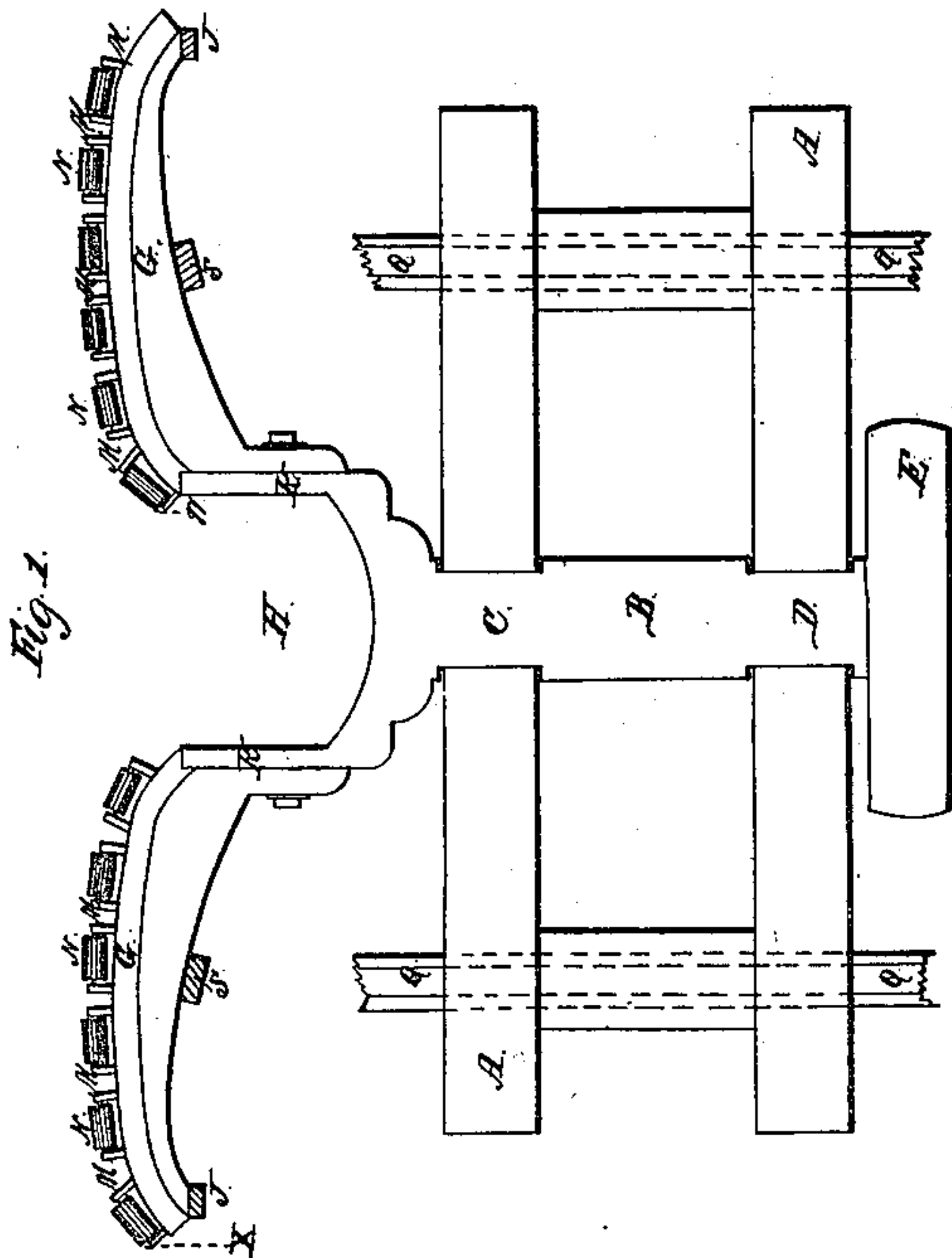
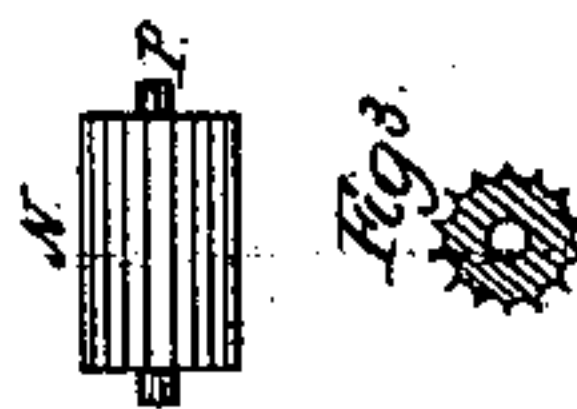
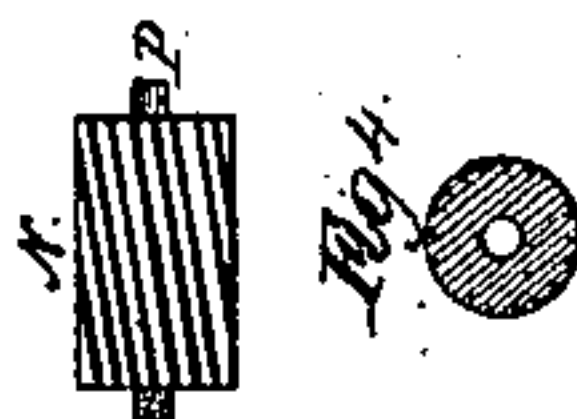
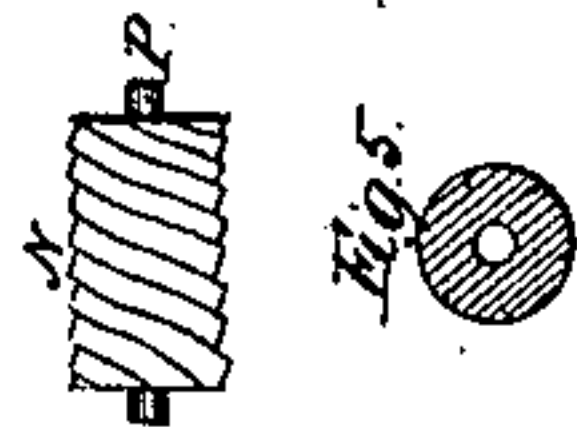
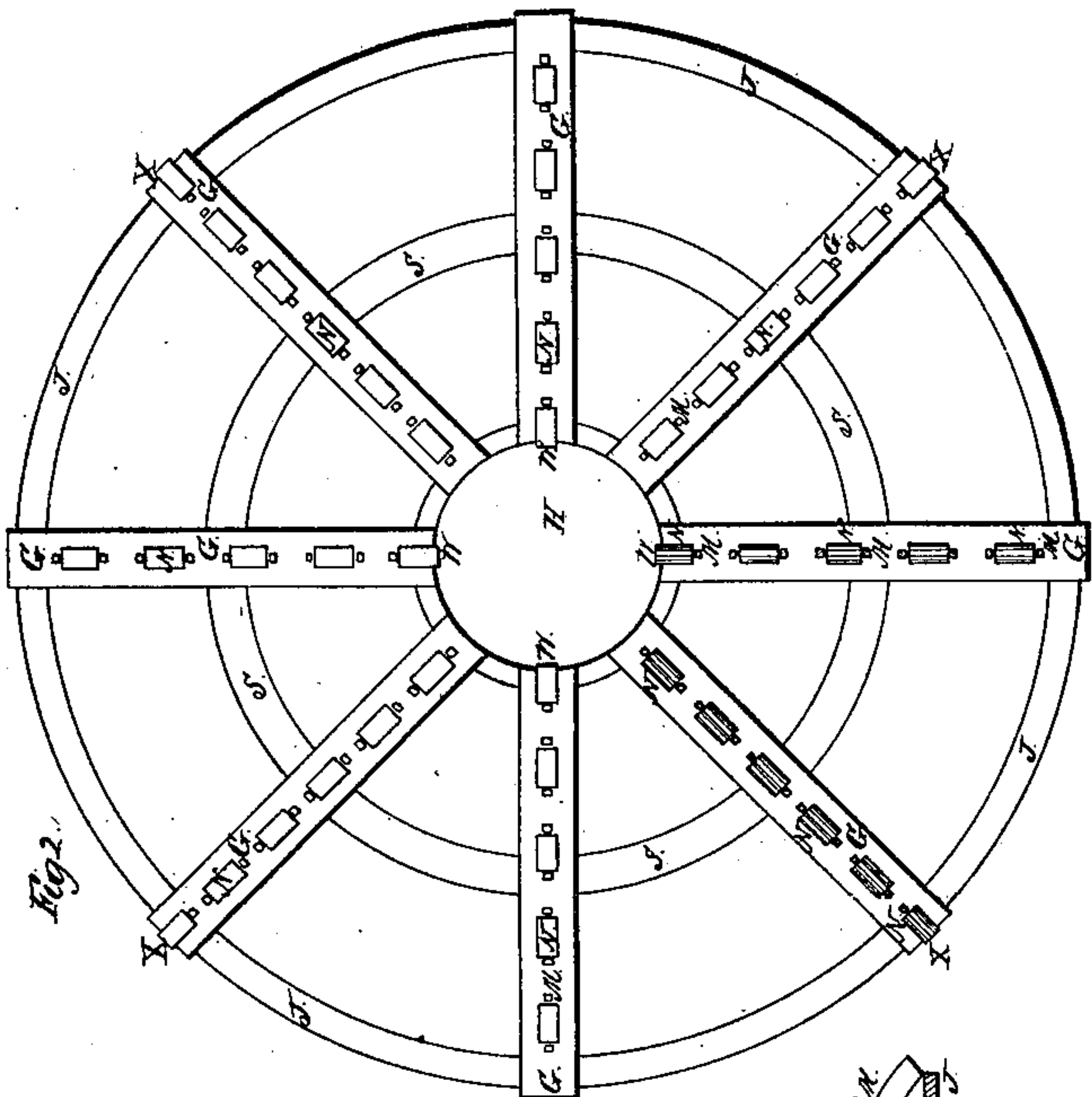


*H. W. Catlin,*

*Stone Drill.*

*N<sup>o</sup> 9179.*

*Patented Aug. 10, 1852.*





# UNITED STATES PATENT OFFICE.

ALEXANDER CATLIN, OF BURLINGTON, VERMONT; HENRY W. CATLIN, ADMINISTRATOR  
OF SAID ALEXANDER CATLIN, DECEASED.

## MACHINE FOR DRILLING STONE.

Specification of Letters Patent No. 9,179, dated August 10, 1852.

*To all whom it may concern:*

Be it known that ALEXANDER CATLIN, late of Burlington, in the county of Chittenden and State of Vermont, has invented an Improvement on Machines for Boring or Drilling Stone; and I, HENRY W. CATLIN, of the town, county, and State aforesaid, do hereby declare that I am the administrator of the estate of the said ALEXANDER CATLIN, deceased, as stated in the certificate of Bradford Rixford, register of the court of probate in said district of Chittenden, the same being hereto annexed; and I do further declare that the following is a full, clear, and exact description of said invention, reference being had to the accompanying drawings and to the letters of reference marked thereon, in which—

Figure I represents the top of the frame, the driving pulley, and two of the radial arms, with the cutters. Fig. II, is a front view of the arms and hollow cylinder. Figs. III, IV and V are front and end views of the chilled cast-iron rolls or cutters.

This machine is intended for boring or drilling stone, by the rotation of a wheel or radial arms, furnished with revolving cutters, which grind or pulverize the stone with which they are placed in contact.

A, A, Fig. I, shows the top of a frame, made of heavy timber and furnished with suitable supports which rest upon the rails Q, Q. These rails are kept in advance of the frame, so as to allow it to be moved forward as the work progresses, and hold the wheel and cutters in close contact with the stone. Upon the frame A, A, the horizontal shaft B, is placed having its bearing at C and D. At one end of the shaft B there is a pulley E or a gear to which motion is communicated by a steam engine, or other motor. At the opposite end of this shaft, a hollow cylinder K K is attached and firmly secured to the shaft. This cylinder K, K, may be made of wrought or of cast iron, the cavity H being of suitable depth to receive the "core," or solid, central portion of the stone that is operated upon. Upon the outside of this hollow cylinder, any convenient number of arms G, are fastened, from which point they extend radially to the periphery, where they join the circular band, or rim J, by which the arms are strengthened and their outer ends held

in place; any number of concentric rims may be bolted to the arms, as at S, to give them additional strength. The arms G, G, as seen in the front view are in the direction of the radii of the circle, while in the direction at right angles with the shaft B they are so curved or bent as to allow the circular revolving cutters N, N, that are supported upon them, to be presented to the stone in different vertical planes. Short standards of iron, M, M, are fastened to the arms, and are fitted to receive the center pins, or axles, P upon which the cylindrical cutters N, revolve. These standards are so placed as to hold the cutters that are upon opposite arms, at different distances from the axis of rotation; the cutters thus "break joints" with each other, and are prevented from forming concentric grooves in the stone.

The cutters or burs are made of chilled cast iron; they are from two to four inches in length, about two inches in diameter, and are placed as near to each other as the bearings or supports will allow, their number varying according to the size of the machine. Upon part of the arms the cutter that is nearest to the center, as at W, is placed in such a position as to leave the diameter of the core of stone, less than the diameter of the circular walls of the cavity H, into which the core enters; the outer cutter, as at X is also placed so as to make the diameter of the hole, or excavation in the stone, greater than the diameter of the wheel or arms which carry or support the cutters.

The cutters, Figs. III, IV and V are made of chilled cast iron, having a hole through their center to receive the pin or axle P.

The exterior or cutting surface of the rolls is to be varied according to the nature of the stone that is to be operated upon; they may be fluted as in Fig. III, grooved, as in Fig. IV, or grooved spirally as in Fig. V.

To use the machine the frame is placed so that it may traverse upon the rails; power is then applied to the gear or pulley, which turns the shaft with its attached hollow cylinder and radial arms; the cutters revolve by friction upon the stone into which they enter, while the central part or core of the stone enters the cavity of the cylinder. When the cutters have entered the stone to the depth of a few inches the frame is

drawn back and the core is broken off with hammers or wedges.

In behalf of the within named ALEXANDER CATLIN, I claim—

- 5 The revolving arms or wheel, having a cavity near its center to receive the core of the stone, in combination with the revolving

cutters, in the manner and for the purpose herein described.

H. W. CATLIN. [L. s.]

In presence of—

JNO. P. COLBURN,  
C. F. DAVEY.