T. H. WALKER.

EXCAVATOR.

APPLICATION FILED SEPT. 3, 1908.

**916,232.** Patented Mar. 23, 1909.

Fig. 1.

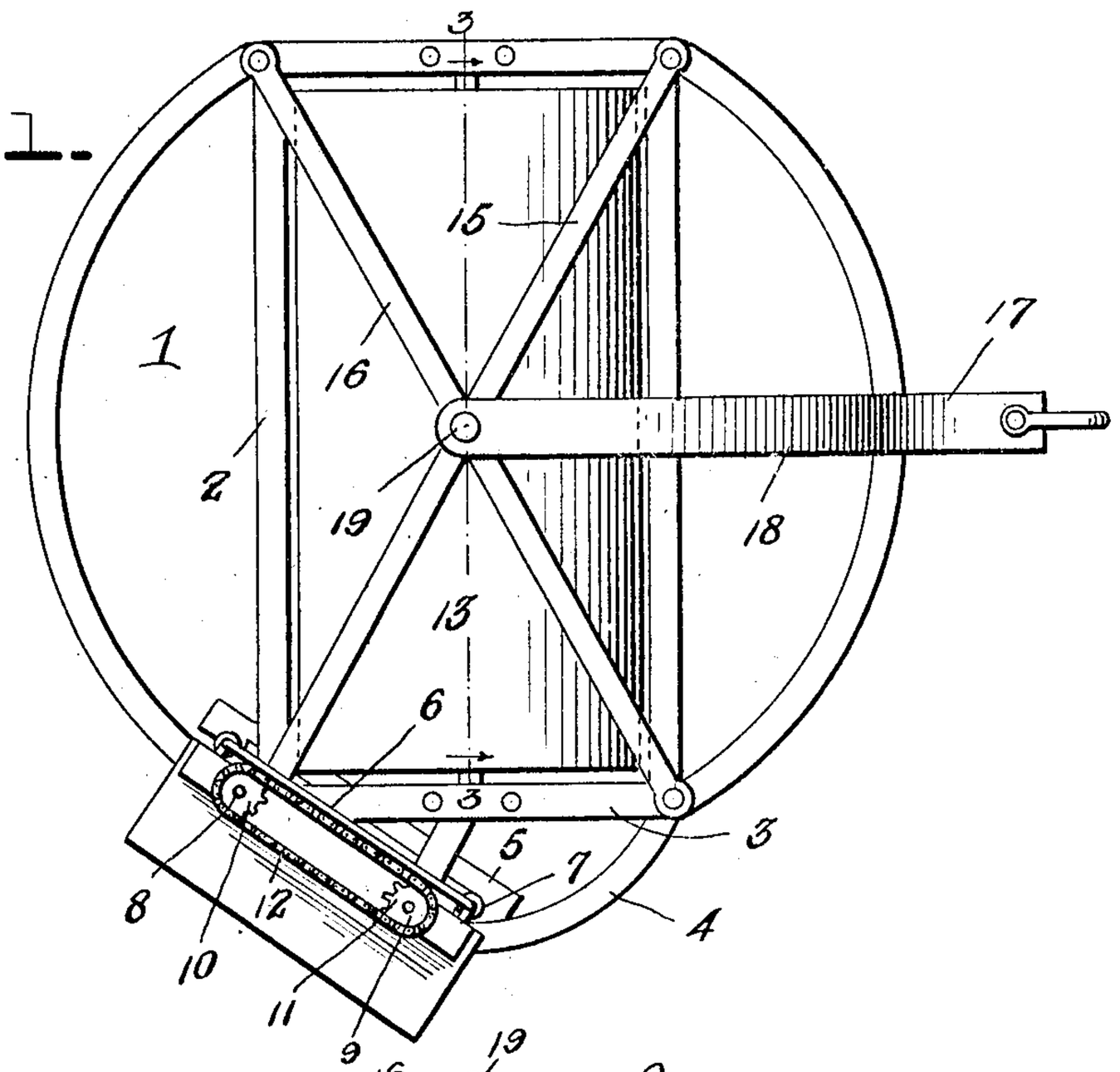



Fig. 2.

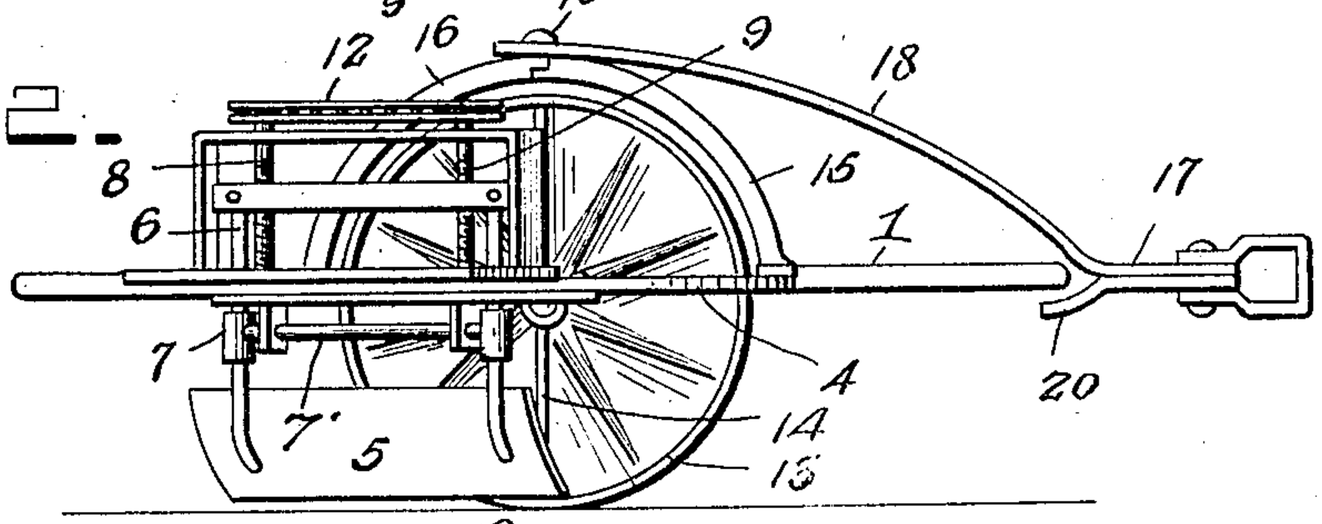
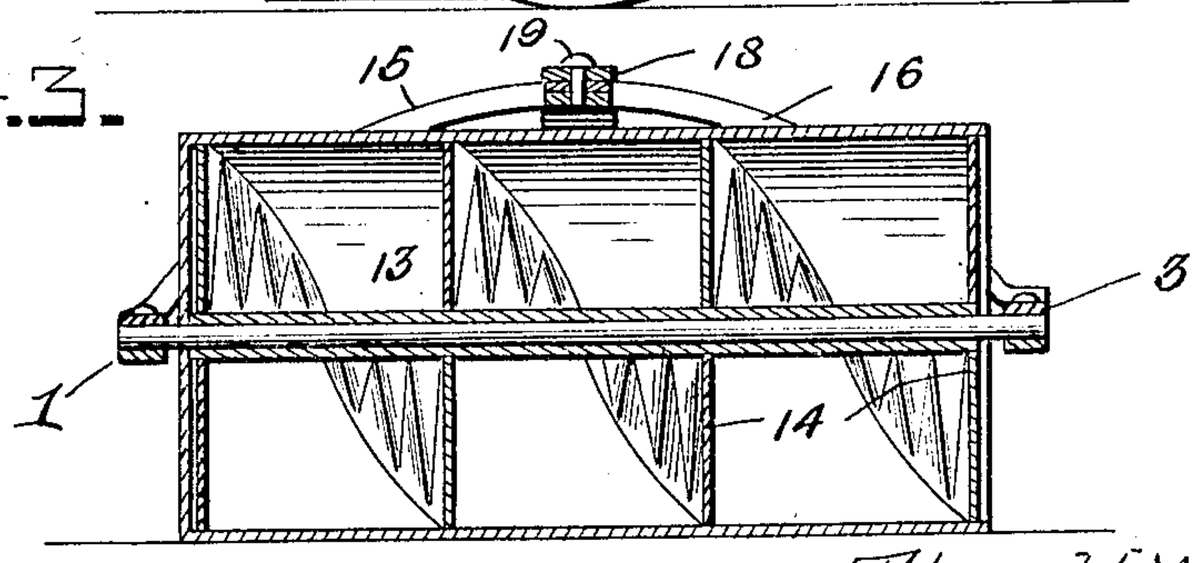



Fig. 3.




Witnesses

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# UNITED STATES PATENT OFFICE.

THOMAS H. WALKER, OF MISSOULA, MONTANA.

## EXCAVATOR.

No. 916,232. Specification of Letters Patent. Patented March 23, 1909.

Application filed September 3, 1908. Serial No. 451,532.

*To all whom it may concern:*

Be it known that I, THOMAS H. WALKER, a citizen of the United States, residing at Missoula, in the county of Missoula and State of Montana, have invented certain new and useful Improvements in Excavators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to excavators of the type known as scrapers and adapted to be operated by draft animals or machine power, and particularly comprehends certain improvements on my Patent No. 813,393 issued Feb. 20th, 1906.

One of the objects of my present invention is the construction of an excavator machine of the type described in my previous patent provided with a spiral conveyer mounted within a cylinder.

Another object of the invention is the production of a frame for supporting a cylinder provided with a spiral conveyer and connected to a draft bar or tongue in such a manner that said bar or tongue may be reversed on said frame.

Another object of the invention is the production of simpler adjusting means for raising and lowering the plow described in my previous patent.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of my improved excavator machine; Fig. 2 is a side elevation thereof; Fig. 3 is a transverse section.

Corresponding and similar parts are indicated in all the views of the drawings and in the following description by similar reference characters.

In the drawings, the numeral 1 designates a frame which is preferably formed oval in shape and straightened at 2 and 3. A U-shaped support 4 is rigidly secured to the frame 1 by means of rivets which are arranged to extend through the ends of said U-shaped piece and through said frame. The middle body portion of this piece 4 extends in an arc beyond the straight portion 3 of the frame 1 and is adapted to support a scraper plow 5. The scraper plow 5 is carried by the approximately U-shaped frame 6 which extends through tubular guides 7 formed at the ends of a cross rod 7′ rigidly supported beneath the support 4. The frame 6 is raised or lowered by vertically disposed operating screws 8 and 9, respectively, which pass through the upper cross piece of said frame. The screws 8 and 9 are provided at their upper ends with gear or sprocket wheels 10 and 11, which are connected by means of the chain 12. When it is desired to adjust the plow 5, the same may be accomplished by moving one of the sprocket wheels and thereby rotating the operating screws 8 and 9 so as to raise the U-shaped frame 6 in the guides formed at the ends of the cross rod 7′.

The cylinder 13 is journaled to the frame 1 by means of suitable bearing blocks and is formed with a closed end and an open end, said open end being adjacent to the plow 5 which is positioned at an oblique angle to the axis of said cylinder. A spiral conveyer 14 in the form of a toothed or corrugated plate is mounted within the conveyer cylinder.

A plurality of arched braces 15 and 16 extend above the frame 1 and the U-shaped support 4 and are crossed at their central point. At this point a tongue 17 formed with an upwardly arched end 18 is secured pivotally to the braces 15 and 16 by a pivot 19. The tongue or draft bar 17 may be swung in the arc of a circle around the frame 1 and for this purpose is provided with a projecting piece 20 which is arranged to engage the under side of the frame 1.

When it is desired to excavate a quantity of earth for a road, the draft bar or tongue 17 is placed in its forward position and the cylinder 13 is rotated over the ground. The movement of the cylinder 13 over the ground will cause the plow 5 to scrape quantities of earth against the open end of the cylinder 13 and the earth passing into said cylinder will be conveyed interiorly thereof by means of the spiral conveyer 14. When the cylinder is filled with earth, the tongue 17 may be reversed on the frame 1 and the cylinder rotated in an opposite direction. The movement of the cylinder over the ground when the tongue is held in its reversed position on the frame 1, will cause the spiral conveyer 14 to convey the dirt contained within the cylinder 13 outwardly against the scraper plow 5 and on

to the ground. It will therefore be seen that my invention provides means whereby an excavating machine may be made to empty itself by a simple movement corresponding to the filling movement.

My improved invention will require very little care to operate and may be constructed of any size with various changes of proportions and arrangements of parts without departing from the spirit of the invention.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

I claim as my invention:—

1. An excavating machine comprising a main frame, a horizontal support projecting laterally from one end of said frame, a conveyer cylinder having an open end, rotatably mounted in said frame, a spiral conveyer arranged in said cylinder and a scraper plow adjustably supported near the open end of the conveyer cylinder in an oblique position with relation to the longitudinal axis thereof.

2. An excavating machine comprising a main frame, a horizontal support projecting laterally from one end of said frame, a conveyer cylinder having an open end rotatably mounted in said frame, a spiral conveyer arranged in said cylinder and a scraper plow adjustably supported near the open end of the conveyer cylinder in an oblique position with relation to the longitudinal axis thereof and a reversible draft bar or tongue pivoted to the center of the main frame.

3. An excavating machine comprising a main frame having curved front and rear portions, a conveyer cylinder rotatably mounted in said frame, a spiral conveyer in the cylinder, bowed intersecting braces extending over and across the frame and attached at opposite ends thereto and a reversible tongue pivoted to said braces at the point of intersection thereof.

4. An excavating machine comprising a main frame having curved front and rear portions, a conveyer cylinder rotatably mounted in said frame, a spiral conveyer in the cylinder, bowed intersecting braces extending over and across the frame and attached at opposite ends thereto and a reversible tank pivoted to said braces at the point of intersection thereof, said tank having a guide or projection adapted to extend under either the front or rear curved portion of the main frame.

5. An excavating machine comprising a main frame having curved front and rear portions, a cylinder rotatably mounted in said frame, a conveyer in said cylinder, a brace extending laterally from one end of the main frame, bowed intersecting braces extending above and across said frame with their ends attached thereto, a tongue having an arched end pivoted to said braces at the point of intersection thereof, and a scraper plow adjustably mounted near one end of the conveyer cylinder.

6. In combination, a main frame, a conveyer cylinder rotatably mounted therein, a scraper plow, a spiral conveyer in said cylinder, a frame for supporting the scraper plow on the main frame and means for adjusting the plow supporting frame vertically.

7. In combination, a main frame, a conveyer cylinder rotatably mounted therein, a scraper plow, a supporting frame therefor, vertical screws for adjusting the plow supporting frame vertically, sprockets arranged at the upper ends of said screws and a chain for connecting the sprockets.

8. In combination, a main frame, a conveyer cylinder having an open end mounted therein, an approximately U-shaped plow supporting frame adjustably supported on the main frame adjacent to the open end of the conveyer cylinder, a scraper plow attached to the plow supporting frame, vertical adjusting screws passing through the cross piece of the plow supporting frame, sprockets arranged at the upper ends of said screws and a chain for connecting said sprockets.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS H. WALKER.

Witnesses:
E. L. ZEIGLER,
E. G. ELLIS.