W. H. JOHNSON.

TRACTOR.

APPLICATION FILED JAN. 8, 1919.

1,320,331.

Patented Oct. 28, 1919.

2 SHEETS—SHEET 1.

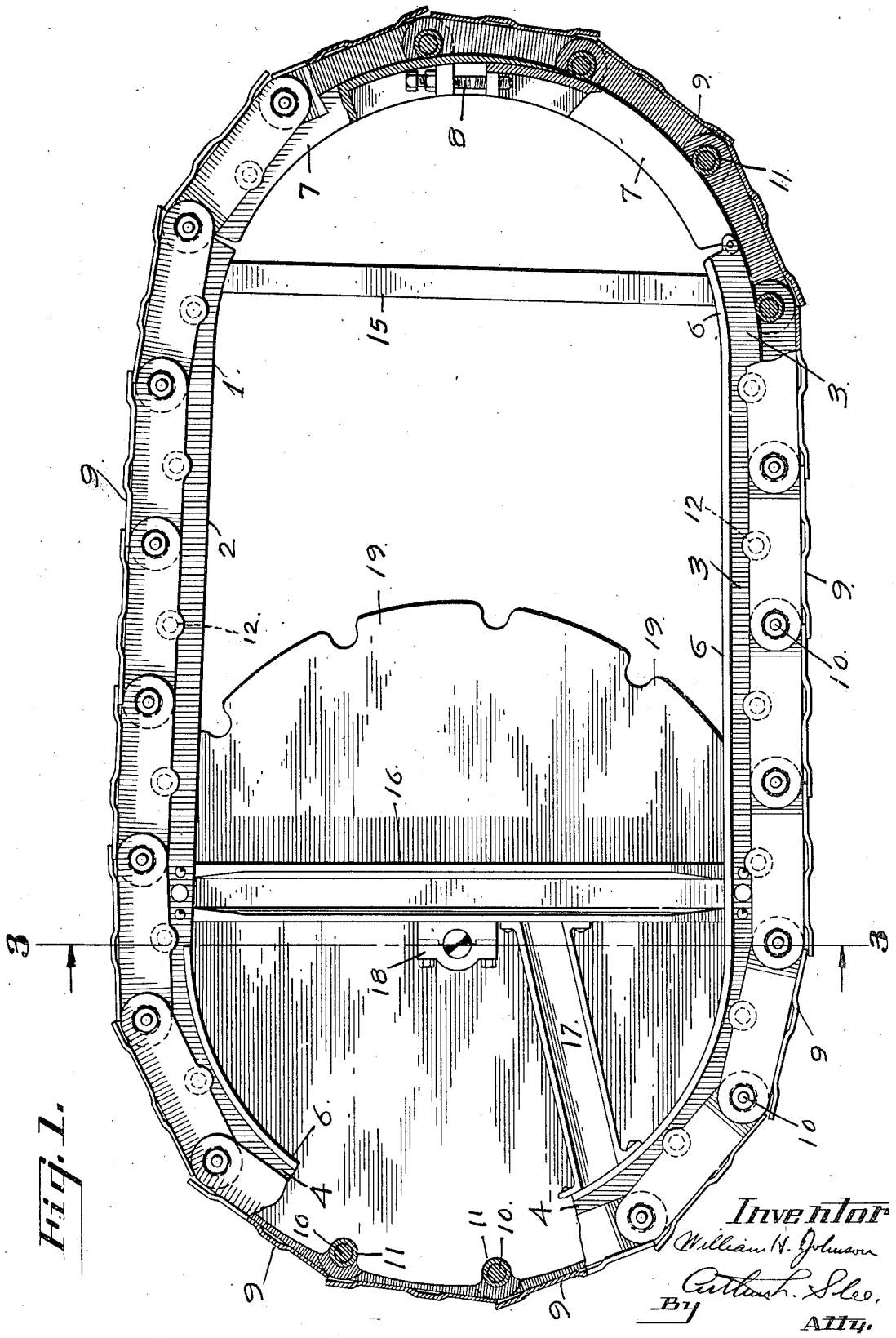


Fig. 1.

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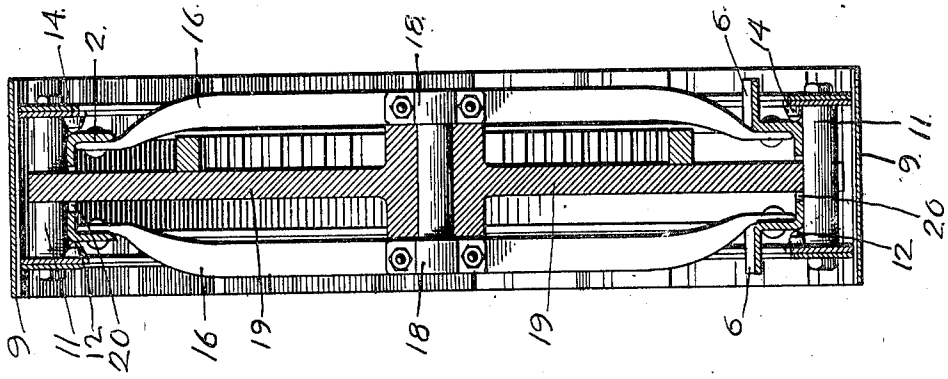


Fig. 3.

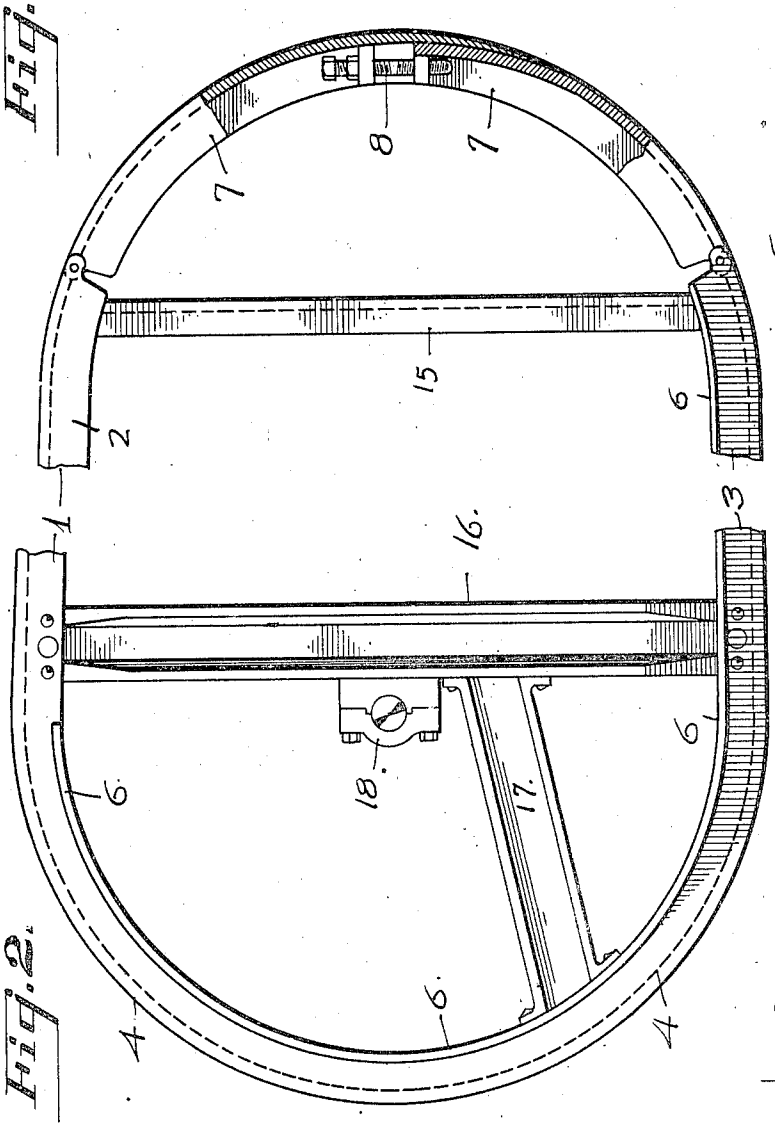


Fig. 2.

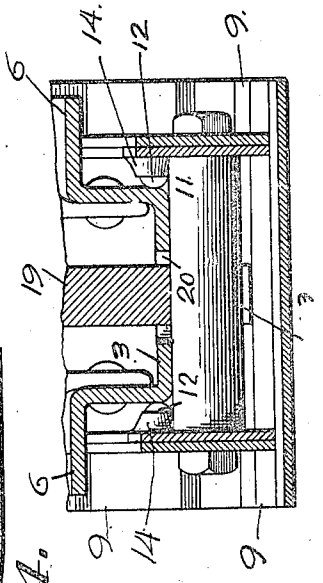


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM H. JOHNSON, OF SAN FRANCISCO, CALIFORNIA.

TRACTOR.

1,320,331. Specification of Letters Patent. Patented Oct. 28, 1919.

Application filed January 8, 1919. Serial No. 271,322.

To all whom it may concern:

Be it known that I, WILLIAM H. JOHNSON, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented a new and useful Improvement in Tractors, of which the following is a specification.

My invention relates to improvements in tractors wherein a series of connected flights operate in conjunction with an adjustable frame; and the invention consists in the improved construction and arrangement of parts as described in the specifications and disclosed in the drawings; and the objects of my improvement are—

First, to provide an improved, simple and effective tractor;

Second, to provide an improved construction for tractors wherein the length of the supporting frame may be easily and readily adjusted to the length of the flights or tractive elements; and

Third, to provide a simple, cheap and effective construction having improved means for decreasing lateral as well as longitudinal friction of the supporting frame on the tractive elements.

I accomplish these and several objects by means of the device disclosed in the drawings forming a part of the present specification wherein like characters of reference are used to designate similar parts throughout the said specification and drawings, and in which—

Figure 1 is a broken side elevation of my improved tractor;

Fig. 2 is a broken elevation of the tractor frame with the flights removed;

Fig. 3 is a vertical sectional view taken on line 3—3 of Fig. 1 in the direction indicated; and

Fig. 4 is an enlarged broken view of the lower portion of Fig. 3.

Referring to the drawings the numeral 1 is used to designate in general a channel having upper and lower portions 2 and 3 respectively connected at one end by means of a semicircular portion or channel 4.

The lower portion 3 and the semicircular portion 4 are provided at the inner edges with laterally extending flanges 6, the purpose of which will hereinafter be more fully set forth.

The other ends of the upper and lower portions 2 and 3 of the channel 1 have pivotally connected thereto overlapping arcuate portions 7 connected at their free ends by means of a right and left hand screw threaded bolt 8 by means of which said free ends may be moved apart or toward each other for the purpose of increasing or decreasing the length of the periphery of the channel 1 and the overlapping arcuate portions 7 pivotally connected thereto.

A series of connected flights or tractors 9 are mounted upon the periphery of the channel 1 and the arcuate portions 7. The pins 10 pivotally connecting said flights 9 are provided with rollers 11 which serve the double purpose of supporting the lower portion 3 of the channel 1 and also for supporting the flights 10 on the upper portion 2 of said channel 1.

In order to reduce frictional contact between the links of the flights 9 and the sides of the lower portion 3 of the channel 1 when the tractor is operating on a hill side or the like I have provided ball bearings 12 rotatably mounted within suitable cups or housing 14 so that the periphery of each ball 12 bears against the side of the lower portion 3 of the channel 1 and the inner side of the links of said flights 9 as disclosed in Figs. 3 and 4 of the drawings.

A vertically disposed member 16 is mounted between the upper and lower portions 2 and 3 of the channel 1 at a point adjacent the semicircular portion 4 while a second inclined member 17 is mounted between the member 16 and the lower part of the semicircular portion 4 to brace said portion 4 and thereby render the same more rigid when the tractor is moving in a reversed direction over uneven ground or against an obstruction.

A suitable bearing 18 is mounted upon the member 16 within which is rotatably mounted a driving element or sprocket 19 which extends through a slot 20 within the semicircular portion 4 and engages the rollers 11 on the flights 9 to move the channel 1 over said rollers 11. The slot 20 extends a sufficient distance into the upper and lower portions 2 and 3 to permit a proper operation of the sprocket 19.

In operation the sprocket 19 engages the rollers 11 on the pins 10 of the connected flights 9, and as the lower portion 3 of the frame or channel 1 is resting upon and supported by said rollers 11 said channel 1 is easily moved.

When the connected flights, through wear,

or from other cause, are mounted too loosely upon the channel 1 and arcuate portions 7, the slack may be easily and readily taken up to adjust said channel to the length of said connected flights 9 by operating the threaded bolt 8 to separate the free ends of the arcuate portions 7 and thereby increase the length of the periphery of the channel 1 and said arcuate portions 7.

When the tractor is operating over laterally inclined ground the lower portion 3 will naturally move laterally upon the rollers 11 and against the balls 12 on the inner sides of the links of the flights 9 thereby reducing frictional resistance between said lower portion 3 and the flights 9.

The laterally extending flanges 6 are provided for the purpose of preventing dirt and other debris from dropping into the interior of the flights 9 and onto the rollers 11 thereof.

It is obvious from the foregoing that I have provided a new and improved construction for tractors and the like wherein the frame may be readily adjusted to the connected flights. It is also obvious that I have provided improved means for reducing the lateral frictional resistance of the frame relatively to the flights.

I am aware that the present state of the art discloses tractors having connected flights having rollers to support the tractor frame. I therefore do not claim such a combination broadly as my invention.

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

1. A tractor comprising a channel having upper and lower portions connected at one end by means of a semicircular portion; arcuate channel portions pivotally connected to the other ends of the upper and lower portions to form a semicircular connection for said ends; connected flights mounted around the channel and arcuate portions connected thereto; and means for moving said arcuate portions to adjust the channel to the flights.

2. A tractor comprising a channel having upper portions connected at one end by means of a semicircular channel, said lower and semicircular portions having lateral flanges extending from the inner edges thereof; arcuate channel portions pivotally connected to the other ends of the upper and lower portions to form a semicircular connection for said ends; connected flights mounted around the channel and arcuate portions to support the same; and means for moving said arcuate portions to adjust the channel to the flights.

3. A tractor comprising a channel having upper and lower portions connected at one end by means of a semicircular portion; arcuate channel portions pivotally connected to the other ends of the upper and lower portions to form a semicircular connection for said ends; connected flights mounted around the channel and arcuate portions; rollers mounted upon the flights to support the channel; and means for moving the free end of the arcuate portions of the channel to adjust the flights to said channel.

4. A tractor comprising a channel having upper and lower portions connected at one end by means of a semicircular portion, said lower and semicircular portions being provided on the inner edges thereof with laterally extending flanges; arcuate channel portions pivotally connected to the other ends of the upper and lower portions and having overlapping ends; connected flights mounted around the outer sides of the channels and arcuate portions; rollers mounted upon the flights to support the channel; means for moving the free overlapping ends of the arcuate portions to adjust said portions and the channel to said flights; and means for engaging the flights to move the channel over said flights.

5. A tractor comprising a channel having upper and lower portions connected at one end by means of a semicircular portion, said lower and semicircular portions being provided on the inner edges thereof with laterally extending flanges; arcuate channel portions pivotally connected to the other ends of the upper and lower portions and having overlapping ends; connected flights mounted around the outer sides of the channels and arcuate portions; rollers mounted upon the flights to support the channel; means for moving the free overlapping ends of the arcuate portions to adjust said portions and the channel to said flights; means for engaging the flights to move the channel over said flights; and balls rotatably mounted upon the flights to engage the sides of the lower portion.

In witness whereof I hereunto set my signature.

WILLIAM H. JOHNSON.