

(No Model.)

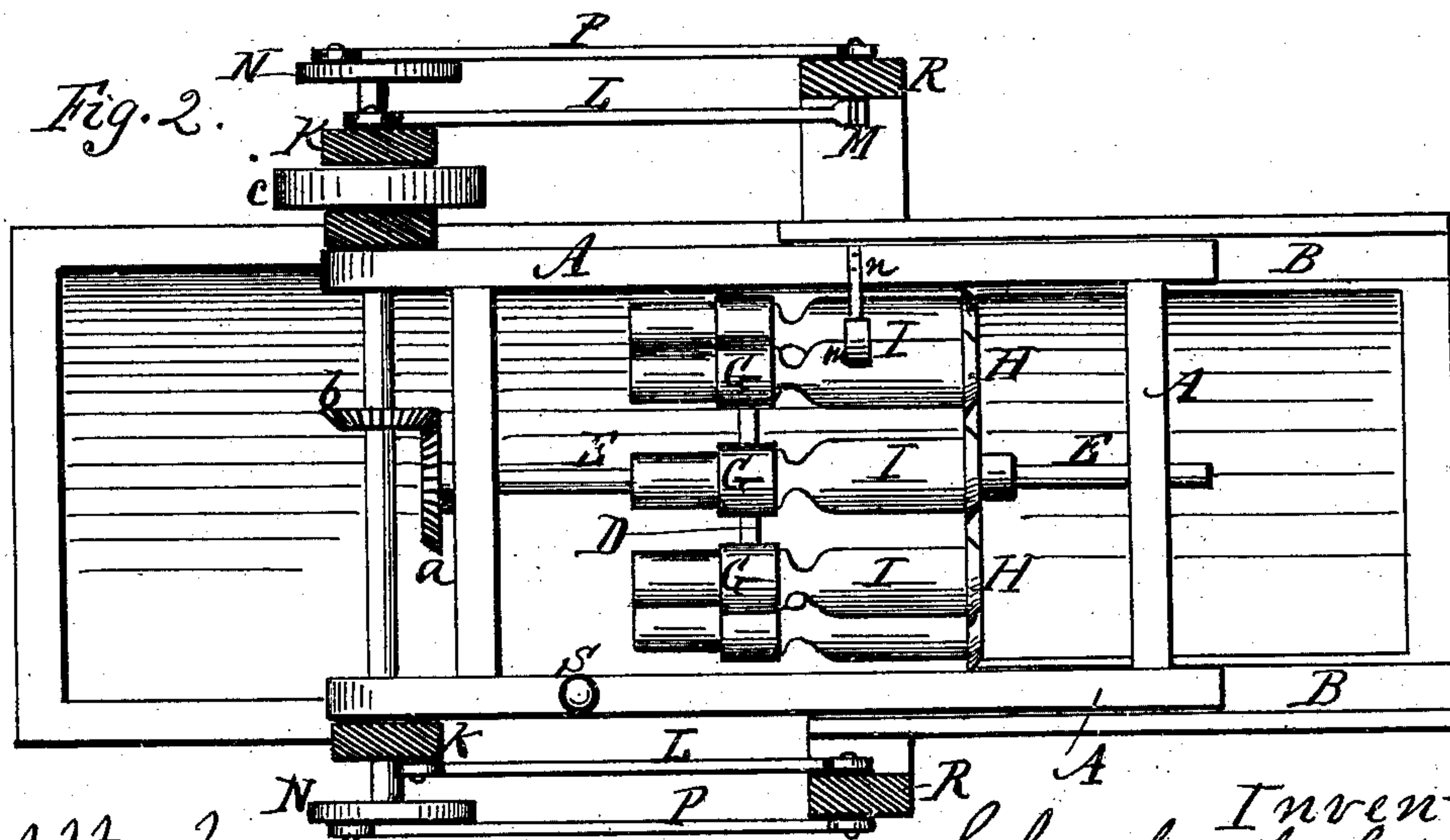
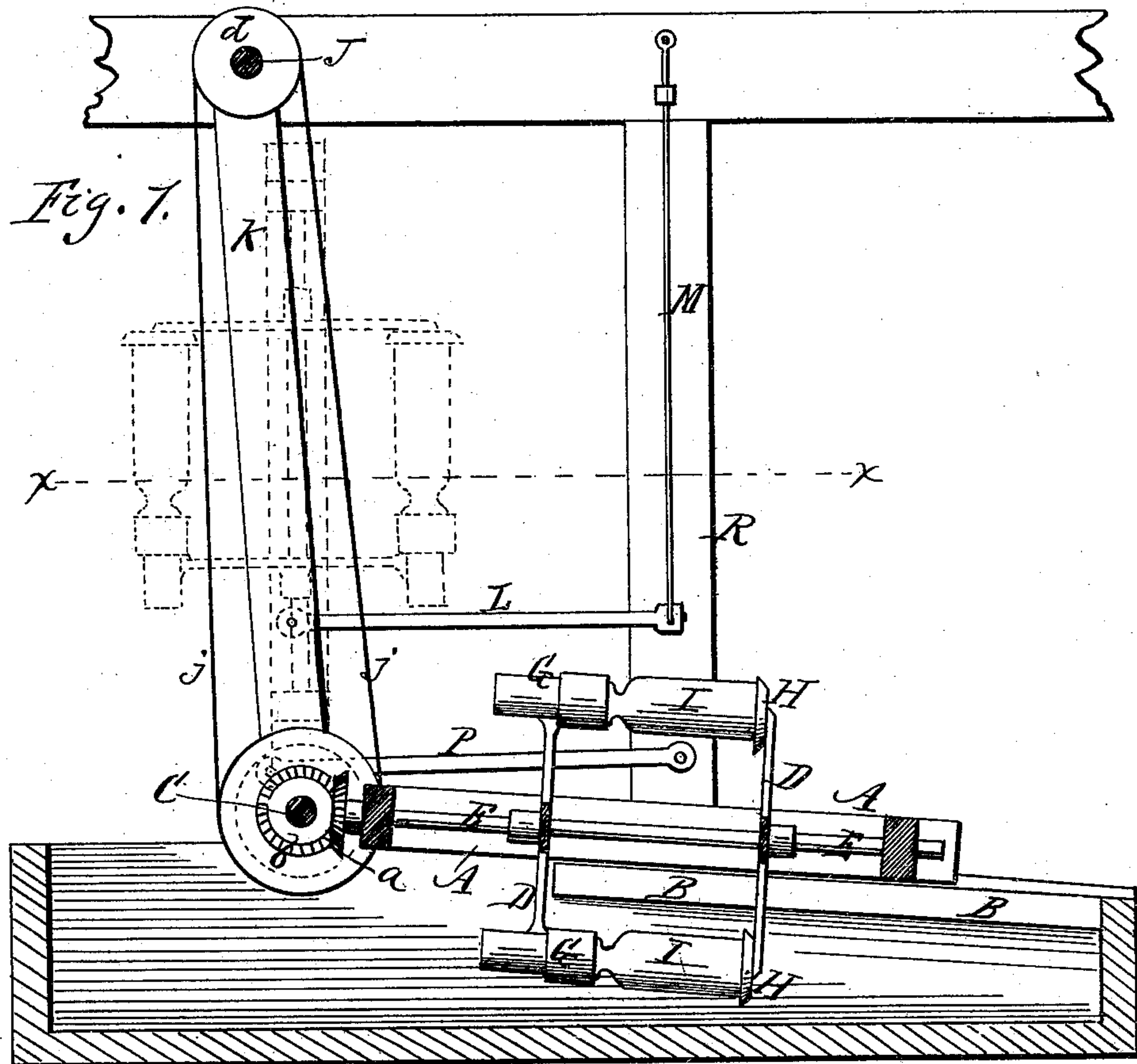
2 Sheets—Sheet 1.

S. L. GILLETT.

MACHINE FOR CLEANING BOTTLES.

No. 370,693.

Patented Sept. 27, 1887.



Attest.
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Inventor.
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Atty.

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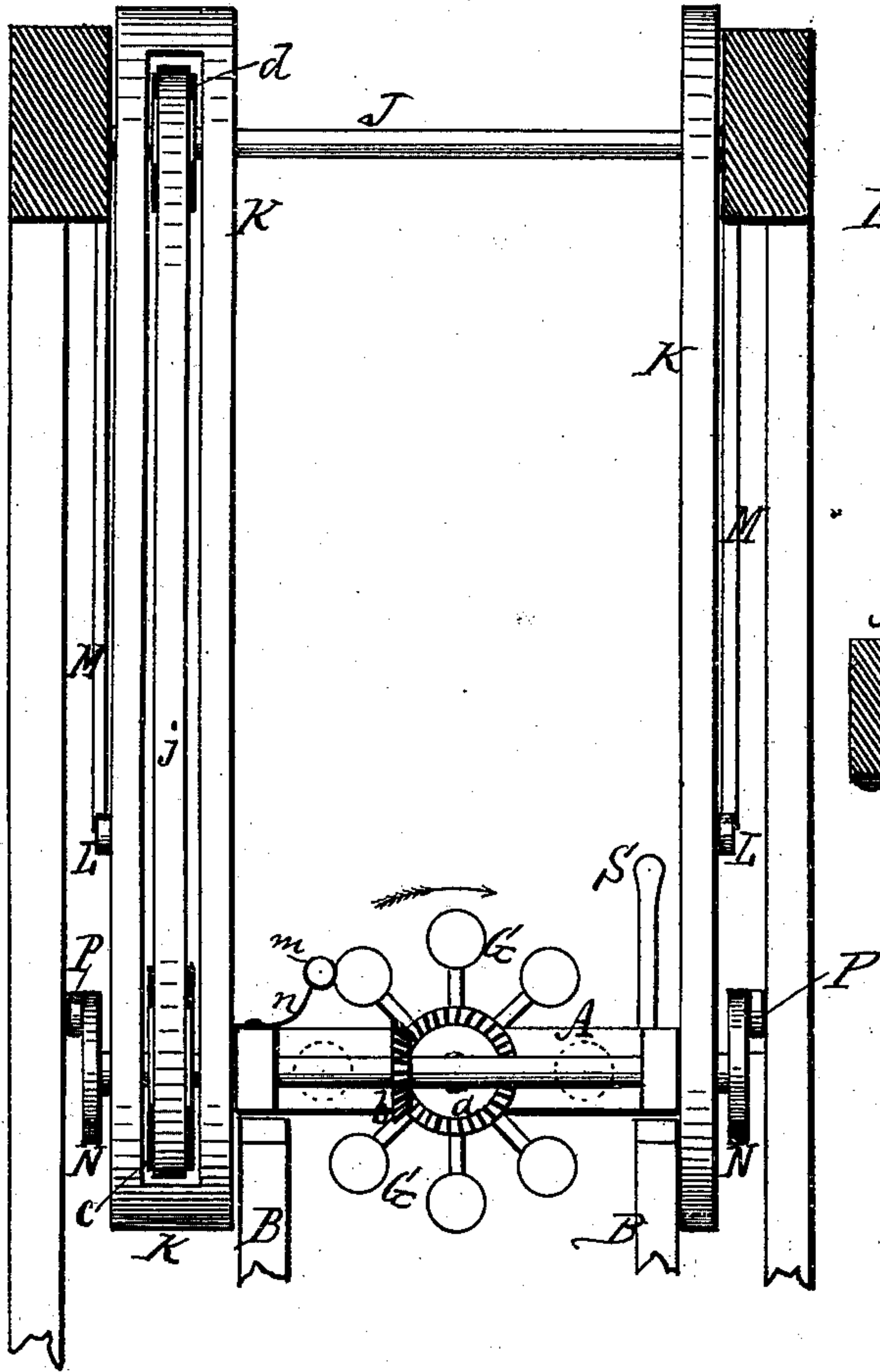


Fig. 3.

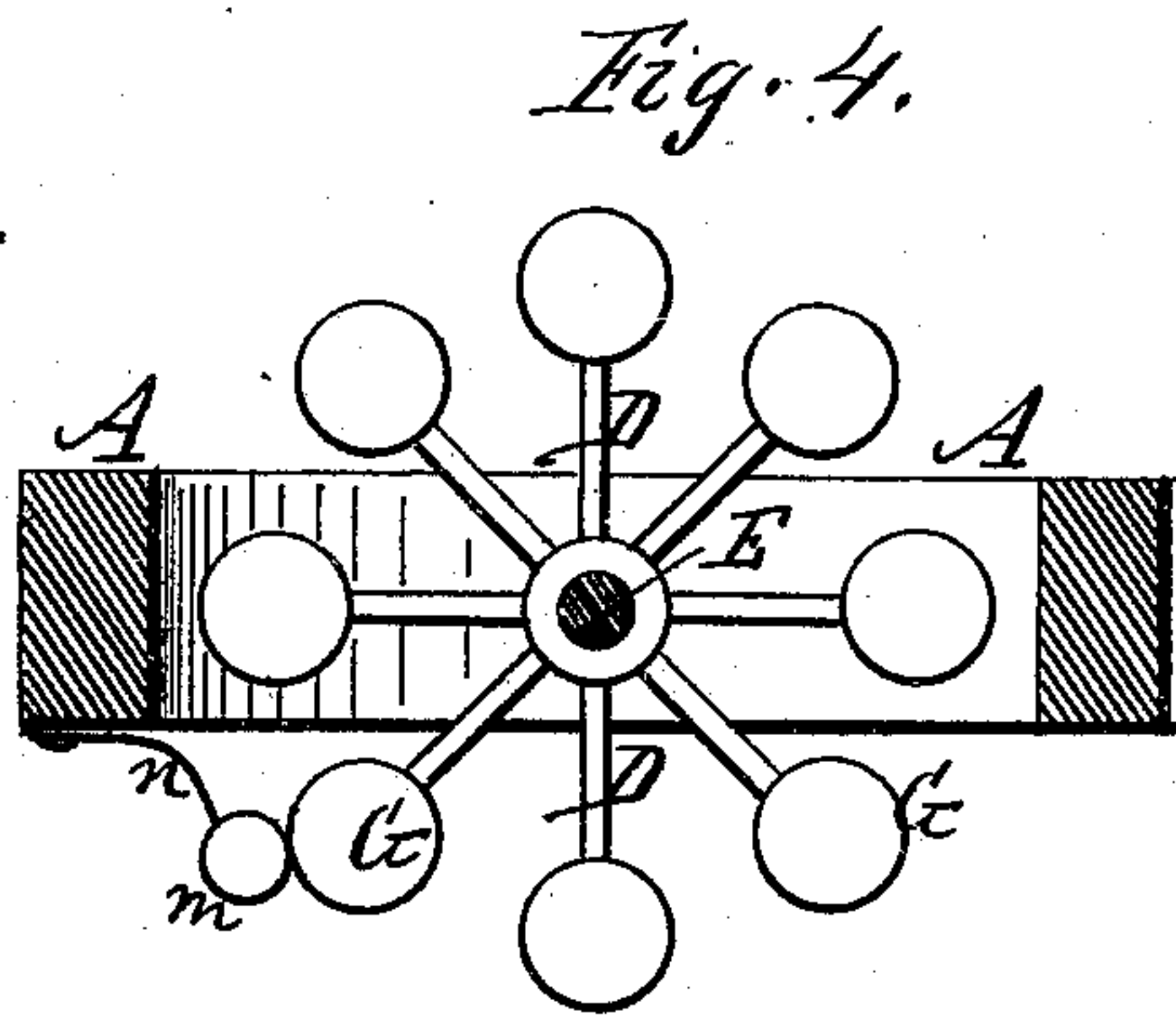


Fig. 4.

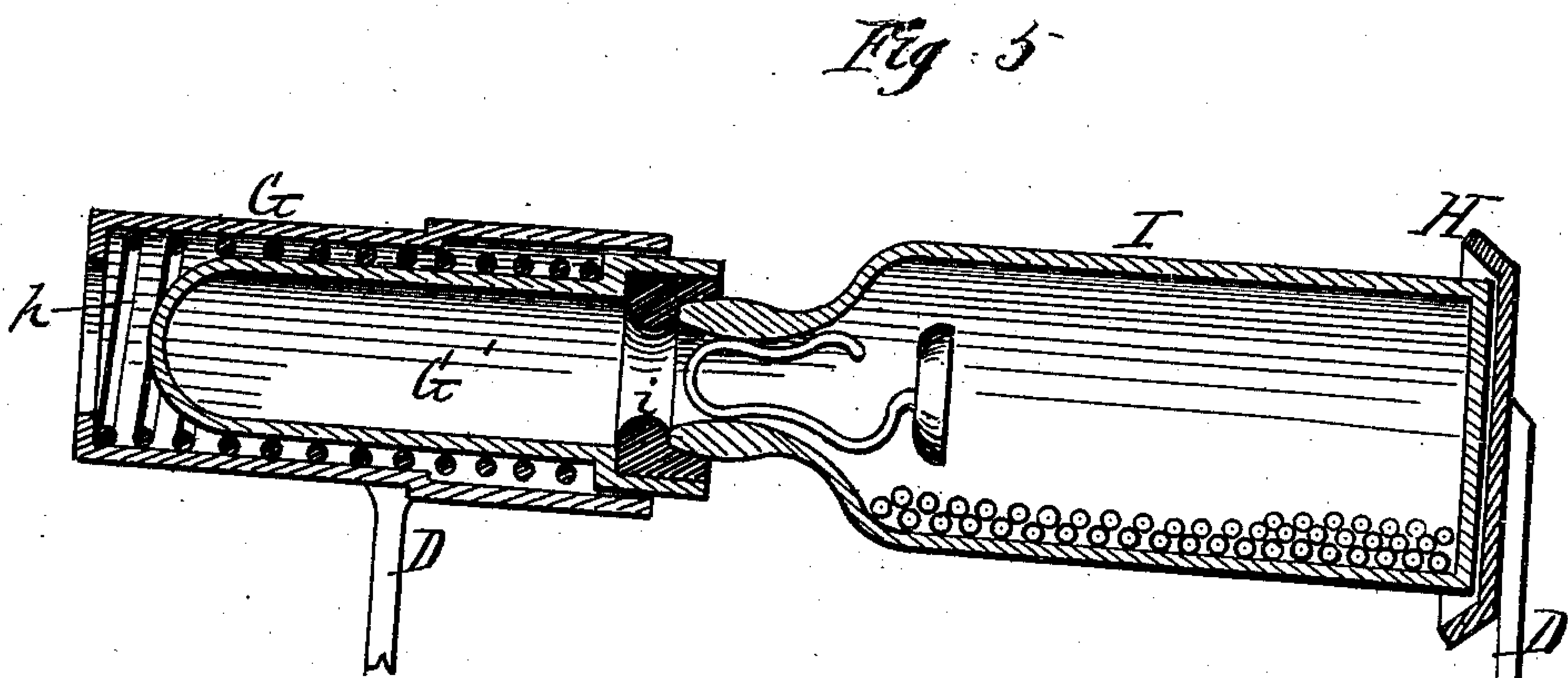


Fig. 5.

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UNITED STATES PATENT OFFICE.

SCHUYLER L. GILLETT, OF LIMA, NEW YORK, ASSIGNOR OF ONE-HALF TO
EDWIN D. WATKINS, OF SAME PLACE.

MACHINE FOR CLEANING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 370,693, dated September 27, 1887.

Application filed October 11, 1886. Serial No. 215,839. (No model.)

To all whom it may concern:

Be it known that I, SCHUYLER L. GILLETT, of Lima, in the county of Livingston and State of New York, have invented a certain
5 new and useful Improvement in Machines for Cleaning Bottles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

10 My improvement relates to a machine for cleaning the interior of bottles, and is of that kind where shot are employed, which, when inserted in the bottle, are agitated to produce the scouring action. It has been found difficult to clean the whole interior of the bottle,
15 and especially the neck portion; and my invention consists of a machine for the purpose, constructed, arranged, and operating as hereinafter more fully described, and definitely
20 claimed.

In the drawings, Figure 1 is a side elevation, partially in section, of the apparatus. Fig. 2 is a cross-section in line *xx* of Fig. 1, and showing a plan view of the shaking and revolving
25 portion of the machine. Fig. 3 is a rear elevation. Fig. 4 is a diagram showing the reel for holding the bottles and the hammer or mallet for jarring them. Fig. 5 is an enlarged longitudinal section of the cup for feeding the
30 shot, and a bottle in place.

In the drawings, A indicates a carriage, which rests in an inclined position on suitable supports, B, forming a guide by which the carriage can be vibrated forward and back. At
35 one end the carriage is hung on a shaft, C, which vibrates with it, said shaft allowing the carriage to be turned up vertically, as on a hinge, as indicated by the dotted lines, Fig. 1.

40 D D are two reels attached to a shaft, E, that rests longitudinally in the carriage.

To the arms of one of the reels are attached the feeding-cups G G, and to arms of the other are attached concave disks H H. The bottles I I are mounted between the feeding-cups and disks, as shown, and the whole are
45 revolved by turning the shaft E. This shaft has a bevel-gear, *a*, on its outer end, which engages with a bevel-gear, *b*, on the shaft C, to which the carriage is hung, and the latter
50 receives revolving motion by means of a band, *j*, which passes around a pulley, *c*, on

the shaft C and a driving-pulley, *d*, on a shaft, J, overhead. The ends of shaft C rest in hangers K K, turning on shaft J, by which means the carriage can be moved forward and
55 back without affecting the revolving motion of the bottles.

L L are connecting-rods, pivoted at one end to the hangers K K and attached at the other end to springs M M, which serve to produce
60 the reaction of the hangers as they are swung outward and to give elasticity to the movement.

N N are crank-wheels on the ends of shaft C, and P P are pitmen pivoted at one end to the
65 pins of said crank-wheels and at the other to stationary supports R R. By this means it will be seen that as the shaft C is revolved by the band before described it, together with the carriage to which it is attached, will re-
70 ceive reciprocating motion forward and back by means of the crank-wheels N N and pitmen P P.

S is a handle attached to one side of and near the outer end of the carriage A, standing
75 at right angles thereto. By seizing this handle and pressing down, the operator can raise the forward end of the carriage to any height while it is still in motion.

It will be seen that the machine has recip-
80 roating motion forward and back in order to shake the shot in the bottles, and has revolving motion to carry the shot around in the bottles to do the scouring. These motions can both be kept up at whatever angle the car-
85 riage may be raised by the handle just described.

Each of the cups consists of the outer stationary shell, G, attached permanently to the arm of the spider, and an inner cup, G', which
90 is movable and contains the shot. This cup rests against a spring, *h*, in the shell, by which it can spring back, and one end is open, and it is provided with a rubber or other packing, *i*, to receive the mouth of the bottle. To
95 insert the bottle in place its mouth is placed on the packing *i* and the bottle is pressed inward, which allows the bottom of the bottle to be seated in the concave disk H. The pressure of the spring holds the bottle firmly
100 in place and the packing makes a close joint, so that water cannot escape outward, and the

connection between the cup and the bottle is therefore perfect. The bottles are first rinsed and then inserted in place with a quantity of water in each. The downward incline of the carriage will cause the shot to pass from the cup into the bottle. To run the shot back again into the cup the carriage is raised to an upward incline by means of the handle before described, or by any other suitable means. By tilting the carriage up and down alternately the shot can be run into and out of the bottle, while at the same time the reciprocating and rotary motions are going on, which distributes the shot properly. By this means all parts of the bottle are reached and a perfect cleaning action produced. It is particularly effective in bottles having interior stoppers. In such bottles it has been difficult to clean the necks; but by this invention the shot can be alternately worked forward and back through the neck, cleaning the same perfectly.

To prevent any danger of the clogging of the shot in the neck of the bottles as they are tilted forward and back, a rubber or other soft mallet, *m*, with a spring-handle, *n*, is so attached to the carriage or the hanger *K* as to strike the bottles in succession as they revolve. By this means a jarring action is produced and no clogging can occur. This is necessary only when the bottles stand in the upright position.

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

1. In a machine for cleaning bottles, the combination of the carriage, the revolving reels resting therein and carrying the bottles, the shaft to which the reels are attached, the driving-shaft to which the carriage is hung, said shafts connected by gearing, the hangers that support the driving-shaft, the cranks at the end of the driving-shaft, and the pitmen connecting the cranks with a stationary part of the machine, as shown and described, and for the purpose specified.

2. In a machine for cleaning bottles, the combination of the carriage, the revolving reels resting on a shaft and carrying the bottles, the shaft to which the carriage is hung, said shafts connected by gearing, the hangers that support the driving-shaft, the cranks at the ends of the driving-shaft, the pitmen connecting the cranks with a stationary part of the machine, and the springs and connecting-rods for producing reaction of the carriage, as hereinafter shown and described.

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

SCHUYLER L. GILLET.

Witnesses:

G. W. THAYER,
H. C. GILBERT.