March 9, 1926. 1,576,239

A. P. DETERMANN

PNEUMATIC STACKER HOOD

Filed March 24, 1925 2 Sheets-Sheet 1

Fig. 1.

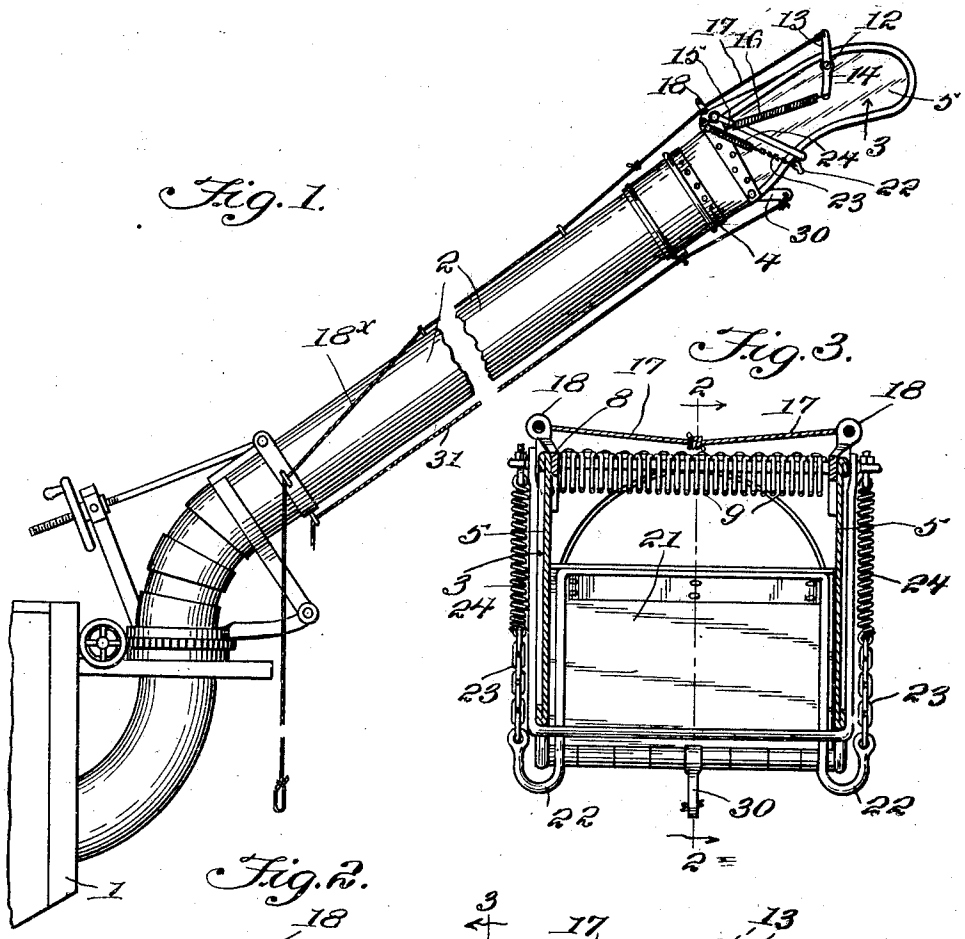
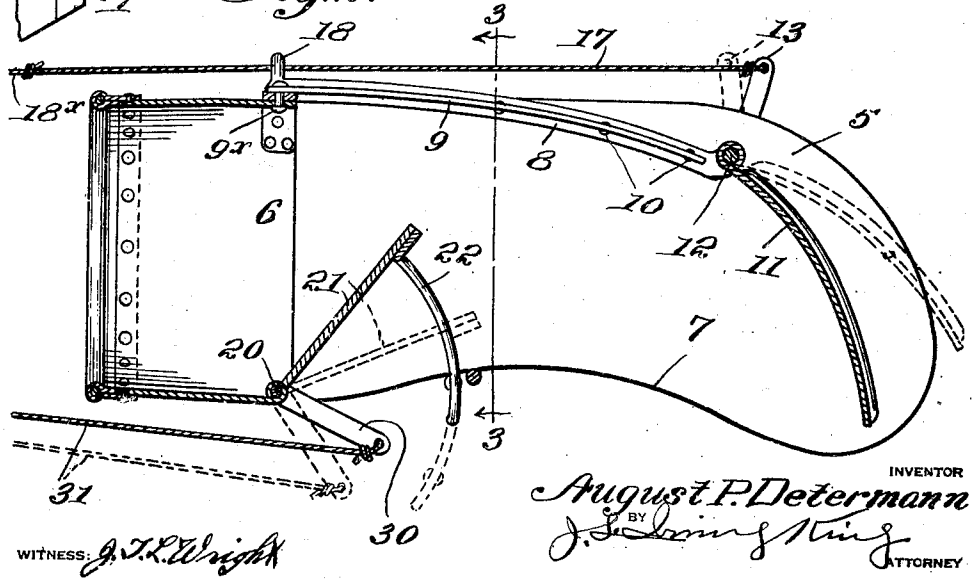


Fig. 3.

Fig. 2.



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Fig. 4.

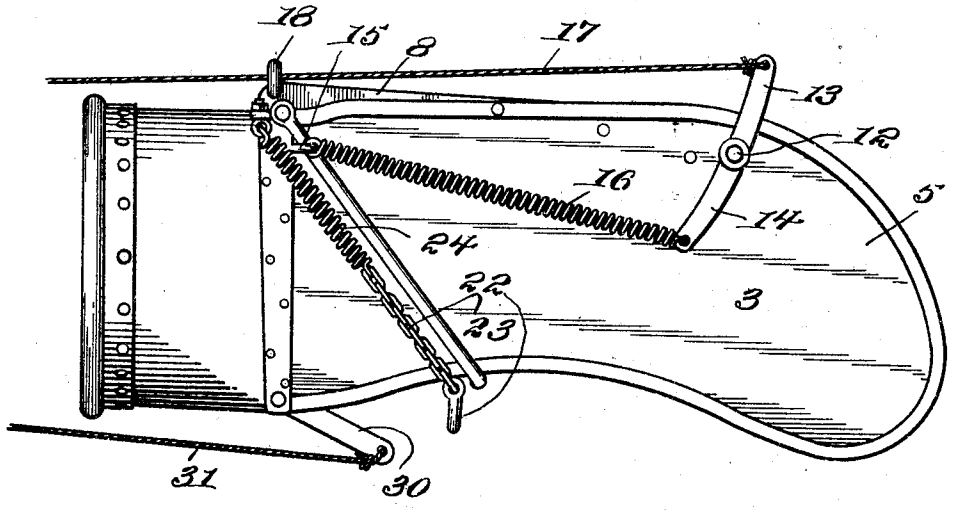
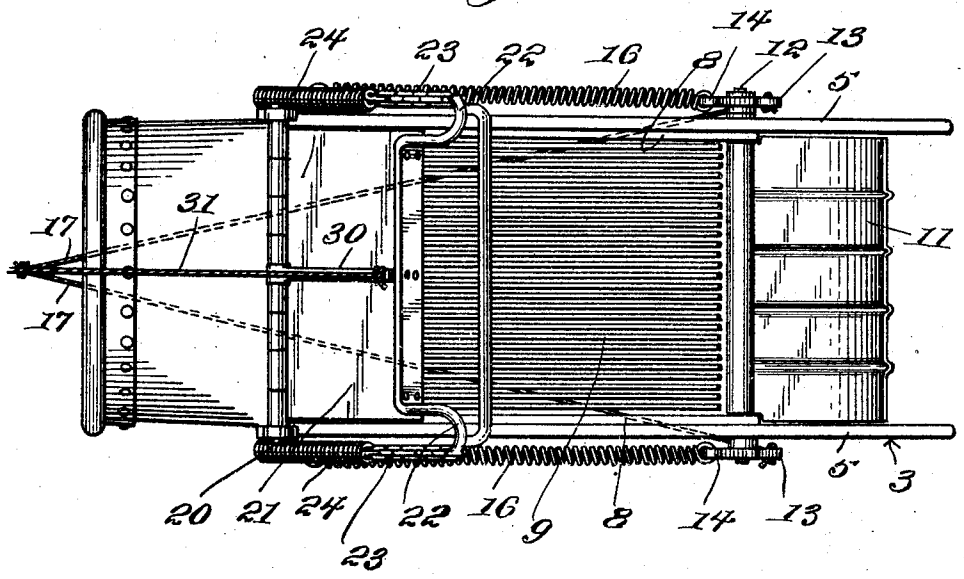


Fig. 5.



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UNITED STATES PATENT OFFICE.

AUGUST P. DETERMANN, OF LYONS, IOWA.

PNEUMATIC-STACKER HOOD.

Application filed March 24, 1925. Serial No. 18,039.

To all whom it may concern:

Be it known that I, AUGUST P. DETERMANN, citizen of the United States, residing at Lyons, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Pneumatic-Stacker Hoods, of which the following is a specification.

My present invention pertains to pneumatic straw stackers; and it has for its object the provision of a compact and efficient construction of stacker hood comprising a swingable and yielding throat plate and a straw-guide with a swingable and yielding deflector, in combination with means whereby when conditions demand either throat plate or deflector or both may be quickly and conveniently swung open to the extent desired by an attendant located a considerable distance from the hood as at the back end of the separator.

Other objects and practical advantages of the invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:—

Figure 1 is a side elevation of a pneumatic stacker equipped with the preferred embodiment of my invention.

Figure 2 is an enlarged vertical longitudinal section of the improved hood, taken in the plane indicated by the line 2—2 of Figure 3.

Figure 3 is a transverse section on the line 3—3 of Figure 2.

Figure 4 is an enlarged detail side elevation of the hood.

Figure 5 is an inverted plan view of the hood.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

In Figure 1, I show a portion of a separator casing 1, and I also show a stacker trunk 2 which may be and preferably is connected with the casing 1 in the manner illustrated, though it may be connected in any other appropriate manner without affecting my present invention.

In accordance with my present invention a hood 3 is attached at 4 to the outer end of the trunk 2, the said hood 3 having side plates or walls 5 of appropriate metal which are spaced apart and are adapted to receive between them straw at the point designated by 6 in Figure 2 and are also adapted to discharge straw from between them at the point designated by 7 in Figure 2.

Arranged between the upper portions of the side walls 5 of the hood 3 is the frame 8 of a straw guide 9, the said frame 8 being fixedly connected to the hood at the points 9^{x} and 10 in Figure 2, and the said straw guide being formed by a plurality of longitudinal spaced rods, which rods are adapted to confine straw and yet are adapted to permit of the free escape of dust and the like.

Carried between the ends of the side frame portions 8 is a pivotally connected and swingable deflector 11, the said deflector 11 being imperforate and being fixedly connected through the medium of a transverse pintle or other appropriate means 12 with arms located at opposite sides of the hood 3. The center of movement of the deflector 11 is immediately in front of the forward ends of the straw-guide rods 9, Figure 2, and the pintle 12 is journaled in the forward side portions of the frame 8 and also in the hood walls 5. In this connection I would have it understood that upwardly extending arms 13 are fixed to the pintle 12 exterior of and at opposite sides of the hood 3 as are downwardly extending arms 14. Interposed between and connected to the arms 14 and points 15 on the hood 3 are retractile springs 16 which serve efficiently to yieldingly maintain the deflector 11 in the closed position shown by full lines in Figure 2 and tend to return said deflector to said closed position subsequent to outward movement of the deflector.

Manifestly at all times in virtue of the action of the springs 16 the deflector 11 is held under yielding pressure against straw incident to the passage of the straw through the hood.

Connected to the upper arms 13 on the pintle 12 are cables 17 which are carried toward the left through guides 18 on the hood, Figures 1, 3 and 4, and are then merged into a single cable 18^{x} which may be carried to a point at the back of the sep-

arator or to any other convenient location so that an attendant can quickly and easily open the deflector 11 against the action of the springs 16. In this way at intervals the eduction orifice 7 of the hood may be materially increased in size, as when the straw because of its condition tends to obstruct the passage of straw through and the discharge of straw from the hood.

Pivotally connected at 20 to the hood 3 is a swingable throat plate 21 to which are fixed arms 22 which are preferably shaped as shown in Figure 3 to accommodate the side walls 5 of the hood and are connected to chains 23 which, in turn, are connected by retractile springs 24 with the upper portion of the hood. Manifestly the springs 24 will tend to move the plate 21 to and retain the same in closed position and it will also be noticed that the springs 24 will enable the throat plate 21 to give and accommodate itself to the volume of straw passing through the hood. It is frequently desirable under different working conditions to quickly open the throat plate 21 to the fullest extent, and in order that this may be conveniently done by an attendant located at the back of the separator or at any other point remote from the throat plate 21, I fix with respect to the plate 21 at the center of movement thereof a crank arm 30 and I provide a cable 31 in connection with said crank arm; the cable being appropriately guided and being intended to be carried to a point at the back of the separator or to any other suitable point from which it is desirable for an attendant to control the plate 21.

It is of the essence of my invention that the open work straw-guide 9 be fixed in the upper portion of the hood 3, and that the lower rear throat plate 21 be imperforate, and the deflector 11 at the forward end of the open work straw-guide also imperforate. By virtue of these essential elements relatively arranged as described the straw is positively guided by the open work straw-guide fixed in the hood in association with the plate 21 and the deflector 11, and the said throat plate precludes the passage of any air from the trunk 2 except through the fixed open work straw-guide with the result that not only is the straw guided to the best advantage, but practically all dust and fine particles are eliminated from the straw and blown through the open work guide 9 before the straw is discharged from the hood 3. In this connection it will be observed that the imperforate deflector 11 contributes to preventing the escape of air from the straw in the hood 3 except through the open work straw-guide, the air passing through said open work straw-guide and carrying the dust and other fine particles from the straw with it.

It will be apparent from the foregoing that my improvement as disclosed does not materially increase the cost of stacker hoods, and yet by virtue of the improvement the efficiency of the hood in its reliability and operation are materially enhanced. It will also be manifest that the relative arrangement of the arms 13 and 14, the pintle 12, the cables 17, and the springs 16 is such that the construction is compact and strong and does not entail any material projection from the hood.

I have specifically described the construction and relative arrangement of parts in the preferred embodiment of my invention in order to impart an exact understanding of said embodiment. I do not desire, however, to be understood as confining myself to the specific disclosed structure, my invention being defined by my appended claims within the scope of which modifications may be made without departure from my invention.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:—

1. A pneumatic stacker hood adapted for the passage of straw and having an open-work straw-guide fixed in the hood and provided with a swingable imperforate deflector at the forward end thereof, yielding means for closing said deflector, and manually-operable means for opening said deflector against the action of said yielding means.

2. A pneumatic stacker hood adapted for the passage of straw and having an open-work straw-guide fixed in the hood and provided with a swingable imperforate deflector at the forward end thereof, yielding means for closing said deflector, and manually-operable means for opening said deflector against the action of said yielding means, and also having a swingable imperforate throat plate disposed below the straw-guide and in rear of said deflector and spaced from said straw-guide and deflector, yielding means for closing said plate, and manually-operable means for opening the plate.

3. The combination of a pneumatic straw stacker hood, an open-work straw-guide fixed in and to said hood, a swingable imperforate deflector on the forward end of said guide, yielding means for closing said deflector, a swingable imperforate throat plate in the hood, and yielding means for closing said plate.

4. The combination of a pneumatic straw stacker hood, an open-work straw-guide having a frame fixed in said hood and also having spaced longitudinal rods fixed in said frame, an imperforate deflector pivoted to the forward end of said guide frame and arranged in the hood, exterior upwardly and downwardly extending arms fixed to and movable with said deflector, a retractile

spring interposed between and connected to the downwardly extending arm and hood, and means connected to the upwardly extending arm whereby the deflector may be opened by a person remote from the deflector.

5. The combination of a pneumatic straw stacker hood, an open work straw-guide fixed in and to the hood, and a swingable imperforate deflector pivoted to the forward end of said fixed guide and movable in and with respect to the hood.

In testimony whereof I affix my signature.

AUGUST P. DETERMANN.