

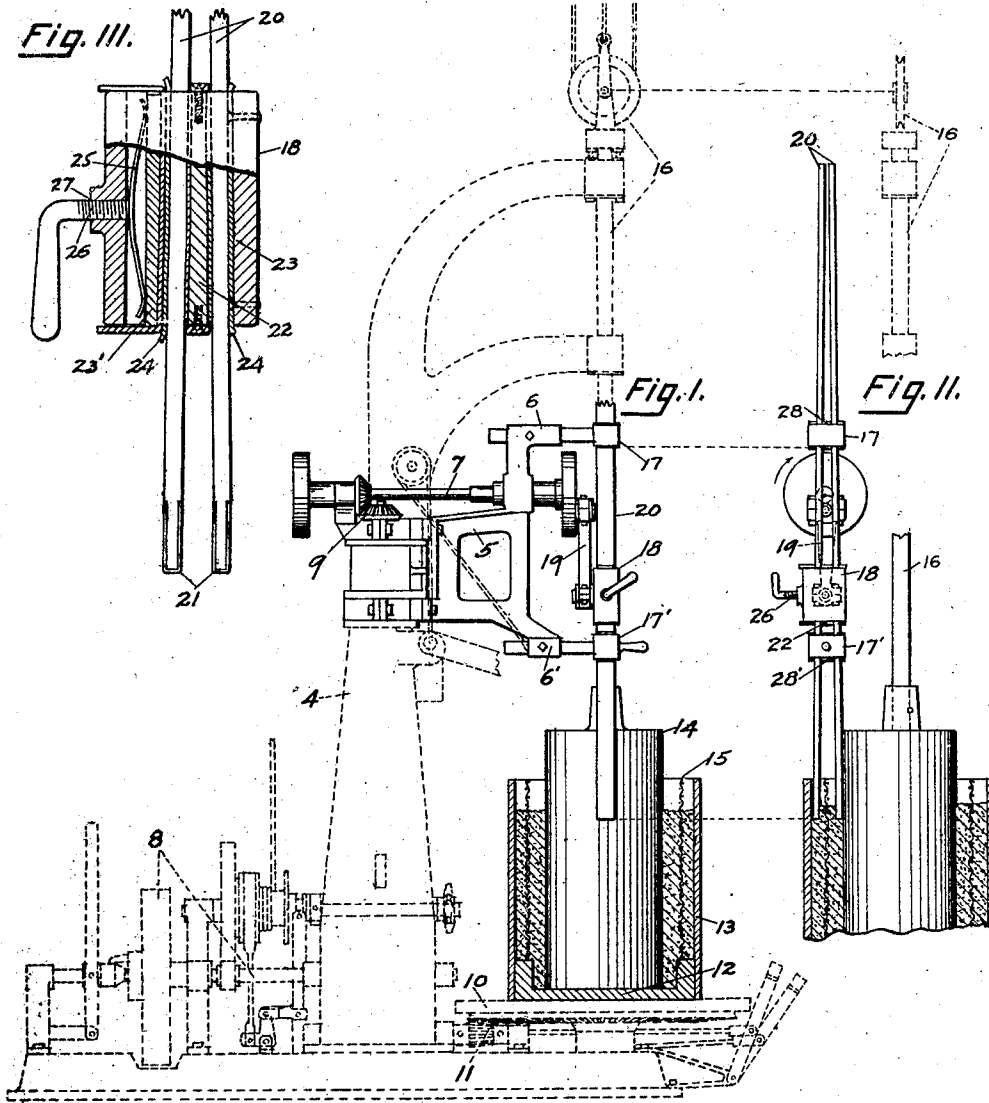
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TAMPING MACHINE

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UNITED STATES PATENT OFFICE.

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TAMPING MACHINE.

Application filed July 18, 1922. Serial No. 575,857.

To all whom it may concern:

Be it known that I, PHILIP S. EASTERDAY, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Tamping Machines, of which the following is a specification, reference being had to the accompanying drawings.

10 My invention relates to tamping apparatus for concrete pipe forming machines.

The object of my invention is to provide tamping devices especially adapted to compact concrete material upon each side of 15 metal reinforcement positioned in the forming apparatus.

It is also an object of my invention to provide tamping bars spaced apart upon each side of said reinforcement and directed 20 downwardly in diverging relation to more thoroughly compact the plastic material adjacent the outer and inner walls of the pipe.

These objects, as well as other advantages, I attain by the construction, combination 25 and arrangement of parts illustrated in the accompanying drawings which form a part hereof.

Figure I is a side elevation of the tampers, mechanism for their operation, and forming 30 apparatus, partly in section.

Fig. II is a front elevation of tampers, with parts of said mechanism and apparatus.

Fig. III is a front elevation of tampers and friction casing with parts broken away.

35 Like characters refer to like parts in all views.

An upright frame 4 is provided. At a convenient height, a swinging bracket 5 is mounted on the frame, the same having horizontal arms 6—6'. A horizontal shaft 7 40 is rotatably mounted in the frame and bracket. Power transmitting mechanism 8 and intermediate mechanism 9 are arranged to transmit power to the shaft 7. A turntable 10 is positioned adjacent to the frame 4. Power is transmitted to it from the 45 mechanism 8 through intermediate mechanism 11. Upon the turntable is placed a circular male former pallet 12 and over this a vertical jacket 13. A cylindrical core 14 is positioned centrally within the jacket and circular metal reinforcing material 15 is positioned within the jacket, between it and the core, resting upon the former pallet. 50 The core rests upon the central part of

the pallet 12 and extends above the jacket. Means 16 are arranged in the upper part of the frame 4 to move the core 14 vertically.

In the arms 6—6' guides 17—17' are secured, each having vertical, quadrilateral 60 openings therein positioned in alignment with the space between the jacket 13 and core 14 when set in operative position on the table 10. A friction block casing 18 is connected with the shaft 7 by a crank and rod 65 19. Wooden tamping bars 20 extend through the guides 17—17' and casing 18. These bars are preferably provided with metal shoes 21 on their lower ends. Within the casing a wedge-shaped spreader block 22 is placed between the bars 20. The casing wall 23 is adjacent to one outer side of the bars and a movable plate 23' to the opposing outer side. Between the wall 23 and plate 23' and the respective opposing bars, friction strips 24 are placed. Between the wall of the casing and the plate 23' a spring 25 is placed. A setting screw 26, having a handle, is mounted in a threaded opening 27 80 in the wall of the frame to adapt the screw to engage the spring 25 and press the blocks into engagement with the bars 20 to retain them in position at a desired height in relation to their extension into the space within the jacket 13, also to release them to allow 85 their withdrawal from the jacket. Wedge-shaped blocks 28—28' are placed between the tampers in the guides 17—17'. The blocks in the friction casing and guides may be changed to spread the tampers at their 90 lower ends a desired distance apart.

The operation of the device will now be described. The tamping bars are released and raised above the jacket to allow the core and finished product to be removed. 95 The former 12 is secured upon the table 10, the jacket placed over the former pallet and the core 14 and reinforcing material 15 are placed in the jacket as shown in Fig. I. The screw 26 is adjusted to allow the bars 20 to be slid to a position where their lower ends are on each side of the reinforcing material 15 and approximately near the pallet 12, when the bars are secured in the casing. Plastic material is then placed by any convenient means into the space between the jacket and core while the table 10 is being rotated. During this time, power being transmitted to the shaft 7, it causes the bars to tamp the material in a circular path 100

on both sides of the reinforcement. The friction blocks are adjusted for a clutch upon the tampers pre-determined to allow the tampers to slip upwardly, when the material below has been tamped to a desired density. When it has attained such density, the mass is solid enough to force the tampers gradually upward and the tamping continues in this manner until the upper end of the jacket is reached. The tampers are then withdrawn and a circular former is inserted to produce the female joint end of the pipe. When this is done the bracket allows the tampers to be swung to one side, the core is withdrawn and the jacket with the material resting upon the pallet is removed to a convenient place to cure. Heretofore great difficulty has been encountered in successfully imbedding reinforcing material, such as the wire netting here illustrated, in concrete pipes. Also in tamping about such reinforcing material in a manner to retain it in a proper and effective position. I have overcome these difficulties by the device which tamps on each side of the reinforcement simultaneously. This distributes the material on both sides and through the wire, making a homogeneous mass of the whole and of a desired density. In practice I have found the crushing resistance of pipe tamped with my device is a large percentage greater than that of an all concrete pipe or with reinforcement tamped on one side only. The tamping bars being spread apart to close proximity with the jacket and core, the result is that the material is pressed against jacket and core and thence outwardly through the wire where it is wanted, as well as being tamped downwardly. This prevents material crawling upward along the jacket and core walls. The tamping in this way proceeds evenly as the former is rotated below at a moderate speed. It is obvious that the tampers may be positioned apart for varying sizes of formers and pipes. My device produces a most durable and satisfactory pipe, as practical demonstration has proven.

I claim:

1. In a concrete pipe machine, the combination with a rotatable mold and a core therefor adapted to include a cylindrical body of reinforcement material therebetween, of a pair of tamping bars operative upon opposite sides of said reinforcement material, spaced guides for said tamping bars, a spreading block positioned in each said guide to separate said bars, a cas-

ing mounted for reciprocative movements intermediate said guides through which said tamping bars extend, a spreader block positioned between said bars within said casing, a movable plate engaging one of said bars, a spring interposed between an end wall of said casing and impinging upon said movable plate, and means for tensioning or releasing said spring whereby said bars are frictionally engaged or released.

2. In a concrete pipe machine, a pair of tamping bars, guides for said bars, a reciprocatively actuated casing intermediate said guides, means for frictionally engaging said bars within said casing, and spreaders within said guides and casing adapted to maintain said bars in spaced relation.

3. In a concrete pipe machine, the combination with a rotatable mold and a core therefor adapted to include a cylindrical body of reinforcement material therebetween, of a pair of tamping bars operative upon opposite sides of said reinforcement material, spaced guides for said tamping bars, a wedge-shaped spreading block positioned in each said guide to separate said bars in downwardly diverging relation, a casing mounted for reciprocative movements intermediate said guides through which said bars extend, a wedge-shaped spreader-block positioned between said bars within the casing, a movable plate engaging one of said bars, a spring interposed between an end wall of said casing and impinging upon said movable plate, and means for tensioning or releasing said spring whereby said bars are frictionally engaged or released.

4. In a concrete pipe machine, a pair of tamping bars, guides for said bars, a reciprocatively actuated casing intermediate said guides, means for frictionally engaging said bars within said casing, and wedge-shaped spreaders within said guides and said casing adapted to maintain said bars in downwardly diverging relation.

5. In a concrete pipe machine, tamping mechanism consisting in a pair of tamping bars spaced apart in downwardly diverging relation, and means to actuate said bars.

6. In a concrete pipe machine, a pair of tamping bars operatively secured in frictional engagement and spaced apart in downwardly diverging relation.

PHILIP S. EASTERDAY.

Witnesses:

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