

Oct. 18, 1932.

F. KINZBACH
COATING MACHINE

1,883,305

Original Filed Nov. 25, 1927 2 Sheets-Sheet 1

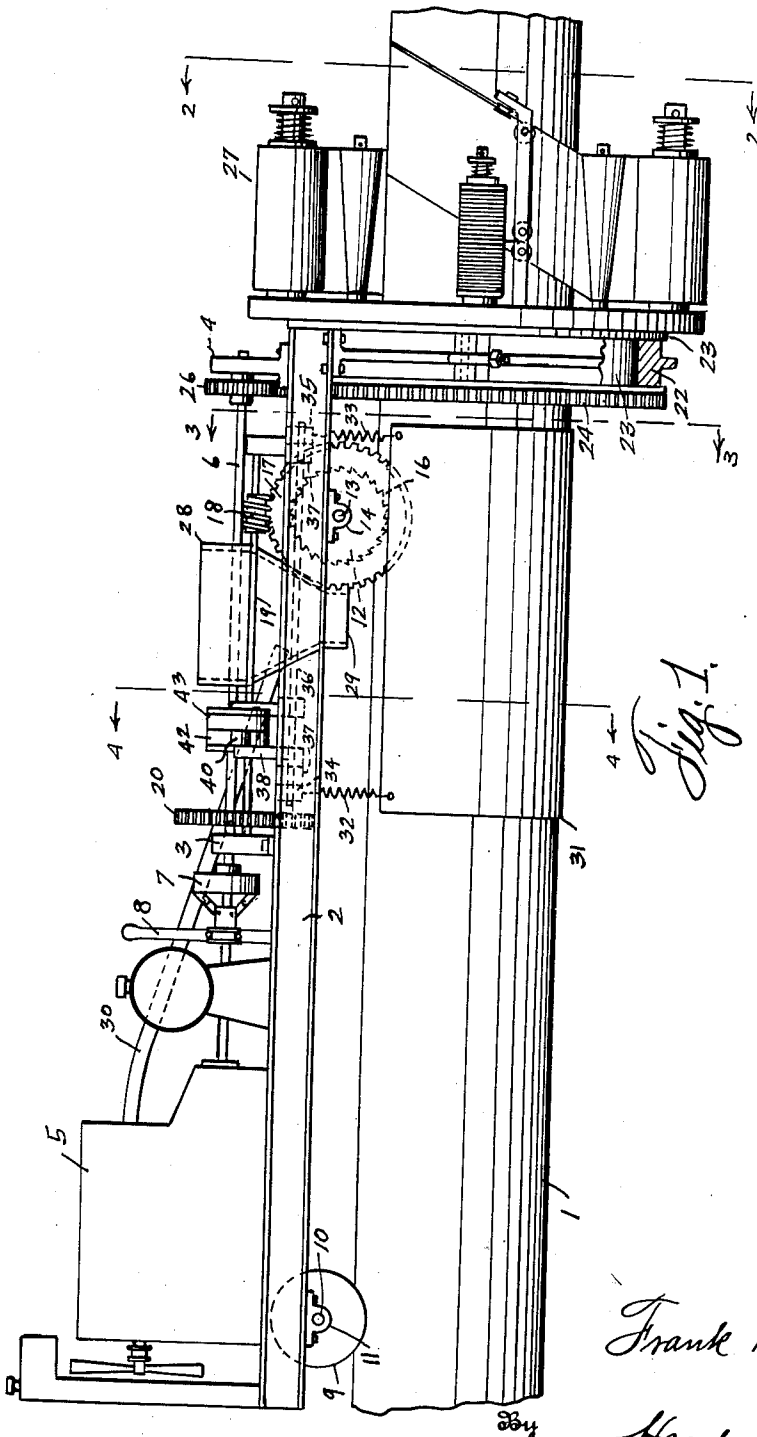


Fig. 1.

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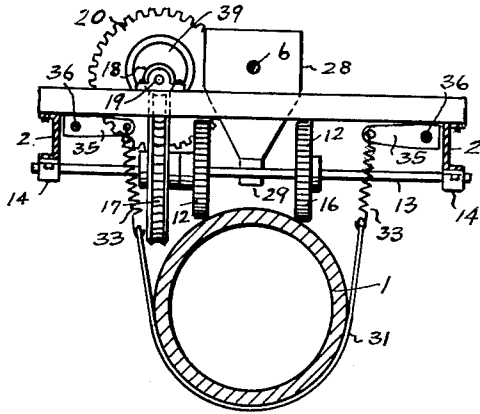


Fig. 3.

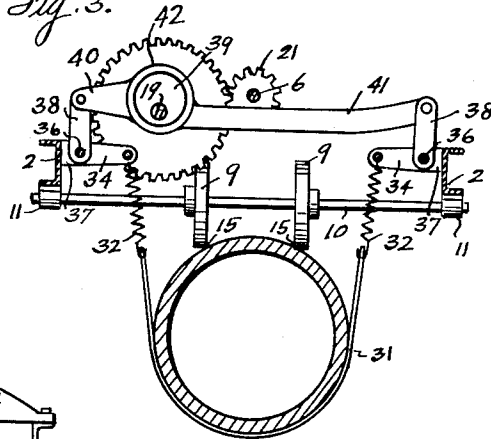


Fig. 4.

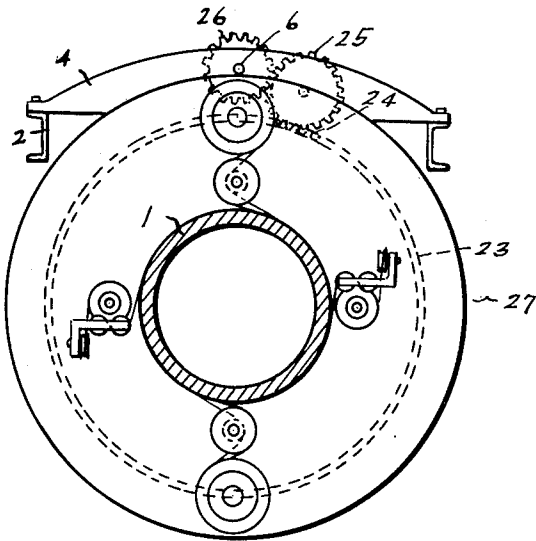


Fig. 2.

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UNITED STATES PATENT OFFICE

FRANK KINZBACH, OF HOUSTON, TEXAS

COATING MACHINE

Original application filed November 25, 1927, Serial No. 235,698. Divided and this application filed January 28, 1930. Serial No. 423,916.

This invention relates to new and useful improvements in a coating machine.

One object of the invention is to provide a machine of the character described specially designed for the purpose of painting, or coating a pipe or a similar object.

Another object of the invention is to provide a machine of the character described whereby pipe may be painted or coated preparatory to being wrapped with a flexible cover of felt, paper or the like, preparatory to laying the pipe connected into a pipe line underneath the ground.

This is a divisional application, having been divided out of the application for serving machine filed in the United States Patent Office by me on November 25, 1927 under Serial Number 235,698.

With the above and other objects in view this invention relates to certain novel features of construction, operation and arrangement of parts an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1 shows a side elevation of the machine mounted on the pipe to be served.

Figure 2 shows an end view of the machine taken on the line 2—2 of Figure 1, through said pipe.

Figure 3 shows a sectional view taken on the line 3—3 of Figure 1, and

Figure 4 shows a sectional view taken on the line 4—4 of Figure 1.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates the pipe, which serves also as a track on which the machine is mounted and along which it runs as the pipe is painted. The machine embodies a frame work composed of the side members 2, 2 and the front and rear arch-like cross bars 3, 4 whose ends are secured to the respective side members.

Mounted on the front end of the frame

work there is a suitable motor 5. There is a sectional drive shaft 6 operatively connected with the motor, which has bearings, in the bars 3 and 4.

The sections of the drive shaft may be operatively connected, and disconnected, by a conventional clutch 7 operable through the lever 8, in the usual manner.

The forward end of the machine is supported on the carrier wheels 9, 9 which are fixed on the axle 10 which, in turn, rotates in suitable transversely aligned bearings 11 carried by the forward ends of the side members 2, and the rear end of the machine is supported on the traction wheels 12, 12 which are fixed on the rear axle 13, which in turn is rotatably mounted in the transversely aligned bearings 14, 14 carried by the rear ends of said side members 2. The front wheels 9 have the sharp corners 15 which bite into the pipe to prevent the machine from turning thereon and the rear wheels 12 have the teeth 16 which engage with the pipe and give the traction wheels a better tractive effect.

The axle 13 has a worm gear 17 fixed thereon and in mesh with the screw gear 18 which is fixed on the lengthwise shaft 19. This shaft is mounted to rotate in suitable bearings, carried by the framework, and has a large spur gear 20 fixed thereon and in mesh with, and driven by, a spur pinion 21 fixed on the drive shaft 6.

Through the mechanism described the machine may be propelled along the pipe 1 and held in upright position thereon.

The rear end of the machine has an annular bearing 22 which surrounds the pipe and an annular frame 23 surrounds said pipe and rotates in said bearing 22. The forward end of the frame has an annular spur gear 24 fixed thereto and in mesh with an intermediate spur pinion 25 which in turn is in mesh with, and driven by, a spur gear 26 fixed on the rear end of the shaft 6.

The annular frame 23 is provided for supporting and rotating a suitable mechanism, designated generally by the numeral 27 for wrapping the flexible covering about the painted pipe and for securing said covering thereon. This wrapping and securing mechanism has not been specifically described herein for the reason that it forms no part of the invention described and claimed.

The numeral 28 designates a suitable hopper whose lower end is formed into a lengthwise discharge opening as 29, which is disposed above the pipe 1. This hopper is located in front of the wrapping mechanism above referred to and is provided to contain a suitable pitch, paint or other substance with which the pipe is to be coated. The exhaust pipe 30 from the motor 5 terminates in the hopper 28 and supplies heat to the coating substance in the hopper to assist in maintaining the proper temperature thereof.

Underneath the pipe 1 and arranged opposite the hopper there is a flexible paint retainer 31 which is suspended by front and rear coil springs 32, 32 and 33, 33 whose lower ends are attached to the margins of the retainer 31 and whose upper ends are attached to the free ends of the inwardly extending arms 34, 34 and 35, 35, which are fixed on the respective shafts 36, 36. These shafts are disposed on opposite sides of the pipes 1 and are rotatable in suitable bearings 37, 37 carried by the respective side members 2. Each shaft 36 has an upstanding arm 38 fixed thereto. The shaft 19 has adjacent cams as 39 fixed thereon and there are the oscillating rods 40, 41 formed at one end with the bearings 42, 43 in which the cams 39 work and the other ends of these connecting rods are pivotally connected to the upper free ends of the respective arms 38. As the shaft 19 rotates the rods 40, 41 will be simultaneously oscillated and the shafts 36 rocked back and forth and this will reciprocate the retainer 31 back and forth against the underside of the pipe 1. The coating material will be fed onto the top of the pipe 1 as the machine moves along the pipe and will cover the top and sides of the pipe and will run down into the retainer 31 and as said retainer is reciprocated it will spread said paint over the under side as well as both sides of the pipe to be coated.

Meanwhile, the frame 23 will be revolved and the wrapping will be wound onto the pipe which has been freshly coated and will adhere thereto.

The drawings and description disclose what is now considered to be the preferred form of the invention by way of illustration only, while the broad principle of the invention will be defined by the appended claims.

What I claim is:—

65 1. A pipe coating machine including a

carriage, means supporting the carriage on the pipe, means for driving the supporting means to effect the movement of the machine along the pipe, means for supplying a coating substance to the pipe, a flexible retainer 70 disposed around the underside of the pipe opposite said supplying means, means for imparting an oscillatory movement to said retainer.

2. A pipe coating machine including a 75 carriage, means supporting the carriage on the pipe, means driving the supporting means to effect the movement of the machine along the pipe, means for supplying a coating substance to the pipe, a flexible retainer disposed 80 around the underside of the pipe opposite said supplying means, means for imparting an oscillatory movement to said retainer and yieldable means connecting said retainer with 85 its oscillating means.

3. In a pipe coating machine an oscillating flexible retainer disposed underneath the pipe and adapted to retain a coating material and apply it to the underside of the pipe, 90 and means for oscillating said retainer.

4. In a pipe coating machine an oscillating flexible retainer disposed underneath the pipe and adapted to retain a coating material and apply it to the underside of the pipe, 95 and means for oscillating said retainer, and other means for moving said retainer lengthwise along the pipe.

5. In a pipe coating machine, means for moving the machine along the pipe to be served and oscillatory receiving means adapted to receive and distribute a coating material over the underside of the pipe. 1

6. In pipe painting apparatus including means for distributing paint to the top portion of the periphery of the pipe, a member 1 in receiving relation with the distributing means movable transversely over an opposite pipe portion for distributing paint thereto.

7. In pipe painting apparatus including 11 a paint container and means for supporting the container adjacent the pipe, means for distributing paint from the container to a portion of the pipe, an oscillating member movable over a pipe portion adjacent said 11 first named portion, for distributing paint thereto, a crank for moving said member, and common means for actuating said means and crank.

8. In pipe painting apparatus including 120 a paint container, means for supporting the container adjacent the pipe, and means for distributing paint from the container to the upper surface of the pipe, means including a pair of cranks and a flexible member movable by the cranks circumferentially of the 125 pipe for distributing paint to the lower surface of the pipe.

9. In pipe painting apparatus including 130 a paint container, means for supporting the

container adjacent the pipe, and means for
distributing paint from the container to a
portion of the pipe, a flexible strip having
opposite ends on opposite sides of the pipe
and adapted to receive paint from said dis-
tributing means, springs connected with the
ends of said strip, and means connected with
the springs for moving said strip circumfer-
entially of the pipe for distributing paint to
a portion of the pipe adjacent said first named
portion.

In testimony whereof I have signed my
name to this specification.

FRANK KINZBACH.

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