 1. The upper ends of the stay-straps 5′ are provided with apertures which are fitted over anchor-bolts 7 that project from the lower ends of the reinforcing band *a*. The roof stretch of the band *a* is fitted over and secured to the backbone strip 5 and also to one leaf 8 of a hinge member, the said leaf being also secured to the roof of the elbow section by a rivet which passes through said roof and the backbone strip 5.

The curved mouth section B is formed with side walls 9, and a roof-wall 9′, as shown, and the rear open end of said throat section is reinforced by a band *b* similar to the band heretofore mentioned with reference to the throat section. This band *b* has also secured thereto the opposite leaf member 8′ of the hinge and a backbone extension strip 5″ is fitted under the band and to the roof wall of the mouth section, being bent upwardly at its outer end to form a

supporting post 5‴. The hinge sections are connected by a pintle-pin 8″ and the fulcrumed end of the roof wall 9′, together with the side walls 9 of the mouth section, are fitted over the corresponding walls of the throat section to form an articulating joint that is sealed in the direction of travel of the material, whereby choking of said material at the joint is eliminated.

The side walls 9 of the mouth section B have secured thereto in any suitable manner obliquely disposed locking straps 10, the rear ends of which are curved upwardly and formed with circular slots 10′ for engagement with the locking bolts 7, the said slots being described about an arc of a circle concentric with the hinge axis. The upper projecting ends of the straps are brought together over the discharge end of the throat section and secured to the supporting bar 5‴ by a bolt or rivet 10″, whereby the supporting bar is braced, the said bar being also stiffened by a reach-bar 11, which is bolted or otherwise secured to the strap 5″ and roof 9′ of said mouth section. For economy in construction I provide a bolt 11′ for securing the downturned end of the reach-bar 11 to the supporting bar 5‴ and this bolt also serves as a swivel stud for an oscillatory suspension arm 12. The ends of the said suspension arm carry pulleys 13 for the support of flexible runners 14, the depending ends of which terminate with snap-hooks 14′ for engagement with rings of hopper section 15, which hopper section forms the head of the sectional distributer pipe leg. The sections of this pipe leg are coupled together by a ring 16 and snap-hook 16′, which members are respectively secured to the various distributer pipe sections and form no part of my present invention. Thus it will be seen that the runners 14, which may be in the form of chains or cables, serve as means for suspending the distributer pipe leg and for elevating said leg, whereby its hopper section is held in alinement with the discharge end B′ of the elbow mouth section. The tackle mechanism just described forms no part of my present invention and the said runners are passed over guide pulleys 17 which are loosely affixed to the band *a* of the pipe section A and from said guide-pulleys the runners extend downwardly to a convenient point, whereby they can be manipulated for raising and lowering the distributer leg.

From the foregoing description it will be clearly understood that when the silo has been filled to a plane approximating the hopper section 15 of the distributer leg, said hopper section is removed and the discharge end of the elbow throat section is then swung upwardly, for example, to a position as indicated by dotted lines in Fig. 2, whereby the angle of discharge is raised in order that the upper portion of the silo can be filled without choking the apparatus. This angle can be varied to meet any requirement within the scope of the hinge movement of the throat section and after the desired angle has been selected the said throat section is locked in its position by thumb-nuts 7′, which engage the anchor-bolts 7. Thus the locking straps 10 are securely bound to the fixed throat section of the elbow, whereby rigidity of the apparatus is insured in its various adjusted positions. It will also be observed that, owing to the cheek-pieces 3″, the joint between the hinge members is sealed irrespective of their relative positions.

It should be further understood that, while I have shown and described minutely a practical exemplification of my invention, I may, without departing from the spirit of said invention, vary all of such detail within the scope of the skilled mechanic, the essential feature being some means for effecting the vertical adjustment of the elbow throat section, together with some means for locking said throat section in its adjusted position.

I claim:

1. An elbow of the character described comprising a throat section and a mouth section having a hinge connection, a band carried by the mouth section and terminating in an upstanding post above the outlet of the mouth section, straps connected to the mouth section and throat section, and having end portions fastened to the post, an oscillating bar carried by the post, and distributer pipe suspending means carried by the bar.

2. An elbow comprising a throat section and a mouth section having a hinge connection, a brace carried by the mouth section and terminating in an upstanding supporting post, locking straps rigidly connected to the post and adjustably connected to the throat section for locking the mouth section in an adjusted position relative to the throat section, a bar pivotally connected to the post, and distributer pipe suspending means carried by the bar.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

AUGUST ROSENTHAL.

Witnesses:
GEO. W. LONG,
M. E. DOWNEY.