

998,583.

J. MABUS.
DRIVING DEVICE.
APPLICATION FILED NOV. 5, 1909 .

Patented July 18, 1911.

2 SHEETS—SHEET 1.

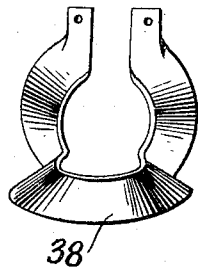
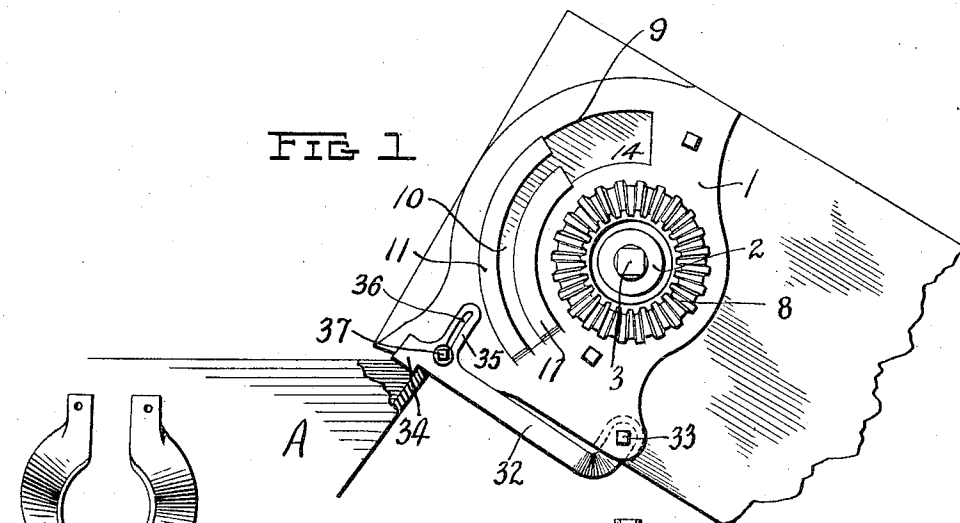


FIG 8

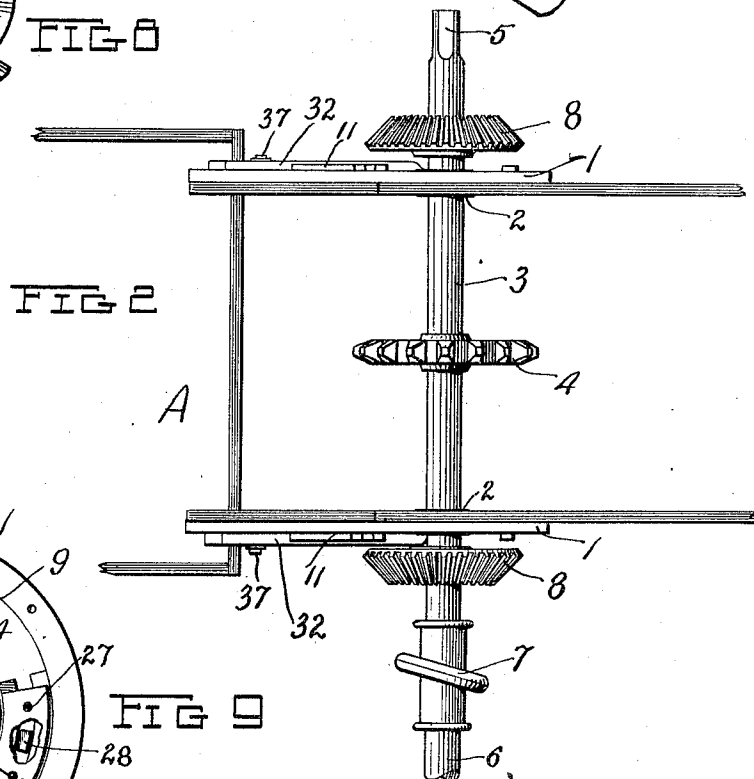


FIG 2

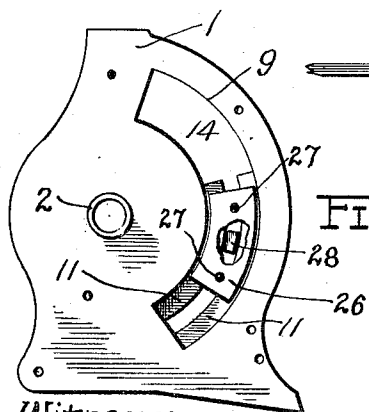


FIG 9

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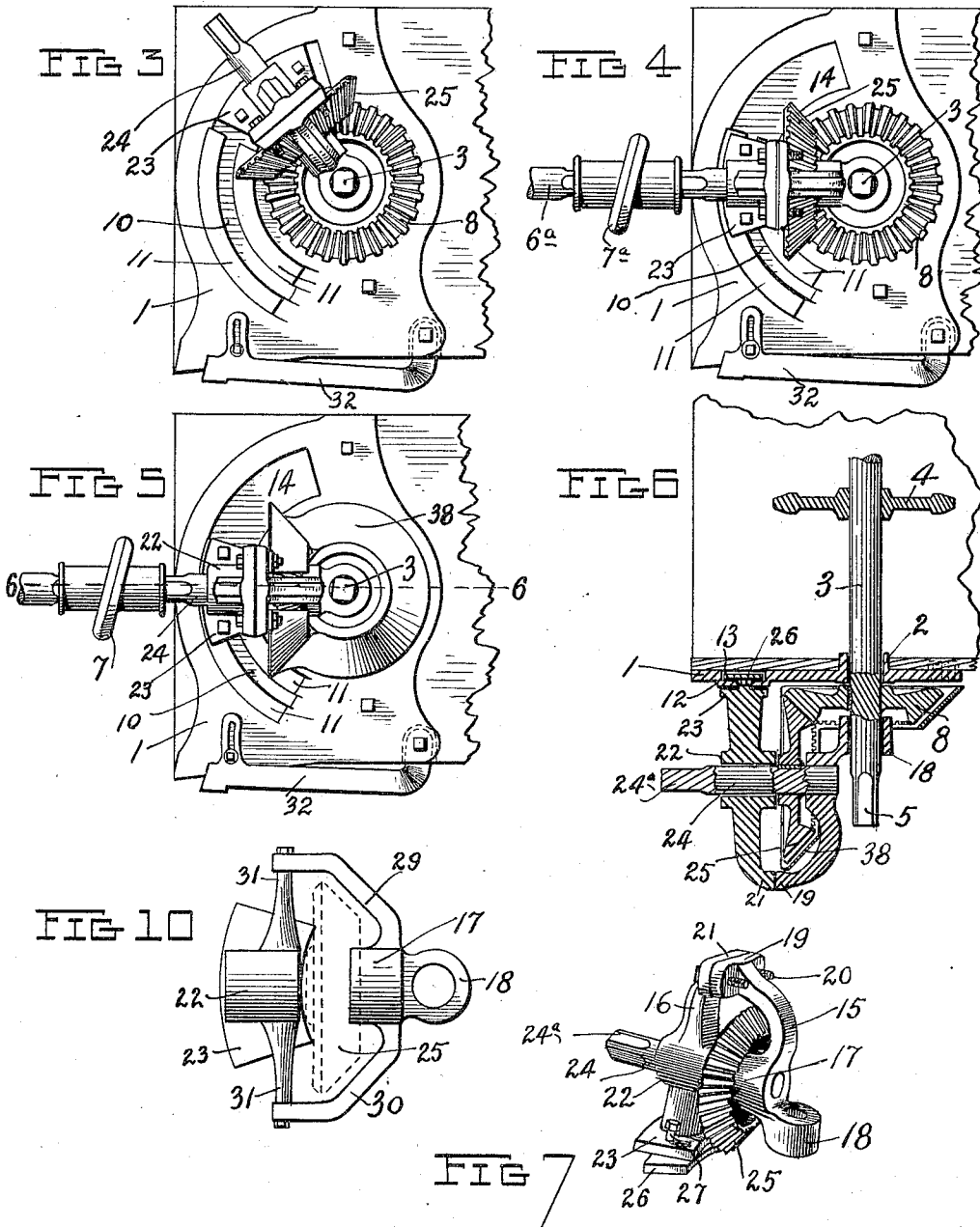
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UNITED STATES PATENT OFFICE.

JOHN MABUS, OF DANVERS, ILLINOIS.

DRIVING DEVICE.

998,583.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed November 5, 1909. Serial No. 526,421.

To all whom it may concern:

Be it known that I, JOHN MABUS, a citizen of the United States, residing at Danvers, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Driving Devices for Drags, &c., and do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to a new and improved driving device, which is more especially applicable to drags employed in connection with corn-shellers and similar machines, and may be applied to different styles of conveyers used in connection with different types of dumping and elevating machinery.

One of the objects of the present invention is in the provision of an interchangeable driving device which is capable of having power applied thereto to drive from one side, or changing the power connections from the side to the front, so as to drive from the front. Such an application of power, has its particular advantage in connection with drags when used with corn-shellers, because at times it is impracticable to drive from the side of the drag, and likewise, at times it is impracticable to drive from the front; but with an interchangeable drive, power may be applied in the most convenient manner.

For a further and full description of the invention herein and the merits thereof, and also to acquire a knowledge of the details of construction of the means of effecting the result, reference is had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of the head of a drag or conveyer, showing the manner in which it is supported on a receiving hopper and also showing the drive capable of being driven from the side; Fig. 2 is a plan view of what is shown in Fig. 1 with the addition of a tumbling-rod connection with the drag or conveyer drive; Fig. 3 is a side elevation of the head end of a drag or conveyer body; showing the drive which is used

when power is applied from the front. The view further illustrates how the drive is placed in position; Fig. 4 is a view similar to Fig. 3, with the exception that the drive is in proper working position and has attached thereto a tumbling-rod driving from the front; Fig. 5 is a view similar to Fig. 4, except that a shield that is used to cover the gearing of the drive is in working position; Fig. 6 is a cross section as the same would appear if taken on the line 6—6 of Fig. 5; Fig. 7 is a perspective view of the supporting bracket and gear which is employed, as shown in Figs. 3 to 6 both inclusive, when driving from the front; Fig. 8 is a perspective view of the shield used to cover the gears, as shown in Figs. 5 and 6; Fig. 9 is a rear view of a supporting plate attached to the sides of the head end of the drag or conveyer, with certain parts coöperating therewith, broken away, and Fig. 10 is a view of a modified form of the bracket shown in Figs. 3, 4 and 7.

Like numerals of reference indicate corresponding parts throughout the figures.

In the drawings, 1 denotes duplicate plates, which, when used on drags or elevating bodies, are arranged upon opposite sides of the head thereof, substantially as shown in Fig. 2. The plate 1 has a central hub portion 2 forming a bearing for a shaft 3, extending transversely through the body of the drag, and on said shaft is carried a sprocket wheel 4, or several such sprocket wheels, if desired, for operating a conveying mechanism movable through said drag or conveyer body. The conveyer mechanism forming no part of this invention, has been omitted. The shaft 3 extends beyond the opposite sides of the drag, for a suitable distance and is squared as at 5 so as to provide for attachment thereto of a tumbling-rod 6, see Fig. 2, designed to be driven from some suitable source of power, preferably a horse power, and the tumbling-rod includes a knuckle-joint 7, which may be of any well known or approved construction for adjusting the rod 6 to the power. Thus it will be seen, that with the application of power, such as I have described, to the shaft 3, said shaft may be driven from either side of the drag.

On the opposite ends of the shaft 3 are carried bevel gear wheels 8, and it is through these gears, in a manner which I shall now

describe, that I am enabled to change from a side drive to a front drive.

The plate 1 is provided with an arc-shaped slot 9, of suitable length and width and preferably arranged concentric to the axis of the shaft 3. This slot for a portion of its length is contracted, as at 10, through the provision of inwardly carried flanges 11 which are offset, as at 12, see Fig. 6, to form a groove 13, between the flanges and the side wall of the drag, for the insertion and travel of a locking plate, to be further described, for securing a bracket in adjustable positions on plate 1. One end of the slot 9 is left its full width, as at 14, for the insertion of the locking plate previously mentioned.

The bracket to which reference has just been made, is composed of the two parts 15 and 16, and is best seen in Figs. 6 and 7. The part 15 has the bearing portion 17 and the transverse bearing portion 18, also the head 19 by means of which the part 15 may be bolted, by bolts 20, to a head 21 of the part 16. Said part 16 has a bearing portion 22 and a base-plate 23. When the parts of the bracket are assembled, substantially as shown in Fig. 7, a short shaft 24 is journaled in the bearings 17 and 22 of the parts 15 and 16 respectively, and said shaft has the squared end 24^a, to provide for connecting thereto a tumbling-rod 6^a, similar to the rod 6. In fact, when not driving the shaft 3 by the rod 6, the rod 6 is connected in manner seen in Fig. 4, to the short shaft 24. Said tumbling-rod 6^a includes a knuckle-joint 7^a to provide for adjusting the tumbling rod 6^a to its power.

Before joining or attaching the parts 15 and 16 of the bracket, in manner described, the short shaft 24 is passed through the bearing 22; a bevel gear wheel 25 similar to the wheels 8, is then placed on the shaft, when the bracket parts may be secured. Constructing the bracket in two parts simplifies the insertion of the gear wheel 25 and provides for constructing the bracket in a compact form. The bracket could be in one piece but it would be cumbersome and impracticable.

To the base-plate 23 of the part 16, of the bracket, is attached, in an adjustable manner, a locking plate 26, which is shaped to conform to the walls of the slot 9 of plate 1, into which it is intended to insert the same, and the said plate is attached to the base-plate 23 by bolts 27.

When it is desired to apply power to the drag or conveyer body from the front, the bearing 18 of the two part bracket, above described, is passed over one or the other of the ends of the shaft 3, with the base-plate 23 of the bracket and locking plate 26 disposed in the position shown in Fig. 3, in which position, the locking plate 26 may be

inserted through the arc-shaped slot 9, at 14, and the operator swinging or moving the bracket downwardly, as shown in Fig. 4, causes the locking plate 26 to move down in the groove 13, between the flanges 11, and the side wall of the drag. When the parts are in a desired position, the operator tightens the bolts 27, which will bring the plate 26 up against the flanges 11, from the rear, and force the base-plate 23 against the flanges from the front, thereby locking the bracket in working position, being that position shown in Fig. 4. The shaft 3 forms the pivot on which the bracket, through the bearing 18 may be oscillated. It will be observed that the bracket with the gear 25 has a considerable range of adjustment, whereby the shaft 24 may be brought into proper alinement with its driving connection, the tumbling-rod 6^a, for imparting power to the gears 25 and 8.

For the purpose of relieving the strain on the gears 25 and 8 during their initial starting movement, I provide the base-plate 23 with the lug 28, projecting from the under side thereof, see Fig. 9, which said lug is intended to be inserted in the reduced slot 10, between the flanges 11 of plate 1, and engage with the walls of said slot in the event of the gears starting to separate, and hold the gears in meshing relation.

An examination of the bracket in Figs. 6 and 7 will disclose that the connecting arms of the two parts 15 and 16 project at right angles from the body of the drag when the said bracket is in working position, which provides a connection of the two parts only on one side of the shaft 24. If advisable this connection of the parts 15 and 16 may be modified as shown in Fig. 10, where the part 15 is shown provided with superimposed arms 29 and 30 disposed parallel with the side wall of the drag, when in working position, and these arms are adapted to be fastened to upwardly and downwardly projecting lugs 31 from the bearing 22 of said part 16.

In Figs. 5, 6 and 8 a shield 38 is shown, which is designed to cover the gears 8 and 25, in the manner best seen in Figs. 5 and 6, which will protect the gears against any foreign substance entering between the teeth, which might have a tendency to break the same, and will also protect the operator when working around the mechanism.

In Fig. 1 the body of the drag is shown disposed at an incline with the head end thereof resting on a receiving hopper A. As a means of adjusting the head of the drag on the hopper and also to prevent its accidental dislodgment therefrom, due to vibration or other causes, an arm 32 is pivoted at 33 to the side of the drag or plate 1; its forward end is formed with an offset 34 to engage the wall of the hopper A, and also

provided with an extension 35, slotted as at 36, through which a bolt 37 operates, to provide for adjusting and locking the forward end of the arm 32 in different positions.

5 Having thus fully described my invention, what I claim and desire to secure by Letters Patent of the United States, is:—

1. In a driving device of the character described, in combination, a shaft arranged
10 to be driven at either end, a gear on each end of said shaft, a removable support, a short shaft journaled in said support, said shaft arranged to be driven from a direction at right angles to said first mentioned shaft,
15 and a gear on said short shaft, said gear adapted to be sustained by said support in meshing relation with one or the other of the gears on said first mentioned shaft.

2. In a driving device of the character described, in combination, a shaft, to either end of which may be connected a tumbling rod, a gear carried by said shaft near each end, a bearing plate for the opposite ends of the shaft, a bracket adapted to have a detachable as well as an adjustable connection with either one of said bearing plates, a short shaft journaled in said bracket and having one end arranged for connection with a tumbling rod, a gear carried by said
25 short shaft and adapted to have a meshing relation with one or the other of the gears on said first mentioned shaft.

3. In a driving device of the character described, in combination, a shaft, plates forming a bearing for the opposite ends of the shaft and having a slot arranged concentric to the axis of said shaft, a gear on each end of said shaft, said shaft at each end arranged to have a driving connection made therewith, a bracket having a part adapted to be fitted over either end of said shaft, whereby the bracket may be swung into different positions, means on the bracket fitting the slot of either of said plates, a short shaft journaled in said bracket and having one end arranged to have a driving connection therewith, and a gear on said short shaft adapted to have a meshing relation with one or the other of said gears on
45 said first mentioned shaft.

4. In a driving device of the character described, in combination, a body, a plate attached thereto and having an arc-shaped slot, inwardly projecting and spaced flanges partially covering said slot, a shaft carried through said plate and having its outer end arranged to have a driving part attached thereto, a gear on said shaft, a bracket having a bearing for the shaft and also provided with means capable of entering and moving in the slot of the plate, means for locking the bracket in adjusted positions about the axis of said shaft, a short shaft journaled in said bracket and having one
65 end arranged to have a driving part con-

nected thereto, and a gear on said short shaft adapted to have a meshing relation with the gear on said first mentioned shaft.

5. In a driving device of the character described, in combination, a bearing plate 70 having an arc-shaped slot, a pair of flanges conforming to the contour of the slot, extending part way of its length and spaced so as to reduce the width of the slot the length of the flanges, a shaft journaled in
75 said bearing plate, a gear on said shaft, a bracket having a part to fit said shaft so as to allow the bracket to be swung on said shaft, a base plate on the bracket, a locking plate connected to the bracket, capable of
80 entering the larger opening in the slot and of being moved behind said flanges, means for clamping the locking plate and base plate against said flanges, a shaft having a bearing in said bracket, and a gear on said shaft,
85 said gear adapted to mesh with the gear on said first mentioned shaft.

6. In a driving device of the character described, in combination, a bearing plate having an arc-shaped slot, a pair of flanges 90 conforming to the contour of the slot, extending part way of its length and spaced so as to reduce the width of the slot the length of the flanges, a shaft journaled in said bearing plate, a gear on said shaft, a bracket having a part to fit said shaft so as to allow said bracket to be swung on said shaft, a base plate on the bracket having a part to fit in said slot between said flanges, a locking plate connected to the bracket,
95 capable of entering the larger opening in the slot and of being moved behind said flanges, means for clamping the locking plate and base plate against said flanges, a shaft having a bearing in said bracket, and a gear
105 on said shaft, said gear adapted to mesh with the gear on said first mentioned shaft.

7. In a driving device of the character described, in combination, a bearing plate, a shaft journaled in said plate, a gear on
110 said shaft, a bracket having a hub to fit on said shaft which will allow the bracket to be swung in an arc of a circle on said plate, means for locking the bracket in several different positions, a short shaft journaled in
115 said bracket, a gear on said short shaft in mesh with the gear on said first mentioned shaft, a shield for covering said gears, and means for attaching said shield to the said bracket.
120

8. An interchangeable driving mechanism for conveyers and the like, including a driving shaft, a gear on each end of said shaft, means for driving the said shaft from either side of said conveyer, in combination
125 with a short shaft adapted to be disposed transversely to said first mentioned shaft, means for operating said short shaft from in the front of said conveyer, and a gear
130 on said short shaft adapted to have a driv-

ing connection with the gear on said first mentioned shaft.

9. A gear and shaft support for a driving device, including two parts with means for
5 uniting the same, one of said parts having bearing portions disposed at right angles to each other, the other of said parts having a bearing portion and a base plate, a short shaft journaled in bearings of both of said

parts, and a gear on said shaft and located 10 between the two parts.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN MABUS.

Witnesses:

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ROBERT N. McCORMICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
