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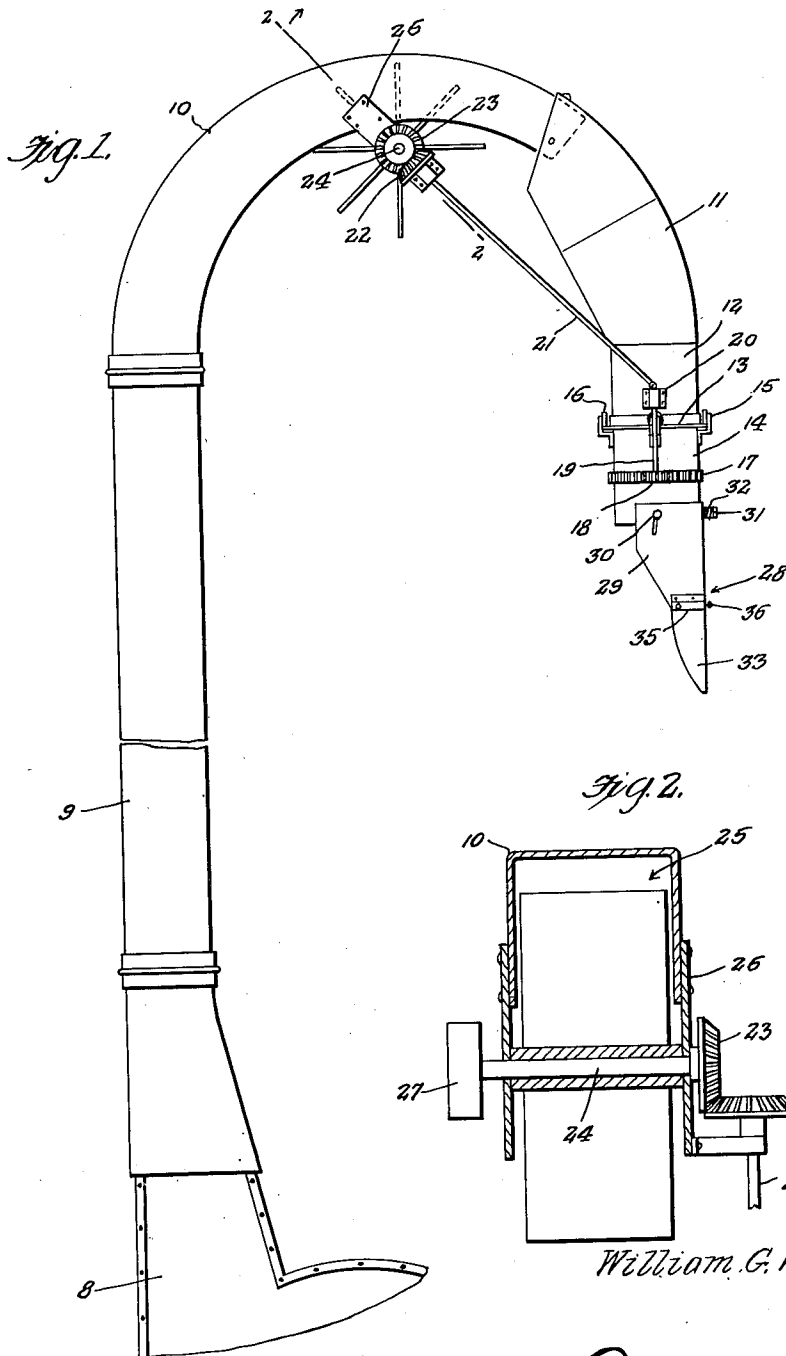
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ENSILAGE DISTRIBUTING APPARATUS

Filed July 29, 1929

2 Sheets-Sheet 1



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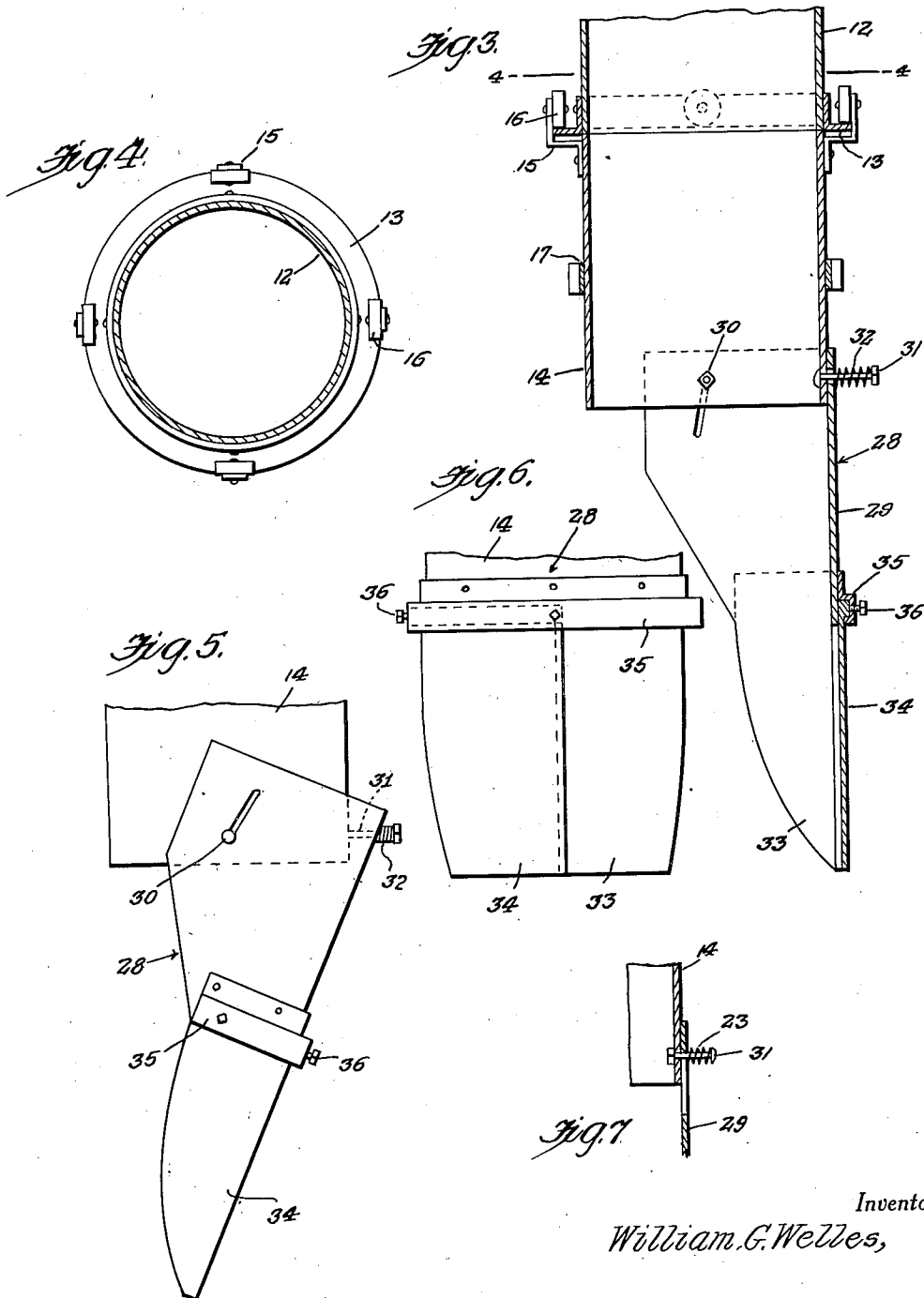
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UNITED STATES PATENT OFFICE

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ENSILAGE-DISTRIBUTING APPARATUS

Application filed July 29, 1929. Serial No. 381,917.

This invention relates to an especially constructed distributing and equalizing apparatus for conveying and properly delivering ensilage to a silo.

Under ordinary conditions, the distribution of the ensilage in a silo requires the presence of a person and manually manipulated means for evenly spreading the material within the silo. This is, of course, expensive, in spite of the fact that it is generally satisfactory.

What I have in mind is the provision of supplementary appliances of a mechanical nature, to be applied on the discharge end of the delivery conduit to take care of uniform distribution in an automatic manner, whereby to overcome the liability of the material being centrally delivered and piled up and unevenly mixed, such as is the case when no attendant is present with ensilage distributors of the present-day type.

The particular structural means for accomplishing these results will become more readily apparent from the following description and drawings.

In the drawings:—

Figure 1 is a side elevational view of an ensilage delivery and distributing apparatus of the type described.

Fig. 2 is an enlarged sectional view taken approximately on the plane of the line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary longitudinal section through the discharge end of the apparatus.

Fig. 4 is a cross sectional view taken approximately on the plane of the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary detail elevation of the discharge end showing the adjusted deflector or shovel.

Fig. 6 is a detail view end elevation showing the relatively adjustable sections on the free end of the deflector.

Fig. 7 is a fragmentary detail section.

Attention is now invited to Fig. 1, wherein it will be observed that the reference numeral 8 designates a part of the fan blower (only partly shown). This connects with the vertical branch of the delivery pipe gen-

erally designated at 9 which in turn connects with a depending return bend or goose-neck 10. This is sometimes commonly referred to in the trade as a half-moon. The distributing means is connected with the discharge end of this goose-neck 10 and it comprises an arcuate receiver 11 constructed of pipe sections and carrying a discharge pipe section 12 having an annular angle-ring 13 constituting a track for suspending the rotary sleeve 14.

In this connection, it will be observed that this sleeve is provided with angle brackets 15 carrying rollers 16, movable around the track. This sleeve is also formed with annular feedgears 17 with which a pinion 18 meshes, this pinion being carried by a depending shaft 19 rotatable in a bearing 20 on the relatively stationary discharge pipe 12.

In accordance with the invention, I provide an angularly disposed shaft 21 which is connected with the stub-shaft 19 at one end, and in turn connected at its opposite end with a beveled gear 22. This beveled gear is in mesh with a complementary beveled gear 23 on a shaft 24 (see Fig. 2) of a rotary fan 25. In this connection, I provide hanger plates 26 suspended from the goose-neck 10 in the position shown. If desired, the pressure of the material flowing through the conduit may serve to rotate the fan or the fan shaft may be provided with a pulley 27, to receive its power from a suitable source of supply (not shown).

At the discharge end of the so-called sleeve 14, I provide an adjustable deflector generally designated by the numeral 28 in Fig. 3. This comprises a substantially semi-circular scoop-like upper section 29. This is swingably mounted through the medium of a suspension bolt 30 whereby to permit it to be adjusted from a straight alinement position as seen in Fig. 3 to an adjusted angular position as seen in Fig. 5. In connection with this, I call attention to a guide bolt 31 and a retaining and return spring 32 associated with these details for returning the part 29 to its straight alinement position. The deflector is secured in adjusted position by tightening the nuts on the bolts 30. By set-

ting the deflector at the desired angle the distribution of the material in the silo may be regulated.

The terminal portion of this deflector is in the nature of a two-part shovel including a stationary section 33 and an adjustable section 34. In this connection I call attention to the part 35 which is in the nature of an arcuate retaining track in which the ribbed portion of the adjustable section 34 is adjustably mounted and held in position through the medium of the adjusting set screw 36. The section 34 is adapted to slide over the section 33 when the width of the shovel portion is to be reduced. At no time are the sections 33 and 34 spaced from each other. This allows the width of the mouth portion of the deflector to be regulated as desired. In this manner the material may be caused to leave the deflector either in a small, concentrated stream or in a comparatively broad stream somewhat in the nature of a spray.

It is understood that the entire deflector comprising its beveled parts is bodily adjustable so that its deflecting angle may be regulated to suit conditions. Moreover, the deflector together with the sleeves is rotatable as a unit through the track and roller suspension means, and the complemental ring gear the cooperating pinion.

The result of this is that as a fan is set into the rotation either by the pressure of the material passing thereby, or through the medium of a belt drive with a pulley, the entire rotatable unit including the deflector on the discharge end of the part 11 will be rotated slowly but continuously throughout a complete revolution, thereby uniformly distributing the ensilage in a sweeping manner to prevent piling of the material at the center.

It is thought that by carefully considering the description in connection with the drawings, a clear understanding of the invention will be had. Therefore a lengthy description is thought to be unnecessary.

Minor changes in shape, size, materials, and re-arrangement of details, coming within the field of invention claimed, may be resorted to in actual practice if desired.

Having thus described my invention, what I claim as new is:—

1. In a structure of the class described, a delivery conduit including a vertical portion, and a discharge goose-neck having a pipe at its discharge end provided with a track, a rotary discharge sleeve including hangers having rollers mounted for movement on said track, a ring gear carried by said sleeve, a pinion in mesh with said ring gear, a shaft on which said pinion is carried, said shaft being mounted on the discharge end portion of the conduit, a fan on the conduit at a remote point, a connection between the fan and shaft, a deflector adjustably mounted on said sleeve,

whereby to permit the angularity thereof to be regulated at will, said deflector including a scoop-like body portion, and an adjustable terminal portion.

2. In a structure of the class described, a conduit terminating in a relatively stationary sleeve having an annular track, a relatively movable sleeve having hangers including rollers mounted for rotation on said track, a ring gear carried by said relatively rotatable sleeve, a deflector of arcuate cross section mounted for swinging adjustment on the lower end portion of the sleeve, a shiftable section mounted for circumferential sliding adjustment on the free end of the deflector in a manner to vary the width thereof, a bearing on the relatively stationary sleeve, a shaft mounted for rotation on said bearing, a pinion carried by said shaft and in mesh with said ring gear, a fan in said conduit, and an operating connection between said fan and shaft.

In testimony whereof I affix my signature.
WILLIAM G. WELLES.