Aug. 11, 1936. R. W. BRIGGS 2,050,645

TOOL FOR PACKING MATERIAL AGAINST THE INNER WALL OF A TUBULAR MEMBER

Filed Feb. 20, 1934

Fig. 1

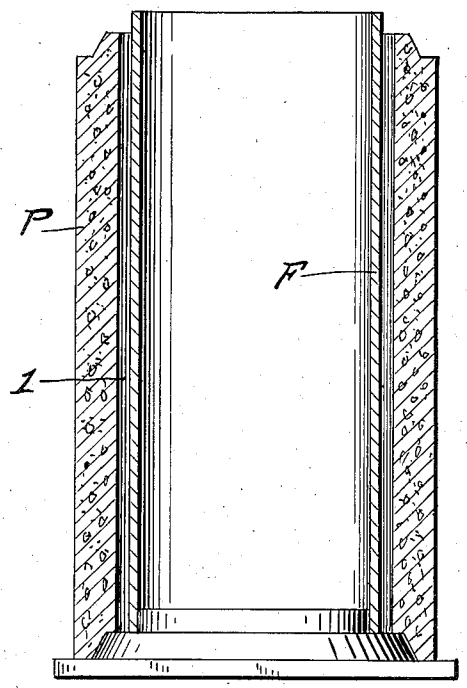


Fig. 2

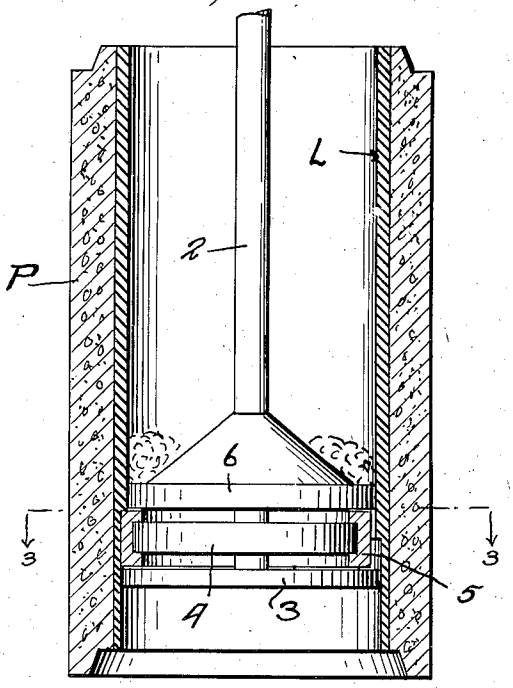
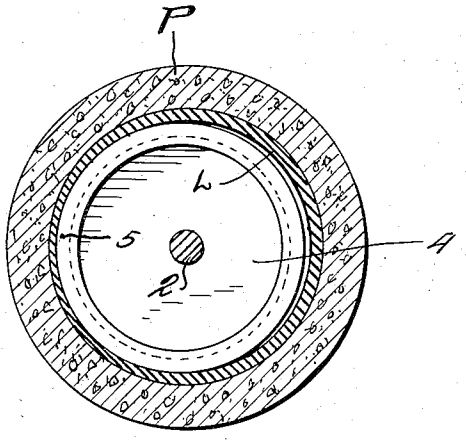


Fig. 4



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Patented Aug. 11, 1936 2,050,645

UNITED STATES PATENT OFFICE

2,050,645

TOOL FOR PACKING MATERIAL AGAINST THE INNER WALL OF A TUBULAR MEMBER

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Application February 20, 1934, Serial No. 712,236

4 Claims. (Cl. 25—36)

This invention relates to concrete pipes, and it is primarily an object of the invention to provide a pipe of this kind having a lining of natural rock asphalt whereby the pipe is rendered less susceptible to the action of acids and gases in sewage and in industrial wastes or any other liquids which might be injurious to concrete.

Another object of the invention is to provide a pipe of this kind wherein the natural rock asphalt is packed or otherwise applied under pressure to assure a maximum efficiency of the lining.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein:—

Figure 1 is a view partly in section and partly in elevation illustrating an initial step in applying the lining;

Figure 2 is a view similar to Figure 1 but illustrating an apparatus for use in connection with the application of the lining;

Figure 3 is a sectional view taken substantially on the line 3—3 of Figure 1.

As disclosed in the accompanying drawing, P denotes a pipe of desired dimensions and configuration and which is formed of a cementitious material.

In applying a lining L of natural rock asphalt to the inner wall or surface of the pipe P a suitable form F is applied within the pipe, said form affording a space I in which the natural rock asphalt or other kindred material in a non-liquid state is placed and such material can be arranged in one or more layers. After this initial placement of the material the form F or shell as it may also be called, is removed and then the lining L as initially applied is subjected to suitable pressure to compact the same and also to an action to assure the exposed surface of the lining being smooth. As disclosed in the accompanying drawing, I provide an implement for action upon the initially applied lining which comprises an elongated shaft 2 adapted to be rotated in any desired manner and which has fixed to one extremity a smoothing disk or ring 3 which operates to apply a final smoothing action upon the lining L and also serves as a guiding means to maintain the shaft 2 in desired alignment with respect to the pipe P during a working operation. Above but closely adjacent to the disk or ring 3 the shaft has fixed thereto an eccentric disk 4 and freely engaged with the peripheral portion of this disk 4 is an annular compacting member or ring 5.

The shaft 2 closely adjacent to and inwardly of or above the eccentric 4 has fixed thereto a distributor and cutting head 6 which serves during a working operation to remove the surplus natural rock asphalt or kindred material and also assured such material is properly spread around the inner surface of the pipe P to assure the production of an effective lining.

As the shaft 2 rotates it is also caused to travel lengthwise of the pipe P so that the implement will have desired action upon the lining from one end of the pipe to the other. As the implement travels through the pipe the action of the eccentric 4 will result in effective pressure being imposed upon the material through the instrumentality of the annular member or ring 5 thus assuring the desired compacting of the lining. The disk 3 following the pressure ring 5 in addition to serving as a guide for the implement also assures a smooth or even finish to the lining while, as hereinbefore stated, the head 6 in advance of the pressure member or ring 5 operates to remove all surplus material and at the same time to assure the effective distribution of the material around the inner wall or surface of the pipe.

In referring to natural rock asphalt I wish to particularly state that the invention also has in mind the use of an artificial asphalt mixture of a non-liquid character.

While I have hereinbefore stated that the pipe P is formed of a cementitious material it is to be understood that the pipe in its entirety may be made of natural rock asphaltic material and in which event, of course, the pipe will be molded between two suitably spaced and concentrically arranged forks.

I claim:—

1. A tool for packing material against the inner wall of a tubular member comprising a shaft for rotation and endwise movement, two members concentrically mounted upon the shaft at points spaced along the shaft, one of said members being of a diameter greater than the other, the member with the larger diameter constituting a smoothing element and the other member constituting a cutting head, an eccentric carried by the shaft between the members, and a packing ring freely mounted upon the eccentric and extending around the periphery thereof, the direction of pressure applied by the eccentric being perpendicular to the shaft.

2. A tool for packing material against the in-

ner wall of a tubular member comprising a shaft for rotation and endwise movement, two members concentrically mounted upon the shaft at points spaced along the shaft, one of said members being of a diameter greater than the other, the member with the larger diameter constituting a smoothing element and the other member constituting a cutting head, an eccentric carried by the shaft between the members, and a packing ring freely mounted upon the eccentric and extending around the periphery thereof, the direction of pressure applied by the eccentric being perpendicular to the shaft, said members and eccentric being in close proximity.

3. A tool for packing material against the inner wall of a tubular member comprising a shaft for rotation and endwise movement, two members concentrically mounted upon the shaft at points spaced along the shaft, one of said members being of a diameter greater than the other, the member with the larger diameter constituting a smoothing element and the other member constituting a cutting head, an eccentric carried by the shaft between the members, and a packing ring freely mounted upon the eccentric and extending around the periphery thereof, the direction of pressure applied by the eccentric being perpendicular to the shaft, said members and eccentric being carried by an end portion of the shaft with the member of larger diameter outermost.

4. A tool for packing material against the inner wall of a tubular member comprising a shaft for rotation and endwise movement, a packer head on the shaft comprising three elements arranged longitudinally of the shaft, the top element serving to distribute the material, the bottom element serving as a smoothing trowel, and the middle element serving as a pressure device, the first two members positively rotating with the shaft, the third member being free of connection with the shaft; and means carried by the shaft and operating upon rotation of the shaft constructed and arranged to cause the middle element to apply pressure in a direction perpendicular to the shaft.

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