F. E. AMES.

SERVING MACHINE.

APPLICATION FILED NOV. 7, 1912.

1,094,047. Patented Apr. 21, 1914.

Fig. 1.

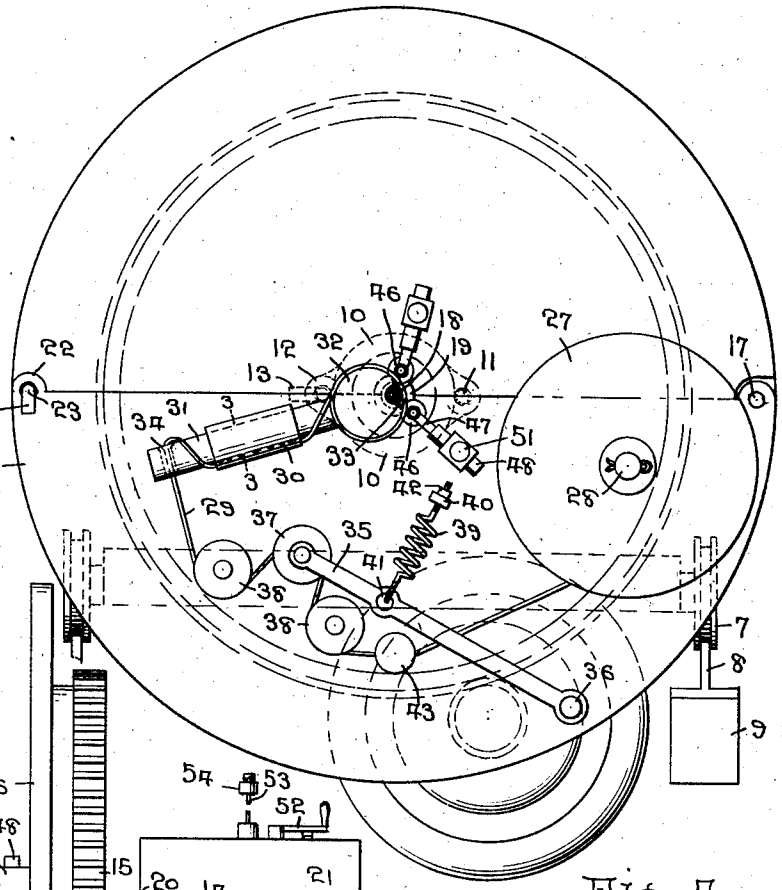


Fig. 3.

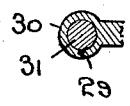


Fig. 2.

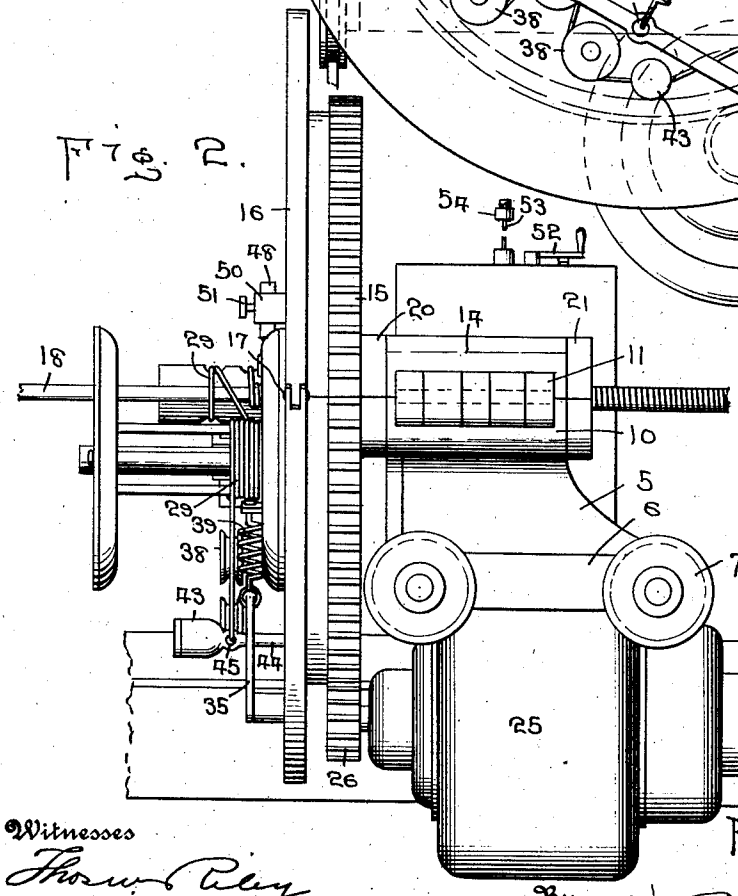
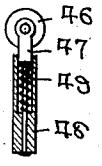


Fig. 4.



Witnesses

Thos. W. Riley

W. Newcomb

Inventor

F. E. Ames

By W. T. Fitzgerald & Co.

Attorneys

UNITED STATES PATENT OFFICE.

FRANK E. AMES, OF VALLEJO, CALIFORNIA.

SERVING-MACHINE.

1,094,047. Specification of Letters Patent. Patented Apr. 21, 1914.

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To all whom it may concern:

Be it known that I, FRANK EVANS AMES, a citizen of the United States, residing at Vallejo, in the county of Solano and State of California, have invented certain new and useful Improvements in Serving-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to serving machines, and it more particularly relates to a machine for covering wire cables and the like with a winding of marline, houseline, roundline, servingwire or other suitable material.

An object of the invention is to provide a practical and thoroughly efficient machine, for wrapping or "serving" cables, for protecting the same from detrimental effects of the weather, or from chafing; or for insulating purposes.

A further object of the invention is to provide a machine of this character by means of which the rapidity of movement of the serving cables is greatly increased.

Another object of the invention is to provide a machine of this character which will apply the serving material more evenly and compactly than it can be applied by means previously employed.

A further object of the invention is to provide a machine for carrying and operating a serving mallet which is of the same general construction as those which are usually operated by hand, but slightly modified for application to a machine of this character.

Other objects and advantages may be recited hereinafter and in the claims.

In the accompanying drawings which form a part of this application, Figure 1 is a front elevation view of the complete winding or serving machine. Fig. 2 is a side elevation view of the machine, one of the track beams and rails being removed for the sake of clearness. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1, and, Fig. 4 is a detail sectional view through one of the sockets which carries one of the plungers and presser rollers.

Referring to the drawings in which similar reference characters designate corresponding parts throughout the several views, the main frame or body 5 of the machine is carried by or formed integrally with a truck 6, the sheave wheels 7 of which travel upon a track 8, said track being seated upon beams or other suitable foundation 9. The body 5 carries a bearing 10, the lower half of which may be formed integrally with the body 5, the upper half being hinged at 11 to the lower half. The side of the bearing 10 opposite to the hinge 11 is provided with a hinged joint 12, a bolt 13 extending through the hinged joint and being removable therefrom and comprising a fastening means which may be quickly removed when it is desired to swing the upper element of the bearing on the hinge 11, and which may be replaced for securing the hinged bearing in closed position.

Mounted for rotation in the hinged bearing 10 is a diametrically divisible journal 14, connected with a diametrically divisible disk 16. The disk 16 is hinged together at 17, so that the upper half thereof may be swung upward, when the hinged bearing is open, and the upper half of the gear wheel 15 and the upper half of the journal 14 are swung upward therewith. When thus swung upward or into open position, a cable 18 may be passed laterally into the central bore 19 which extends entirely through the journal 14. A boss 20 and a flange 21, which are formed integrally with the gear wheel 15 and the journal 14, and also being divisible are seated against the ends of the bearing 10 for preventing thrust of said journal.

From the foregoing it will be seen that the members 14, 15, 20 and 21 constitute a rotating former which is divided into two equal sections, said sections being held together by means of the bearing 10 and its locking bolt 13; however, in order to prevent relative movement of the upper and lower sections of the gear member 15 and the disk 16, I have provided a hinged joint 22 which is diametrically opposed to the hinge 17 and is provided with a locking bolt 23. These locking bolts 13 and 23 may be secured within the respective hinged joints by any proper means, such for instance as screw threads (not shown), and they may be provided with an arm, as shown at 24, whereby they may be withdrawn.

A motor 25, of any proper and preferred construction carries a pinion 26 which meshes with the gear wheel 15 and is adapted to rotate the same, together with the disk 16. Upon this disk 16 is mounted

a reel 27, through the medium of a stud 28, and upon this reel is carried the serving material 29 with which the cable 18 is to be wrapped. The disk 16 also carries a sleeve 30 which is located rectilineally in a radial plane of the disk, and the serving mallet is carried in this sleeve 30, a handle or beam 31 of said mallet being mounted within the sleeve and adapted for longitudinal movement therein. The head 32 of the serving mallet is substantially of cylindrical form, a concaved recess 33 being formed in the side opposite to the beam 31, and into this concaved recess lies the cable 18 while being wound or served.

In order that the serving material may be applied compactly and tightly, it is desirable to wrap the head and beam of the serving mallet with said material, so as to provide a proper tension for the latter. In the free end of the beam 31 is a diametrically disposed aperture 34 which serves as a guide for the serving material 29. In order that the slack may be taken up in the serving material, I provide a take-up mechanism which consists of an arm 35, pivoted at 36 to the disk 16, said arm carrying a sheave wheel 37 around which the serving material passes. Sheave wheels 38 are journaled in the disk 16, and these sheave wheels constitute guides for the serving material, and coact with the take-up mechanism, the latter including a retractile spring 39, secured to the disk 16, through the medium of a lug 40. The spring 39 is engaged with the arm 35 at 41, so that said sheave is continually drawn against the strand of serving material 39. An end of the spring member 39 is screw-threaded for the reception of a nut 42, so that the tension of the spring 39 may be regulated at will.

An oil or grease cup 43 is secured on the disk 16, through the medium of a stem 44, said stem being provided with an aperture 45 which extends diametrically therethrough and communicates with the interior of the cup 43. Through this aperture 45 passes the strand of serving material, so that said strand is oiled or greased thereby, for softening the same and reducing the friction thereof and consequent wear of the serving mallet, where it comes into contact with the latter. It is obvious that the cup 43 may be of any preferred and proper construction and size, and that tar, pitch or any other suitable and desired material may be applied thereby to the strand of serving material.

The sleeve 30 may be provided with a longitudinal aperture through which the strand 29 passes, as indicated in Fig. 3.

In order that the action of the serving mallet may be supplemented, for tightening and smoothing the serving material upon the cable 18, I provide a pair of presser rollers 46 which are mounted upon plungers 47, the latter being longitudinally movable in sockets 48 and being pressed outward by means of springs 49. The sockets 48 are seated in apertured lugs 50, being adapted for longitudinal adjustment therein, set screws 51 being provided for securing the sockets in adjusted position.

Any proper and desired form of electrical appliance may be employed in connection with the motor 25, and for this purpose a controller is indicated at 52. Electric current may be supplied through the medium of a conductor wire 53 which may be connected with a lamp socket or with other electrical connection, by means of a plug, indicated at 54.

The operation of the machine is as follows: The cable which is to be served is first placed in horizontal position on a plane above the track members 8, and its medial portion is placed within the aperture 19, the disk 16 and bearing 10 having previously been opened to receive it. The cable is then stretched tight in axial alinement with the disk 16, so that it extends centrally through the aperture 19. The machine is then trundled along the track until the point is reached where the serving is to begin, whereupon the serving material or strand is passed around the mallet head, as shown, and secured to the cable; all preliminary treatment of the cable having previously been completed. The electrical connection is then made and the motor started, so that the gear wheel 15 and disk 16 are rotated, carrying therewith the reel of serving material, the serving mallet, the take-up mechanism, the oil cup and the presser wheels. The serving material which has been wound upon the cable acts as a helical cam, or in the manner of a screw-thread, in conjunction with the portion of material being wound thereagainst, for drawing the machine along on the track rails 8. On account of the inertia of the machine and of the friction between the wheels 7 and their axles, the serving material being applied is continually held firmly against that which has been applied, so that the serving material is uniformly and compactly wound at every point.

It will be seen that I have provided a machine of this character which is fully capable of attaining the foregoing objects, and in a thoroughly practical and efficient manner.

I do not limit my invention to the exact details of construction, combination and arrangement of parts, as herewith illustrated and described, but my invention may only be limited by a reasonable interpretation of the claims.

I claim:

1. In a serving machine, a centrally aper-

tured rotatable disk adapted to receive a cable therethrough, a serving member carried by said disk and adapted to feed serving material on to said cable, sheaves journaled on said disk and adapted to convey the serving material to said serving member, an arm pivoted at one end to said disk, a sheave journaled at the free end of said arm and adapted to engage said serving material, and a retractile spring secured at one end to said arm and having its opposite end adjustably connected with said disk, whereby the slack in said serving material may be taken up.

2. In a serving machine, a centrally apertured rotatable disk adapted to receive a cable therethrough, a sleeve secured on said disk, a beam slidable in said sleeve, a serving mallet carried by the inner end of said beam and adapted to feed serving material on to said cable, the outer end of said beam having an opening laterally therethrough, means carried by said disk for supplying serving material to said serving member, said sleeve provided with a longitudinal opening therein, said serving material adapted to pass through the opening in said beam and through the opening in said sleeve.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK E. AMES.

Witnesses:

WM. DICKIE,

WM. D. BIXLEY.