

P. A. McGOWAN.
 DEVICE FOR APPLYING GREASE TO ROLLS.
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1,021,062.

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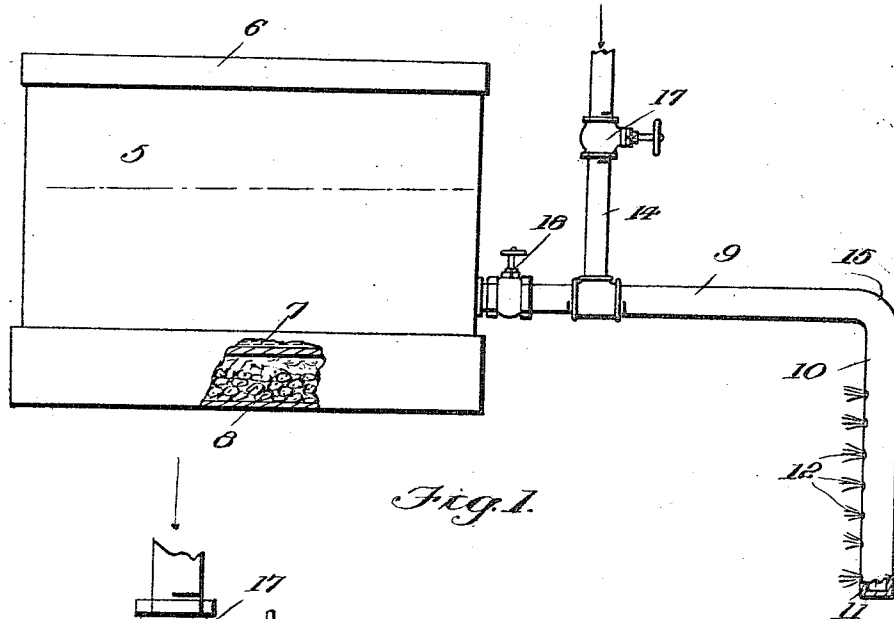


Fig. 1.

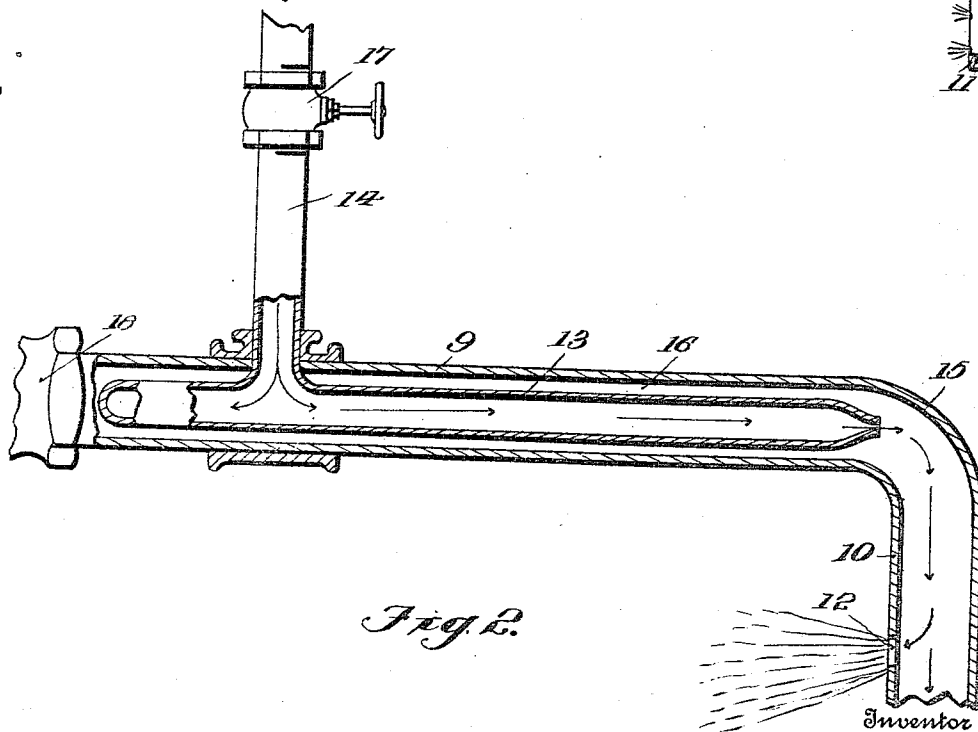


Fig. 2.

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DEVICE FOR APPLYING GREASE TO ROLLS.

1,021,062.

Specification of Letters Patent.

Patented Mar. 26, 1912.

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To all whom it may concern:

Be it known that I, PATRICK A. McGOWAN, citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Devices for Applying Grease to Rolls, of which the following is a specification.

This invention relates to lubricators and more particularly to means for applying grease in a fluid state to rolls employed in iron and steel rolling mills and similar machinery.

The object of the invention is to provide a lubricator in which grease or other lubricant is fed by fluid pressure to the rolls, means being provided for heating the grease prior to its delivery to the rolls.

A further object is to provide a grease container or tank having a perforated supply pipe leading therefrom and through which the grease is forced by a jet of air, steam or other fluid entering the supply pipe at the rear of the perforations.

A further object is to provide means for regulating the quantity of grease delivered to the rolls, and means for heating the grease during its passage through the supply pipe.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation partly in section of a lubricator constructed in accordance with my invention; Fig. 2 is a longitudinal sectional view on an enlarged scale showing the construction of the supply pipe and fluid nozzle.

Corresponding and like parts are referred to in the following description and indi-

cated in all the views of the drawings by the same reference characters.

The device comprises a tank or receptacle 5 of any desired shape or cross sectional formation, said tank being provided with a cover 6 and adapted to contain a quantity of grease or other lubricant, indicated at 7. Disposed beneath the tank 5 and supporting the latter is a fire box 8 for the purpose of heating the grease in the tank 5 so as to reduce it to a fluid state prior to its delivery to the rolls.

Extending laterally from one side of the tank 5 and communicating with the interior thereof, is a supply pipe 9 having an angular extension 10, the end of which is closed at 11, there being a series of perforations 12 formed in one side of the extension 10 and through which the grease is fed to the necks of the rolls. Disposed within the supply pipe 9 is a nozzle 13 to which is connected a fluid supply pipe 14. The rear end of the nozzle 13 is closed and extends to a point adjacent the tank 5, while the front end of the nozzle is open and terminates near the bend 15. The nozzle 13 is disposed concentric with and spaced from the interior walls of the supply pipe 9 so as to form a circumferential chamber 16 to permit the passage of grease from the tank 5 to the perforations 12. By making the nozzle 13 approximately the same length as the pipe 9, the steam entering said nozzle through the pipe 14 will tend to heat the grease and thus prevent the same from congealing during its passage through said pipe to the perforations therein.

Connected in the fluid supply pipe 14 is a valve 17 for regulating the quantity of fluid delivered to the nozzle 13, there being a similar valve 18 connected in the supply pipe 9 between the tank 5 and the fluid pipe 14 for the purpose of regulating the quantity of grease discharged through the perforations in said supply pipe.

In operation, the grease in the tank 5 is first heated, after which the valve 18 is moved to open or partially open position and the valve 17 adjusted so as to admit steam, air or other fluid under pressure to the interior of the supply pipe 9.

The fluid discharged at the active end of the nozzle will positively force the grease

through the perforations in the supply pipe to the rolls and also tend to create a suction in the supply pipe 9 and thus feed the grease through the supply pipe to said perforations, as will be readily understood.

While the lubricating mechanism is principally designed for supplying lubricant to rolls, it will of course be understood that the device may be used with equally good results for other purposes without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A device of the class described including a tank adapted to contain a lubricant, means for heating the exterior of the tank, a supply pipe having one end thereof communicating with the interior of the tank and its other end perforated, and a fluid pressure heating device centered within the supply pipe and terminating short of the perforated end thereof, said fluid pressure device also serving to discharge the lubricant through the perforations in the supply pipe.

2. A device of the class described including a tank adapted to contain a lubricant, a supply pipe having one end thereof communicating with the interior of the tank and its other end perforated, means for heating the exterior of the tank to liquefy the lubricant contained therein, and fluid pressure means independent of said tank for heating the lubricant during its passage through the supply pipe to the perforations, said fluid pressure means also serving to discharge the lubricant through the perforations in said supply pipe.

3. A device of the class described including a tank adapted to contain a lubricant, a supply pipe having one end thereof communicating with the interior of the tank and its other end perforated, means for heating the exterior of the tank, fluid pressure means independent of the tank and tank heating means for heating the lubricant during its passage through the supply

pipe from the tank to the perforations in said supply pipe, and means for controlling the flow of lubricant through the supply pipe.

4. A device of the class described including a tank adapted to contain a lubricant, a supply pipe having one end thereof communicating with the interior of the tank and its other end perforated, means for heating the exterior of the tank, a nozzle independent of the tank disposed within and spaced from the walls of the supply pipe to form a circumferential chamber terminating short of the perforations in said supply pipe, and a source of fluid pressure independent of the tank communicating with the nozzle for heating the lubricant during its passage through the chamber, said fluid pressure means also serving to discharge the lubricant through the perforations in the supply pipe.

5. A device of the class described including a tank adapted to contain a lubricant, means for heating the exterior of the tank, a supply pipe having one end thereof communicating with the interior of the tank and its other end closed, there being perforations formed in the walls of the supply pipe at the closed end thereof, a nozzle independent of the tank disposed within and spaced from the interior wall of the supply pipe to form a circumferential chamber terminating short of the perforations in said supply pipe, a pipe communicating with the nozzle for admitting fluid under pressure to said nozzle to heat the lubricant within the chamber, and a valve for controlling the passage of lubricant through the supply pipe.

In testimony whereof I affix my signature in presence of two witnesses.

PATRICK A. MCGOWAN. [L. S.]

Witnesses:

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Mrs. P. A. MCGOWAN.