

Sept. 20, 1932.

L. SCHAFER

1,877,980

WEIGHT INDICATOR

Filed March 15, 1930

FIG. 1.

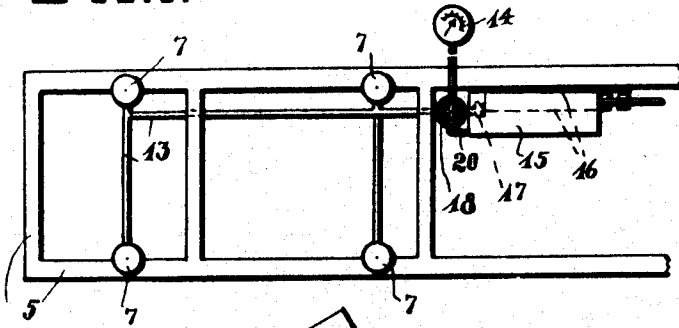


FIG. 5.

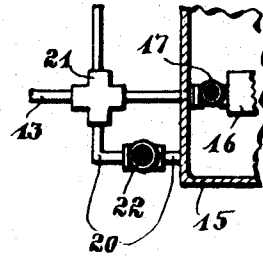


FIG. 2.

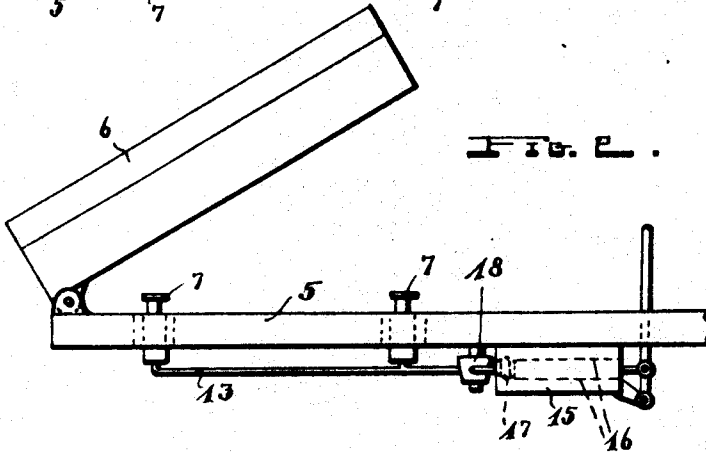


FIG. 6.

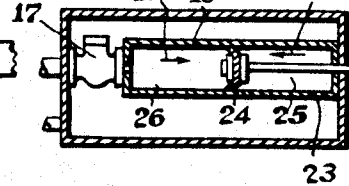


FIG. 3.

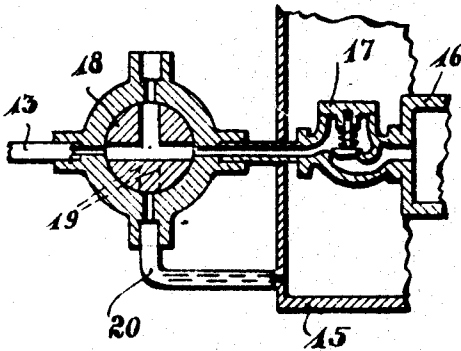


FIG. 4.

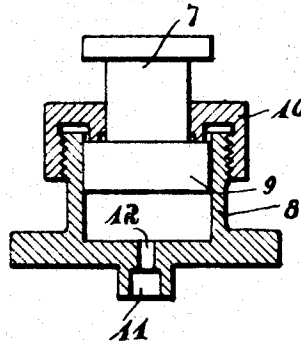
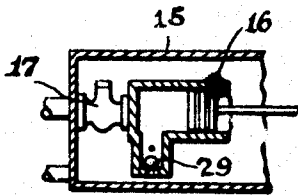


FIG. 7.



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WEIGHT INDICATOR

Application filed March 15, 1930. Serial No. 436,021.

This invention relates to devices by which the weight of a load can be indicated on a vehicle or truck during the loading or at any other time.

- 5 One of the objects of this invention is to provide a weight indicator under the influence of a pressure medium.

- 10 Another object is to provide plungers in the framework of a vehicle in a position to support the load in or on the upper part such as a box of the vehicle structure, the plungers being piped to a pressure medium container and provided with a pressure indicating gauge as well as with a release means and
15 pumping means.

Other objects will appear from the following description and appended claims as well as from the accompanying drawing, in which—

- 20 Fig. 1 is a fragmentary top plan view of the framework of a truck having roughly outlined therein plungers, pipe lines, and a controlling mechanism to operate according to this invention.

- 25 Fig. 2 is a fragmentary side elevation of the weight-indicating apparatus illustrated in Fig. 1.

- Fig. 3 is a fragmentary detail illustration of controlling parts and connections in enlarged scale.

- 30 Fig. 4 is a fragmentary detail illustration of a cylinder and plunger.

- Fig. 5 is a fragmentary plan view of a slightly modified form of a connection between the pipe line and the pressure producing and containing parts, having a plain cross-piece pipe-fitting inserted for the control means illustrated in Fig. 3 in detail.

- 40 Fig. 6 is a fragmentary view of a simple pump in cooperative connection with the storing container.

Fig. 7 is a fragmentary view of another simple pump in cooperative connection with the storing container.

- 45 The framework 5 roughly outlined in Figs.

1 and 2 may be that of a truck, and the numeral 6 in Fig. 2 may designate the box of a truck.

Plungers 7 are disposed on the framework to support the box 6 in its normal position 50 in relation to the framework. A plunger of this type is illustrated in detail in Fig. 4, being shiftably mounted in a cylinder 8 by which it can be mounted on the framework of a truck. The inner and larger end 55 9 of the plunger is held within the cylinder by the cap 10. A connection 11 serves to supply the cylinder with a pressure medium through the aperture 12.

The pipes 13 connect the several plungers 60 to a controlling apparatus, of which the principal parts are the gauge 14, the pressure medium container 15, and the pressure pump 16.

A check valve 17 is inserted between the 65 pump 16 and the pipe line 13, by which any pressure produced by the pump is held in the pipe line and thereby in the cylinders to act upon the plungers.

Any suitable means may be used for a 70 pressure medium, such as water, oil, or air; and, of course, any pump to be had or purchased on the open market may be used for transmitting the pressure medium from the storing container 15 to the pipe line, and 75 different pumps, of course, require different connections.

The simple leather-cupped pump illustrated in Fig. 6 does not require any special valve or connection with the container 80 15, inasmuch as the aperture 23, generally provided in this type of pump, is proportioned suitably to cause sufficient matter to pass around the flexible and yielding cup piston 24 from the end 25 to the end 26 85 when the piston is moved in the direction of the arrow 27, to be discharged through the check-valve 17 when the piston is moved in the direction of the arrow 28.

On the other hand, a different type of 90

pump with a solid or metal piston, of course, must have intake and outlet check valves or other means to suit the conditions of such a pump or any other type of pump that can be purchased on the open market and that certainly may be made applicable to the apparatus disclosed in this case. In Fig. 7, for instance, a separate intake check-valve 29 is provided on the same end of the pump together with the check-valve 17.

In Figs. 1, 2 and 3, a three-way cock 18 is used to either connect the pressure pump 16 with the pipe line 13 or to the release line 20, in the position indicated in Fig. 1 the cock connecting the pipe line with the release line, while in the position indicated in Fig. 3 the cock connecting the pump with the gauge and the pipe line, the dotted lines indicated at 19 in Fig. 3 showing the position in which one of the branches of the cock must be to connect the release line.

When the pipe line 13 is connected with the storing container 15 by way of the release line 20, the pressure medium is allowed to pass back into the container from the pipe line 13 and thereby from the cylinders 8.

A slightly modified form of control is illustrated in Fig. 5, a simple four branch cross pipe-fitting 21 maintains constant communication between the pipe line 13, the gauge, the pressure pump line, and the release line 20, a plain valve 22 being inserted in the release line 20 by which the flow through the release line can either be checked or allowed to pass.

Having thus described my invention, I claim:

1. In a load indicator, in combination with the chassis and the body of a vehicle, movable pressure-influenced members disposed in operative relation between the said chassis and body, a container for holding a pressure medium, a pressure producing device in communication with said members and said container, a checking means for holding the produced pressure in said members, and a controlling means by which communication is formed between the said container through the said pressure producing device and the said members and adapted to form communication between the said members directly with the said container for releasing the pressure in the said members.

2. In a load indicator, in combination with the chassis and the body of a vehicle, movable pressure-influenced members disposed in operative relation between the said chassis and body, a storage container for holding a pressure medium in uncompressed condition, a pressure producing device, means establishing communication between the said device and the said container and means establishing communication between said device and the said members, a gauge in communication with the last-named means, a

checking means in the last-named means for holding the produced pressure in said members, a release communication between the said members and the said container, including a controlling device for releasing the pressure medium from the members directly into the said container.

In testimony that I claim the foregoing as my invention I have signed my name.

LEE SCHAFER.

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