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PUMP TRUCK

Filed Sept. 29, 1927

Fig. 1.

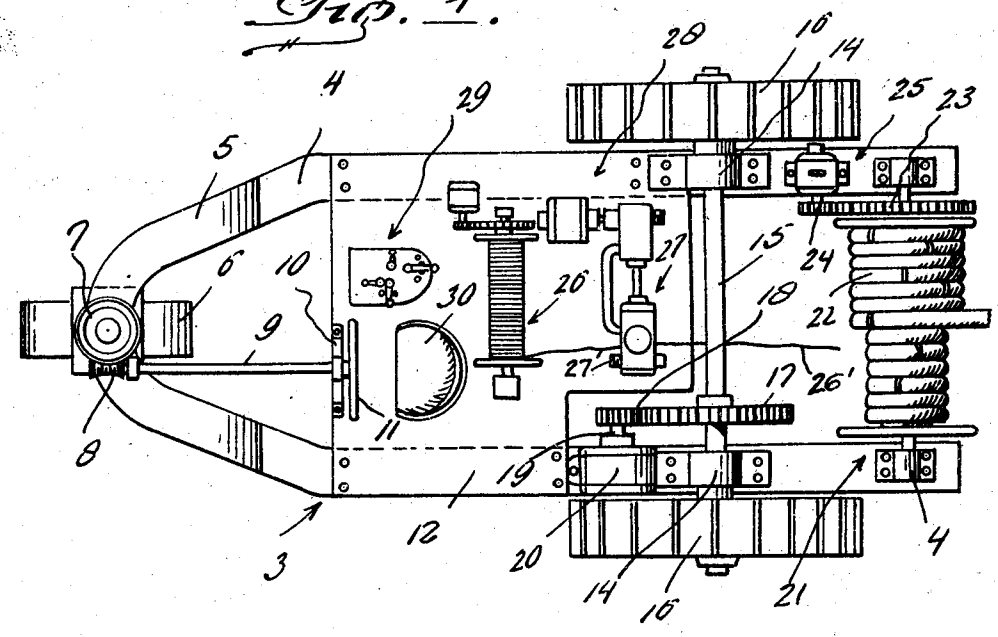
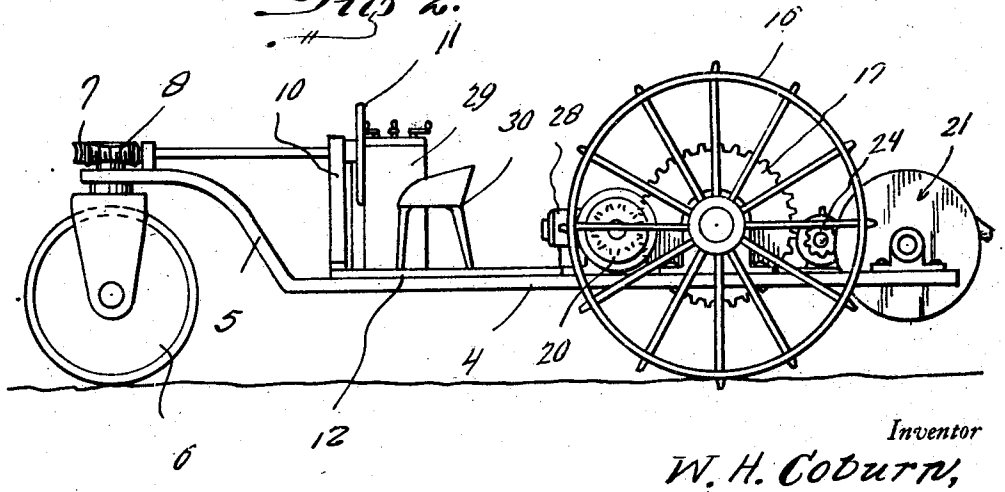


Fig 2.



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UNITED STATES PATENT OFFICE

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PUMP TRUCK

Application filed September 29, 1927. Serial No. 222,920.

This invention relates to an improved pump truck especially designed and constructed for use in coal mining systems where communicating main and auxiliary headings are provided.

More specifically, the truck has been built with a view toward adapting it for convenient operation, in a system of mining known as a concentrated pocket system, for attacking and retreating long walls.

The object is to provide a truck which includes self-propelling means, an electric motor driven pump supported thereon, and a cooperating hose reel, arranged so that the hose can be laid as occasion requires, thereby obviating the necessity of laying a pipe line or permitting the water to be discharged at random on the floor of the heading.

The alleged novelty is based upon the convenience of arrangement and association of parts and the design of the truck which is such as to adapt it for movement through comparatively low headings.

In the drawings:—

Figure 1 is a top plan view of a pump truck constructed in accordance with the present invention.

Fig. 2 is a side elevation of the same.

In the drawings, the reference numeral 3 designates generally the truck which comprises a somewhat U-shaped frame, the side bars 4 of which are disposed in spaced parallelism. The connecting portion 5 is offset upwardly, and is connected with the spindle of a single guide wheel 6. On the upper end of this spindle, is a worm gear 7 with which a worm 8 is meshed, this worm 8 being carried on a steering shaft 9. The steering shaft is mounted in a bearing on a standard 10 and is equipped with a hand wheel 11.

Incidentally, this standard 10 is mounted on a platform 12 on the frame. It is to be noted that the major portion of the frame is disposed in close proximity to the surface traversed in order that the hose line can be laid gently on said surface.

Mounted in appropriate bearings, 14, on the intermediate portions of the side bars, is an axle 15, having relatively large traction wheels 16 thereon. These wheels are of the ribbed type to insure efficient traction. Also mounted on the axle is a gear 17, with which small pinions 18 on a motor shaft 19 mesh. The motor is designated at 20, and suitably supported on one of the frame bars.

The reference character 21 designates generally a reel upon which a sectional hose 22 is wound. The reel is provided with a gear 23 in mesh with a pinion 24 carried by a small motor 25 on the opposite frame bar. This motor is of the reversible type so that the reel can be wound to discharge the hose or to wind the hose thereon.

The reference character 26 designates a power supply reel, on which a power conducting cable 26′ is wound. This power reel is also electrically motor driven. The cable extends back through the heading in an obvious manner, and is connected with a suitable source of power in one of the main headings of the mine, or to a power truck.

Located between the axle 15 and the reel 26 and suitably supported on the platform is a double-acting suction pump 27 operated through the medium of an appropriate motor 28. The pump 27 is provided with hose coupling 27′ to facilitate the attachment thereto of the hose 22. In this connection, it is to be stated that one or more sections of the hose can be removed from the reel and attached to the pump for removing water from workings in the base of the coal block.

At 29 we have designated a controller box and at 30 a seat for the operator, which is located directly behind the steering wheel 11.

From the foregoing description and drawings it will be seen that we have evolved and produced an exceptionally simple, inexpensive, and efficient truck for carrying a sectional hose such as can be conveniently used in coal mining systems of the class described for removing water from pockets and discharging it into existing pumps.

The truck can be easily advanced or retreated, to first lay the hose line, and to then rewind it on the reel. A single truck of this character will suffice in a relatively large mine since it can be moved about in the various headings to relieve undesirable water accumulations.

The pump is constructed to accommodate the hose sections and to operate efficiently. By providing a self-propelled easily steerable vehicle of this character, and by equipping it with appropriate traction means, it is believed that we have produced a characteristic vehicle for mine operations, such as will aid considerably the working conditions, and obviate entirely the necessity of laying pipe lines in temporary headings.

Having thus described our invention, what we claim as new is:—

1. A pump truck for use in coal mines comprising a substantially U-shaped frame, its connecting portions being offset upwardly and whose bar portions are disposed in spaced parallelism and adapted to occupy a plane close to the surface of the earth, a single guide and steering wheel mounted upon the upwardly offset portion, a pair of traction wheels mounted upon the intermediate portion of said guide bars, an electric motor carried by one of said bar portions having suitable drive connections with said wheel, bearing on the respective bar portions adjacent their outer extremities, a reel mounted for rotation in said bearings, a sectional hose mounted on said reel, an electric motor carried by the other of said bar portions and having suitable drive connections with said reel, a platform carried by the side bars and located between said upwardly offset portions and said traction wheels, said platform being adapted to accommodate the driver, and a double-acting motor driven pump on said platform provided with hose couplings for operable connection with the said sectional hose on said reel.

2. A pump truck for use in coal mines comprising a substantially U-shaped frame, the longitudinally extending side members of the frame adjacent the bight end of the same being offset to extend upwardly and forwardly whereby the bight of said U-shaped frame is disposed above the plane of the side bars of the frame, a single guide and steering wheel mounted on the bight portion of said frame, a pair of traction wheels mounted upon the intermediate portion of said guide bars, an electric motor carried by one of said bar portions and having suitable drive connections with the adjacent traction wheel, a hose reel rotatably mounted between the free ends of said side bars, a platform supported on said side bars adjacent the offset portions of said side bars, a reel rotatably supported on said platform, said reel adapted to have a power cable wound thereon, and a suction pump supported on said platform adjacent said last mentioned reel.

In testimony whereof we affix our signatures.

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