April 11, 1939. C. JACKSON 2,154,208

TRANSPORTABLE SUPPORT FOR POWER IMPLEMENTS AND UNITS

Filed June 8, 1936 2 Sheets-Sheet 1

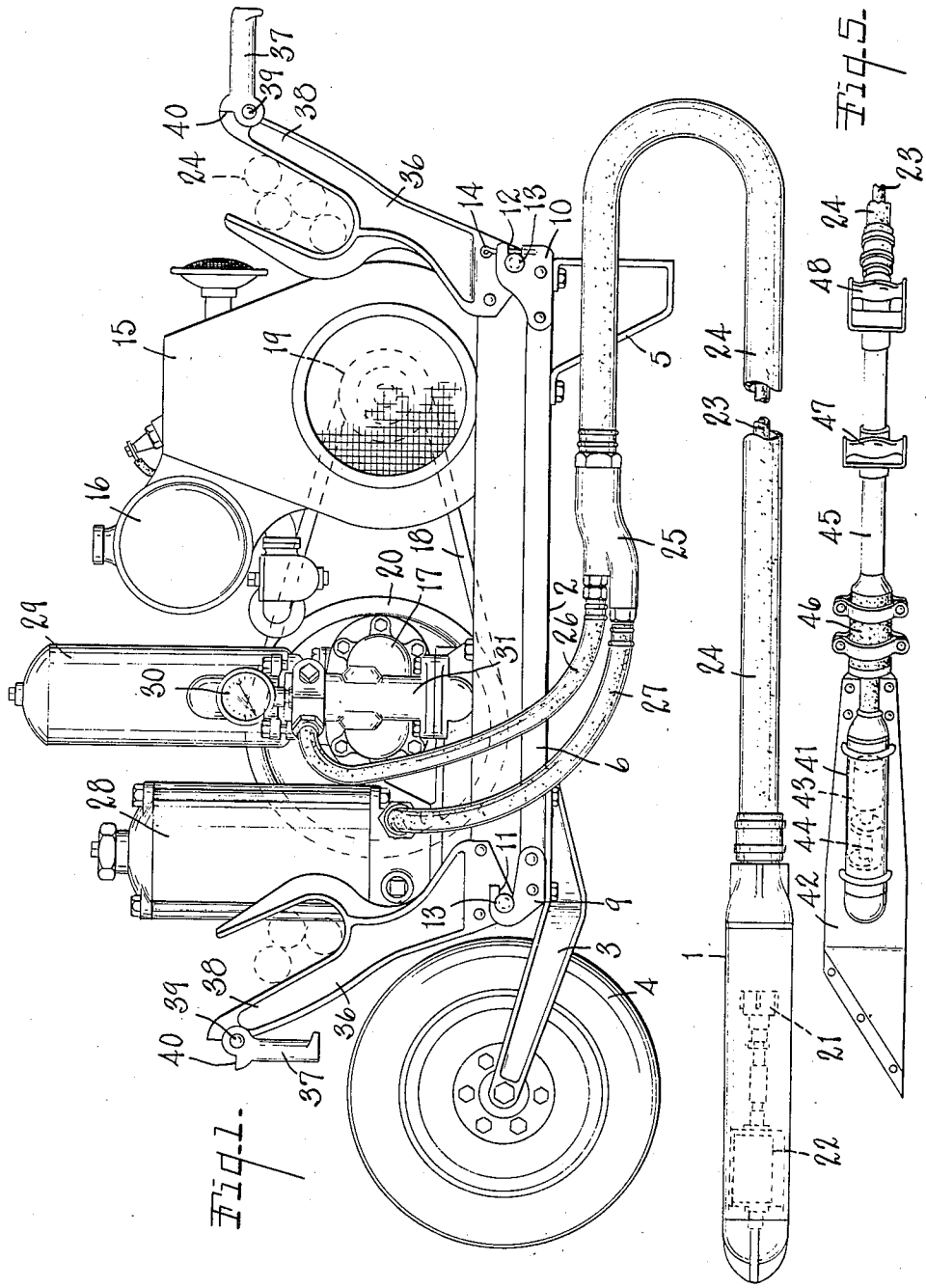


Fig. 1.

Fig. 5.

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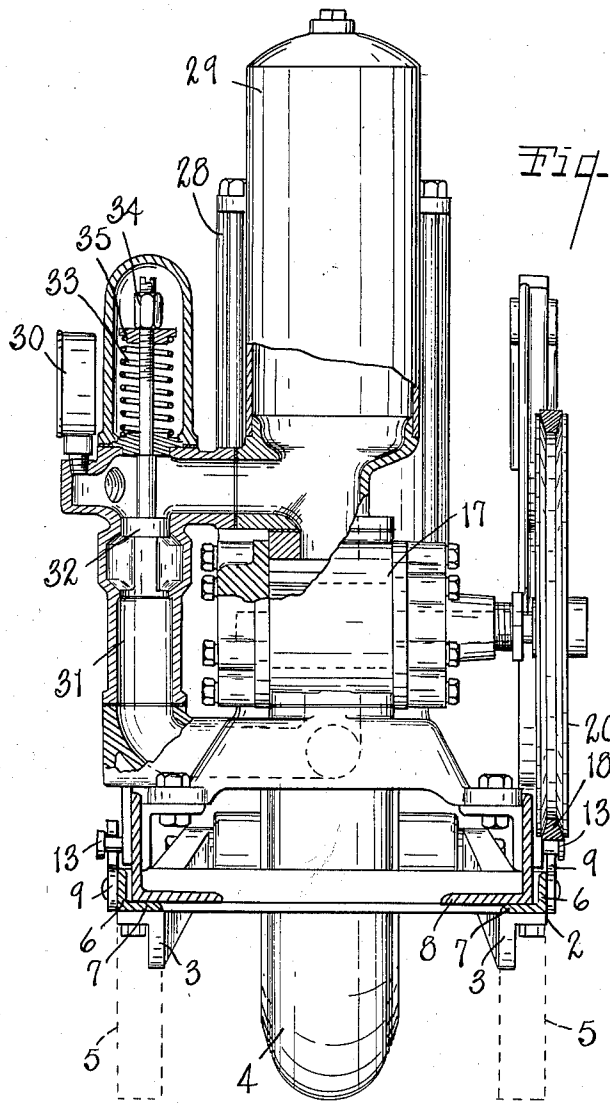


Fig. 2.

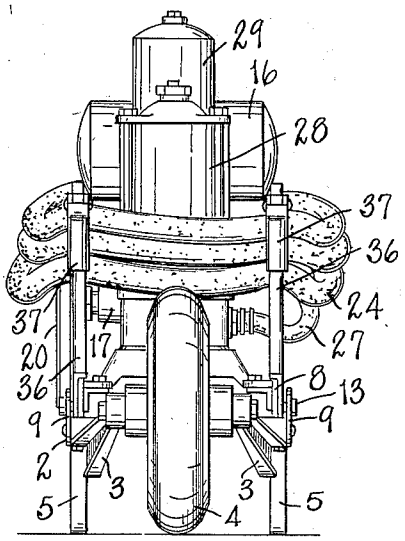


Fig. 3.

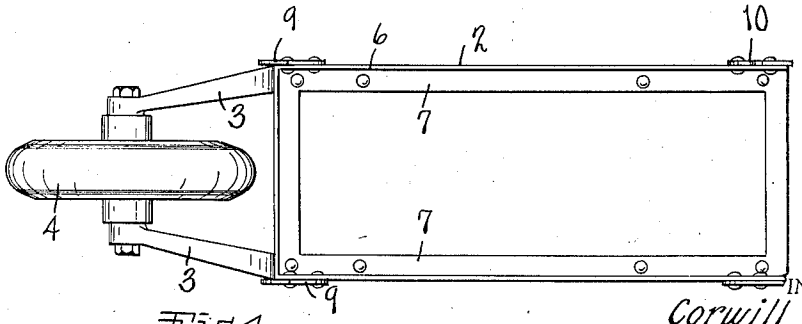


Fig. 4.

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TRANSPORTABLE SUPPORT FOR POWER IMPLEMENTS AND UNITS

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Application June 8, 1936, Serial No. 84,035

4 Claims. (Cl. 280—30)

This invention relates to improvements in transportable supports for power implements and units.

The main objects of this invention are:

First, to provide a portable power unit for use in the placement of concrete for the laying or upkeep of railway tracks and for driving tools of various character, particularly where a general source of power is not available.

Second, to provide a hydraulic motor actuated tool or implement with a source of power associated therewith which is very flexible in its use and has a wide range of uses.

Third, to provide a power unit with a carriage of the wheelbarrow type operatively associated therewith which can be easily dismounted from the carriage if desired and carried or transported for use in various relations where it is not practical to operate the carriage.

Fourth, to provide a structure having these advantages which is highly efficient and economical to use and may be operated by relatively unskilled workmen.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a side elevation of a unit or apparatus embodying the features of my invention, the flexible feed and return or exhaust conduits being partially broken away.

Fig. 2 is an enlarged detail view partially in section on line 2—2 of Fig. 1.

Fig. 3 is a front elevation.

Fig. 4 is a plan view of the carriage with the power unit removed therefrom.

Fig. 5 is a fragmentary front view of one type of tool well adapted for use with the apparatus of this application.

In the embodiment of my invention shown in Fig. 1, the tool or implement designated generally by the numeral 1 is especially designed for the subjecting of plastic materials to vibrations by submerging therein, the tool being preferably that shown in the application of Gerald F. Swarthout, Serial No. 65,438, filed February 24, 1936.

I provide a wheelbarrow type of carriage consisting of a frame designated generally by the numeral 2 having wheel forks 3 at its forward end in which the pneumatically tired wheel 4 is journaled. At its rear end, the frame is provided with legs 5. The side members 6 of the carriage frame are preferably formed of angle iron disposed with their angles facing upwardly and inwardly, the horizontal inwardly projecting legs 7 of the side members being adapted as rests or supports for the frame-like bed 8 of the power unit.

To secure the bed 8 to the carriage for ready detachment, the carriage frame is provided with corner brackets 9 and 10 having horizontally disposed rearwardly facing slots 11 and 12 therein receiving the headed studs or lugs 13 on the bed 8. Pins 14 on the rear brackets 10 lock the studs in the slots. The advantages of removing the power unit from the carriage will be pointed out later.

On the bed I mount a driving motor or engine designated generally by the numeral 15, the gasoline or fuel supply tank being indicated at 16.

I also mount on this bed a hydraulic pressure pump 17 preferably of the gear type, the pump being connected to the engine by means of the belt 18 and coacting with the pulley 19 on the shaft of the engine and with the pulley 20 on the shaft of the pump.

The casing 1 houses a hydraulic motor, the rotor of which is indicated at 21. This rotor is connected to the unbalancing weight 22 housed within the casing, the arrangement being preferably that disclosed in the said Swarthout application. I do not disclose the details as it will be understood that the apparatus is adapted not only for implements of the vibrating type but for implements or tools having rotary cutters, grinders, and the like. However, where the tool is designed to be submerged, the casing 1 should be a closed casing.

The motor is connected to the pump by the feed connection 23 and the exhaust or return connection 24. In this embodiment, the feed connection is housed within the return connection so that the conduits serve as a handle for manipulating the implement.

To provide convenient connection to the pump, the branched or two-passage coupling 25 is provided, connecting the conduit extension 26 for the pressure feed to the delivery or discharge side of the pump while the branch or extension 27 connects the rear conduit or exhaust conduit to the feed or inlet side of the pump.

A combined sump and vacuum chamber 28 is arranged in the return connection while the feed connection is provided with an expansion chamber 29, both of these chambers being closed, there being an air space in the expansion cham-

ber 29 above the liquid level therein. A gage 30 is provided on the discharge side of the pump.

To provide for the contingency of the motor becoming overloaded or stopping, or kinking of the hose or other cause that might check the free flow of fluid to and from the driven motor, I provide the pump with a by-pass passage 31 which connects its discharge with its intake—see Fig. 2. This by-pass is provided with a pressure regulating valve 32 having a regulating spring 33, the tension of the spring being adjusted or regulated by means of the nut 34 on its stem, the nut supporting the thrust member 35 of the spring. The tension of this spring is such as to maintain the valve in closed position under desired operating pressures but when that pressure substantially rises, the valve will open, allowing the liquid, preferably oil, to circulate through the pump and thus relieve the conduits and the motor. In ordinary practice, the conduits are of substantial length so that the tools can be manipulated at some distance from the power unit and to facilitate storage and transportation, the bed 8 is provided with upwardly projecting brackets 36 forked or recessed to permit the conduits being coiled therein as is indicated by dotted lines in Fig. 1 and by full lines in Fig. 2, the coils embracing the engine and pump and other parts mounted on the bed 1.

Handles 37 are mounted on the outer arms 38 of these brackets as by means of the pivots 39 so that the handles may be swung to erected position with their stops 40 in engagement with the ends of the brackets, the handles thus being available for either manipulating the carriage or its frame or as there are handles at each end, the bed and the parts mounted thereon may be conveniently carried when the bed is dismounted from the carriage.

It will be understood that the machine is adapted for use in a great variety of relations—for example, in the erection of buildings or in the placement of concrete in highways, bridges and the like and, therefore, this feature of being able to demount the unit and carry it about is of decided advantage.

In Fig. 5, I illustrate a tamping tool comprising a casing 41 having a tamping blade 42 clamped thereto. In this construction, the rotor is indicated at 43 and the out-of-balance weight is indicated at 44. The implement is provided with a handle 45 connected to the blade by the resilient connection 46 designed to relieve the operator of vibrations. The handle is provided with grips 47 and 48 and is tubular so that it constitutes a part of the return conduit 24, the feed or pressure conduit 23 being arranged therein as in the embodiment shown in Fig. 1.

Other types of tools may be used—for example, a rotary tool may be connected to the rotor 21.

I have illustrated and described my improvements in embodiments which I have found highly practical. I have not attempted to illustrate various other adaptations or embodiments which I contemplate as it is believed that this disclosure will enable those skilled in the art to which my invention relates to embody or adapt the same as may be desired.

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

1. The combination of a carriage comprising a frame provided with wheel forks at its front end and legs at its rear end and a pneumatically tired wheel mounted on said wheel forks, said frame comprising angle iron side members disposed to face upwardly and inwardly, corner brackets on said frame side members having horizontally disposed slots, a demountable power unit comprising a bed adapted to rest on the inwardly projecting legs of said carriage frame side members and provided with laterally projecting lugs detachably engageable with the slots of said brackets, and means for retaining said lugs in engagement with said brackets.

2. A convertible carriage for a power unit comprising a frame having wheel forks at one end and supporting legs at the other end and a wheel mounted on said forks, said frame being provided with corner brackets having horizontally disposed slots, and a bed having laterally projecting lugs adapted to detachably engage said horizontally disposed slots, said bed carrying upwardly projecting brackets and handles pivotally mounted on said brackets to collapse downwardly and adapted for carrying the bed when detached from the frame or for manipulating the carriage when the bed is attached to the frame.

3. A convertible carriage for a power unit comprising a frame having wheel forks at one end and supporting legs at the other end and a wheel mounted on said forks, said frame being provided with corner brackets having horizontally disposed slots, and a bed having laterally projecting lugs adapted to detachably engage said horizontally disposed slots, said bed carrying handles adapted for carrying the bed when detached from the frame or for manipulating the carriage when the bed is attached to the frame.

4. In a convertible carriage, the combination of a frame member, a bed member, one of said members being provided with a wheel at one end and supporting legs at the other and the other of said members carrying brackets having pairs of handles hingedly connected thereto and depending therefrom, and means for detachably connecting said members, said pairs of handles being adapted for carrying the member on which the handles are mounted when said member is detached from the other of said members and one of said pairs of handles being adapted for manipulating the carriage when said members are attached to one another.

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