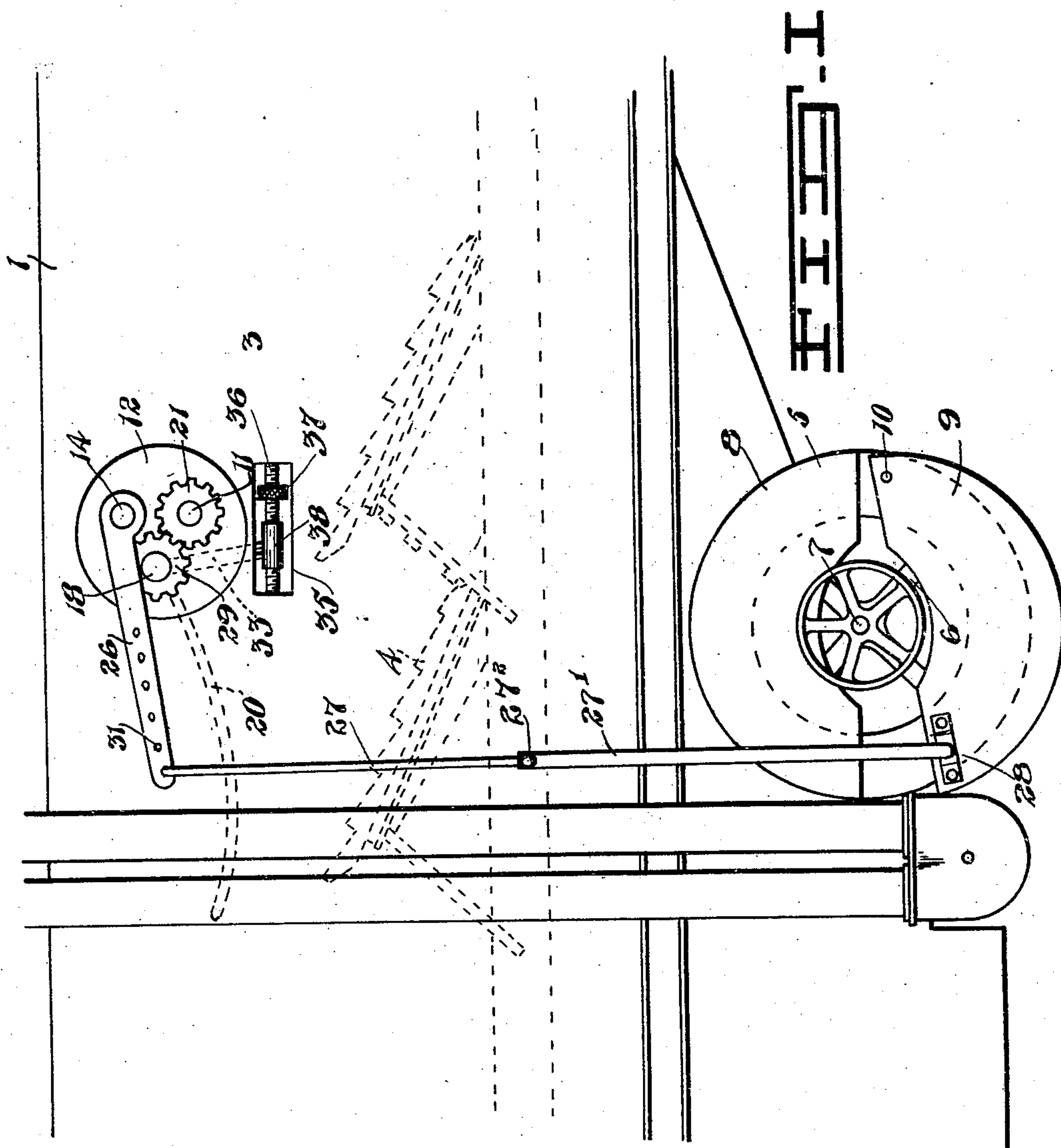


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 AUTOMATIC WIND REGULATOR FOR SEPARATING MACHINES.  
 APPLICATION FILED SEPT. 18, 1908.

929,157.

Patented July 27, 1909.  
 3 SHEETS—SHEET 1.



**Witnesses.**  
 Donald S. Pittsburgh.  
 Jas. M. Tapley

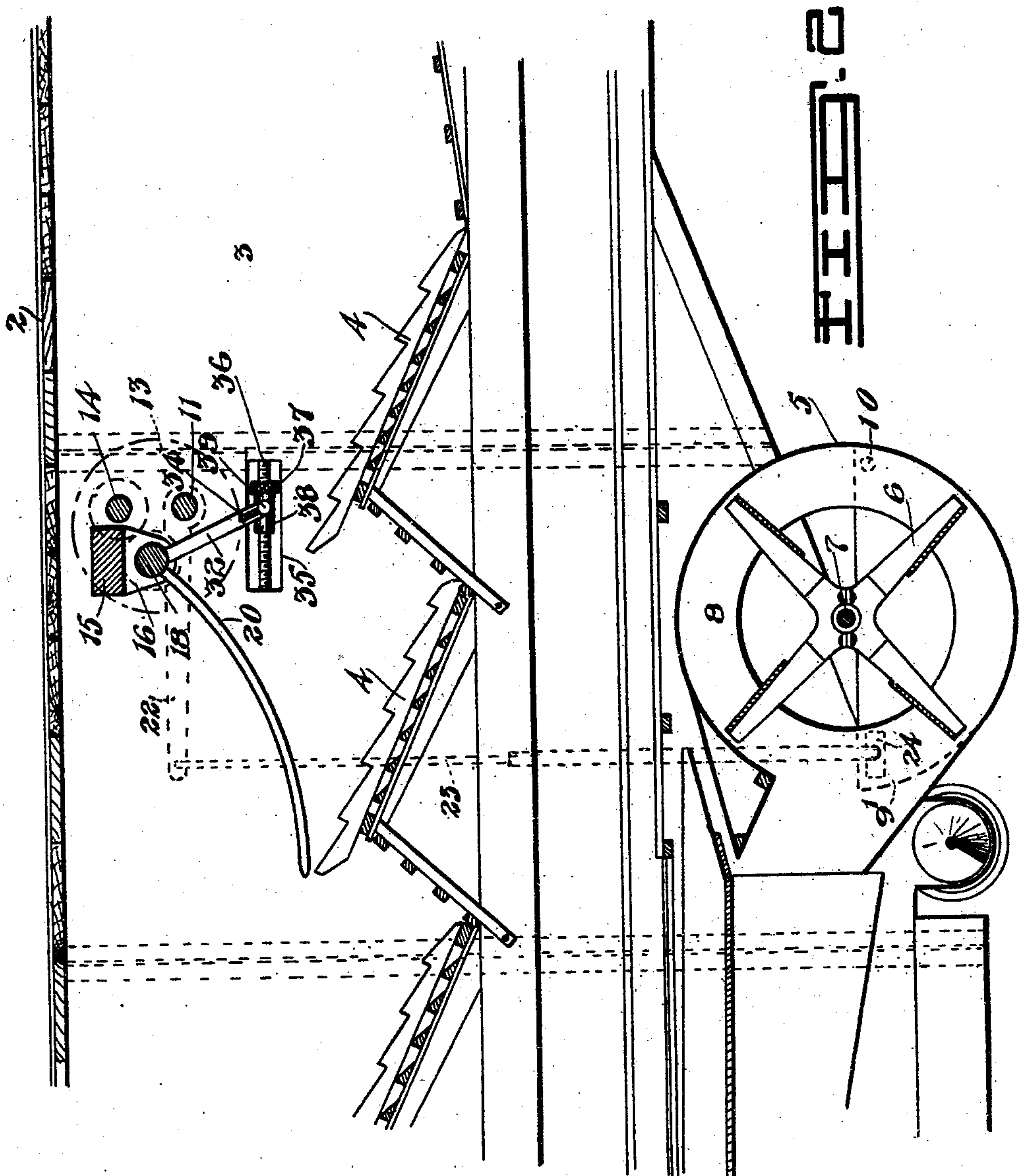
**Inventor**  
 Thos. W. McBride

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Witnesses.  
 David S. Forbush.  
 Jas. M. Tapley

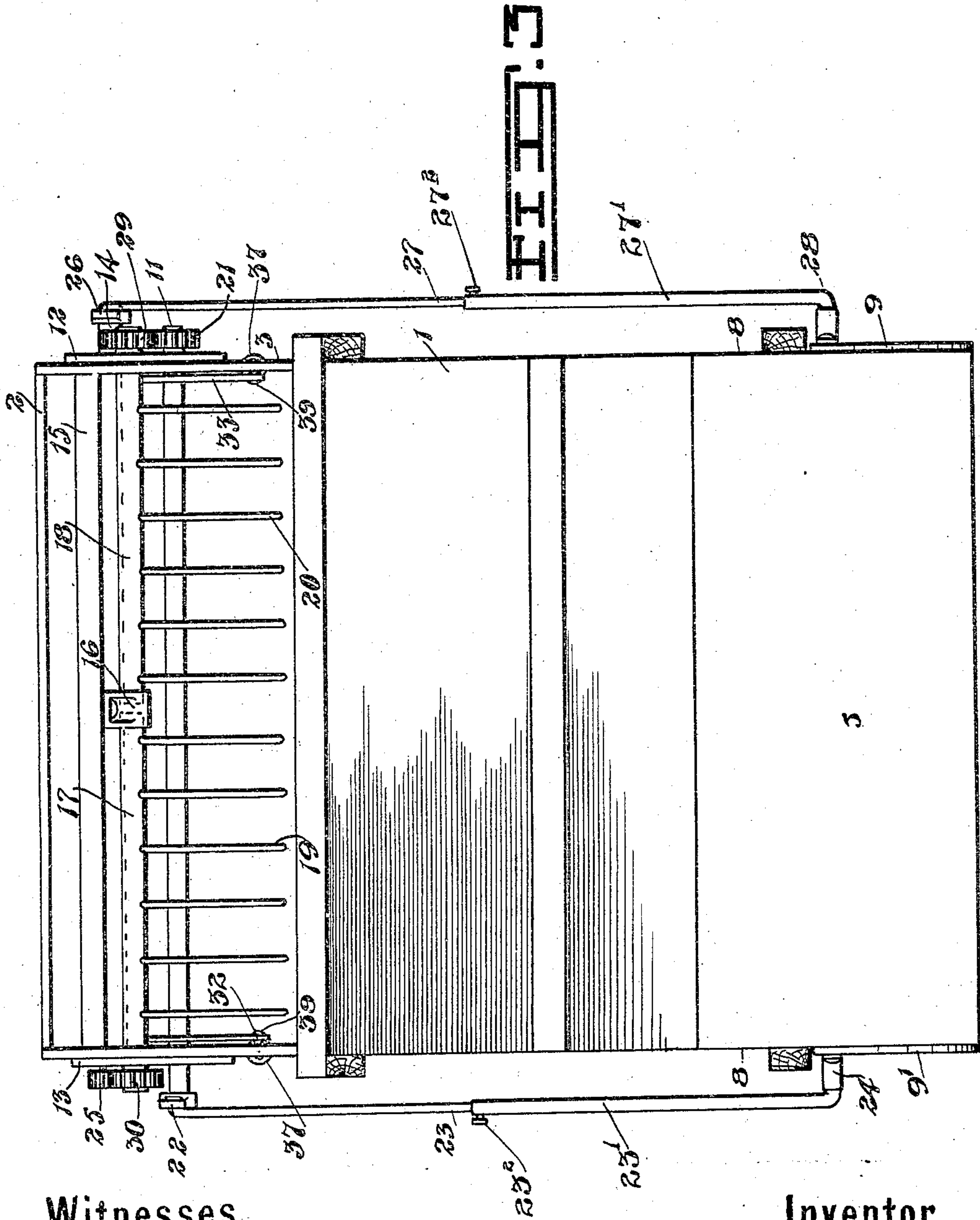
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Witnesses.  
 Gerald Spotsburg.  
 Jas. M. Tapley

Inventor  
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# UNITED STATES PATENT OFFICE.

THOMAS W. McBRIDE, OF GLEN EWEN, SASKATCHEWAN, CANADA.

AUTOMATIC WIND-REGULATOR FOR SEPARATING-MACHINES.

No. 929,157.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed September 18, 1908. Serial No. 453,628.

*To all whom it may concern:*

Be it known that I, THOMAS W. McBRIDE, of the village of Glen Ewen, in the Province of Saskatchewan, Canada, have invented  
5 certain new and useful Improvements in Automatic Wind-Regulators for Separating-Machines, of which the following is a specification.

My invention relates to a wind regulator  
10 for separating machines and the object of the invention is to provide a device by which the air directed to the fanning-mill of a grain separator can be automatically regulated according to the supply of straw fed over the  
15 racks.

It consists essentially in a set of pivotally suspended fingers placed above one of the racks over which the straw feeds, and means interconnecting each set of fingers with the  
20 fanningmill gates, whereby the gates are operated by the movement of the fingers, the parts being arranged and constructed as hereinafter more particularly described.

Figure 1 is a side elevation of a portion  
25 of a separating machine showing the fanningmill and one of its gates and also the interconnection between the gate and the fingers. Fig. 2 is a vertical, longitudinal, sectional view through the center of the  
30 separator, showing the straw racks in position and the fingers above one of the racks. Fig. 3 is a side elevation of the fingers and their supporting rods, the separating machine being shown in end elevation with the  
35 usual forward members, including the band cutters, the teeth, the cylinder and the beater, removed.

In the drawings like characters of reference indicate corresponding parts in each  
40 figure.

It is usual in machines of this class to regulate the fanning-mill gates by hand, the adjustment in nearly all cases being made only occasionally when it is found that considerable grain is being carried with the  
45 straw through the straw chute of the wind stacking attachment to the machine. However, before an adjustment is made there is often times considerable loss of grain in this  
50 way, and in order to overcome this objection I have devised the herein described automatic means for regulating the supply of air which is allowed to enter the fanning-mill.

1 represents the usual body of a separating

machine, of which 2 are the upper cross members and 3 the face boards.

4 represents the shakers or usual racks over which the straw is passed and they are supported within the body of the machine in any desirable manner.

5 represents the fanning-mill which is directly beneath the body of the machine, and 6 is the fan operating on a central cross shaft 7, supported within suitable bearings formed at the ends of the fanning-mill. The fan  
65 is adapted to direct a current of air to the sieves of the machine as is usual, whereby the grain falling on the sieves is cleared of chaff and straw.

8 represents an end inclosing member to  
70 the fanning-mill, and 9 and 9' represent the gates, by the adjustment of which a varying quantity of air can be admitted to the fan. The gates are each provided with a pin 10, which passes into the frame work of the mill.

11 is a rotatable cross shaft mounted at its ends within suitable bearings, formed in the bearing plates 12 and 13, carried by the sides of the separating machine. The shaft passes directly across the machine above the  
80 shaker 14. 14 is a second rotatable shaft directly above the shaft 11 and it is also carried with its end journaled in suitable bearings formed in the bearing plates 12 and 13.

15 is a cross bar located near the shafts and securely fastened to the sides of the separator.

16 is a bearing formed centrally on the bar 15 and extending downwardly from the  
90 bar.

17 and 18 are similar rotatable shafts having their adjoining ends carried in the bearings 16 and their extending ends mounted in journals formed in the bearing plates 12  
95 and 13.

19 and 20 are sets of curved fingers securely fastened to the shafts 17 and 18, respectively. The lower ends of the fingers pass directly above the upper end of one  
100 of the shakers 4, as is best shown in Fig. 2.

21 is the gear wheel firmly secured to the shaft 11 at its one end, such gear wheel being outside of the bearing 12. At the opposite end of the shaft from the gear wheel  
105 is an arm 22 which is connected through a link or rod 23 with a tube 23', the rod telescoping within the tube.



23<sup>2</sup> is a thumb screw carried by the tube for the purpose of adjusting the rod in the tube. The lower end of the tube is connected to a strap 24 carried on the gate 9'.

25 is a gear wheel at the end of the shaft 14, to the opposite side of the separator to that on which appears the gear wheel 21.

26 is an arm firmly secured to the shaft 14 to the opposite end to that on which the gear 25 appears, and the arm is connected by a link or rod 27 with the tube 27' there being a thumb screw 27<sup>2</sup> carried by the tube whereby the portions are rendered adjustable. The lower end of the tube is secured to a strap 28 extending from the gate 9.

29 is a gear wheel at the extending end of the shaft 18, such gear being adapted to mesh with the gear 21.

30 is a gear wheel at the extending end of the shaft 17, such gear wheel being designed to mesh with the gear 25.

31 are openings provided in the arms whereby the links 23 and 27 may be adjusted.

32 and 33 are similar arms firmly secured to the shafts 17 and 18, respectively, toward their outer ends and within the body of the separating machine. The arms normally incline downwardly and are provided each with a longitudinally extending slot 34, the slotted end of the arm appearing directly opposite the openings 35 provided in the sides of the separator frame.

36 are threaded rods or shafts secured within the openings and provided with adjustable nuts 37 which can be screwed to any position on the shaft.

38 are sleeves slidably movable on the shafts, such sleeves being connected by pins 39 to the arms 32, respectively, the pins being designed to operate within the slots.

It will be seen that the distance which the ends of the fingers are above the rack can be controlled by adjusting the nuts 37 which slide the sleeves on the shafts and carry the arms 32 and 33 with them by virtue of the pins. If an adjustment be made in this way it is also necessary to adjust the thumb screws 23<sup>2</sup> and 27<sup>2</sup> so that the gates may close. It is possible also by these latter adjustments to control the distance which the gates are opened when the fingers are on the racks, as will readily be seen.

Referring now to Fig. 2 of the drawings it will be seen that the arm shown in dotted outline is in a horizontal position and that the gate to which the arm is connected is closed. Also it will be noticed that the corresponding position of the fingers is just above or resting on the upper end of one of the racks 4. When a separator is being equipped with these attachments it is necessary, for its best operation, that the latter parts assume the relative position just described.

When a separator supplied with my in-

vention is in use it will be found that the air admitted to the fanningmill is regulated directly, according to the amount of straw which is passing over the racks. If there be a heavier feed of straw over the racks at one time than at another there will be a greater depth of straw on the racks and consequently the fingers will be raised farther from the racks. Raising the fingers lowers the arms through the gears and the gates are opened, the amount of opening depending directly upon the height to which the fingers are above the rack.

I have found that there is a cross blast common to a great number of separator fanning-mills, which means that the arm entering the mill at one side is directed to the opposite side of the mill and passes to the sieves at the opposite side of the machine to that at which it enters. For this reason I have placed a set of fingers on each of the shafts 17 and 18, and have the set 19 controlling the operation of the gate 9, while the set 20 controls the gate 9'. If it happens that there is more straw passing over the rack at one side of the machine than at the other then the fingers at that side will be raised higher than at the other, and the gate at the opposite side of the machine to that of the former fingers will be opened. It will thus be seen I have made absolute provision for the cross blast above referred to, and it does not matter how the straw is passing over the racks as the air admitted to the fan at the respective sides is directly proportional to the amount of straw passing over.

Although I have described the invention in connection with those separating machines in which the cross blast is common, yet it will be understood that in machines where the cross blast is done away with and passes evenly over the sieves at the side of the machine at which it enters, it will only be necessary to change the position of the gear wheels so as to cause the set of fingers 20 to control the operation of the gate 9, and the set of fingers 19 to control the gate 9'. This could be accomplished by placing the gear 21 on the shaft 14 and in mesh with the gear 29; and the gear 25 on the shaft 11 and in mesh with the gear 30.

What I claim as my invention is:

1. In a machine of the class described the combination with a fanning-mill wind boards therefor, straw racks, of means suspended above the racks and connected with the wind boards, whereby the wind boards are regulated by the quantity of straw passing over the racks, as and for the purpose specified.

2. In a machine of the class described the combination with a fanning-mill wind boards therefor, straw racks, fingers pivotally suspended above the racks, and means



connecting said fingers with the wind boards whereby the wind boards are opened and closed by the raising and lowering of the fingers, as and for the purpose specified.

5 3. In a machine of the class described the combination with a fanning-mill wind  
boards therefor, straw racks, of a set of ro-  
tatably mounted cross shafts passing across  
the body of the separating machine; a set  
10 of fingers extending from each of the shafts  
downwardly toward the grain racks, and  
means interconnecting the shafts with the  
wind boards, whereby the movement of the  
fingers controls the operation of the boards,  
15 as and for the purpose specified.

4. In a machine of the class described the combination with a fanning-mill wind  
boards therefor, straw racks, of a set of ro-  
tatably mounted cross shafts passing across  
20 the body of the separating machine; a set  
of fingers extending from each of the shafts  
downwardly toward the grain racks; and  
independent means operated by each shaft  
whereby each set of fingers controls the  
25 movement of a board, as and for the purpose  
specified.

5. In a machine of the class described the combination with a fanning-mill wind  
boards therefor, straw racks, of a set of ro-  
30 tatably mounted cross shafts passing across  
the body of the separating machine; a set  
of fingers extending from each of the shafts  
downwardly toward the grain racks; and  
independent means operated by each shaft  
35 whereby the sets of fingers control respec-  
tively, each a wind board, such wind board

being to the opposite side of the machine to that in which the actuating fingers appear, as and for the purpose specified.

6. In a machine of the class described the combination with a fanning-mill having  
40 wind boards, one at either side and the grain  
racks, of a set of independently mounted  
and rotatable shafts passing across the sepa-  
rating machine above the racks; a set of  
45 fingers extending downwardly from each  
shaft toward the racks; a gear wheel at  
the outer end of each shaft; a set of cross  
shafts rotatably mounted within suitable  
bearings in the side walls of the separating  
50 machine; an arm secured to each shaft and  
at their opposite ends, such arms being ad-  
justably interconnected with the adjoining  
boards, and a gear wheel at the free end of  
each of the latter shafts in mesh with the  
55 gear wheel on the former shafts, as and for  
the purpose specified.

7. In a machine of the class described the combination with the arms, and the wind  
boards, of a rod pivotally interconnected  
60 with each of the arms, and a tube pivotally  
interconnected with each of the boards, the  
rod and the tube telescoping, and a thumb  
screw carried by the tubes and adapted to  
engage with the rods whereby the parts may  
65 be adjusted, as and for the purpose specified.

Signed at Oxbow, in the Province of  
Saskatchewan, this 29th day of June, 1908.

THOMAS W. McBRIDE.

Witnesses:

S. R. WALLACE,  
JAMES D. MURPHY.