Zeno F. Parus. *Impt in Machinery for the Manufacture of Drain Tiles.*

116480

PATENTED JUN 27 1871

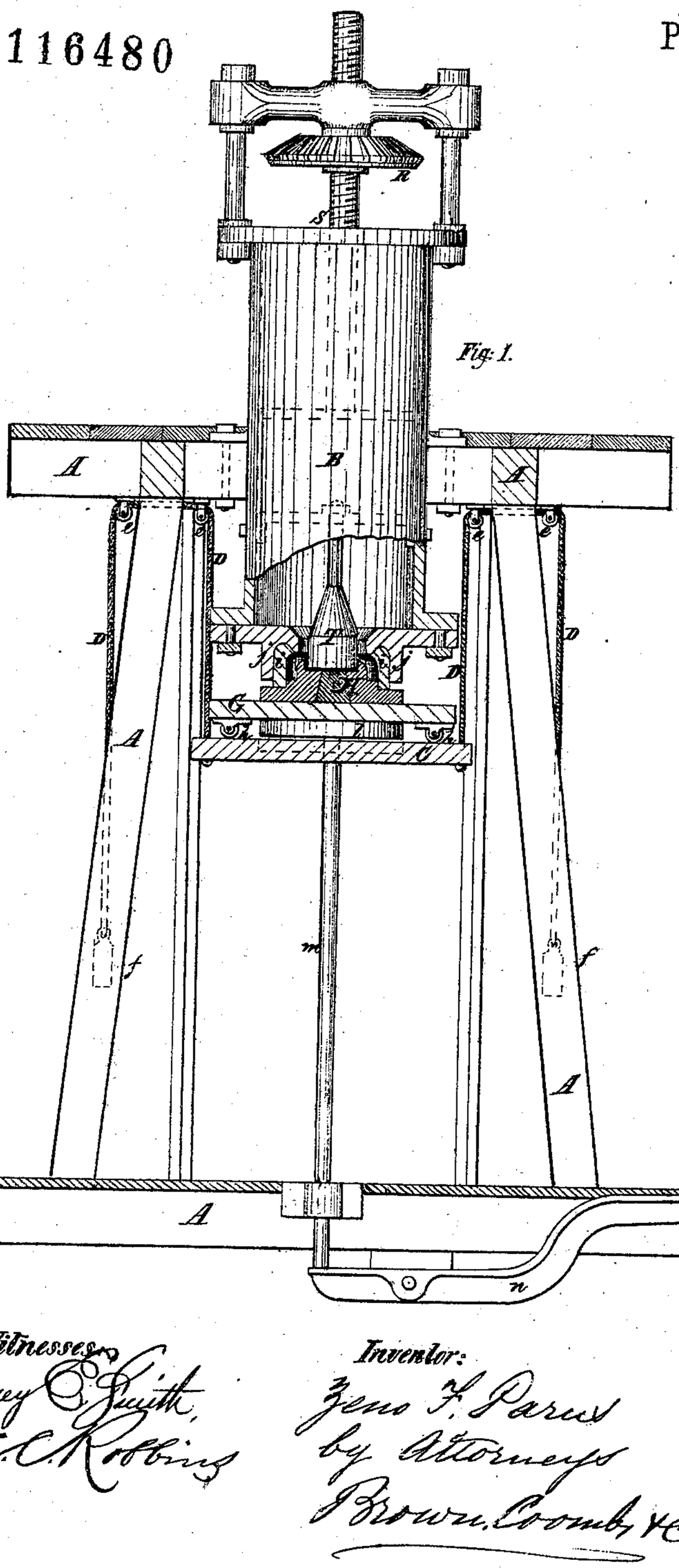

Fig. 1.

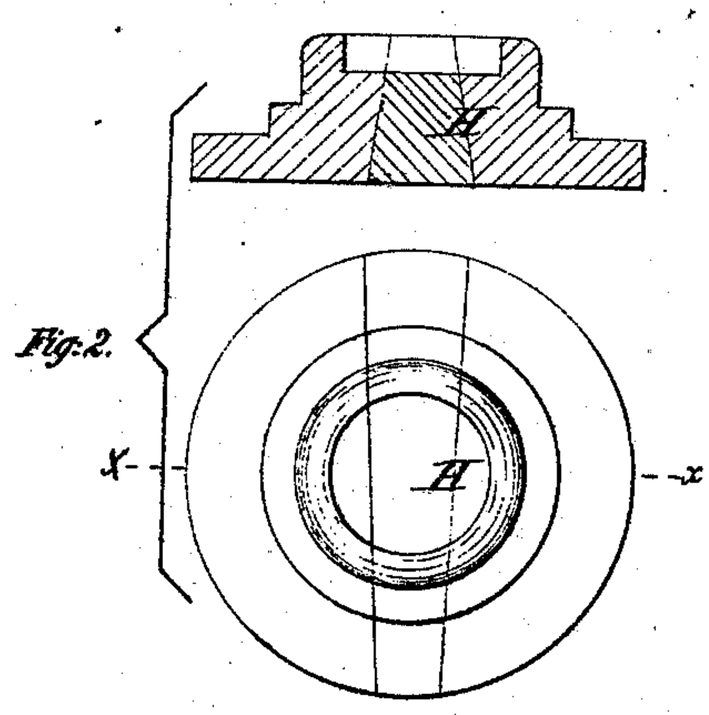

Fig. 2.

Witnesses:
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116,480

UNITED STATES PATENT OFFICE.

ZENO F. PARUS, OF BALTIMORE, MARYLAND, ASSIGNOR TO GEO. C. HICKS & CO., OF SAME PLACE.

IMPROVEMENT IN TILE-MACHINES.

Specification forming part of Letters Patent No. 116,480, dated June 27, 1871.

To all whom it may concern:

Be it known that I, ZENO F. PARUS, of the city and county of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Machinery for the Manufacture of Drain-Tiles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing through letters of reference marked thereon, and in which—

Figure 1 represents a side elevation of a tile-machine with one portion shown in section. Fig. 2 shows a plan and cross-section of the same portion on an enlarged scale.

In the ordinary manner of manufacturing pipe-tiles the bell-mouth or female end of the pipe has been formed by spinning the plastic tube, or by the attachment of such bell-mouth, separately formed, before burning. The object of my invention is to manufacture the pipe with a male and female end at one operation; and it consists in a novel construction of die, in which the female end of such pipe is formed; furthermore, in a novel construction of the disk or block on which the interior of said end is formed; and in the application of a support to such disk or block in such manner as to be unyielding while the bell-mouth is being formed, and to drop into a recess in the platform instantly on release of the levers by which it is supported, leaving a level surface for the truck to be run off when the desired length of pipe is formed.

Referring to the accompanying drawing, A represents the framing to support the several parts of my apparatus, in the upper part of which the compression-cylinder B is rigidly seated. Within this cylinder is arranged a piston or other suitable device for compacting the clay and forming the pipe as in other pipe-tile machines, said piston being operated by gearing R and screw S, arranged above it. Beneath the mouth of the cylinder B a platform, C, is suspended by cords D passing over pulleys *e*, and counterbalanced by weights *f*. This platform carries a truck, G, having small wheels *h*, and on which the pipe, when formed and severed from the clay in the cylinder above, may be conveyed to a convenient position to be removed from the matrix H. The matrix H constitutes the main feature of this invention, inasmuch as in previous attempts to form the bell-mouth or female end of the tube or pipe in connection therewith, and by the same operation, it has been difficult to free it in its plastic state from the molds in and on which it was formed, owing to the clay adhering to the metal surface surrounding and entering it. This difficulty I have overcome by providing a false or interposed sectional matrix, *i*, so adapted to the metallic supporting-collar *j* that it will slip freely therefrom, and a male die, H, composed of three or more parts, constructed in wedge-like form at their connecting lines, in one or more directions, so that, on lifting the pipe, said die will, of its own weight, drop from the mouth of said pipe. In combination with the platform C is a disk, *l*, on the upper end of a vertically-sliding rod, *m*, which is sustained or supported against the under side of the truck G by the levers *n* and *o*, the first of which is provided with a counterbalance-weight, *p*, by which it is removed from under the rod *m* when the latter is released from the toe *q* of the lever *o*, and, on release of the said rod, the disk *l*, at its upper end, falls into a corresponding recess in the upper side of the platform C, forming a level surface, and thence descends with said plarform during the formation of the pipe.

From the above description it will be seen that when all the parts are arranged in the position shown in Fig. 1, and the cylinder below the piston is filled with tempered clay or other plastic material of which the pipe or drain-tile is to be formed, the lever *o* is to be held in the position shown, to support the dies H and *i* against the mouth of the cylinder until the cavity between said dies is filled with the plastic material from the cylinder B by the pressure of the piston or other equivalent device thereon, which is indicated by the oozing of such material through one or more small orifices near the lower edge of the die *i*, at which time the lever *o* should be released, when the platform C, truck G, and die H *i* will, under a continuance of the pressure on the clay exuding through the annular space around the core-block T, be caused to descend until a pipe of the desired length has been formed, when said pipe is to be severed at the bottom of the cylinder in the usual manner, and the truck G which carries it may run off the platform; after the sectional dies *i* have been removed the pipe may be lifted between tongs or holders of suitable contour, when the die H, from its sectional wedge-shaped construction, will become separated from

it, and the pipe is ready to be placed in the kiln and burned for hardening.

What is here claimed as new, and desired to be secured by Letters Patent, is—

1. The combination of the false sectional matrix *i* with the annular collar *j* on the bottom of the cylinder, and pug-mill B, substantially as and for the purpose specified.

2. The die H, made to connect with the core-plug T and matrix *i*, and made in three or more parts, of wedge-shape in both length and depth, so that they will freely separate from the pipe when the latter is lifted from the supporting-table, as set forth.

3. The disk *l*, fitting into a recess in the platform C, in combination with its rod *m* and levers *n* and *o*, for operation, essentially as described.

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Witnesses:
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