(No Model.)

C. A. CARPENTER.

TILE TAMPING MACHINE.

No. 459,390. Patented Sept. 15, 1891.

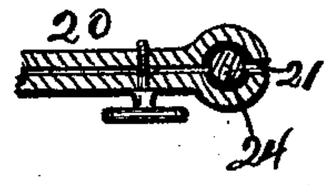

Fig. 2.

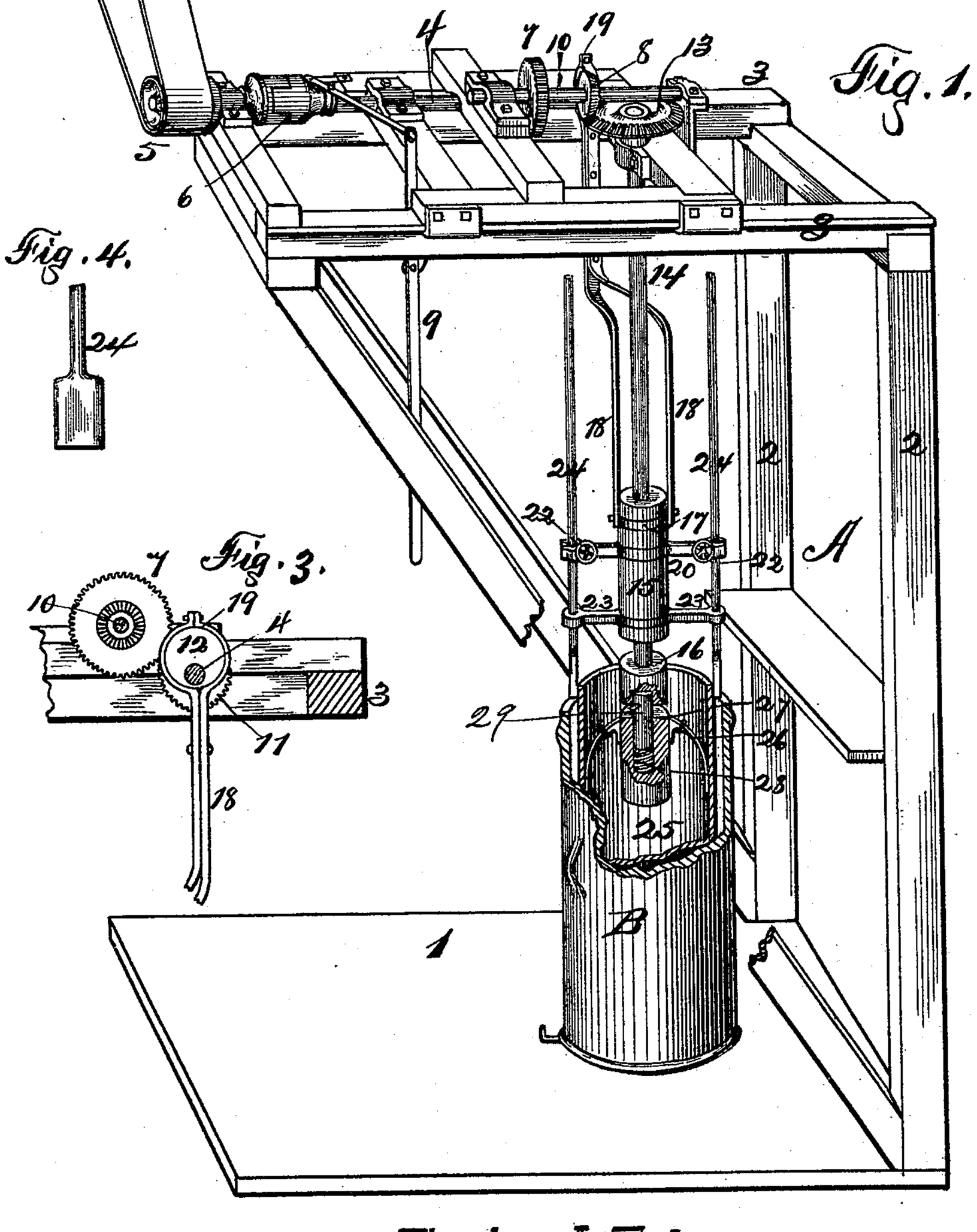

Fig. 1.

Fig. 4.

Fig. 3.

Witnesses
E. B. Kinne,
H. A. Carhart.

Charlie A. Carpenter. Inventor

By his Attorneys
Smith & Denison

UNITED STATES PATENT OFFICE.

CHARLIE A. CARPENTER, OF BALDWINSVILLE, NEW YORK.

TILE-TAMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 459,390, dated September 15, 1891.

Application filed February 7, 1891. Serial No. 380,609. (No model.)

To all whom it may concern:

Be it known that I, CHARLIE A. CARPENTER, of Baldwinsville, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Tamping-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to machines and apparatus for tamping concrete sewer-pipe while in the process of construction in the mold around the central core, which forms the bore of the pipe.

My object is to produce a more perfect, harder, and more thoroughly-compacted pipe, capable of standing greater strains and of greater durability all through, the thorough tamping of the materials as they are fed into the mold around the core by means of power applied to the tamping-bars causing them to travel around the mold as the material is fed into it and automatically rising as the pipe is built up.

My invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of the machine set up with part of the mold broken away to show the core and with part of the core broken away to show the means for connecting the tamping-bar shaft to the core and permitting the shaft to rotate thereon and steadying the core. Fig. 2 is a detail of the friction-grip device for holding the tamping-bar. Fig. 3 is a detail showing the eccentric for driving the tamping-bars and the means for actuating it. Fig. 4 is a plan of a tamping-bar head.

A is the main frame erected upon the floor 1 and comprising vertical timbers 2, horizontal plate-timbers 3, cross-timbers thereon, and suitable braces. Upon the top I mount the drive-shaft 4, having a drive-pulley 5, an ordinary sliding chuck 6, a spur-gear or pulley 11, and a bevel-gear 8, and 9 is an ordinary lever mechanism for throwing the chuck into and out of engagement. A shaft 10 is mounted parallel with the main shaft and provided with a pinion or pulley 7, and 12 is an eccentric secured to and rotating with the shaft 4. A bevel-gear 13, meshing with the gear 8, is secured upon the vertical shaft 14, and 15 is a sleeve mounted thereon by a spline or feather way joint and movable vertically thereon and rotates with the shaft, and 16 is a head secured upon its lower end and recessed in its lower face. A ring 17 is loosely mounted in a groove around the sleeve and is provided with ears, to which the connection bars 18 are connected, and these bars are joined and then curved, so as to form the ring 19 around the eccentric, so that the rotation of the eccentric will raise and lower the sleeve upon the shaft. The arms 20 are composed of two bars curved centrally to fit into a groove around the sleeve and curved at their ends, as shown, and provided with an elastic frictional packing 21 in the end jaws, and 22 are set-screws by which the tension is regulated, so that they rotate with the sleeve. Below these arms I secure another pair of like arms 23, either with or without frictional packing and of the same length as the others, and secured in a third groove, so that they rotate with the sleeve and operate as guides for the shanks 24 of the paddles, while the arms 20 grip them and carry them vertically.

B is the mold, of any ordinary construction, and 25 is the tubular core set within the mold, as usual. A spider 26, secured within the core, supports the block 27, which is bored out to receive the plunger 29 and spring 28, which plunger fits into the recess in the bottom of the head 16 loosely. When this plunger is depressed, the mold and core can be removed from under the shaft. When an empty mold with its core is placed under the shaft, the plunger is depressed and springs up into the head and forms a sort of pivot for the rotation of the shaft and sleeve, and also steadies the core, while the eccentric raises and lowers the rotating sleeve, the arms, and the tamping-bars, whose heads impact against and compact the material in the mold, and as this material is built up the bars are automatically shortened by slipping in their friction-grips until the mold is filled. I then remove the mold and put a new one in place, lowering the tamping-bars by loosening the grips. The sleeve and arms carry the tamping-bars

around and around in the mold, so that all parts are packed alike and homogeneous as the material is fed into the mold. I stop the machine by throwing the clutch out of engagement.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A tamping-machine comprising a vertical shaft, a sleeve splined thereon, arms secured to the sleeve, tamping-bars mounted in said arms, an eccentric and a divided connecting-rod connecting it to the sleeve, and means to rotate the eccentric and the vertical shaft, in combination, as set forth.

2. The combination, with the vertical drive-shaft recessed in its lower end, of a spring-actuated plunger in the core of the mold fitting into the recess.

3. The combination, with the vertical drive-shaft recessed in its lower end, the sleeve splined thereon, the arms upon the sleeve, and the tamping-bars carried in and by said arms, of a spring-actuated plunger in the core of the mold fitting into said recess, and means to rotate said shaft.

In witness whereof I have hereunto set my hand this 22d day of January, 1891.

CHARLIE A. CARPENTER.

In presence of—
H. P. DENISON,
C. W. SMITH.