July 22, 1930. W. H. WATSON 1,771,006

CONVEYER APPARATUS

Filed June 26, 1928 2 Sheets-Sheet 1

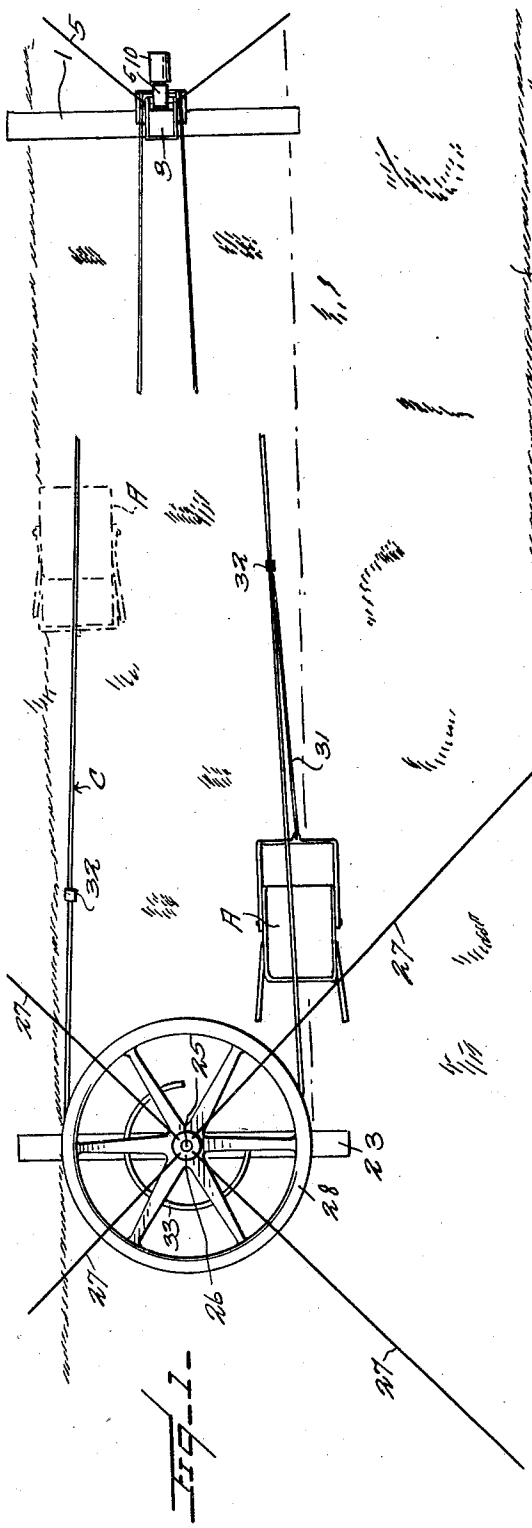


Fig. 1.

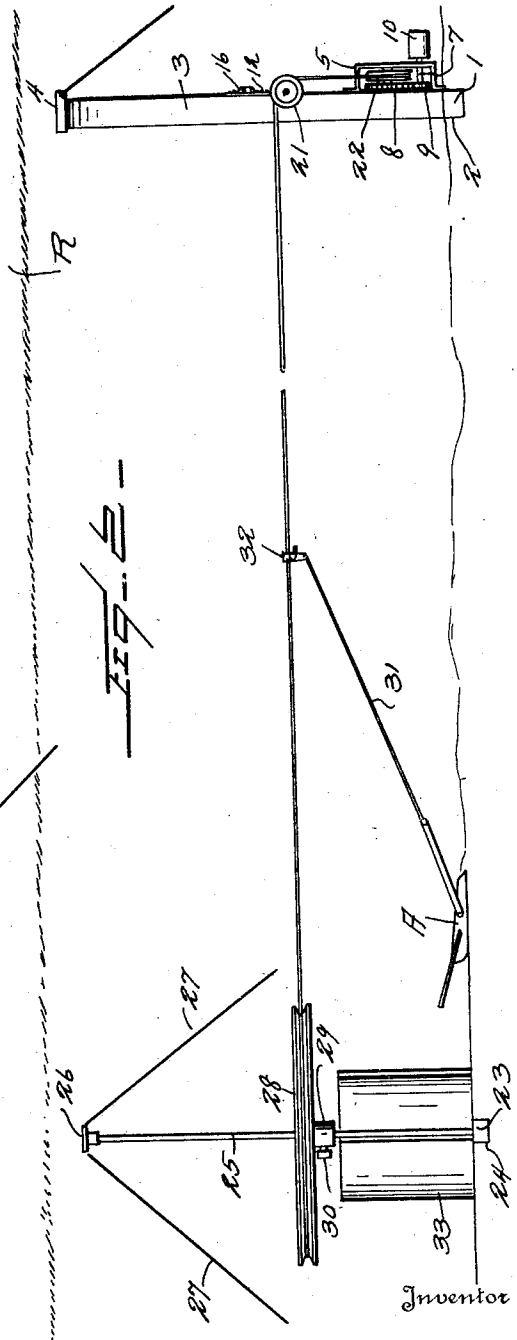


Fig. 2.

Inventor

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CONVEYER APPARATUS

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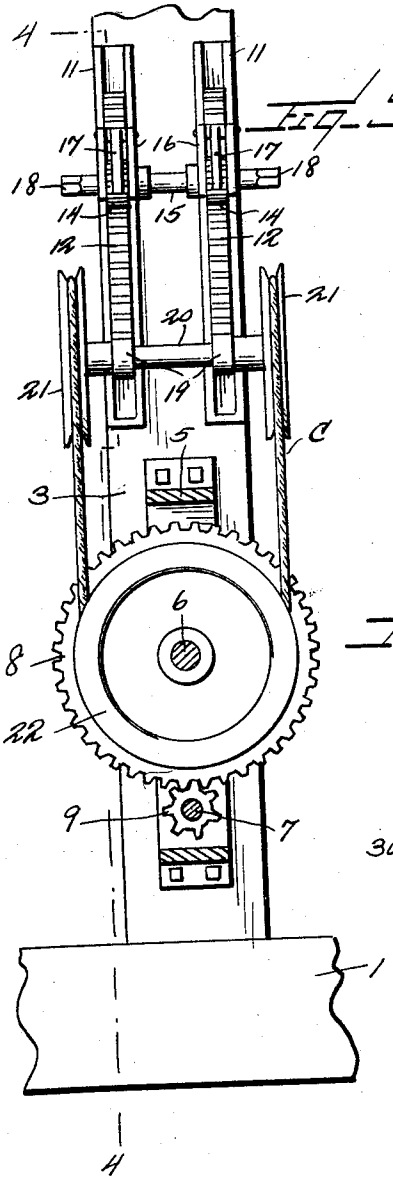


Fig. 3.

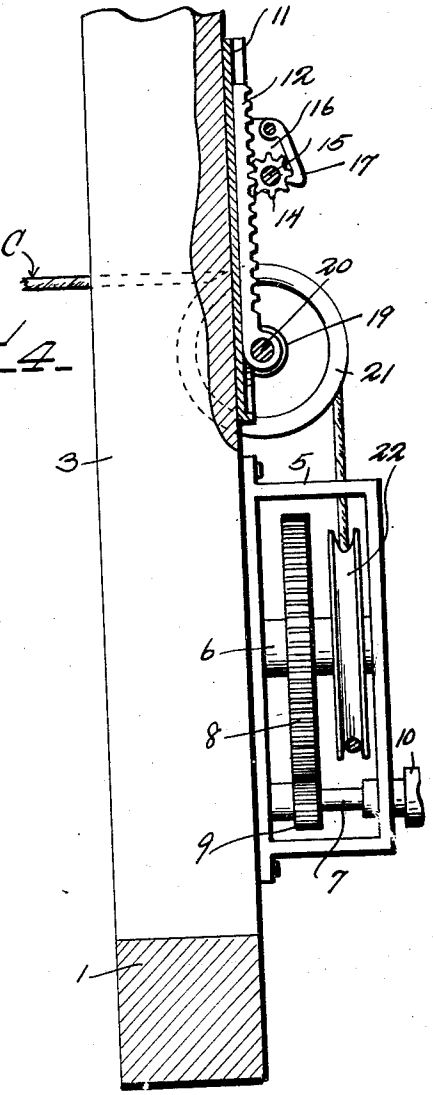


Fig. 4.

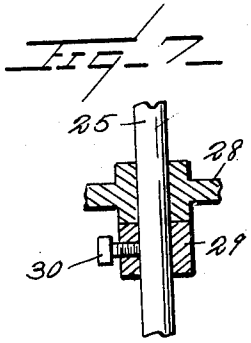


Fig. 7.

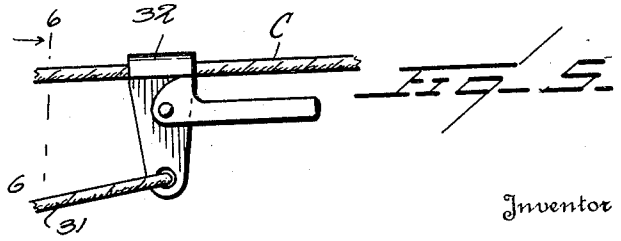


Fig. 5.

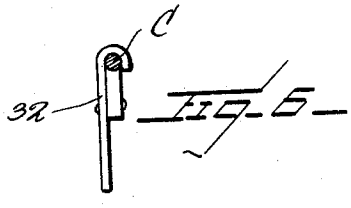


Fig. 6.

Inventor

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Patented July 22, 1930

1,771,006

UNITED STATES PATENT OFFICE

WILLIAM H. WATSON, OF CUTHBERT, GEORGIA

CONVEYER APPARATUS

Application filed June 26, 1928. Serial No. 288,478.

This invention relates to a conveyer apparatus and it is an object of the invention to provide a device of this kind which is especially designed and adapted for use in connection with road making.

It is also an object of the invention to provide a device of this kind provided with power driven means whereby material may be readily and conveniently transported from one point to another as desired and in a manner materially reducing the cost of labor.

Furthermore, it is an object of the invention to provide an apparatus of this kind which can be employed with especial advantage in the cutting down of high spots in a road surface and conveying the material so removed to desired points to fill up dips in the road surface whereby the desired grading of a road surface may be accomplished.

The invention also has for an object to provide an apparatus of this kind comprising an endless member associated with suitable supporting means together with a mechanism for driving said endless member and wherein suitable carriers, such as scrapers, are adapted to be connected with the endless member for travel therewith.

The invention also contemplates for an object to provide an apparatus of this kind which may be readily assembled for a desired working operation and which includes an endless member and a supporting means therefor wherein said supporting means is of such a nature to permit the same to be readily adjusted vertically with respect to the working surface as the necessities of practice may dictate.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved conveyer apparatus whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a view in top plan and of a diagrammatic character illustrating a conveyer apparatus constructed in accordance with an embodiment of my invention;

Figure 2 is a view in side elevation of the apparatus as illustrated in Figure 1;

Figure 3 is an enlarged fragmentary view partly in elevation and partly in section illustrating one of the supporting means for the endless cable as herein employed;

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 3;

Figure 5 is a detail view in side elevation illustrating a means for connecting or coupling a scraper or kindred device to the endless cable;

Figure 6 is a sectional view taken substantially on the line 6—6 of Figure 5;

Figure 7 is a fragmentary view partly in section and partly in elevation illustrating the mounting for the cable wheel as herein employed.

My improved apparatus as herein disclosed is particularly designed and adapted for use in the grading of roads although it is to be understood that it can be employed for other purposes, as for example carrying suitable articles or material from one point to another in a manner to save cost in such transportation.

As disclosed in the accompanying drawings, 1 denotes a base sill adapted to be placed within a trench 2 or the like which is herein disclosed as disposed in a direction transversely to a roadway R. This placement of the sill 1 is to give the same an effective footing.

Suitably secured to and extending upwardly from the central portion of the sill 1 is a column 3 of desired dimensions and which is provided at its top with the rearwardly disposed lugs 4 to which are adapted to be suitably attached the downwardly and rearwardly disposed guy lines 5. The rear face of the column 3 at a point closely adjacent to the sill 1 has secured thereto an outstanding frame or bracket 5 which provides a mounting for a driven shaft 6 and a drive

shaft 7. The shafts 6 and 7 are in operative connection one with the other through the medium of the gear wheel 8 carried by the shaft 6 and the pinion 9 fixed to the shaft 7. The gear wheel 8 and pinion 9 are of such ratio to effect a considerably slower rotation of the shaft 6 than the speed of rotation of the shaft 7. The shaft 7, as illustrated in Figure 4, carries a pulley 10 adapted to be coupled in a conventional manner with the power take-off of a tractor or other suitable source of power. It is to be understood, however, that the shaft 7 may be caused to rotate in any manner desired and, therefore, the particular means of driving the shaft 7 forms no part of the present invention.

The rear face of the column 3 at a desired distance above the frame or bracket 5 has suitably secured thereto parallel trackways 11 disposed lengthwise of the column 3 and in the present instance each of these trackways 11 is disclosed as a channel iron. Slidably engaged with each of the trackways 11 is an elongated rack member 12 and in mesh therewith is a pinion 14 carried by the shaft 15 disposed transversely of the column 3. This shaft 15 is common to both of the pinions 14 and is rotatably supported by the outstanding bearing plates 16 carried by the trackways 11. The bearing plates 16 also provide a mounting for the holding dogs 17 which engage the gears or pinions 14 to effectively hold the same against rotation whereby the rack members 12 are locked in desired adjustment with respect to the column 3.

The extremities of the shaft 15, as particularly illustrated in Figure 3, are provided with the squared portions 18 with which a suitable implement, such as a crank, is adapted to be selectively engaged to permit the shaft 15 to be manually rotated to effect the desired adjustment of the rack members 12 lengthwise of the trackways 11. It is to be understood that before the shaft 15 is rotated the holding dogs 17 are disengaged from the pinions 14.

The lower end portions of the rack members 12 are provided with the bearings 19 which provide mountings for a shaft 20. This shaft 20 extends beyond opposite sides of the column 3 and to the extremities of said shaft 20 are affixed the pulleys 21. Disposed over the pulleys 21 are the stretches of an endless cable C, said stretches extending downwardly from the pulleys 21 and passing under a pulley 22 fixed to the shaft 6 hereinbefore referred to.

At a desired point spaced from the sill 1 is positioned a second sill 23 also seated within a ditch 24 provided in the working surface. This sill 23 is arranged substantially in parallelism with the sill 1 and has extending upwardly from its central portion a mast 25. The upper end portion of the mast 25 has fixed thereto a crown piece 26 to which are suitably affixed the guy lines 27, said lines preferably extending fore and aft of the mast whereby said mast is effectively supported in desired upright position in a manner to effectively withstand the stresses and strains that may be imposed thereon and particularly during a working operation of the apparatus.

Freely mounted on the mast 25 for rotation therearound is a cable wheel 28, said wheel being maintained a desired distance above the sill 23, or more particularly the working surface, by a collar 29 locked in desired position on the mast 25 by a binding screw 30.

The cable C is also disposed around the wheel 28. The wheel 28, and especially when the apparatus is employed in connection with road work, is preferably of a diameter substantially equal to one-half of the width of the roadway so that upon a placement of the apparatus one-half of the roadway between the sills 1 and 23 may be effectively worked and at the same time leaving the opposite half of the roadway open for traffic. When the work upon one side of the road has been completed it is only necessary to shift the apparatus to the other side. When the work between the sills 1 and 23 has been fully completed the column 3 and the mast 25, after proper release of the guy lines 5 and 27, may be readily placed upon a truck and moved ahead for the next succeeding operation.

The sills 1 and 23 may be spaced apart any distance desired to assure an effective operation of the apparatus, and upon the placement of the sills 1 and 23 in desired position the pulley 28 is adapted to be adjusted lengthwise of the mast 25 to a desired position with respect to the working surface and this is also true with respect to the shaft 20 and the pulleys 21 carried thereby. It is to be understood that as the pulleys 21 are raised with respect to the column 3 the cable C will have to be lengthened and vice versa. This can readily be done by employing cables of different lengths or by putting suitable inserts therein.

During a working operation suitable carriers A are adapted to be detachably connected to the cable C at desired points therealong. In the present embodiment of my invention, each of the carriers A comprises a scraper of a conventional type and which has operatively connected thereto an elongated flexible member 31 provided at its outer extremity with a coupling member 32 of a type which readily permits the member 31 to be operatively secured to or disengaged from the cable C.

As the cable C travels the carriers or, in the present instance, the scrapers A are pulled toward the tower end of the apparatus or the column 3 during their working operation and

as a scraper reaches a desired point upon the surface to be worked a laborer will operate such scraper to effect a desired removal of material and after the scraper has been passed over such portion of the surface or has become filled, it is permitted to travel with the cable C until the desired dumping point is reached whereupon a second laborer will throw over the scraper A to discharge the material where desired, as for example within a dip in a road surface to be leveled. As the carrier or scraper A continues to travel toward the column 3 a third laborer just before the cupling 32 reaches a pulley 21 will disengage said coupling 32 from the cable C and engage said coupler with the second stretch of the cable C moving or traveling in a direction away from the column 3.

As a carrier or scraper A travels along with the cable C in a direction away from the column 3 and as it reaches the wheel 28, the coupling 32 will readily pass around said wheel and the carrier or scraper drawn around the lower portion of the mast 25.

To facilitate the travel of the carrier or scraper A around the lower portion of the mast 25, I provide an upstanding guard plate or shield 33 herein disclosed as circular in form and in excess of a semi-circle. As illustrated in Figure 1, it is to be noted that this guard or shield 33 is so positioned as to completely extend from one side of the mast 25 to the other so that as a carrier or scraper A is being drawn around the mast 25 it will be prevented from coming into contact therewith or effecting any such entanglement which would prevent this desired turning travel of the carrier or scraper.

From the foregoing description it is thought to be obvious that a conveyer apparatus constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. In combination with a conveyer apparatus including an endless pulling member, a column, a shaft carried by the column, means for vertically shifting the position of the shaft upon the column, pulleys carried by said shaft at opposite sides of the column and over which the endless member is engaged, and a drive pulley carried by the column below the shaft and under which the endless member is also engaged.

2. In combination with a conveyer apparatus including an endless pulling member, a column, a shaft disposed transversely of the column, a supporting means for the shaft including racks, means for engaging the racks with the column for movement lengthwise thereof, means operatively supported by the column and engageable with all the racks for imparting endwise movement thereto to raise or lower the shaft, means for vertically shifting the position of the shaft upon the column, pulleys carried by said shaft at opposite sides of the column and over which the endless member is engaged, a drive pulley carried by the column below the shaft and under which the endless member is engaged, and means for operating the drive pulley.

In testimony whereof I hereunto affix my signature.

WILLIAM H. WATSON.