April 28, 1959 L. E. BROBERG 2,884,235

MIXER CHARGING CHUTE TELESCOPING OVER CHARGING CONE

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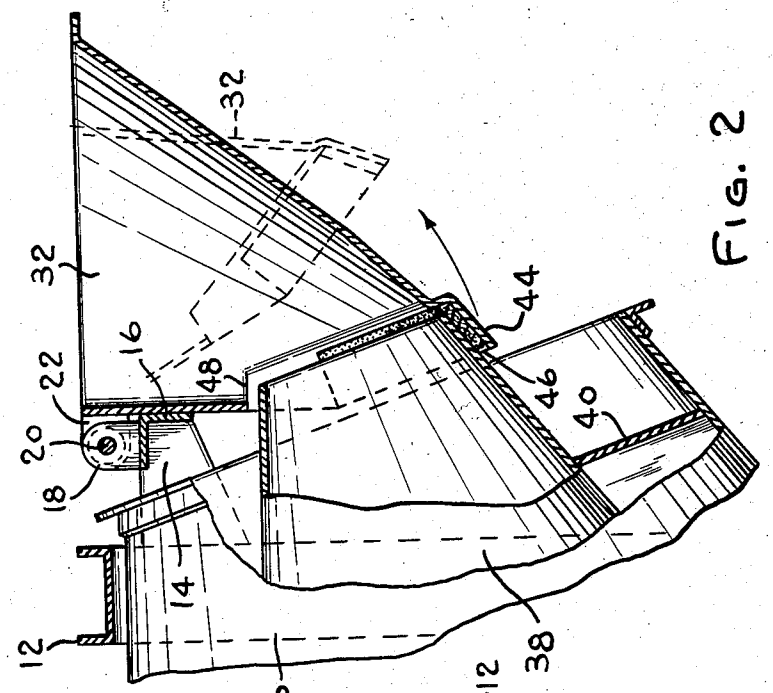


FIG. 2

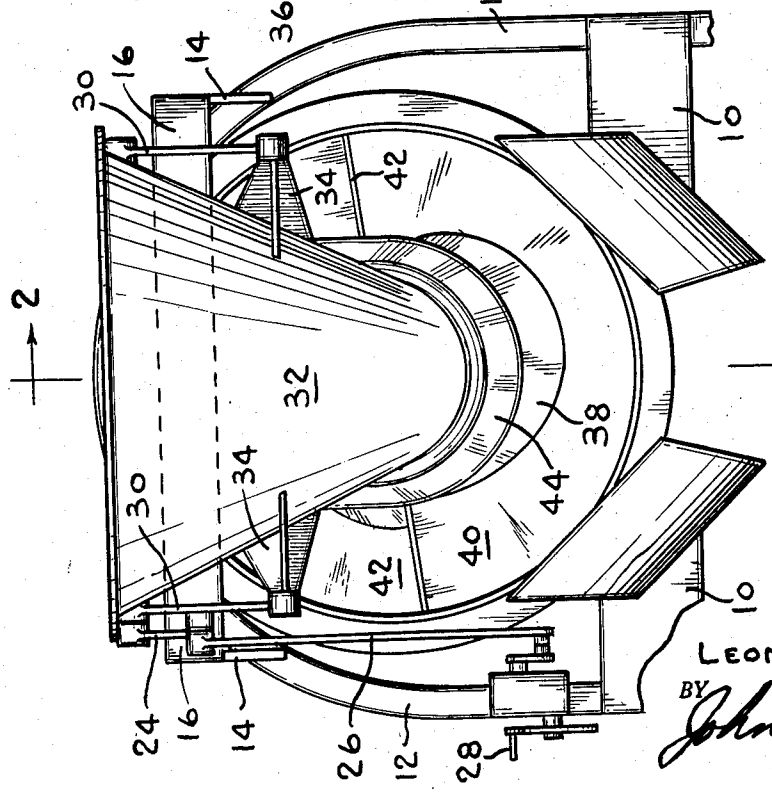


FIG. 1

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2,884,235

MIXER CHARGING CHUTE TELESCOPING OVER CHARGING CONE

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Application February 11, 1957, Serial No. 639,387

2 Claims. (Cl. 259—161)

This invention relates to open ended transit mixers or agitators and particularly to prevention of spillage from the charging cone.

In reducing the weight of transit mixers the industry has eliminated the rear closing door. This has given rise to the problem of eliminating leakage or spillage which tends to occur through the open end of the charging cone due to increased loads or surging of the load. Leakage between the cone and the drum is quite effectively prevented by the blades when the drum is rotated in the mixing direction. There have been some efforts to handle the leakage referred to but these efforts have been directed principally towards returning the leakage to the drum as opposed to the present arrangement which prevents the leakage.

From the above, it will be appreciated that the principal object of the present invention is to prevent leakage from the charging cone. In effecting this object I provide the swingably mounted charging chute with a belled lower portion which is adapted to telescope over the cone rather than fitting inside the cone. To insure that there will be no leakage the belled portion is provided with a sealing liner which closes the space between the chute and the cone without undue wear on the metal parts as might well be encountered if these relatively rotating parts had metal-to-metal contact.

In my copending application, Serial No. 639,385 I show and claim a sealing arrangement where the seal is carried by the cone and the hopper or chute fits within the cone.

Other objects and advantages will be pointed out in, or be apparent from, the specification and claims, as will obvious modifications of the single embodiment shown in the drawings in which:

Figure 1 is a rear view of a truck mixer provided with the present invention; and

Figure 2 is a side view with parts broken away and partly in section to show the seal construction.

Referring to the drawings now in detail, truck frame **10** is provided with an inverted U-shaped channel frame member **12** on which brackets **14** are welded for interconnection by inverted angle iron **16**. The angle iron **16**. The angle iron is provided with bearing supports **18** which journal shaft **20** on which the chute brackets **22** are journalled for movement about the axis of shaft **20** as the linkage **24, 26** is actuated by hand wheel **28** move the chute hanger arms **30** pivotally connected to chute **32** through laterally projecting arms **34**. This type of structure is rather conventional and forms no part of this invention except so far as it discloses a movable chute. Greater detail of a similar arrangement may be seen in Rockburg Patent No. 2,563,963.

Drum **36** is rotatably mounted in the frame for rotation about an upwardly and rearwardly inclined axis such as customarily employed in the high discharge type of mixer. The rear end of the drum is open and has

charging cone **38** mounted therein centrally of blades **40, 42**. These blades spiral throughout the length of the drum and serve to work the contents forward when the drum is rotated in the mixing direction and to work the contents to the rear of the drum for discharge when the rotation is reversed.

It will be noted that the lower portion **44** of chute **32** telescopes over the projecting end of the charging cone **38**. The lower portion of the chute is belled rather sharply so the inner surface of the chute may, as closely as reasonable, line up with the interior surface of the cone to avoid material building up at this point either during the charging or the mixing operation. Rather than relying on a metal-to-metal seal between the belled portion of the chute and the cone (which would be feasible assuming all parts are in perfect alignment but which would be impractical in field use since the parts naturally tend to become misaligned) I provide a sealing liner **46** which may be of fabric belting or the like. The material will be somewhat compressed as the chute swings into position but will permit rotation of the cone with respect to the chute while acting to seal against leakage.

It will be noted that the more or less vertical portion of the chute is cut out (as at **48**) to permit the chute to swing out to the position shown in dotted lines without interference with the cone. Obviously, if there was a tight fit at this point the chute could only be moved out along the drum axis.

The fabric liner or seal **46** may be bonded to the belled portion or may be secured thereto by means of bolts or the like if deemed advisable. In the latter case it will be appreciated that the bolt head would necessarily be recessed to avoid scraping the cone.

From the above description it will be appreciated that this invention is in no way limited to a structure in which the chute is mounted for swinging movement but could be used with a fixed chute if desired. The swinging chute does, however, afford advantages insofar as it permits access to the drum interior for cleaning or inspection purposes.

Although but one embodiment of the present invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. The combination with a truck mixer of the type having an open-ended drum rotatably mounted in a fixed frame and having spiral blades on the interior thereof with a charging cone mounted centrally of the blades adjacent the open end of the drum, of means for preventing leakage from centrally of the cone, comprising, a charging chute mounted on the frame at the rear of the drum and having a belled portion telescoping over the outside of the cone so the surface of the chute interior generally lines up with the cone interior, and a liner mounted in the belled portion to act as a seal between the chute and the cone.

2. The combination according to claim 1 in which the chute is swingably mounted on the frame and the upper portion of the chute telescoping over the cone is cut out to permit the chute to swing.

References Cited in the file of this patent

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