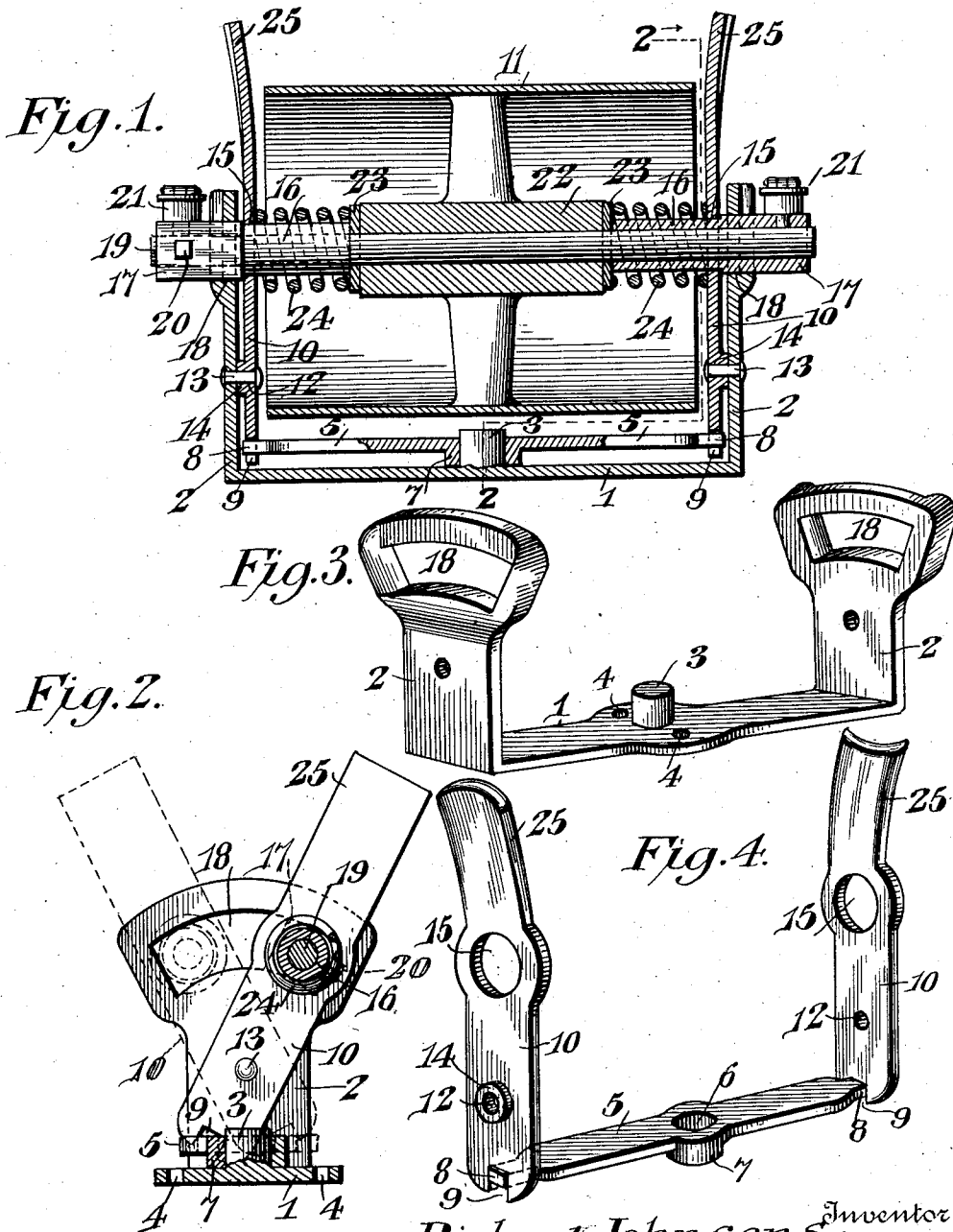


R. JOHNSON, SR.
 AUTOMATIC BELT GUIDE.
 APPLICATION FILED SEPT. 13, 1911.

1,022,949.

Patented Apr. 9, 1912.



Witnesses
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UNITED STATES PATENT OFFICE.

RICHARD JOHNSON, SR., OF FREEPORT, ILLINOIS.

AUTOMATIC BELT-GUIDE.

1,022,949.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed September 13, 1911. Serial No. 649,168.

To all whom it may concern:

Be it known that I, RICHARD JOHNSON, Sr., a citizen of the United States, residing at Freeport, in the county of Stephenson and State of Illinois, have invented a new and useful Automatic Belt-Guide, of which the following is a specification.

The invention relates to improvements in automatic belt guides.

10 The object of the present invention is to improve the construction of automatic belt guides, and to increase the strength, durability and efficiency thereof, and to provide a simple and comparatively inexpensive belt
15 guide, adapted to be actuated in its guiding movements by the belt and to operate automatically to keep the pulley and belt in line and prevent the latter from running off the former.

20 With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims here-
25 to appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrific-
30 ing any of the advantages of the invention.

In the drawing:—Figure 1 is a central vertical sectional view, taken longitudinally of the pulley. Fig. 2 is a vertical sectional
35 view on the line 2—2 of Fig. 1. Fig. 3 is a detail perspective view of the supporting frame. Fig. 4 is a detail perspective view of the bottom and side levers.

40 Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, 1 designates a rigidly mount-
45 ed approximately U-shaped supporting frame, constructed of any suitable material and consisting of a horizontal bottom portion and vertical sides 2. The bottom por-
50 tion, which is preferably enlarged at the center as shown, is provided with a central vertical pivot 3, and it has perforations 4 for the reception of bolts or other suitable

fastening means for securing the frame 1 to a suitable support. The vertical pivot 3, which is preferably formed integral with
55 the frame 1, receives a horizontal bottom lever 5, provided with a central bearing opening 6 and having a depending flange 7 surrounding the opening and arranged
60 upon the bottom of the supporting frame and spacing the lever from the bottom of the said frame. The terminals 8 of the bottom lever 5 are reduced and fit in
65 recesses 9 in the lower ends of side levers 10, whereby when one of the side levers is actuated by the belt, motion will be communi-
70 cated to the other side lever through the bottom connecting lever 5, so that both levers will be simultaneously oscillated for
75 adjusting a pulley 11 to maintain the same in proper position with relation to its belt. The side levers 10 are provided at points
intermediate of the ends with bearing open-
80 ings 12, located at the lower portions of the side levers and receiving pivots 13, which
75 pierce the sides of the supporting frame 1, the side levers being provided at the bearing openings 12 with annular bosses or
flanges 14, which space the side levers 10
80 from the inner faces of the sides of the frame. By this arrangement when the upper portion of one of the side levers is actuated by the belt, the upper portion of the
other side lever will be simultaneously
85 moved in the opposite direction by the con-
necting means between the side levers.

The side levers 10 are provided near their centers with circular openings 15 for the reception of inner cylindrical portions 16 of
90 sleeves or boxes 17, operating in arcuate slots 18 of the sides of the supporting frame and receiving the end portions of a shaft 19 upon which the pulley 11 is mounted. The
sleeves or boxes 17 have polygonal outer por-
95 tions provided with slightly curved upper and lower faces to conform to the curvature of the slots, and the said sleeves or boxes are fixed to the shaft 19 by clamping screws
20, or other suitable means, and each is preferably equipped with an oil cup 21 for
100 holding a suitable lubricant. In practice the stationary shaft 19 will be provided with suitable passages for conducting the lubricant from the oil cups to the pulley.

The inner tubular portions 16 extend inwardly to the hub 22 of the pulley and maintain the latter in a central position, a washer 23 being preferably interposed between the ends of the hub and the sleeves or boxes. The washers 23 also form bearings for the inner ends of the coiled springs 24, disposed on the tubular portions of the sleeves or boxes and interposed between the hub of the pulley and the side levers to prevent the levers from shifting from a central position until sufficient pressure is exerted on the same to overcome the force of the springs. The springs tend to press the levers flat against the shoulders at the inner ends of the polygonal outer portions 17 and thereby tend to maintain the levers in a central position. This will prevent the side levers from being shifted through any vibration of the parts, and they will remain practically stationary until positively actuated by the belt. The upper portions 25 of the side levers are curved upwardly and outwardly, and they also have a transverse curvature, as shown.

The device, which is capable of use in various relations, is designed particularly for guiding the belt, which connects a threshing machine with a traction or other engine. When the belt is shifted by the wind or other disturbing means and the pulley is not in proper alinement with the belt, one edge of the belt will run over the pulley and will strike against the upper portion of the adjacent side lever, which will actuate the lever and swing the upper portion of the same in one direction. The upper portion of the other lever will be simultaneously swung in the opposite direction through the connecting lever. This will change the position of the pulley and arrange the same in proper position with relation to the belt.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. An automatic belt guide comprising a fixed supporting frame, side members pivoted at a point between their ends to the supporting frame and provided at one side of the pivotal point with bearings for a pulley shaft, a connecting lever pivoted at an intermediate point on the supporting frame and connected with the side levers at the opposite side of the pivotal point thereof to cause the side levers to simultaneously move in opposite directions, said side levers being arranged to be actuated by a belt when the pulley is out of alinement with the same.
2. An automatic belt guide including a fixed supporting frame, upright side levers pivoted to the supporting frame and provided above their pivots with openings to receive a pulley shaft, the upper portions of

the levers being arranged to be engaged by a belt when the pulley is out of alinement with the same, and a bottom lever centrally pivoted to the fixed frame and connected at its terminals with the lower ends of the side levers.

3. An automatic belt guide including a fixed supporting frame provided at opposite sides with guide slots or openings, side levers pivoted between their ends to the sides of the frame and provided above their pivots with openings located in line with the guide openings or slots of the supporting frame, boxes guided in the slots or openings of the frame and extending through the openings of the side levers and adapted to receive a pulley shaft, and a bottom lever pivoted to the supporting frame and connected at its terminals with the lower ends of the side levers.

4. An automatic belt guide including a fixed supporting frame provided at opposite sides with arcuate slots, side levers pivoted between their ends to the sides of the supporting frame and provided with openings located at the said slots, boxes having outer portions guided in the arcuate slots of the supporting frame, said boxes being also provided with inner portions extending through the openings of the side levers, a shaft mounted in the boxes, which are adapted to maintain a pulley in a central position on the shaft, and means for transmitting motion from one of the levers to the other.

5. An automatic belt guide including a fixed supporting frame, side levers pivoted between their ends to the supporting frame and provided at their lower ends with recesses and having openings located above the pivots, and a connecting lever centrally pivoted to the supporting frame and having terminal portions operating in the recesses of the side levers, whereby when one of the side levers is oscillated the other side lever will be simultaneously moved in the opposite direction.

6. An automatic belt guide including a supporting frame, side levers pivoted at an intermediate point and provided above their pivots with openings to receive a pulley shaft, friction springs engaging the levers for resisting the oscillatory movement of the same, and means for transmitting motion from one lever to the other, whereby when one lever is actuated the other will be simultaneously moved in the opposite direction.

7. An automatic belt guide including a supporting frame, side levers pivoted between their ends and provided above their pivots with openings, a shaft mounted in the openings, a pulley mounted on the shaft, coiled friction springs surrounding the shaft

and interposed between the pulley and the side levers for frictionally resisting the movements thereof, and means for transmitting motion from one of the side levers to
5 the other for causing the same to be simultaneously moved in opposite directions.

In testimony, that I claim the foregoing

as my own, I have hereto affixed my signature in the presence of two witnesses.

RICHARD JOHNSON, Sr.

Witnesses:

JOSEPH H. JOHNSON,
GEO. C. DANFORTH.

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