No. 765,349. PATENTED JULY 19, 1904.

F. F. WILSON.

MOLDING MACHINE FOR ARTIFICIAL STONE, &c.

APPLICATION FILED SEPT. 9, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1.

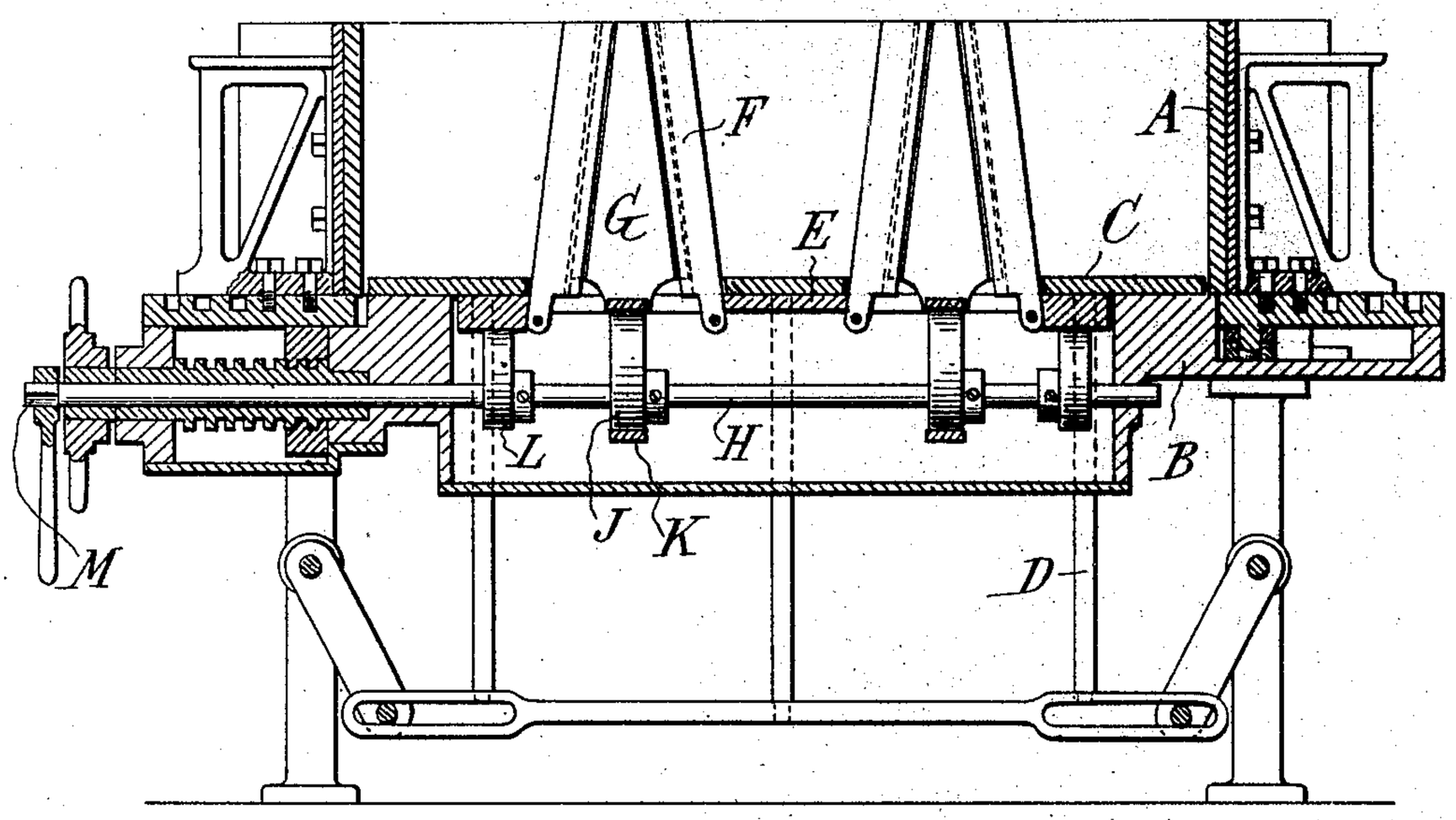


FIG. 2.

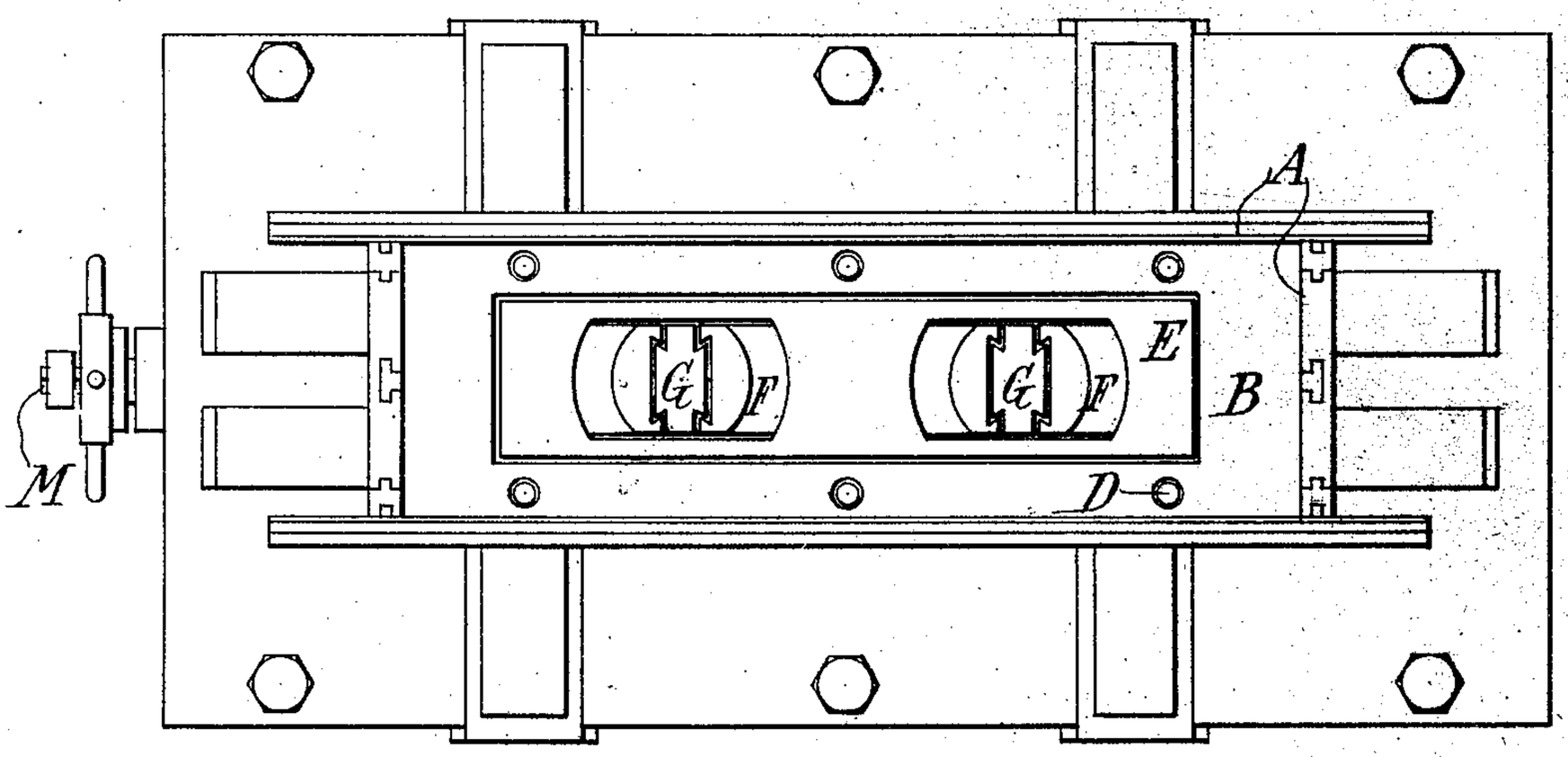
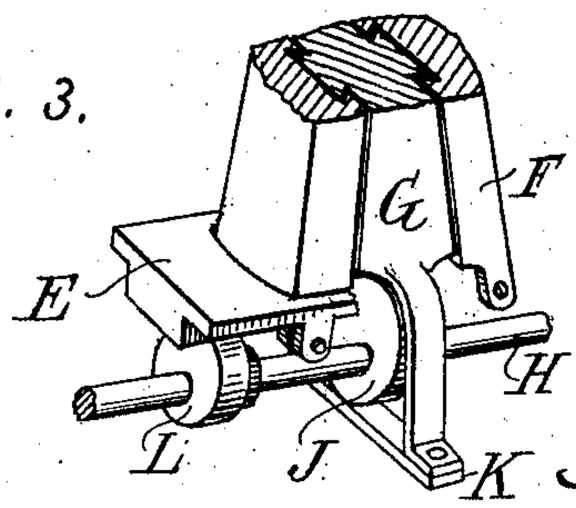


FIG. 3.



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NO MODEL. 2 SHEETS—SHEET 2.

FIG. 4.

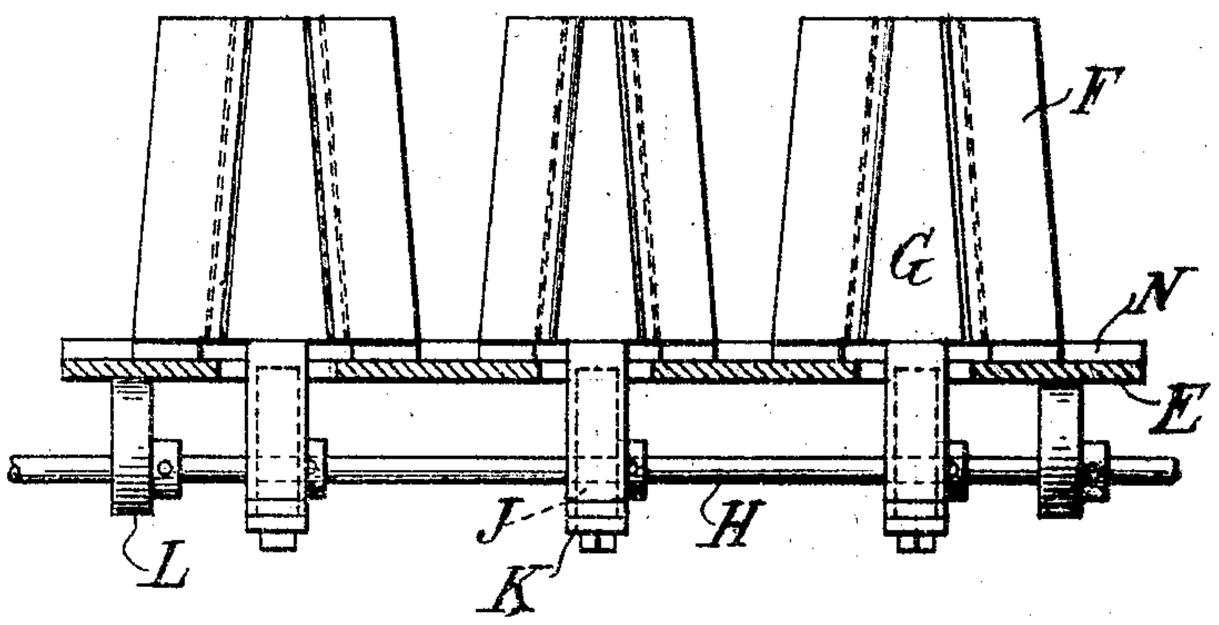


FIG. 5.

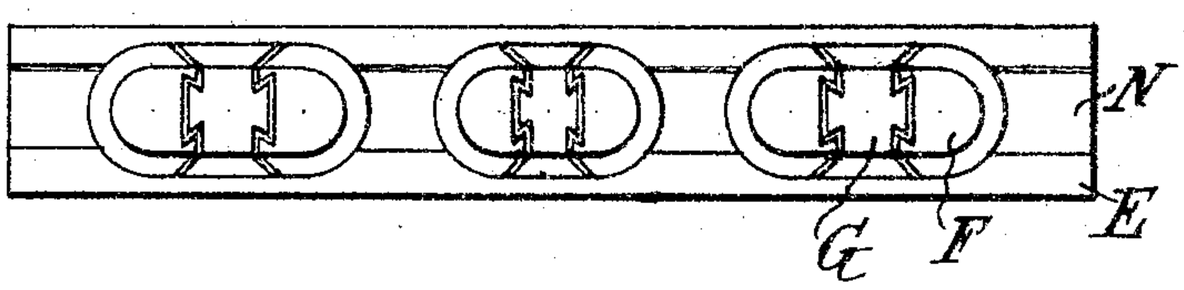


FIG. 6.

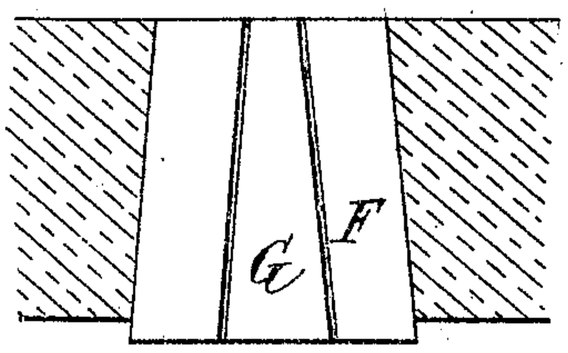
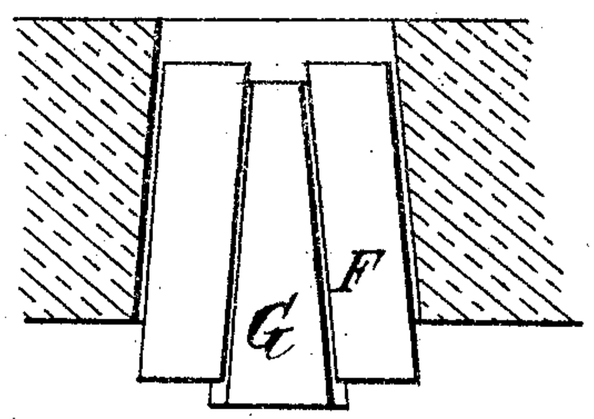


FIG. 7.



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No. 765,349. Patented July 19, 1904.

UNITED STATES PATENT OFFICE.

FERGUS F. WILSON, OF NEW YORK, N. Y.

MOLDING-MACHINE FOR ARTIFICIAL STONE, &c.

SPECIFICATION forming part of Letters Patent No. 765,349, dated July 19, 1904.

Application filed September 9, 1903. Serial No. 172,470. (No model.)

To all whom it may concern:

Be it known that I, FERGUS F. WILSON, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Molding-Machines for Artificial Stone or the Like, of which the following is a specification.

My invention aims to provide certain improvements especially applicable to the molding of artificial stone from cement or concrete.

The improvements refer more particularly to cores which are commonly used in such machines; and the invention has for its main object to provide for a wide separation of the cores from the surrounding stone by means of a simple and compact mechanism.

The invention has also for its object to contract the core, so as to separate it from the stone and at the same time to partly withdraw it out of the opening which it forms in the stone, so that the stone may be more easily removed. Preferably the contraction and the withdrawal of the core is accomplished by a single operating mechanism and preferably, also, by a single movement of such operating mechanism.

Various other advantages in detail are referred to hereinafter.

The accompanying drawings illustrate two embodiments of the invention.

Figure 1 shows in side elevation a pair of cores applied to a machine of the type described in my application, Serial No. 160,308, filed June 6, 1903. Fig. 2 shows the same in plan. Fig. 3 is a perspective view of the cores and operating mechanism. Fig. 4 is a side elevation of a group of three cores of a slightly different type. Fig. 5 is a plan of the same. Figs. 6 and 7 are views of a core respectively in working position and in contracted and withdrawn positions.

The number and grouping of the cores is not material to this invention, nor is the mold or any other part of the molding-machine essential. These may be of any suitable type.

In the machine shown the mold-walls A rest on a base B and are moved inward and outward by suitable mechanism. (Not herein shown.) The floor C of the mold is removed in Fig. 2. It is an ordinary plate provided with holes for the passage of the cores through it and serves also as an ejecting-plate, being lifted when the stone is complete, and the cores are withdrawn by means of the rods D. The cores may be mounted, as shown, upon a core-base E, lying in an opening in the machine-base B. As illustrated in Figs. 1 and 3, the cores comprise sides F, pivoted at their lower ends to the core-base E, so that they may swing outward and inward, and a center G, which is tapered and engages the sides, preferably by means of the undercut tongue-and-groove connection. (Shown in Fig. 2.) As the center G is raised to the position of Fig. 1 it spreads the sides, and as it is lowered it draws them inward. A certain amount of looseness is necessary in the connection between the sides F and the center G, since the different positions of the sides as the center G is raised and lowered are not parallel with each other; but the lateral movement is comparatively slight, and the construction shown is practically sufficiently accurate. The operating mechanism is arranged to move the center G downward to contract the core and at the same time to move the sides F longitudinally, so as to withdraw the core. For this purpose a shaft H may be used, provided with eccentrics J, engaging straps K at the lower ends of the centers G and having also eccentrics L engaging the under side of the core-base E. The eccentrics J have a greater throw than the eccentrics L, being larger, and effect a faster downward movement of the center G than of the sides F, and the effect of the eccentric J is felt before that of the eccentric L. Thus the cores are first separated by a contracting movement from the stone and then by a continued contracting and withdrawing movement. As shown by Figs. 6 and 7, the core is considerably separated from the stone and is lowered, so that it does not interfere with the removal of the stone as much as it would if it stood at its original height. This advantage is apparent whether the core be tapering or not. It is preferred, however, to taper the cores, since the mere lowering of the tapered core increases the lateral separation of the sides of the core

from the stone beyond that which is due to its mere transverse contraction. The shaft H may be operated in any suitable manner—as, for example, by means of a wrench applied to the squared end M.

Figs. 4 and 5 illustrate another style of core, the sides F of which have a bodily horizontal movement, being guided in an undercut slot N in the core-base E. The center G is substantially the same as described in the previous construction, as also are the shaft H and the eccentrics J and L for lowering the centers and the core-base, respectively.

My improved cores have an advantage over cores which are merely lowered, since the latter are apt to carry away portions of the stone, the latter being soft when fresh, and they have an advantage over cores which are merely contracted inward in that they facilitate the removal of the stone and also when tapered provide a wider space between the sides of the core and the stone. The eccentric mechanism is particularly compact and is operated by a single half-turn of the shaft. It is to be noted also that the cores can be changed from one to the other position by merely giving the shaft a half-turn in either direction, so that no care or skill is necessary. The mechanism is so compact that it lends itself readily to being inclosed as shown, and thus protected from dirt. Furthermore, the parts are quite open, so that grit or dirt cannot lodge permanently in them and affect the operation. Though small, the mechanism effects as great a movement of the cores as do much more cumbersome and large mechanisms in use. Furthermore, the gradual separation of the core from the freshly-molded stone which is effected is also a decided advantage of eccentric mechanism over racks and pinions or similar mechanisms which have been used. The rate of movement of the core with an eccentric at the beginning is very slow and only increases after the core is separated from the concrete. With a rack and pinion the movement starts suddenly and is very apt to injure the soft concrete and carry away portions of it.

Though I have described with great particularity of detail certain embodiments of my invention, yet it is to be understood that the invention is not limited to the specific mechanisms shown and described. Various modifications of the same in detail and in the arrangement and combination of the parts may be made by those skilled in the art without departure from the invention.

What I claim is—

1. In combination, a core comprising sides and a tapering center, means for moving said center to contract said core, and other means acting directly on said sides, without the intermediation of the center, for withdrawing said sides.

2. In combination, a contractible core, and an operating-shaft operating one device for contracting said core and another device for withdrawing it.

3. In combination, a contractible core, and an operating-shaft having one eccentric for contracting said core and another for withdrawing it.

4. In combination, a contractible core, and an operating-shaft having one eccentric for contracting said core and another for withdrawing it, the former having a greater throw than the latter to effect a faster contracting than withdrawing movement.

5. In combination, a contractible core, a base upon which it is fixed against longitudinal movement, and an operating-shaft having one eccentric for contracting said core and another for withdrawing said base and core, the former having a greater throw than the latter to effect a faster contracting than withdrawing movement.

6. A core comprising sides F, a movable base upon which said sides are pivoted at their lower ends, and a tapering center G engaging said sides and longitudinally movable to contract or expand said core.

7. In combination, a core comprising sides F, a base upon which said sides are pivoted at their lower ends, a tapering center G engaging said sides and longitudinally movable to contract or expand said core, and means for moving said center to contract the core and moving said base to withdraw the sides.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FERGUS F. WILSON.

Witnesses:
THOMAS F. WALLACE,
FRED WHITE.