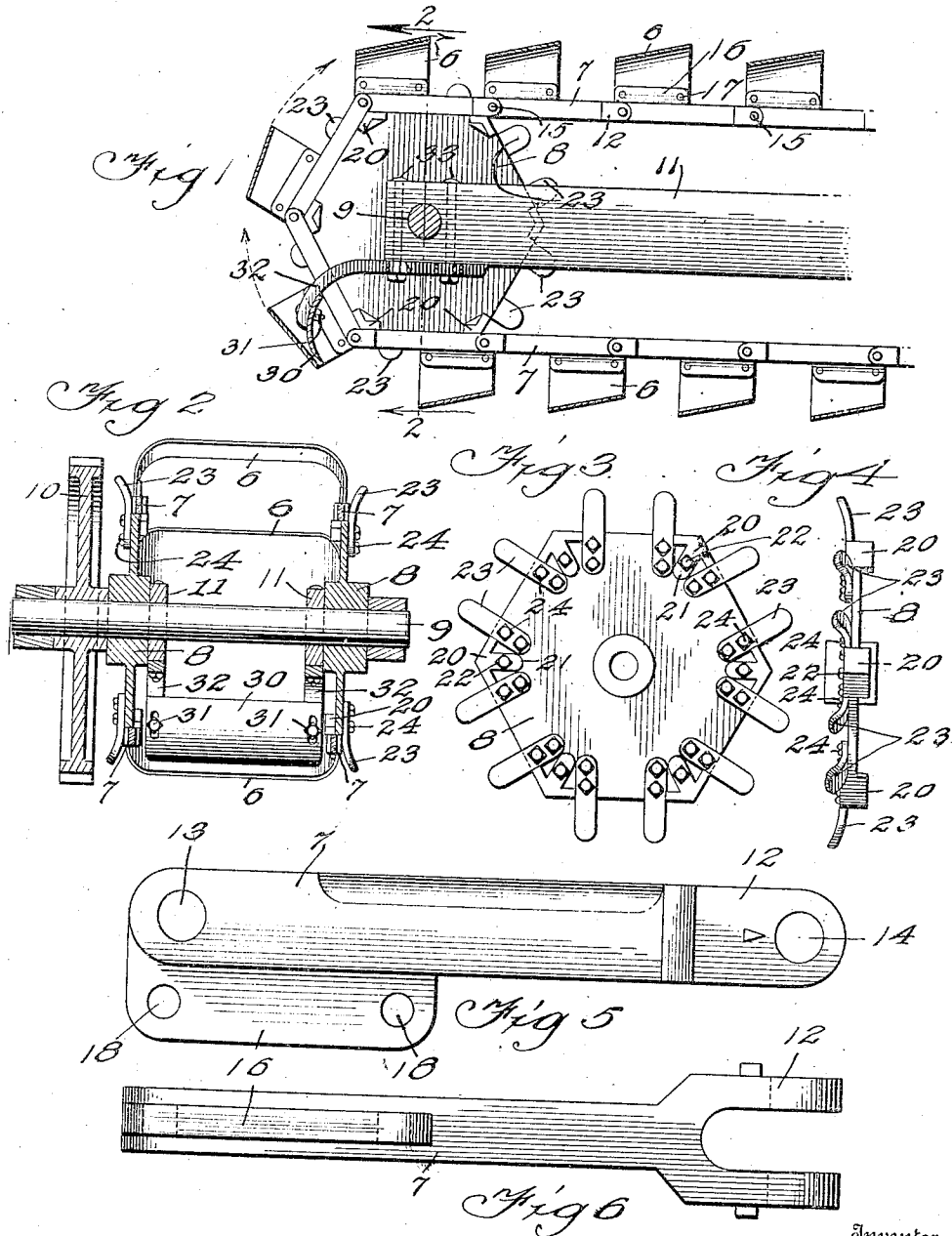


J. W. HUMPHREYS.
DITCHING MACHINE.
APPLICATION FILED NOV. 21, 1908.

931,763.

Patented Aug. 24, 1909.



Witnesses
Frederick W. H. H.
Arthur M. H.

Inventor
Jas. W. Humphreys.
By *W. E. Tew*
Attorney

UNITED STATES PATENT OFFICE.

JAMES W. HUMPHREYS, OF ALVA, OKLAHOMA.

DITCHING-MACHINE.

931,763.

Specification of Letters Patent. Patented Aug. 24, 1909.

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To all whom it may concern:

Be it known that I, JAMES W. HUMPHREYS, a citizen of the United States, residing at Alva, in the county of Woods and State of Oklahoma, have invented certain new and useful Improvements in Ditching-Machines, of which the following is a specification.

This invention relates to ditching machines of that class having an endless line or belt of scoops carried on a frame which is held in position and which can be raised or lowered to any depth desired. Such machines are shown in my U. S. Patents Nos. 607,688; 516,682; 436,241 and 355,701.

The object of the present invention is to provide an improved chain by which the scoops are carried, the links of the chain being so constructed that the scoops can be readily attached or detached.

A further object is to provide an improved wheel for carrying the chains to which the scoops are attached, the wheel having removable parts which can be replaced when they become worn, and also having guides which prevent the chains from slipping off the wheels.

A further object of the invention is to provide an improved cleaner, to detach the earth from the scoops at the upper end of the run.

The invention is illustrated in the accompanying drawings in which—

Figure 1 is a longitudinal sectional view showing one end or part of the traveling excavating devices and the supporting frame. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a plan view of one of the belt wheels. Fig. 4 is an edge view of the same. Figs. 5 and 6 are plan and edge views of one of the links.

The scoops or cutters 6 are carried by a pair of chain belts formed of links 7, the scoops being slightly tapered toward the rear, and open at both ends. The belts pass around wheels 8 mounted upon a shaft 9 which will be carried by the frame work of the machine and driven by suitable gearing one wheel, 10, of which is shown, fast on the shaft. There will be shafts and wheels at opposite ends of the belts, and said shafts will be spaced apart by beams 11, in a well known manner.

Each link 7 of the chain comprises a main bar forked at one end as indicated at 12 and

having holes 13 and 14 to receive the pivot bolts 15 by which the links are connected together. On the outer edge of each link is a longitudinal rib 16 to which the ends of the scoops are attached as by bolts 17 through holes 18 at the ends of said rib. Each scoop will be formed of a piece of sheet steel or other metal bent so that its ends will fit against the outer sides of the ribs 16, for attachment thereto, and will lie within the plane of the outer side of the link.

Each wheel 8 consists of a hub and a web, the periphery of the wheel being hexagonal or non-circular in shape, in order to drive the belt, and necessarily each link is of proper length to fit the corresponding part of the wheel rim. At each corner the wheel is provided with a detachable corner piece 20 having a shank 21 which is bolted to the web as indicated at 22. These corner pieces are set in suitable recesses made to receive the same at the corners of the wheel. The wheel is also provided with projecting guard fingers 23 attached to the web of the wheel by bolts 24, and located adjacent to each corner piece. These fingers project on the outer side of the wheel and serve to retain the chains in position on the wheels. This manner of construction, and located adjacent to each corner piece, and the guard fingers to be renewed when they become worn out, without dismantling the supporting frame work and removing the shaft. New scoops can also be attached at any time, without separating the links of the belts.

In order to dislodge dirt from the scoops when they reach the inner end of the run, I provide a cleaner consisting of a scraper or blade 30 fastened at its opposite ends by bolts 31 to arms 32 attached by bolts 33 to the under side of the beams 11. By passing the bolts through slots in the arms the latter can be adjusted, and the blade may be adjusted in the same manner, to properly locate the scraper with respect to the scoops, so that the latter will pass the same. As the endless excavator is operated, the scraper will dislodge the dirt or material from the scoops, thereby clearing the same out at the rear ends of the scoops. This will be found very useful in dealing with sticky material.

I claim:

1. A chain for the belt of a ditching machine, comprising a succession of links piv-

oted together, each link having a rib along one edge for a portion of its length only, for attachment of a scoop or the like, whereby the scoops attached to successive links will be spaced apart.

5 2. A wheel for the link belt of a ditching machine, having a non-circular web with recesses at the corners thereof, and pieces fitting in said recesses, each having a shank bolted to the side of the web, and head portions extending oppositely and at an angle from each other from the outer end of said shank.

10 3. In a ditching machine, the combination with endless belts with scoops therebetween, and a frame provided with a shaft and wheels over which the belts travel, of a scraper supported on the frame between said

belts, in position to dislodge material from the scoops.

20 4. In a ditching machine, the combination with a pair of beams, a shaft extending across the ends thereof and provided with wheels on the outer sides of the beams, belts which pass around the wheels, scoops extending across between the belts, and a scraper supported on the ends of said beams, in position to dislodge material from the scoops.

In testimony whereof, I affix my signature 30 in presence of two witnesses.

JAMES W. HUMPHREYS.

Witnesses:

W. G. SHARE,
S. B. SHARE.