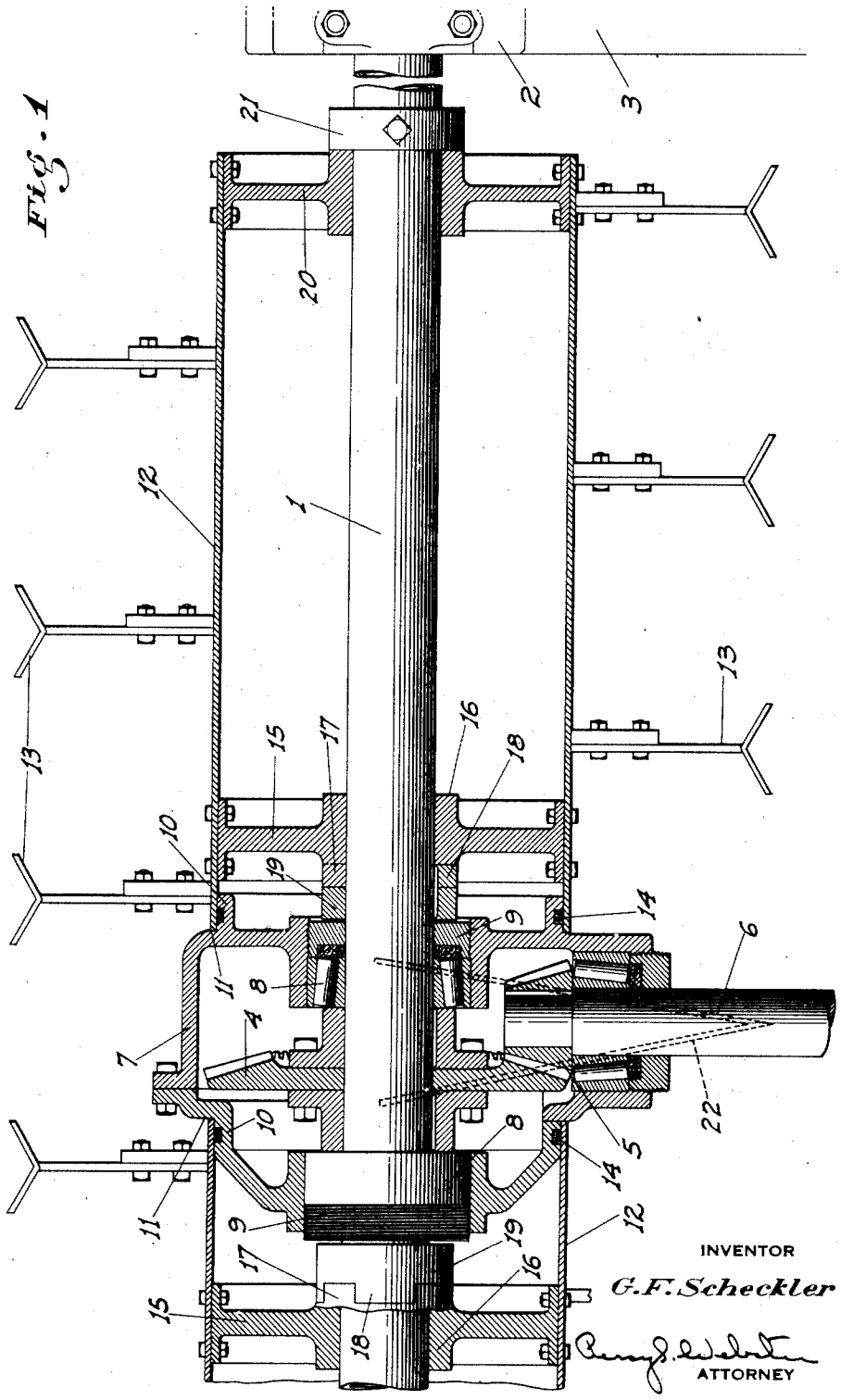
March 5, 1929. G. F. SCHECKLER 1,704,263

DRIVING MECHANISM FOR SOIL PULVERIZERS

Filed Jan. 9, 1928 2 Sheets-Sheet 1

Fig. 1



INVENTOR
G. F. Scheckler
ATTORNEY

March 5, 1929. G. F. SCHECKLER 1,704,263

DRIVING MECHANISM FOR SOIL PULVERIZERS

Filed Jan. 9, 1928 2 Sheets-Sheet 2

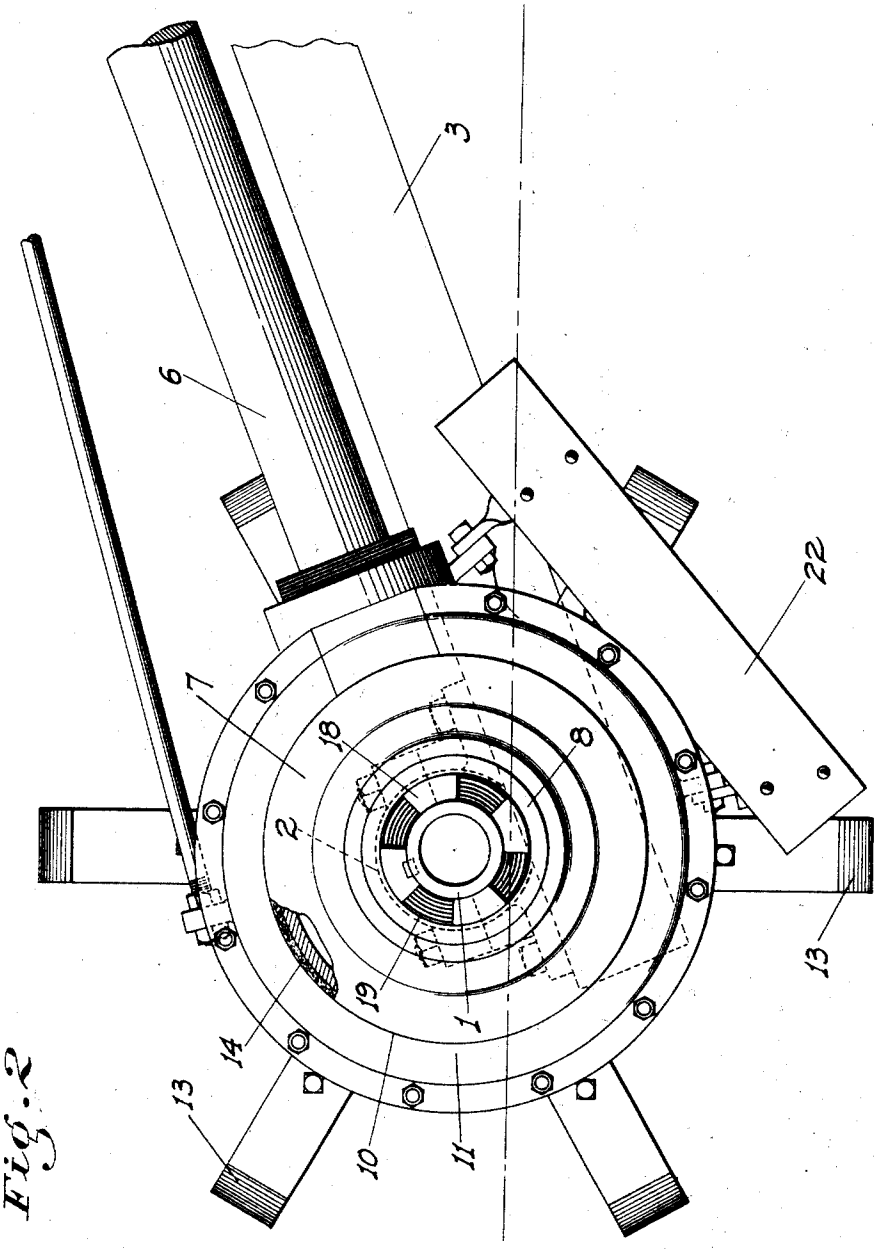


Fig. 2

INVENTOR

G. F. Scheckler

BY

ATTORNEY

Patented Mar. 5, 1929. 1,704,263

UNITED STATES PATENT OFFICE.

GORDON F. SCHECKLER, OF STOCKTON, CALIFORNIA, ASSIGNOR OF ONE-HALF TO ROSCOE C. ZUCKERMAN, OF STOCKTON, CALIFORNIA.

DRIVING MECHANISM FOR SOIL PULVERIZERS.

Application filed January 9, 1928. Serial No. 245,424.

This invention relates to improvements in ground working implements of that general character which includes a rotating drum or the like to be drawn behind a tractor, dirt engaging elements projecting outwardly from the drum and driving mechanism for the drum. The present invention deals particularly with the mechanism for rotating the drum or shaft as the case may be.

Heretofore as far as I am aware all such structures have been driven by chains or other completely exposed means, so that when the structure is depressed into operative engagement with the ground, the chains, etc., of course inevitably contact with the ground also. This causes abrasion and rapid wear of the chain and sprockets and frequent clogging of the same with dirt, sometimes to an extent sufficient to cause the chain to break. Also as will be evident, it is impossible under such operating conditions to maintain the driving mechanism in a proper lubricated condition and as a result such mechanism soon wears out even if it does not actually break.

The principal object of my invention therefore is to provide a driving mechanism for such a pulverizer so constructed as to be completely inclosed so that it is properly protected from contact with the dirt and may be kept constantly and entirely lubricated. Such mechanism includes inclosed gears mounted in bearings provided with take-up means, and another object of my invention is to connect the parts of the structure in such a manner that while the take-up means are normally concealed and protected, the parts may be easily and quickly disassociated from each other sufficient to enable the necessary adjustments to be made, without having to dismantle the entire structure.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views;

Fig. 1 is a fragmentary sectional plan view of my improved structure.

Fig. 2 is an end elevation of the same with one of the drum members removed.

Referring now more particularly to the numerals of reference on the drawings, 1 denotes a horizontal drive shaft journaled at each end in a bearing 2 supported on the rear end of a beam 3. These beams support the entire structure for vertical adjustment in the usual manner and the arrangement thereof forms no part of my invention.

Keyed onto the shaft substantially centrally between its ends is a bevel gear 4 engaged by a pinion 5 which projects from a drive shaft 6 extending forwardly at right angles to the shaft 1. The gear and pinion are inclosed in a housing 7 which is provided at opposite ends with roller bearings 8 or the like for the shaft 1 with take-up or adjustment nuts 9 for said bearings projecting outwardly from the ends of the housing. The opposite ends of the housing are formed with finished-surfaced bands or rings 10 concentric with the shaft 1 and having shoulders 11 at their inner ends. Turnable on these bands and abutting against the shoulder are the inner ends of independent tubular drums 12 on which are secured outwardly projecting ground pulverizing elements 13 arranged in suitable longitudinally and circumferentially spaced relation. The type of pulverizing element itself forms no part of my invention. The bands 10 are circumferentially grooved to receive rings 14 of felt or similar material, so as to maintain a smooth running fit with the drums and prevent the passage of dirt and dust between these parts.

The drums adjacent the housing are provided with spiders 15 having hubs 16 turnable and slidable on the shaft 1. The ends of the hubs facing the housing have clutch jaws 17 formed thereon arranged to cooperate with similar jaws 18 formed on collars 19 which are keyed on to the shaft 1 just outwardly of the adjustment nuts 9.

At its outer end each drum also has a hub and spider member 20 engaging the shaft, slidable collars 21 being adjustably fixed on the shaft outwardly of and engaging the members 20, said collars being located between said members and the bearings 2. The cutting elements on the drums while capable of being very closely spaced along said drums, adjacent the housing must be spaced apart a sufficient distance to avoid the shaft 6 as will be evident. To cause the dirt between adjacent cutters or across the housing to be worked on and thrown into the sphere of ac-

tion of such cutters, a wedge shaped and forwardly pointing plow member 22 is secured to the under face of the housing and is disposed at a suitable upward and forward angle.

In operation it will be seen that the driving strains from the gear 4 are imparted to both drums adjacent the inner ends thereof through the medium of clutch collars 19 and through the cooperating clutch hubs 16 and spiders 15 to the peripheries of the drums. The driving strains being transmitted to the drums close to the gear, places most of the torsional strains on the large drums which are well able to withstand such strains rather than on the shaft 1, which may thus be made fairly light while having ample strength for its purpose. The driving mechanism is completely inclosed and protected even though the drums and housing are partly disposed below the ground surface.

When it is desired to get at one of the adjusting nuts, the corresponding drum member is disengaged from the housing by merely loosening the collar 21 and sliding the same toward the adjacent end bearing 2. The drum may then be freely slid lengthwise of the shaft sufficient to fully expose the adjusting nut. The latter may then be manipulated and if desired the adjacent felt ring 14 may also be lubricated or replaced since this ring is also then fully exposed as will be evident.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A soil pulverizer including a housing, a shaft journaled therein and projecting therefrom, a drum concentric with and surrounding the shaft outwardly of the housing, said drum having ground engaging elements thereon and having turning engagement with the adjacent end of the housing, disengageable drive connections between the shaft and drum enclosed by the latter, and means in the housing for rotating the shaft.

2. A soil pulverizer including a housing, a shaft journaled therein and projecting therefrom, a drum concentric with and surrounding and enclosing the shaft outwardly of the housing, said drum having ground engaging elements thereon, a clutch member fixed on the shaft, a cooperating clutch member mounted in connection with the drum and separable from the first named clutch member by a longitudinal movement of the drum away from the housing, said clutch elements being enclosed by the drum, means normally preventing such movement of the drum, and means in the housing for driving the shaft.

3. A soil pulverizer including a housing, a shaft projecting therefrom, bearing means in the housing for said shaft, an adjusting nut for the bearing projecting outwardly from the housing, a drum concentric with and surrounding the shaft, said drum having ground engaging elements thereon and normally having turning engagement with the housing to enclose the nut, means then connecting the drum in driving relation with the shaft, the drum being movable longitudinally along the shaft to disengage its engagement with the housing and break its driving relation with the shaft, means normally preventing such movement of the drum, and drive means for the shaft enclosed in the housing.

4. A soil pulverizer including a housing, a shaft journaled therein and projecting therefrom, a drum concentric with and surrounding the shaft outwardly of the housing, said drum having ground engaging elements thereon, and means between the housing and drum to normally provide a close running fit therebetween; the drum being movable longitudinally of the shaft to break said fit, means providing a driving connection between the shaft and drum only when the latter has such fit, releasable means for holding the drum against movement, and means in the housing for driving the shaft.

5. A soil pulverizer including a housing, a shaft journaled in and projecting from the housing, means in the housing for rotating the shaft, a clutch element fixed on the shaft adjacent but outwardly of the shaft, a drum concentric with the shaft and having running engagement at one end with the adjacent end of the housing, ground working members on the drum, spiders fixed in the drum adjacent its ends and having turning and sliding engagement with the shaft, a clutch element formed on the spider nearest the housing to cooperate with the shaft clutch element, and a collar releasably mounted on the shaft outwardly of the drum and normally engaging the adjacent spider.

In testimony whereof I affix my signature.

GORDON F. SCHECKLER.