

(No Model.)

2 Sheets—Sheet 1.

D. GILES.

PIPE CASTING APPARATUS.

No. 358,927.

Patented Mar. 8, 1887.

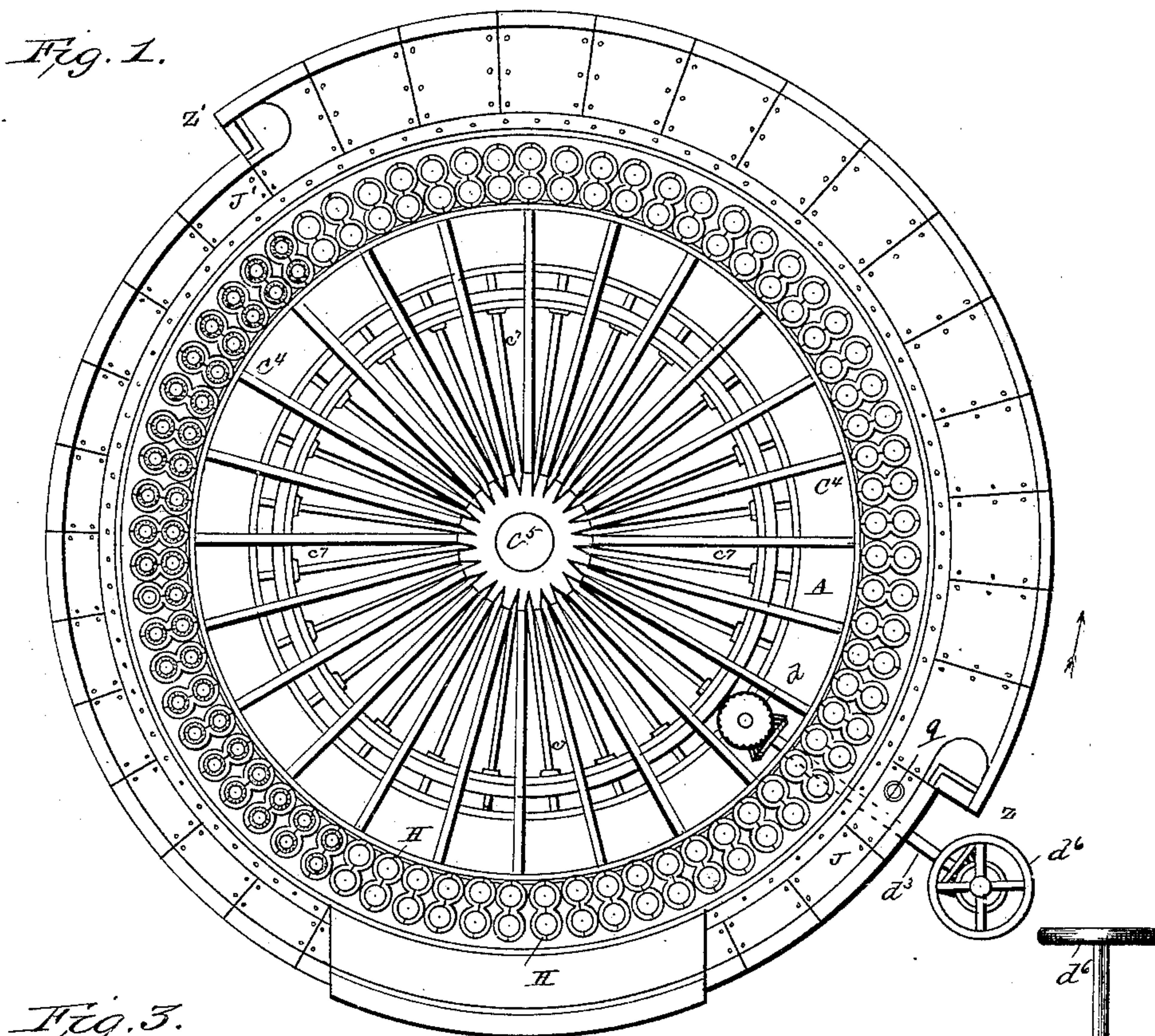


Fig. 3.

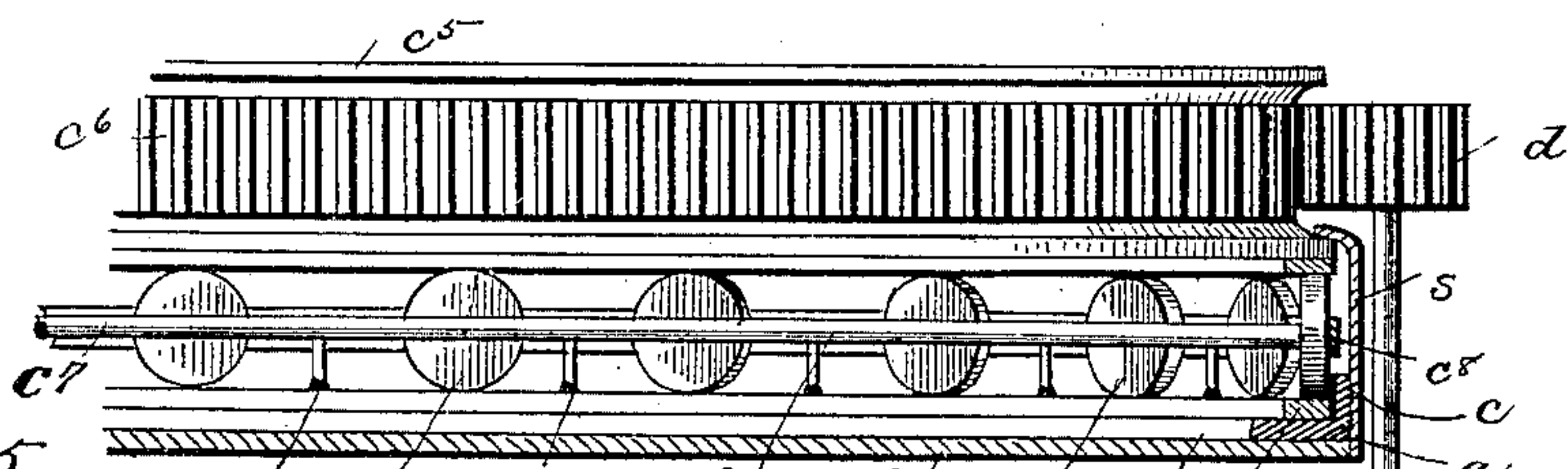
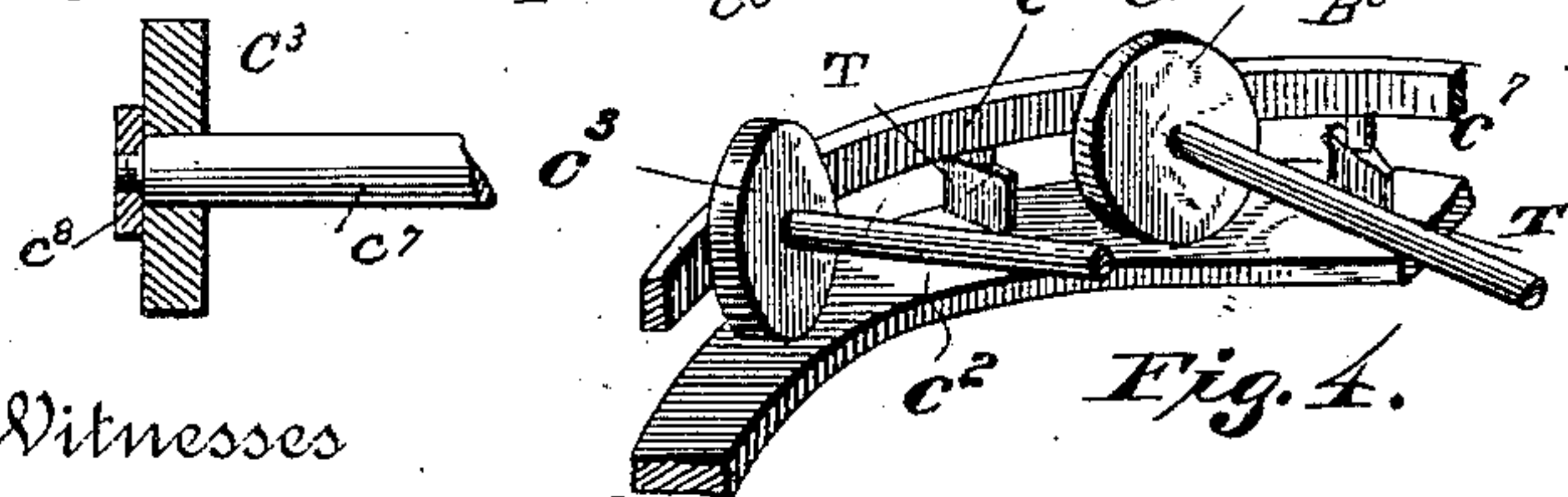


Fig. 5.



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UNITED STATES PATENT OFFICE.

DAVID GILES, OF CHATTANOOGA, TENNESSEE.

PIPE-CASTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 358,927, dated March 8, 1887.

Application filed December 29, 1886. Serial No. 222,888. (No model.)

To all whom it may concern:

Be it known that I, DAVID GILES, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Apparatus for Producing Cast-Metal Pipes; and I do 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.

The object of this invention is to improve the apparatus for producing cast-metal pipes for which United States Letters Patent were granted to me bearing date April 6, 1886, and numbered 339,402.

My improvements will be fully understood from the following description and claims, when taken in connection with the annexed drawings, in which—

Figure 1 is a top view of my improved plant. Fig. 2 is a vertical diametrical section through Fig. 1. Fig. 3 is an enlarged sectional detail of my improvements. Fig. 4 is a perspective sectional detail view, and Fig. 5 is a sectional detail view.

Referring to the annexed drawings by letters, A designates a circular turn-table, which I prefer to construct as follows:

B represents the base or foundation masonry-work, and B' the circular vertical wall thereof, adapted to form pits B² B³, of varying depths, as illustrated in Fig. 2. Upon the central raised portion, B, I suitably key metal plates B⁵, which constitute the metallic floor upon the raised foundation B, and it will be observed by reference to Fig. 2 that the periphery of this floor B⁵ does not reach the vertical edge of the foundation B. I therefore leave an annular space, a. The central portion of B is depressed, and receives in this depression the flanged base of the center pivot, C, which is suitably bolted to it. The center pivot, C, is shouldered and receives around it a sleeve, C', having radial angular lugs b formed on it, and above this sleeve is a reduced portion terminated by a nipple-bearing, on which latter is a cap, b', which is rigidly secured to a cast-metal spider, C², from which radiate channel-iron beams C³, which constitute the base-beams of the turn-table A, and

which are extended outward far enough to constitute the lower abutments of the flasks.

At a suitable distance above and in the same horizontal plane with the radial beams C³ are another series of radial beams, C⁴, of equal radii. These beams C³ C⁴ are trussed and vertically braced, so that a rigid unyielding turntable is produced, adapted to receive and sustain many tons of metal. In the vertical axial center of this turn-table A is a flanged connecting-plate, C⁵, to which the inner ends of the spokes or radial beams C⁴ are all secured. On top of the plates or floor B⁵, I suitably secure other plates, B⁶, terminating at their periphery in an annular upturned flange, c. (Shown more clearly in Fig. 3.) Inside of and near the flange c and upon the plates B is an annular tread, c², for rolling supports c³, which are journaled on the radial arms c⁷, that are suitably secured to the upturned portions b of the sleeve C'. Between the rolling supports c³ and the lower radial beams, C³, I employ an annulus, c⁵, preferably of an I shape in cross-section and rigidly secured to said radial beams C³. To the periphery of the annulus c⁵ is rigidly secured a band of teeth, c⁶; or, if desired, the teeth may be cast on the periphery of the annulus c⁵. With these teeth engages a spur-wheel, d, which is keyed on the upper end of a vertical shaft, d', suitably journaled and bearing a beveled spur-wheel, d². This wheel d² engages with a similar wheel keyed on a horizontal radial shaft, d³, which extends beyond the annular wall B' and receives rotation from a vertical shaft, d⁴, by means of geared miter-wheels d⁵ d⁶. The vertical shaft d⁴ extends above the top of the wall B', outside thereof, and has keyed on it a hand-wheel, d⁶, in a convenient position to an operator located on a platform, P².

The operator, in order to properly inspect the work, witness the several steps in the process of making the molds, &c., and to stop and start the turn-table at the proper times, should preferably be located near the "blackwash" tank q, as indicated in Fig. 1. At this point the commencement of the process takes place.

By means of the gearing above described the operator, with his hands on the wheel d⁶, can rotate the turn-table as rapidly as the nature of the work requires.

In combination with the hand-wheel shaft d^1 , I may employ a locking device substantially as and for the purposes described in my Letters Patent above referred to.

5 H H designate flasks, which may be constructed in any suitable manner, and which are detachably attached to the circumference of the turn-table, as described in said Letters Patent, or in any other manner adapted to the
10 work to be performed. Below these flasks are arranged a series of suitably-constructed furnaces, I, which are concentric to the vertical axis of the turn-table A, and extend from the molder's platform J to the position for "cor-
15 ing up," (indicated by J' on Fig. 1,) or, in other words, these drying-furnaces extend from the point Z to the point Z'.

As the furnaces I are required to be beneath the flasks in the deepest pit, there is neces-
20 sarily considerable deposit of ashes, cinders, and iron sparks from the pouring of the molten iron, &c., from the furnaces, which I have found would seriously clog the wheels on which the turn-table is supported and inter-
25 fere with the continuous process required in the production of pipes. To obviate this difficulty I employ an annular shield or skirting, S, and also brooms or scrapers T. The annular skirting S is interposed between the
30 floor B⁵ and the annulus c^5 , and it may be suitably secured to the latter outside of the train of rolling supports c^3 , so as to rotate with the turn-table, or it may be secured to the said floor and remain stationary. It may extend
35 from the turn-table down and about the circumference of the elevated central foundation, B, or it may fall within but free of the up-turned flange above described. This skirting

may be made very light, and it may be made either of metal or other suitable material. To
40 the radial rods c^7 , I suitably secure a ring-carrier, c^8 , which should be concentric to the vertical axis of the turn-table A, and to this carrier c^8 , I pivot or otherwise attach a number
45 of brushes, scrapers, or track-clearers, T, above referred to, which are so arranged relatively to the track or way on which the rolling supports c^3 travel that they will sweep off this
50 track any obstructing matter which might possibly fall thereon. If these track-clearers are jointed to the carrier c^8 , they may be held down upon the track by springs, so as to af-
ford an accommodating or yielding pressure thereupon.

Having described my invention, I claim— 55

1. The combination, with the turn-table and rolling supports, of track-clearers applied to an annular carrier secured to the radial arms bearing said rollers, and adapted to operate
60 substantially as described.

2. The combination, with the turn-table and its rotative mountings, of the dust-shield and track-clearers, substantially as described. 65

3. In a plant for producing cast-metal pipes, the combination of a rotative turn-table, rolling supports therefor, the ring c^8 , applied to the outer ends of the radial arms of these sup-
70 ports, a series of brushes secured to said ring, and the annular dust-shield s, all substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID GILES.

Witnesses:

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E. B. THOMASSON.