Dec. 27, 1932. C. L. GEORGE 1,892,526

TRENCHING MACHINE

Original Filed March 25, 1932 2 Sheets-Sheet 1

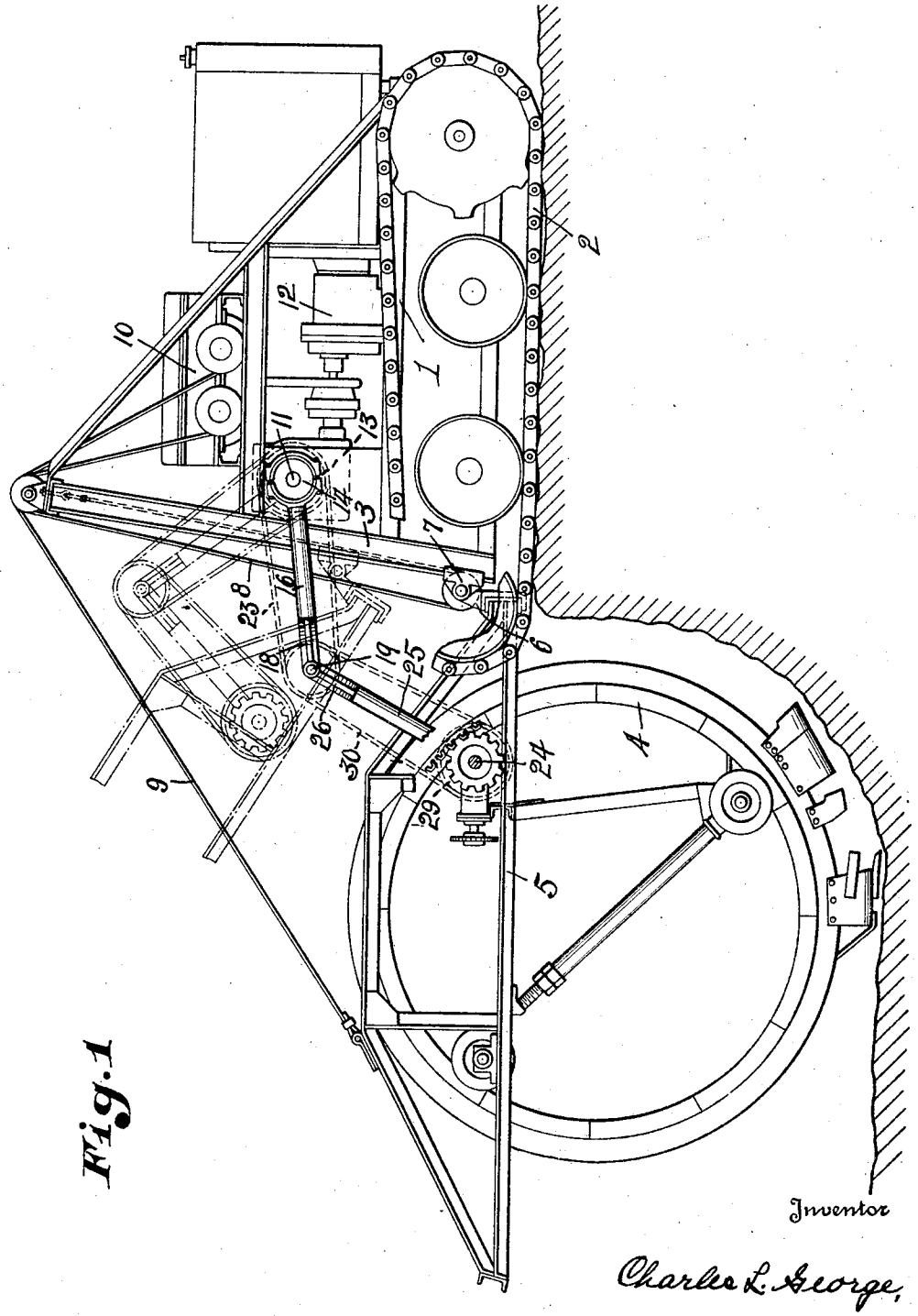


Fig. 1

Inventor

Charles L. George,

By Owen & Owen,

Attorneys

Dec. 27, 1932. C. L. GEORGE 1,892,526

TRENCHING MACHINE

Original Filed March 25, 1932 2 Sheets-Sheet 2

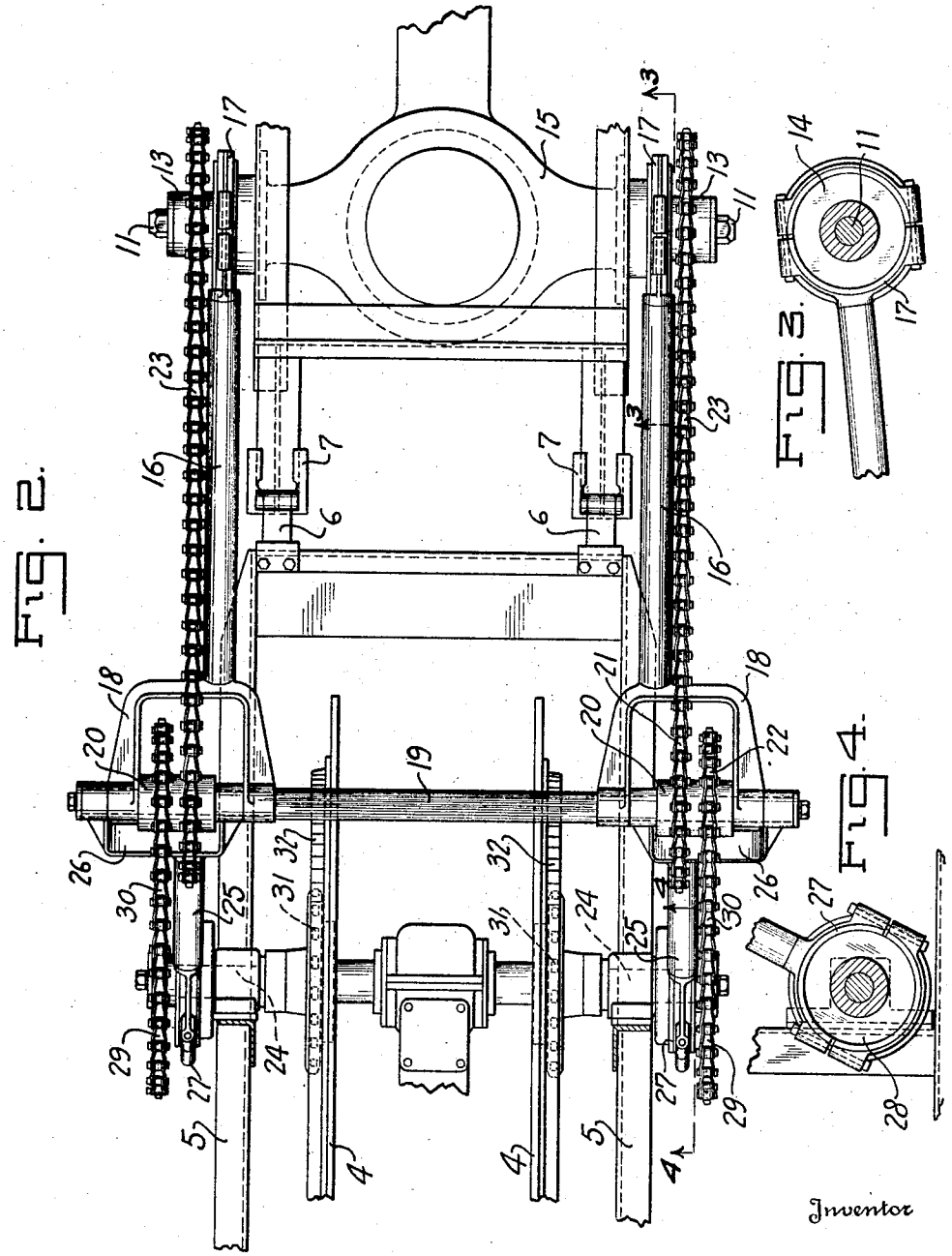


Fig. 2.

Fig. 3.

Fig. 4.

Inventor

Charles L. George.

By Owen & Owen

Attorneys.

Patented Dec. 27, 1932 1,892,526

UNITED STATES PATENT OFFICE

CHARLES L. GEORGE, OF FINDLAY, OHIO, ASSIGNOR TO THE BUCKEYE TRACTION DITCHER COMPANY, OF FINDLAY, OHIO, A CORPORATION OF OHIO

TRENCHING MACHINE

Original application filed March 25, 1932, Serial No. 601,209. Divided and this application filed July 14, 1932. Serial No. 622,413.

This invention relates particularly to trenching machines of the wheel-type.

The primary object of the invention is the provision of a drive means of novel arrangement and construction between the digging wheel and source of power, which means employs drive chains having definite centers and avoids the necessity of using some type of chain slack device to maintain the driving means operative for different adjusted positions of the digging wheel and its frame.

This application is a division of my former application, Serial No. 601,209, filed March 25, 1932.

The invention is fully described in the following specification, and one embodiment thereof illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an excavating machine embodying the invention, with the digging wheel in lowered digging position, portions of the machine being omitted; Fig. 2 is an enlarged plan view of the digging wheel driving means, together with associated portions of the machine, and Figs. 3 and 4 are sections on the lines 3—3 and 4—4, respectively, in Fig. 2.

Referring to the drawings, 1 designates the main frame of a trenching machine, carried, in the present instance, by tractor units 2 of the apron-type, and itself carrying various power and control units common to machines of this type.

The customary upright frame 3 is provided at the rear end of the frame 1. The digging wheel 4 is carried in the usual or any suitable manner by the vertically swinging frame 5, which at its forward or inner end is provided with hanger arms 6 pivotally suspended from blocks 7 guided for vertical sliding movements by the upright 3, as well understood in the art. The vertical adjustment of the inner and outer ends of the wheel frame 5 is effected by means of cables 8 and 9 extending over sheaves at the top of the upright from suitable control means 10 on the main frame. All of these features of construction are well understood in the art and need not, therefore, be described in detail. The mechanism for transmitting power to the digging wheel from suitable power means mounted on the main frame 1 comprises a cross-shaft 11 mounted on the main frame forward of the upright 3 and having suitably controlled driving connection with a power unit 12. This shaft may be termed the "drive shaft" as applied to the driving connection between the power unit and digging wheel, and may be the same, both in its mounting and driving, as the corresponding shaft of the drive means now commonly employed.

The shaft 11 has a sprocket-wheel 13 fixed to each end thereof, and also has a small wheel or disc member 14 mounted thereon between each wheel 13 and the adjacent end of the casing 15 in which the shaft is mounted. The shaft is longer than the width of the frame 3, so that the members 13 and 14 are disposed beyond its sides.

An arm 16 is mounted at its forward end on each disk member 14 by means of a strap 17 for swinging coaxially with the shaft 11, and has its opposite or rear end provided with a U-shaped yoke 18 with the arms thereof horizontally spaced. A cross-shaft 19 parallels the shaft 11 and is mounted at its respective end portions in suitable bearings or openings provided in the ends of the arms of the respective yokes 18. The shaft 19 serves to firmly connect the arms 16, 16, and to cooperate therewith to form a substantially U-shaped frame for swinging movements about the axis of the shaft 11.

A hub or sleeve member 20 is mounted on the shaft 19 between the arms of each yoke 18 and carries two sprocket-wheels 21 and 22. Each sprocket-wheel 13 is connected by a sprocket-chain 23 to the respective sprocket wheels 21 on the shaft 19.

The shaft 19 is spaced with respect to the customary digging wheel driving shaft 24 on the frame 5 by a pair of arms 25, each of which has a U-shaped bearing yoke 26 at one end for bearing engagement with the respective end of the shaft 19, while the opposite end of the arm is provided with a strap 27 loosely embracing a disc 28 on the respective end of the shaft 24, thus permitting swinging movements of the arms 25 relative to the shaft

24. Each yoke 26 straddles a respective set of sprocket wheels 21 and 22, and, in the present instance, has its arms alternating with the arms of the yoke 18. The customary sprocket-wheel 29 is mounted on each end of the shaft 24 at the outer side of the frame 5 and is connected by a sprocket-chain 30 to the respective sprocket-wheel 22 on the shaft 19. The shaft 24 has driving connection with the digging wheel 4 through spur-gears 31 mounted on the shaft and in engagement with annular sets of teeth 32 on the rim members of the digging wheel, as well understood in the art.

It is apparent with this form of drive for the digging wheel, that the digging wheel frame 5 may be placed in any position of adjustment relative to the main frame without affecting the efficient driving action of the driving means, and that it eliminates the use of some type of chain slack device customarily employed.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications or changes without departing from the spirit of the claim.

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

In combination, in a trenching machine, a main frame, a relatively adjustable digging wheel-carrying frame, transverse drive and driven shafts carried respectively by said frames, an intermediate shaft, an arm swingingly connected to each end of the drive shaft and having a yoke at its free end, the arms of which receive the intermediate shaft, an arm swingingly projecting from each end of the driven shaft and having a yoke with its arms mounted on and the intermediate shaft in cooperating relation to respective yokes of the first-mentioned arms, a pair of fixedly connected sprocket-wheels mounted on the intermediate shaft between the arms of each cooperating set of yokes, a sprocket-wheel on the outer end of each of the drive and driven shafts, sprocket-chains connecting each sprocket-wheel on the drive shaft to the respective sprocket-wheel on the intermediate shaft and a sprocket-chain connecting each sprocket-wheel on the driven shaft to a respective sprocket-wheel on the intermediate shaft.

In testimony whereof I have hereunto signed my name to this specification.

CHARLES L. GEORGE.