

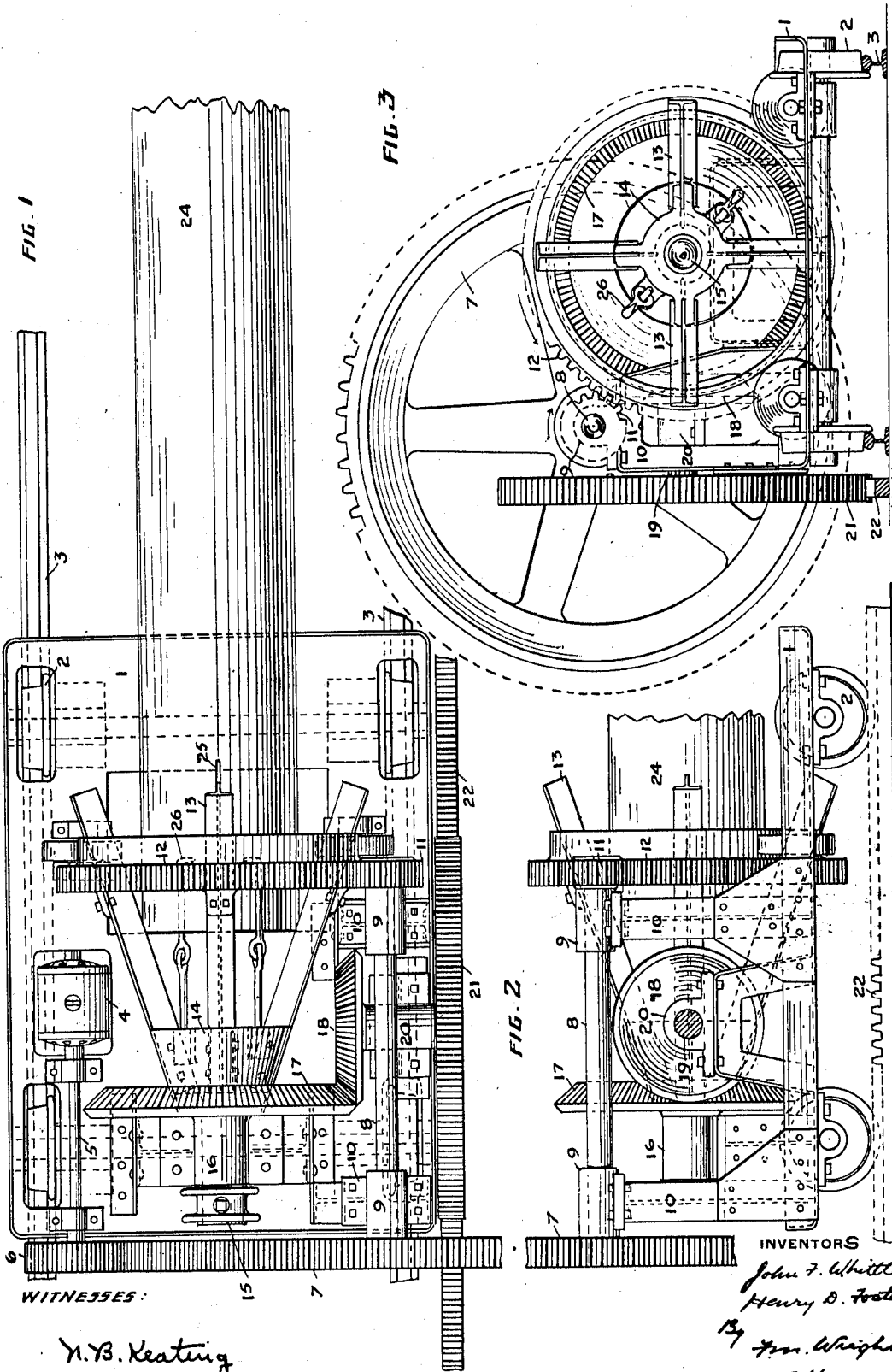
J. F. WHITTLE & H. D. FOSTER.
MACHINE FOR FORMING JACKETS ON PILES.

APPLICATION FILED FEB. 13, 1911.

Patented May 21, 1912.

2 SHEETS—SHEET 1.

1,026,939.



N. B. Keating
Leon Boileau

INVENTORS
John F. Whittle
Henry D. Foster
By Wm. Wright
Attorney

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FIG. 4

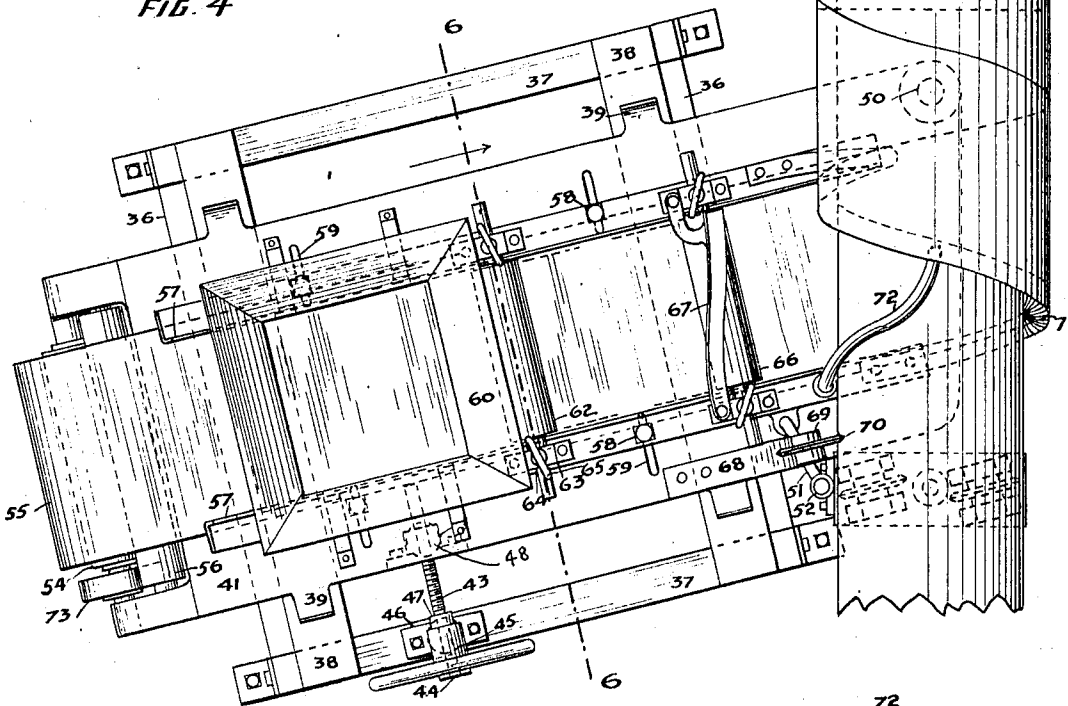


FIG. 5

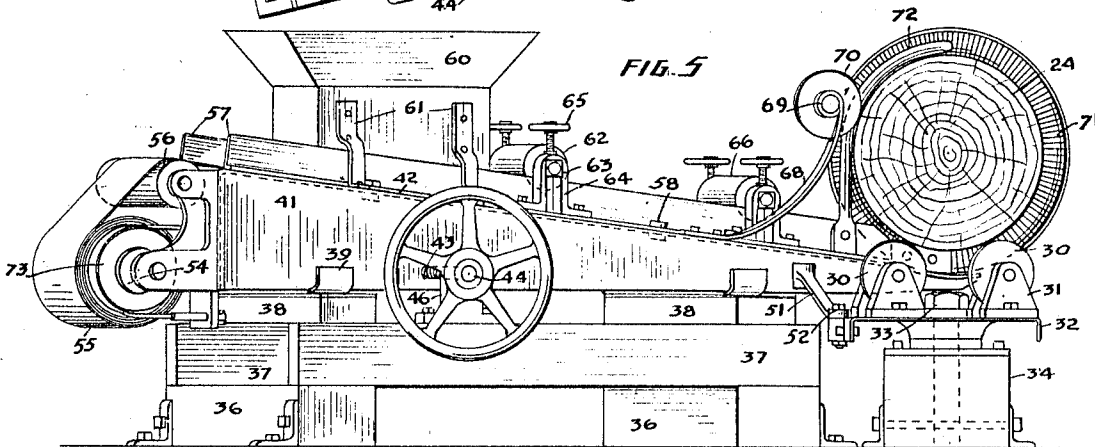
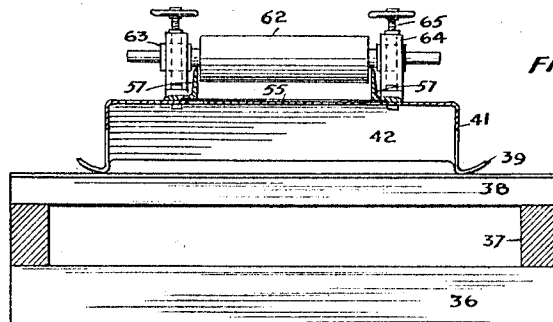


FIG. 6



WITNESSES

N. B. Keating
Leon Boillon

INVENTORS

John F. Whittle
Henry D. Foster

By J. M. Wright
Attorney.

UNITED STATES PATENT OFFICE.

JOHN F. WHITTLE, OF POINT RICHMOND, AND HENRY D. FOSTER, OF BERKELEY,
CALIFORNIA.

MACHINE FOR FORMING JACKETS ON PILES.

1,026,939.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOHN F. WHITTLE and HENRY D. FOSTER, citizens of the United States, residing, respectively, at Point Richmond, in the county of Contra Costa, and Berkeley, in the county of Alameda, State of California, have invented new and useful Improvements in Machines for Forming Jackets on Piles, of which the following is a specification.

The object of the present invention is to provide a machine for forming around piles jackets preferably of plastic material with an outer coating or sheathing.

In the accompanying drawing, Figure 1 is a plan view of the mechanism for turning and feeding the pile; Fig. 2 is a side view of the wheel, a gear being removed; Fig. 3 is an end view of said mechanism; Fig. 4 is a plan view of the apparatus for feeding the plastic material and sheathing, the pile being broken away; Fig. 5 is a side view of the same; Fig. 6 is a transverse vertical section on the line 6—6 of Fig. 4.

Referring to the drawings, 1 indicates a truck, mounted on wheels 2, which are adapted to travel on rails 3. Upon said truck is supported an electric motor 4, the shaft 5 of which carries a pinion 6 which meshes with a large gear wheel 7 and communicates a comparatively slow motion to said gear wheel. Said gear wheel 7 is secured to a shaft 8 rotating in bearings 9 on standards 10, and on said shaft is secured a pinion 11, which meshes with a gear wheel 12 which is secured to converging T-bars 13, the inner or converging ends of said bars being secured to a frame 14 which in turn is secured to a shaft 15 in a bearing 16 and carrying a bevel gear 17 meshing with a bevel gear 18 on a shaft 19 in a bearing 20 and carrying a gear wheel 21 which meshes with a rack 22 located parallel with the rails 3.

It will be seen that by means of this mechanism the converging bars are given a rotary motion and the truck is at the same time given a longitudinal motion, the relative speeds of said motions being determined by the proportions of the intermediate mechanism, which may be of any desired size.

The end of the pile 24 which is to be

treated is driven into the converging space between said T-bars, notches 25, if necessary, being formed in the end of the pile to receive the central members of said bars and insure the turning of the pile with said bars. The pile having been so driven is retained in place against longitudinal relative movement by hooks 26, which are caused to engage the sides of the pile. In this way the pile also is given a rotary and longitudinal motion.

The body of the pile is supported upon two rollers 30, shown in Figs. 4 and 5, the peripheries of said rollers preferably being rounded to allow of a sliding motion of the pile thereon. Said rollers are rotatably supported in bearings 31 on a table 32, which is secured so as to be rotatable about a vertical axis by a vertical bolt 33, passing down into a base block 34. Said table is given a slight rotary movement by the mechanism hereinafter described.

Supported upon blocks 36 are sills 37 upon which are supported transverse beams 38, upon which rest shoes 39 formed by extensions of the sides of a metallic apron 41, having an inclined upper surface 42. Said apron can be adjusted rotarily upon said beams by means of a screw 43 having a stem 44, which passes through a swivel sleeve 45 secured in a bearing 46 on one of said sills, which stem is provided with a collar 47 to prevent longitudinal movement in said sleeve, the screw 43 of said stem passing through a swivel nut 48 secured in said apron. By this means the rotary position of the upper portion of said apron can be adjusted. The lower portion thereof is provided with a vertical axle 50, shown in dotted lines in Fig. 4, by which said lower portion is prevented from moving laterally while permitting the upper portion to turn about said axle. From a side of said apron extends an arm 51, the outer end of which is pivotally connected as shown at 52 to the table 32 so that, upon the lateral adjustment of said apron, said table 32 is likewise rotatably adjusted to set said rollers at a different angle in correspondence with the different position of the apron.

Upon the rear end of the apron is mounted a roller 54 upon which is wound a band or sheet 55 of suitable material, metal or

otherwise, which band passes over a roller 56 and then extends down over the upper surfaces of the apron 41 between guide bars 57 secured to said upper surface. An adjustable band brake 73 passes around the roller 54 for adjusting the tension at which the band is fed to the pile. Said guide bars are adjustable transversely, being secured in their adjusted position by means of bolts 58 passing through said guide bars and secured in slots 59 in the upper surface of the apron. A hopper 60 is secured to the apron by arms 61 at a sufficient distance outside the guide bars to permit of the lateral adjustment of said bars, and by means of this hopper plastic material is fed on to the upper surface of the sheet material. The plastic material flowing through the lower side of the bottom of said hopper, and moving downward with the sheet material, is first distributed evenly over said sheet material by means of a roller 62, the ends of the shaft of which are mounted in boxes 63 adjustable vertically in standards 64 by means of screws 65. It then, still moving downward with the sheet material, passes beneath a tamping roller 66, of like construction with the first named roller, which exerts greater pressure upon the plastic material and regulates the thickness of the layer thereof. A wiper blade 67 is secured to the guide bar on the side of the apron from which the pile travels and extends over said latter roller. Also secured to the same guide bar is one end of a stout spring arm 68 the other end of which carries bearings 69 for the shaft of a roller 70 having a rounded edge adapted to engage the pile and prevent its moving toward the apron, since the pile has a tendency, owing to the pressure of, the sheet material thereon, to move toward said apron. Secured to the ends of the guide bars 57 adjacent to the pile are the ends of a helical wall 71, which encircles the pile and is of substantially the same height as the layer of plastic material, which confines the edge of said plastic material between the pile and the sheet material being spirally wound therearound. This wall is additionally supported by the end of a supporting arm 72 secured to and extending upwardly from the lower portion of the guide bar from which the pile is traveling. Any motive power other than the electric motor herein shown may be employed to drive said mechanism.

From the above description of the apparatus its operation will be readily understood. By the power of the prime motor the truck is advanced longitudinally, thus advancing the pile lengthwise and at the same time rotating said pile. A portion of the pile having been covered by hand with a layer of plastic material and by the end of the band, the apparatus is set in motion,

and the plastic material moves down the table in unison with the band, and, upon arriving at the pile, it is fed between said pile and sheathing of the band, being confined to its position between said pile and sheathing by the flexible wall 71, as described. Having been once started, the operation of the machine is automatic, and the pile is covered for any desired portion of its length with a jacket of plastic material having a sheathing of any suitable sheet material spirally wound thereon. When a sufficient length has been so covered, the end of the sheathing is finished by hand in any suitable manner, as by wiring the end of the band. By changing the angle of the apron, or by shaping the band, the end of the sheathing may be formed in a conical shape.

The machine may be used for other purposes, as, for instance, for manufacturing cylinders or pipes of concrete or other plastic material by using a collapsible core.

We claim:—

1. In an apparatus of the character described, the combination of a truck, a rotatable device mounted on said truck provided with means for retaining the end of a pile or the like, means for producing simultaneously a longitudinal movement of the truck and a rotary movement of said device, an apron for feeding plastic material to the surface of said pile, a hopper for supplying plastic material to said apron, means for regulating the thickness of said plastic material, means for varying the angle of inclination of said apron to said pile, and means located adjacent to said apron for rotatably supporting said pile, substantially as described.

2. In an apparatus of the character described, the combination of a truck, a rotatable device mounted on said truck provided with means for retaining the end of a pile or the like, means for producing simultaneously a longitudinal movement of the truck and a rotary movement of said device, an apron for feeding plastic material to the surface of said pile, a hopper for supplying plastic material to said apron, means for regulating the thickness of said plastic material, means located adjacent to said apron for rotatably supporting said pile, and means for simultaneously varying the angle of inclination to said pile of said apron and said supporting means, substantially as described.

3. In an apparatus of the character described, the combination of a truck, a rotatable device mounted on said truck provided with means for retaining the end of a pile or the like, means for producing simultaneously a longitudinal movement of the truck and a rotary movement of said device, an apron for feeding plastic material to the surface of said pile, a rotatable de-

vice engaging said pile to prevent movement thereof toward said apron, a roller suitably located relatively to the apron for supplying sheet material over said apron
5 to said pile, and means for supporting said pile adjacent to an end of said apron, substantially as described.

In testimony whereof we have hereunto

set our hands in the presence of two subscribing witnesses.

JOHN F. WHITTLE.
HENRY D. FOSTER.

Witnesses:

FRANCIS M. WRIGHT,
D. B. RICHARDS.