

(No Model.)

3 Sheets—Sheet 1.

W. H. STEWART.

BRICK MACHINE.

No. 376,759.

Patented Jan. 24, 1888.

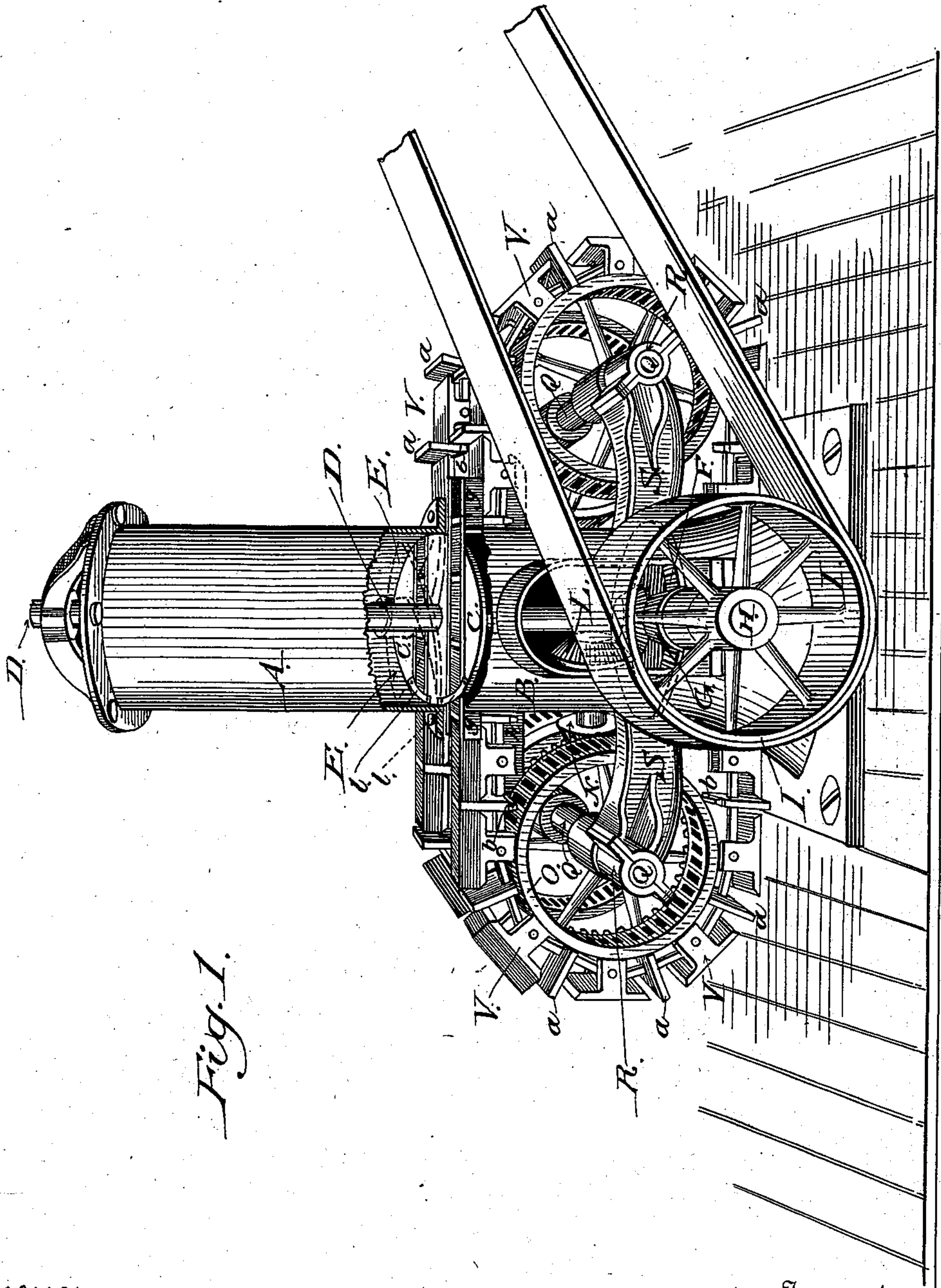


Fig. 1.

Witnesses

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Inventor

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(No Model.)

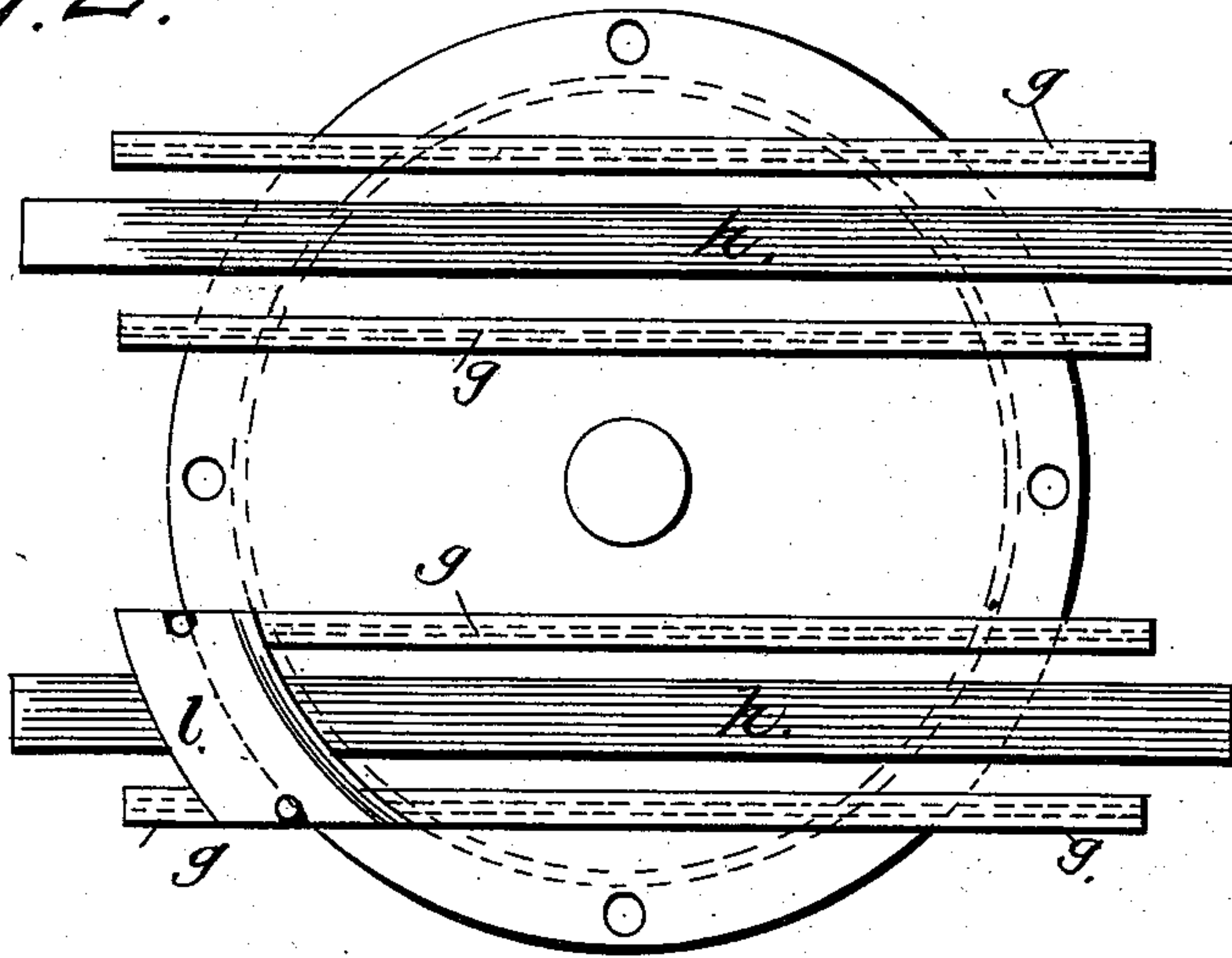
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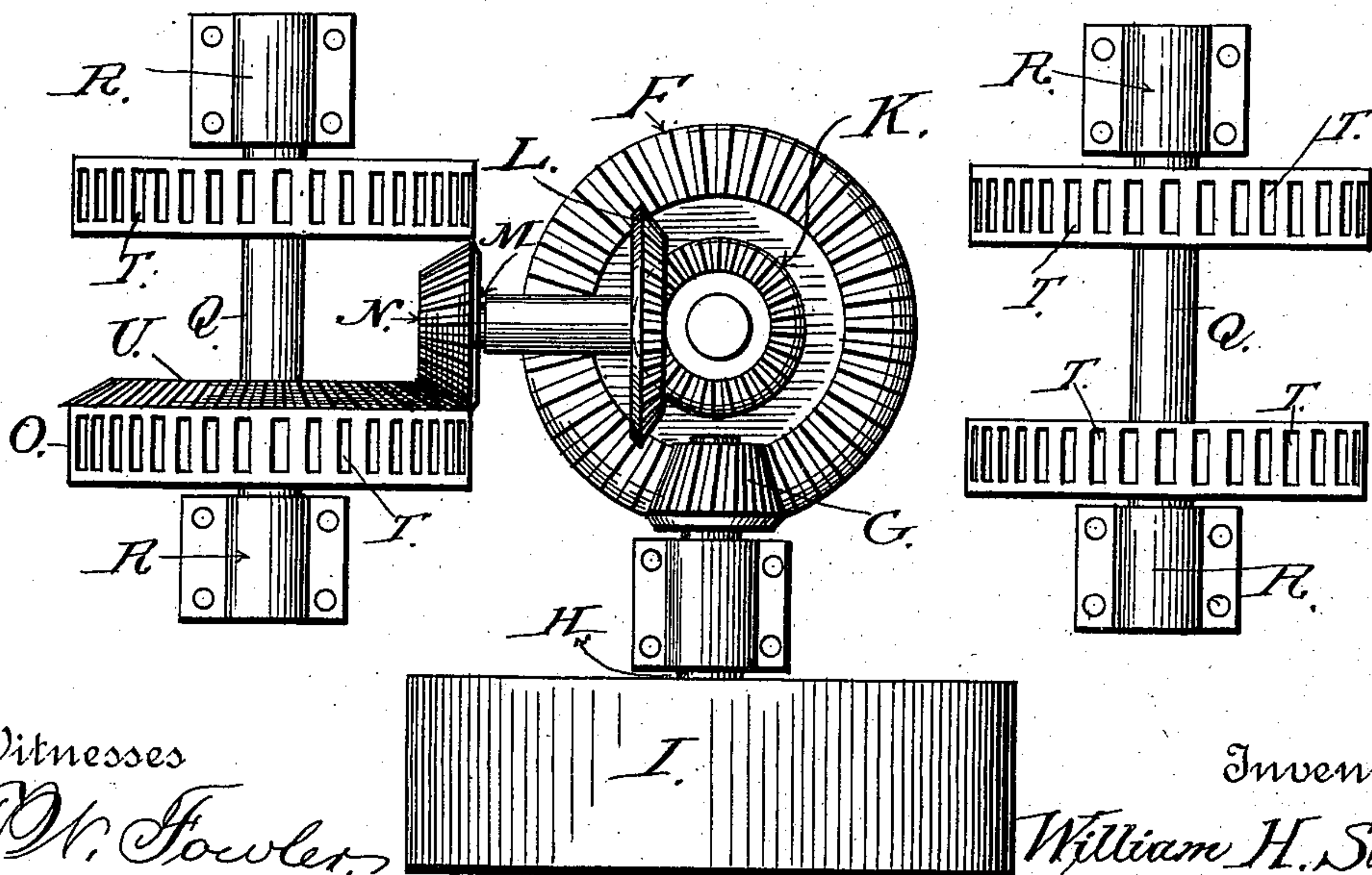
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*Fig. 2.*



*Fig. 4.*



Witnesses

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(No Model.)

3 Sheets—Sheet 3.

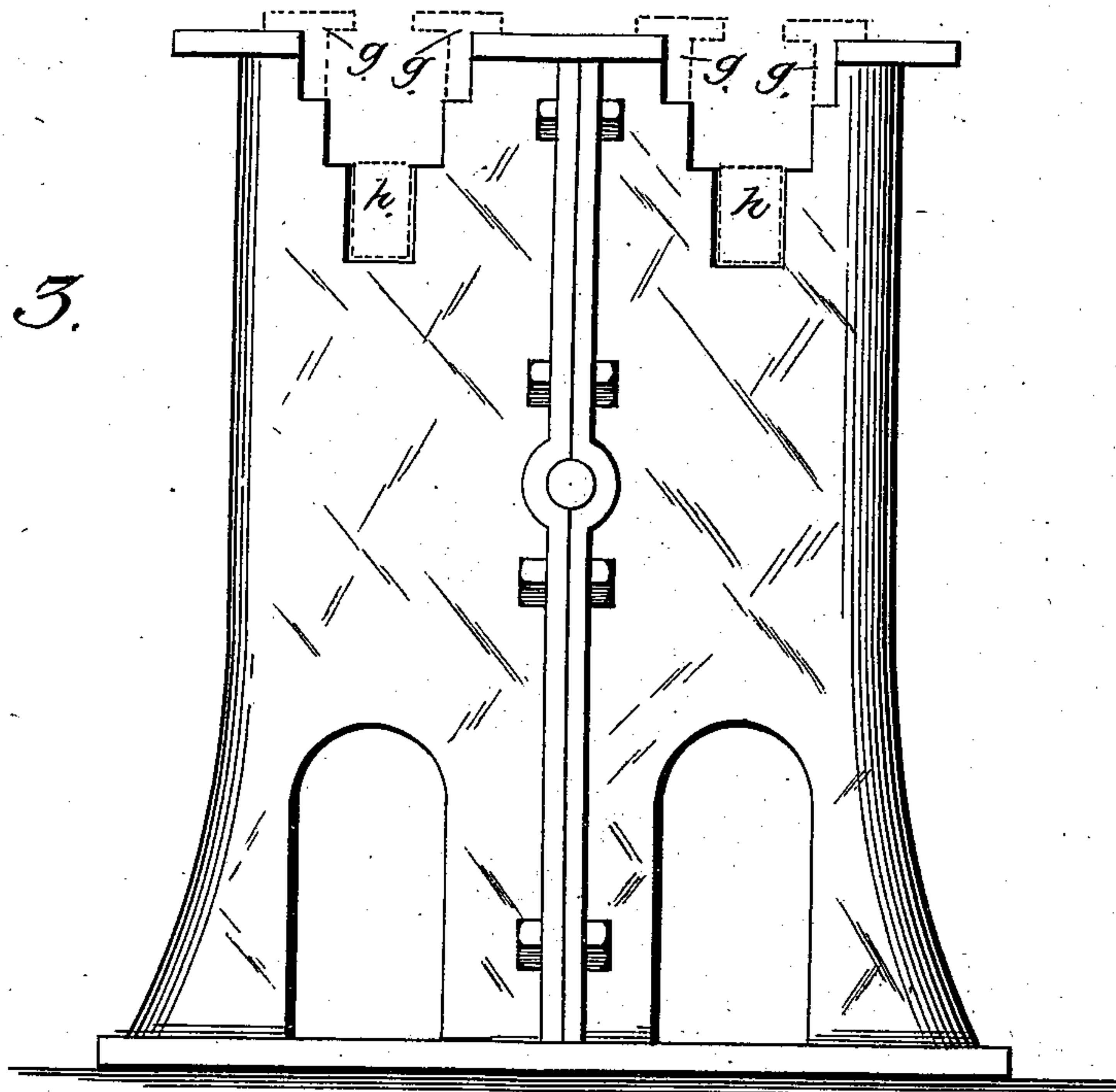
W. H. STEWART.

BRICK MACHINE.

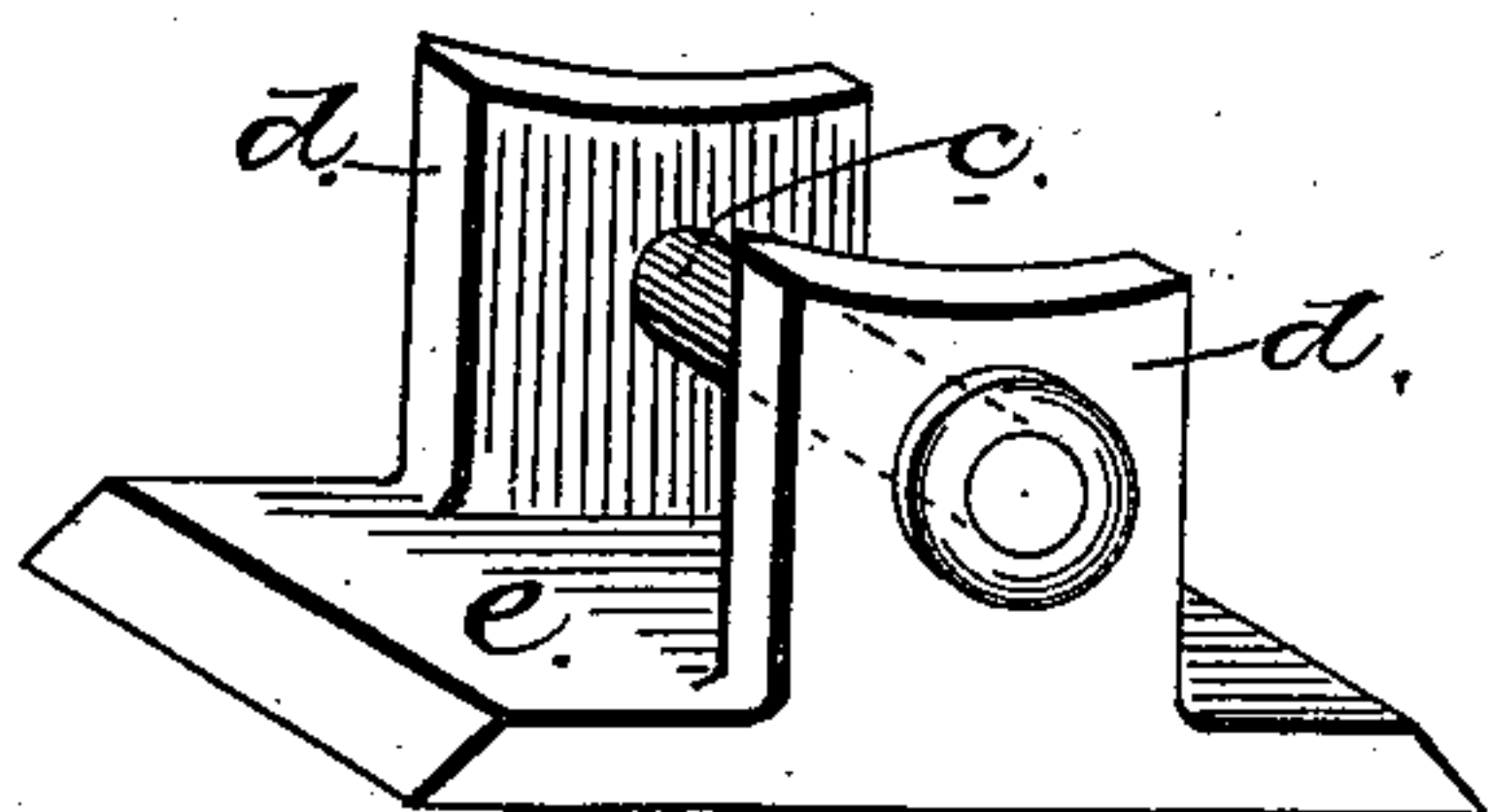
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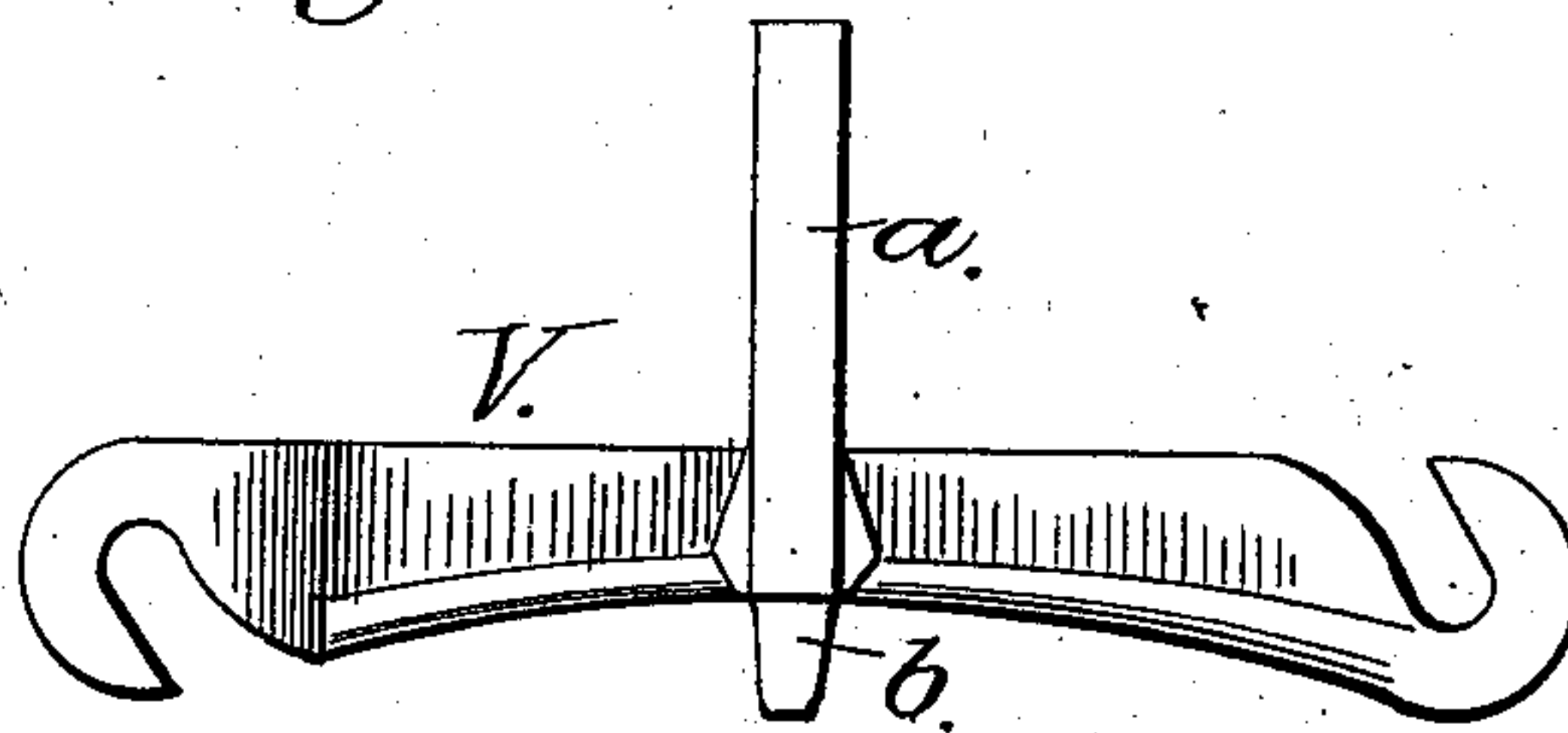
*Fig. 3.*



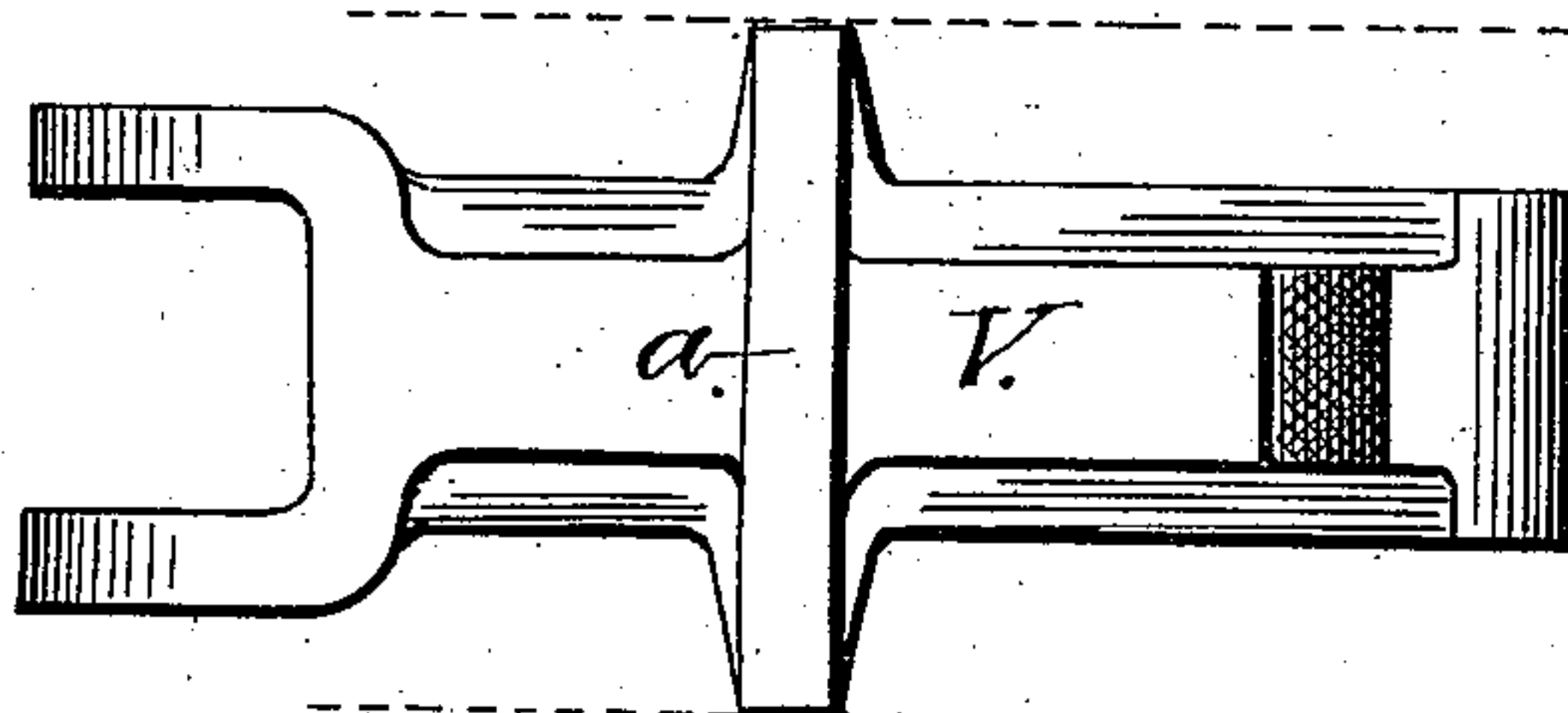
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



Witnesses

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# UNITED STATES PATENT OFFICE.

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FOURTHS TO ROBERTSON M. GODFREY, OF SAME PLACE.

## BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 376,759, dated January 24, 1888.

Application filed March 28, 1887. Serial No. 232,718. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. STEWART, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Brick-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a perspective view of a brick-machine embodying my invention and showing a portion of the hopper, &c., broken away. Fig. 2 is a plan view of the bed-plate C, showing the bars *g* and *h* in position, and also illustrating a knife or cutter for severing the surplus clay from the top of the brick. Fig. 3 illustrates a view of the main frame, showing the guides or channels for the passage of the mold-chain and an end view of the bars *g* and *h*. Fig. 4 represents an enlarged plan view of the mortise-wheels and their operative mechanism. Figs. 5, 6, and 7 illustrate enlarged detailed views of one of the links which constitute the mold-chain.

My present invention relates to that class of brick-machines in which the clay is taken direct from the bank and deposited into a suitable hopper, through which it is fed by means of a revolving shaft having spirally-arranged flukes or blades, which cut up and disintegrate the clay before it reaches the molds; and my invention consists in the peculiar constructions and combinations of devices which I shall hereinafter describe, and specifically claim.

To enable others skilled in the art to which my invention appertains to make and use the same, I will now describe its construction and indicate a preferred manner in which the same is carried out.

In the said drawings, A represents a hopper, of any suitable and approved construction, into which the clay is dumped, shoveled, or otherwise deposited. This hopper is bolted or secured to a main frame, B, within which the main operating portions of the machine are mounted, the said main frame having at or near its juncture with the hopper a bed-plate, C, upon which the clay is supported.

A vertically-arranged shaft, D, passes through the hopper and main frame, and is

provided with a series of flukes or blades, E, (see dotted line, Fig. 1,) which disintegrate the clay and feed the same to the molds, as I shall hereinafter describe. The lower end of the shaft D has secured thereto a bevel-gear wheel, F, which meshes with a pinion, G, on a horizontal driving-shaft H, the said driving-shaft carrying on its outer end a band-pulley, I, to which power is applied to operate the machine. On the shaft D, above and contiguous to the gear-wheel F, is a beveled pinion, K, which is driven by said shaft and meshes with and drives a beveled wheel, L, on a horizontal shaft, M, the said shaft having secured to its outer end a second beveled pinion, N, which engages and drives one of the mortise-wheels O, as I shall hereinafter set forth.

The system of gearing, as described, is located within the main frame B, occupying but little space therein, but so arranged that motion when applied to the pulley I is transmitted directly to the vertical shaft D and the mortise-wheels which drive the mold-chain. These wheels O are preferably four in number, located upon two sides of the main frame, and are mounted upon transverse shafts Q, whose ends are journaled within boxes or journals R, formed in or on the outer ends of suitable arms, S, which project from the main frame B, as shown in Fig. 1, the said wheels having each a number of mortises, T, in their periphery, and one or more of said wheels being constructed on its inner side with teeth, or a beveled gear, such as U, with which the pinion N on the shaft M engages, whereby said mortise wheel or wheels are rotated.

The mold-forming chain comprises a number of links, V, having slotted hook-shaped ends, as shown in Figs. 6 and 7, and a centrally-arranged plate or bar, *a*, which forms the ends of contiguous molds, while a lug or projection, *b*, extends from the bottom of said link and is designed to enter the mortises in the wheels O. From the description of these links it is manifest as the wheels O rotate, their mortises engage the projections *b* and impart movement to the series of links comprising the mold-chain. The slotted ends of the links are engaged by rods or bars *c*, passing through lugs or ears *d*, which extend downward upon each side of and confine the ends of said links, the



said ears constituting a portion of plates *e*, which form the bottom of the mold and receive and support the clay as it leaves the hopper. The plates *e* and *a*, as before stated, constitute the bottoms and ends of the molds, the sides of said molds being formed by suitable T-shaped plates or bars *g*, secured within the bed-plate C, as shown in Figs. 1 and 2, the space between the bars *g* being sufficient to permit the plates or projections *a* on the links to pass between them during the formation of the brick. Other bars, *h*, are mounted in the main frame directly beneath the plates *g*, and are designed to support the links as they pass between the said plates *g* to receive the clay. As the lugs *a* pass between the plates *g*, their upper ends will be found flush or nearly flush with the upper surface of the bed-plate, and as the lower fluke or tempering auger E is contiguous to said bed-plate it is manifest in its rotation it severs the main body of clay from those portions in the molds. The flukes or tempering auger thus virtually becomes the top of the mold, the surplus material being removed and the top of the brick smoothed down or "dressed" by a curved knife or cutter, *t*, on one end of the bars or plates *g*, as shown in Figs. 2 and 3.

In addition to the guides or channels in the upper portion of the main frame for the passage of the mold-chain, other passages or guides are constructed near the base of said main frame for the returning portion of the chain.

By reference to Fig. 1 it will be seen that the molds and plates *g* practically close the openings in the bed-plate C and form a solid bottom for the hopper. The clay is forced downward by the action of the tempering auger or flukes into the molds, and as the latter move forward they bring the top of the molded brick against the knife or cutter at the end of the bars *g*, as previously stated, and as they emerge from the said bars they pass around the mortise-wheels and are again caused to pass between the plates *g*, it being understood the chains are endless ones, the molded bricks simply resting upon the plates *e*, from whence they may be removed or deposited upon a board or other receptacle placed to receive them and finally transported to the kiln. It will also be noticed that when the plates *e* pass the vertical center of the mortise-wheels they turn upon their pivots, thereby separating the ends of said plates and its molded bricks from the bars *a*, and lifting the brick clear of the molds as the

chain passes around the wheel, the chain resuming its normal or closed condition automatically before the mold again enters the hopper to be filled.

Having thus described my present invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A main frame, a hopper secured thereto, and endless brick-molding chains, in combination with a bed-plate, C, between the frame and hopper, the T-shaped plates *g* in the main frame, secured to the bed-plate and forming the sides of the molds, the bars *h*, for supporting the chains, and mortise-wheels O, engaged by lugs on the chains, whereby said chains are driven, substantially as herein described.

2. In a brick-machine, the endless chains comprising the links V, having the upwardly-projecting bars *a*, forming the ends of the molds, and the plates *e*, loosely mounted in said links and forming the bottom of said molds, in combination with a stationary bed-plate, *c*, having the plates *g*, which constitute the side walls of the mold, substantially as herein described.

3. In a brick-machine, the endless traveling chains comprising the links V, having the bars *a* and lugs *b*, the plates *e*, loosely mounted in said links, and forming with the bars *a* the ends and bottoms of the molds, and a stationary bed-plate between the hopper and main frame, forming the sides of said molds, in combination with mortise-wheels O, engaging the lugs *b* and driving the chains, and mechanism between said wheels and driving-pulley for rotating the former, substantially as herein described.

4. In a brick-machine, a hopper, a main frame, a bed-plate between said hopper and frame, a vertical shaft, D, having a tempering auger or flukes, and a bevel-gear, F, on said shaft connecting with the main driving mechanism, in combination with a horizontal shaft, M, having the pinion N, gearing between said shaft and vertical shaft, mortise-wheels O, driven by said pinion, endless chains composed of separable sections driven by the mortise-wheels and forming the bottoms and ends of the molds, and suitable plates, *g*, within the bed-plate and forming the sides of said molds, substantially as herein described.

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Witnesses:

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