W. H. JOHNSON.

TRACTOR.

APPLICATION FILED SEPT. 29, 1917.

1,276,929. Patented Aug. 27, 1918.

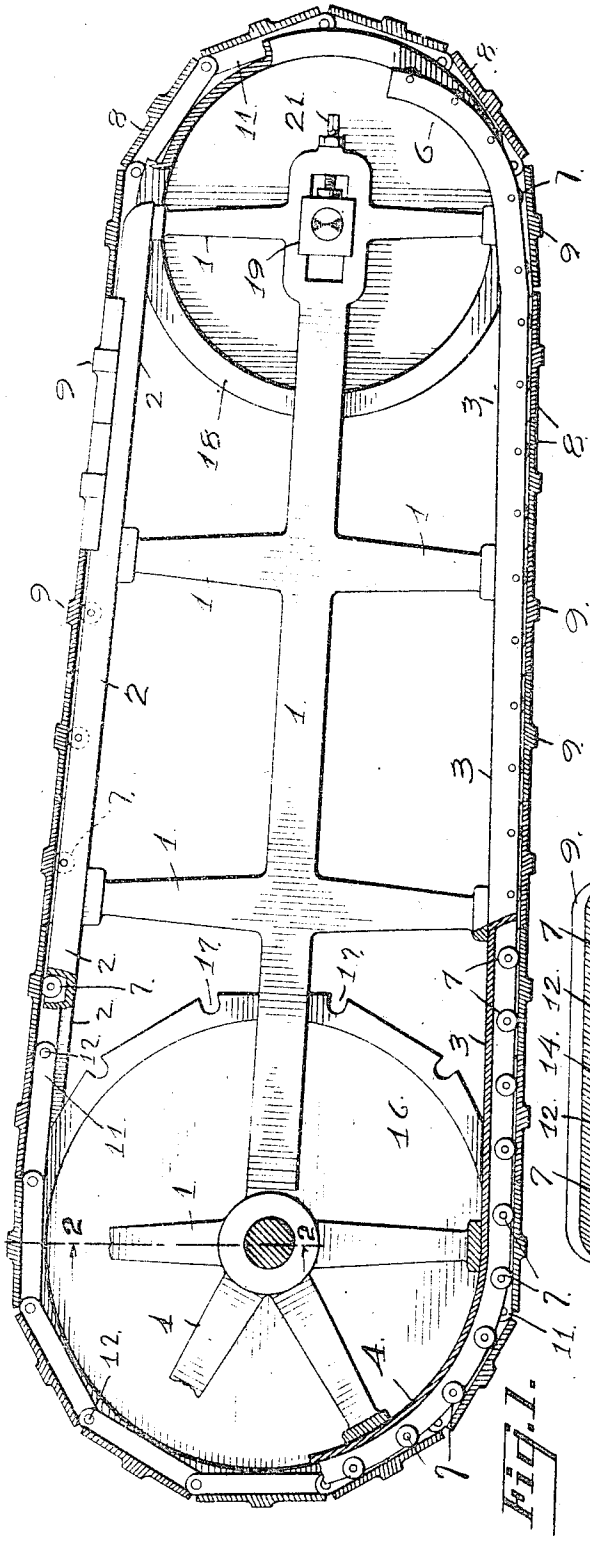


Fig. 1.

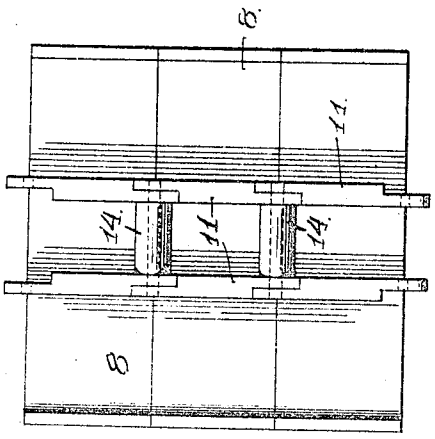


Fig. 3.

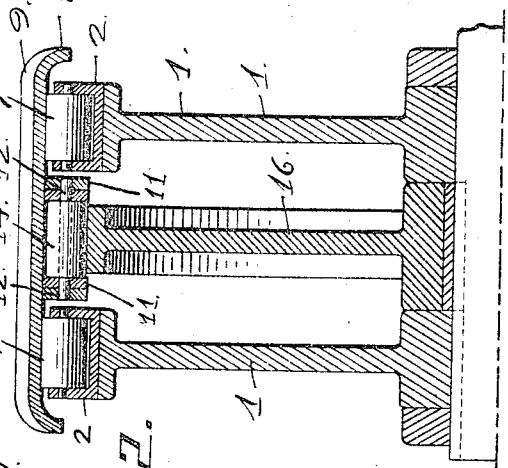


Fig. 2.

INVENTOR.

William H. Johnson

BY

Arthur L. Slee.

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM H. JOHNSON, OF SAN FRANCISCO, CALIFORNIA.

TRACTOR.

1,276,929. Specification of Letters Patent. Patented Aug. 27, 1918.

Application filed September 29, 1917. Serial No. 194,401.

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 and State of California, have invented a new and useful Improvement in Tractors, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in tractors wherein a series of flights operate in conjunction with parallel channels to propel the tractor; and the invention consists in the improved construction and arrangement of parts described in the specifications and claimed in the appended claims; and the objects of my invention are:

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

Second, to provide an improved tractor having few parts which may be easily and simply constructed and assembled; and

Third, to provide an improved tractor of simple and cheap construction providing a maximum efficiency.

I accomplish these several features by means of the device disclosed in the drawings forming a part of the present specification and drawings, and in which—

Figure 1 is a broken vertical sectional view of my improved device;

Fig. 2 is a transverse sectional view of the upper portion of the rear end of the device taken on line 2—2 of Fig. 1; and

Fig. 3 is a plan view of several of the connected lower flights as disclosed in Fig. 1 of the drawings.

Referring to the drawings, the numeral 1 is used to designate a suitable frame having upper and lower parallel channels 2 and 3 respectively joined at their rear ends by means of semicircular portions 4.

The front ends of the lower channels 3 are provided with upturned arcuate portions 6 the purpose of which will hereinafter be more fully described.

A series of rollers 7 are rotatably mounted between the flanges of the channels 2 and 3 and the semicircular portions 4 and arcuate portions 6 thereof.

A series of flights 8, having transverse ribs 9 in the approximate central portions thereof and parallel link portions 11, by means of which said flights may be linked together, are mounted around the channels 2 and 3 and the semicircular portions 4 thereof and the rollers 7 mounted within said channels.

The flights 8 are pivotally connected to each other by means of suitable pins 12 which engage adjacent link ends of said flights 8.

A roller 14 is rotatably mounted upon each pin 12 and between the parallel link portions 11 of the flights 8.

A wheel 16 is rotatably mounted within the rear end of the frame 1 and concentric with the semicircular portions 4 joining the channels 2 and 3. The wheel 16 has its periphery grooved at regular intervals as at 17 to engage the rollers 14 of the flights 8.

The grooves 17 are so arranged that the bottoms thereof will not engage the rollers 14 by which arrangement the weight of the frame 1 is removed from the pins 12 of said rollers 14 which weight might otherwise tend to sheer said pins 12.

A double flanged wheel 18 is rotatably mounted within slidable bearings 19 at the front end of the frame 1 to carry the flights 8 from the front ends of the top or upper channels 2 onto the arcuate portions 6 of the lower channels 3. The wheel 18 is arranged slightly in advance of the arcuate portions 6 so that the weight is gradually assumed by said arcuate portions.

The position of the bearings 19 may be adjusted by means of the screws 21.

The wheel 16 is arranged preferably midway between the parallel channels 2 and 3 whereby said channels may serve as keepers or cheek plates to retain the alinement of the flights with the channels and the wheels 16 and 18.

The radius of the wheel 18 is slightly less than the distance from its center to the outer periphery of the adjacent rollers 7 so that by moving the wheel 18 longitudinally to take up the slack in the caterpillar formed by the connected flights 8 the arcuate portion 6 of the lower channels 3 will at all

times be eccentric to the periphery of the wheel 18. The wheel 18 is double flanged to prevent the necessity of maintaining a definite pitch relatively to the wheel 16.

The operation is as follows:

A rotary motion is imparted by any suitable power to the drive wheel 16 which engages the rollers 14 of the flights 8 to move the frame 1 and channels 3 on the rollers 7 in turn supported by the lowermost connected flights 8.

As the frame 1 and channels 2 and 3 are moved over the lowermost flights 8 said flights are carried over the semicircular portions 4 to the upper channels 3 over which they ride on the rollers 7 therein until the front ends of the upper channels 2 are attained.

The connected flights 8 are carried from the front ends of the upper channels 2 onto the flanged wheel 18. The double flanges of the wheel 18 tend to retain the alinements of the flights by engaging both sides of the parallel link portions 11 of the flights 8.

The wheel 18 then carries the connected flights 8 onto the underside of the arcuate portions 6 on the front ends of the lower channels 3 which gradually assume the weight by reason of their eccentric position relatively to the wheel 18.

It is obvious from the foregoing that I have provided an improved simple and effective tractor.

I am aware that the present state of the art discloses tractors having connected flights mounted around rotatable members. 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 parallel channels comprising upper and lower portions connected by semicircular portions at the rear ends and having arcuate upturned portions at the front of the lower channels; rollers mounted within the channels with their peripheries extending slightly beyond the flanges of said channels; flights connected together and mounted upon the rollers to support the channels; and means for engaging the flights to move the same over the rollers within the channels.

2. A tractor comprising a suitable frame; parallel channels mounted upon the frame and comprising upper and lower portions connected at their rear ends by semicircular portions and having upturned arcuate portions upon the front ends of the lower channels; rollers mounted between the flanges of the channels with their peripheries extending slightly beyond said flanges; a series of connected flights mounted around the channels to support the same and the frame; and means for engaging the flights to move the frame and channels over said flights.

3. A tractor comprising a suitable frame; parallel channels mounted upon the frame and having upper and lower portions connected at their rear ends by means of semicircular portions, and having upturned arcuate portions, on the front ends of the lower channels; rollers rotatably mounted between the flanges of the channels with their peripheries extending beyond the said flanges; connected flights mounted around the channels and rollers; means for carrying the flights from the front end of the upper channels onto the arcuate portions of the lower channels; and rotary means mounted within the frame and concentric with the semicircular channels to engage the flights and move the channels and frame over said flights.

4. A tractor comprising a suitable frame; parallel channels mounted upon the frame and having upper and lower portions connected at their rear ends by means of semicircular portions and having arcuate portions at the front ends of the lower channels; rollers rotatably mounted between the flanges of the channels and extending beyond said flanges; a series of flights, each having parallel link portions whereby said flights may be connected, mounted around the channels and rollers therein, the lower flights supporting the channels and frame; rollers mounted between the link portions of the flights and between each flight; a driving wheel rotatably mounted within the frame, between the channels and concentric with the semicircular portions of the channels to engage the rollers mounted between the link portions of the flights; to move the frame and channels over the lower flights; and means slidably and rotatably mounted within the front end of the frame to carry the flights from the front ends of the upper channels onto the arcuate portions of the lower channels.

5. A tractor comprising a suitable frame; parallel channels mounted upon the frame and having upper and lower portions connected at their rear ends by means of semicircular portions and having arcuate portions at the front ends of the lower channels; rollers rotatably mounted between the flanges of the channels and extending beyond said flanges; a series of flights, each having parallel link portions whereby said flights may be connected, mounted around the channels and rollers therein, the lower flights supporting the channels and frame; rollers mounted between the link portions of the flights and between each flight; a driving wheel rotatably mounted within the frame, between the channels and concentric

with the semicircular portions of the channels to engage the rollers mounted between the link portions of the flights; to move the frame and channels over the lower flights; and a double flanged wheel slidably and rotatably mounted within the front end of the frame to carry the flights from the front ends of the upper channels onto the arcuate portions of the lower channels.

In witness whereof I hereunto set my signature.

WILLIAM H. JOHNSON.

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