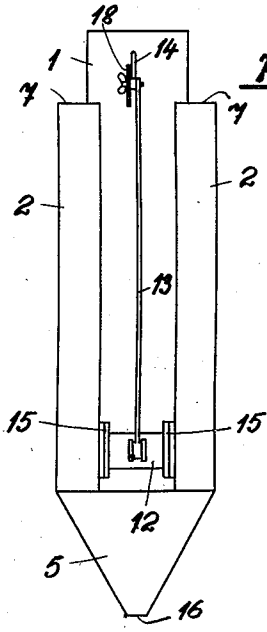
April 22, 1947. C. S. J. BERG 2,419,386

AIR NOZZLE

Filed Sept. 14, 1944

Fig. 1



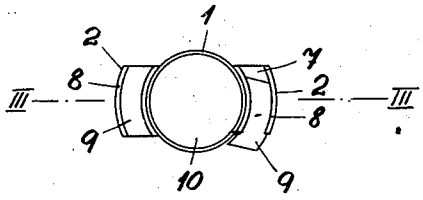


Fig. 2

Fig. 3

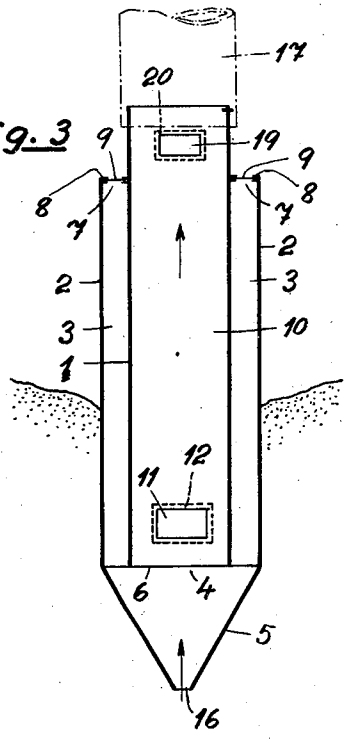
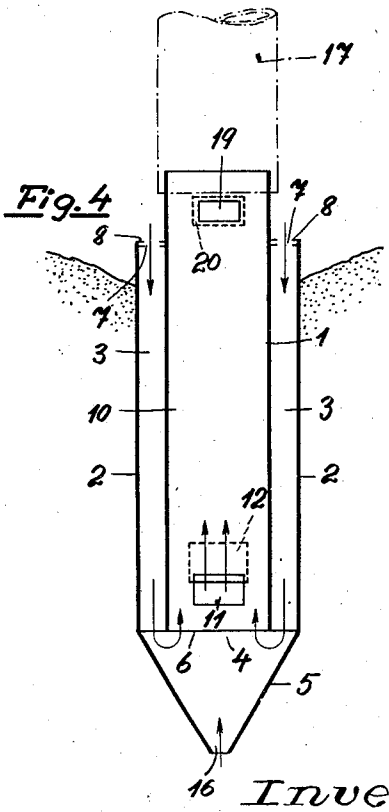


Fig. 4



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AIR NOZZLE

Conrad S. J. Berg, Nossebro, Sweden

Application September 14, 1944, Serial No. 554,127
In Sweden September 24, 1942

1 Claim. (Cl. 302—58)

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The present invention relates to air nozzles for picking up grains, corn or the like comprising two or more conduits, one of which is intended for the picking up of the grain, while the others form air conduits, which at their upper ends are in communication with the atmosphere and at their lower ends communicate with the grain conduit below the intake in such a manner that the air rushing through the air conduits will force the grain upwardly.

A difficulty with such air nozzles, however, is that they do not sink automatically into the bed of grain and consequently they must be manually controlled to prevent the surface of the grain mass to sink below the intake of the nozzle.

The present invention is intended to remove this difficulty by letting the air conduit or conduits terminate in a preferably funnel-shaped chamber connected with the grain conduit, this lower tapered portion being provided with a comparatively narrow aperture through which aperture such a quantity of grain can be picked up that the nozzle will sink into the grain bed. To make this possible there are, in this invention, means to regulate the intakes of the air conduits as well as of the grain conduit. By means of these arrangements these intakes may be closed wholly or only partly.

The invention is furthermore characterized therein that the grain conveyer is provided with one or more apertures connected with the atmosphere by means of which apertures such grain can be removed which owing to accidental interruption of the work, has become packed in the conveyer connected with the nozzle.

In the drawing:

Figure 2 an end view of the same,

Figure 3 a longitudinal section along the line III—III in Figure 2, with the nozzle partly forced into the grain bed and the intakes of the air conduits as well as the grain conveyer closed, and

Figure 4 a similar section but with open air intakes.

Referring now, more particularly to the drawing in which similar characters of reference designate corresponding parts throughout the several views, there is provided a pipe 1 or the like which has two members 2 attached to the opposite surfaces of the pipe by welding or similar means in such a way that each member 2 forms a channel 3, extending along the full length of the pipe 1. The channels 3 extend to the lower end 4 of the pipe 1 and terminate in a funnel-shaped chamber 5, the upper portion 6 of which is attached to the lower portions of

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the pipe 1 and the channel members 2. The lower portion of this chamber 5 is provided with a comparatively narrow opening 16. At their upper portions the channels 3 are open to the atmosphere by means of apertures 7 each of which is provided with an accurate gate or closure 9 slidably mounted in a slot 8. The conduit 10 formed by the pipe 1 is at its lower portion, at a small distance above the funnel 5, provided with two intakes for the grain, placed opposite to each other, which intakes can be regulated by means of shutters 12 which can be operated in opposed guides 15 by a rod 13 and a handle 14 which can be locked in various positions.

When the nozzle is used, the upper portion of the main channel 1 will be connected with the grain conveyer 17 and the apertures 11 of the channel 10 and the apertures 7 of the air conduits 3 will be shut. After this the fan or the like by means of which the air will be drawn into the grain conveyer 17 will be started. The nozzle will be forced into the mass of the grain. To facilitate the submerging of the nozzle, the gates 9 of the air conduits may be alternately opened and shut at intervals of some seconds to permit such a quantity of air to be drawn into the system that the grain that has drifted into the channel, can be conveyed. When the nozzle is forced into the grain mass to a suitable depth, which naturally should not be deeper than that of the intakes 7, the latter will be left open, and the gates 9 will be fully opened. After this the shutters 12 of the grain conduit, by means of which shutters the feeding will be regulated, will be opened slowly, by aid of the handles 14. At each handle there is arranged a graduated plate 18 from which the amount of the opening 11 can be noted. The nozzle now will work without oversight until the surface of the grain mass approaches the apertures 11 of the grain conduit when a new sinking of the nozzle must be undertaken as described above. There will be no risk that the grain will be packed in the pipe system and cause a stoppage of work since always a sufficient quantity of air will be brought into the grain conduit. Experience has shown that the grain which is under conveyance when the suction fan has been stopped, will flow back in the conveyer 17 which will be partly filled thus preventing the air to enter. To remove such grain the grain conduit at its upper portion has been provided with an aperture 19, which, when the nozzle is working, is closed by a shutter 20.

Although but one specific embodiment of this

invention has been herein shown and described, it will be understood that details of the construction may be altered or omitted without departing from the spirit of this invention as defined by the following claim.

What I claim is:

An air nozzle for picking up grain and the like, comprising a main grain conducting conduit provided in its side wall and near its lower end with opposed grain intakes, manually operable means for closing the grain intakes, channel members on opposite sides of the main conduit at right angles to the grain intakes and forming air conduits which discharge into the grain conduit below the grain intakes, manually operable means for closing the upper ends of the air conduits, an inverted funnel shaped member connected with the lower ends of the grain conduit and the air conduits and having a comparatively narrow aperture at the lower end which makes an automatic conveyance of the nozzle into the grain mass possible when the air conduits and the grain intakes are closed, the main grain conduit being also provided at its upper end with at least one removably closable aperture with respect to the atmosphere, by means of which grain which is gathered in the pipe system connected with the nozzle can be removed.

CONRAD S. J. BERG.

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