F. WEGENER.

HAND RAMMER.

APPLICATION FILED DEC. 5, 1910.

1,038,039. Patented Sept. 10, 1912.

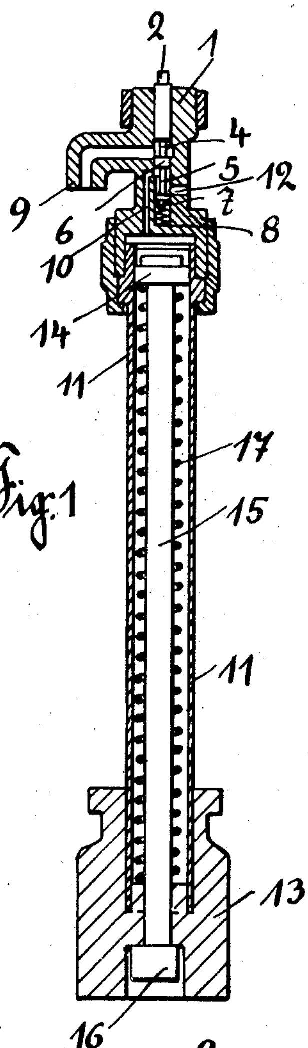

Fig. 1

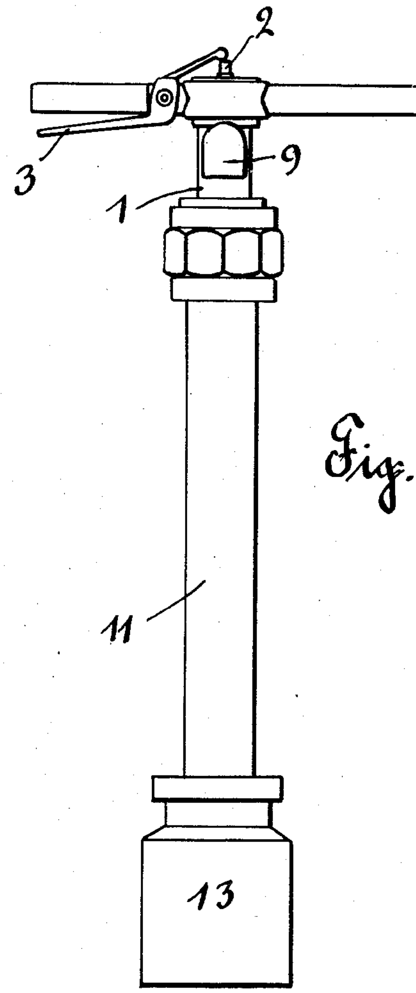

Fig. 2

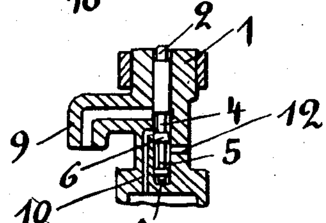

Fig. 3

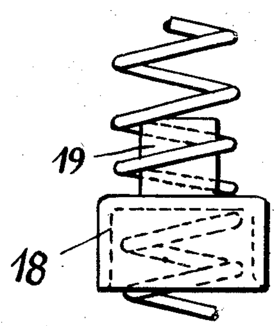

Fig. 4

Witnesses:

Inventor:

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UNITED STATES PATENT OFFICE.

FRANZ WEGENER, OF HALLE-ON-THE-SAALE, GERMANY.

HAND-RAMMER.

1,038,039. Specification of Letters Patent. Patented Sept. 10, 1912.

Application filed December 5, 1910. Serial No. 595,706.

To all whom it may concern:

Be it known that I, FRANZ WEGENER, a subject of the King of Prussia, residing at Halle-on-the-Saale, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Hand-Rammers, of which the following is a specification.

The devices for lifting the monkeys of hand rammers used for paving purposes are usually mounted upon a frame mounted on wheels. These means of transporting the monkey with the rammer are not very practical because the supporting frame partly covers the paving to be worked upon and further because it is necessary to steer the supporting frame during the working of the monkey on the rammer. A further inconvenience of the devices of known construction consists in the fact that the counter pressure caused by the lifting of the monkey cannot be utilized and even has to be supported by the frame, so that instead of being an advantage it becomes an inconvenience.

According to this invention the paving rammer is operated by a pressure fluid such as steam, compressed air or the like.

The improved paving rammer permits all devices for transport to be dispensed with so that the workman can freely survey the field of operation, to connect the steering devices directly with the rammer and to utilize the counter pressure caused by the lifting of the monkey, for paving purposes.

According to this invention the monkey is fixed to a cylinder in which a piston is inclosed which is adapted to be operated by a motor fluid. When the monkey is being lifted the monkey has to overcome the resistance of a spring or the like so that the piston rod returns to its original position before the monkey falls. Instead of a spring, air under pressure can be used as resistance.

In the accompanying drawings the improved paving rammer is shown by way of example.

Figure 1 is a section and Fig. 2 is an elevation of the same. Fig. 3 is a separate view of the valve body. Fig. 4 shows a modified construction of the spiral spring.

The improved paving rammer essentially consists of the valve-body 1 in the central boring of which the distributing piston 2 operated by the hand lever 3 is mounted; of the cylinder 11 with monkey 13; and of the working piston 14 with piston rod 15. The inlet port 4 and the outlet port 5 of the distributing piston 2 are separated by the shoulder 6 of said distributing piston. A spring 8 serves for maintaining said piston in its normal position and it is guided upon an extension 7 of the piston rod. The motor fluid arrives at the valve-body 1 through the conduit 9. When the distributing piston 2 is lowered, said conduit 9 communicates through the inlet 4 with a channel 10 leading to the cylinder 11. An outlet channel 12 is further provided in the valve-body which can be brought in communication with the channel 10 by means of the outlet port 5.

The monkey 13 is fixed upon the lower end of the cylinder 11. In said cylinder 11 the working piston 14 is located, the rod 15 of which carries at its lower end the support 16 for the monkey 13. In order to lift the support 16 rapidly before the monkey begins to fall, a suitable resistance is inserted between the monkey and the piston 15. This resistance can for example consist of a helical spring surrounding the piston rod 15 and abutting with one end against the lower surface of the piston 14 and with the other end against the monkey 13.

The working of the mechanism is as follows:—To operate the rammer shown in Fig. 1 the hand lever 3 is pressed against the handle of the rammer whereby the distributing piston 2 is lowered so that compressed air can flow through the channel 10 into the cylinder 11, wherefrom results the lifting of the monkey 13, which, in moving upward, compresses the helical spring 17. At the same time a considerable pressure is exerted upon the support 16 which rests upon one of the paving stones and thus presses the same into the ground while the monkey is being lifted. As soon as the monkey 13 has been sufficiently lifted, the hand lever 3 is released so that the compressed air can escape through the outlet channel 12. The piston 14 moves rapidly upward in the cylinder 11 and pulls along the support 16 which is thus lifted before the monkey begins to fall through the action of the helical spring 17. At this moment the hand rammer can be easily transported from one point to the other.

Fig. 4 shows the connection of two ends of the parts of a helical spring made in two separate parts. The connecting piece 18 is

cupshaped and carries upon its top a stud 19 which serves to guide the lower end of the upper part of the spiral spring, the upper end of the lower part of the same being located in the cup 18.

I claim:—

1. An improved paving rammer comprising in combination a supply valve for the motor fluid, a cylinder upon which said valve is fixed and a monkey fixed at the lower end of said cylinder, said monkey having a cavity in its lower end, a working piston in said cylinder, a piston rod, an enlarged lower end of said piston rod located in said cavity of the monkey and serving as support for the monkey, and buffer means between said working piston and said monkey and designed to lift the support for the monkey before the monkey begins to fall, substantially as described and shown and for the purpose set forth.

2. An improved paving rammer comprising in combination a supply valve having a central boring, a channel for the admission of motor fluid to said central boring, a channel connecting said central boring with the lower end of said supply valve and an exhaust opening for the motor fluid, a distributing piston in said central boring of the supply valve, a hand-lever for operating said distributing piston, a stud at the lower end of said distributing piston and a spiral spring acting against the lower end of said stud for maintaining said piston in inoperative position, a cylinder fixed in the lower end of said supply valve so that it communicates with the channel of the supply valve terminating in the lower end of the same, a monkey fixed at the lower end of said cylinder and having a central boring and a cavity at its lower end, a working piston in said cylinder, a rod of said piston guided in said central boring of the monkey, a buffer spring surrounding said piston rod and abutting with its upper end against the said working piston and with its lower end against said monkey, and a shoe at the lower end of said piston rod serving as support for the monkey, substantially as described and shown.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

FRANZ WEGENER.

Witnesses:

A. W. SCHWABACH,

RUDOLPH FRICKE.