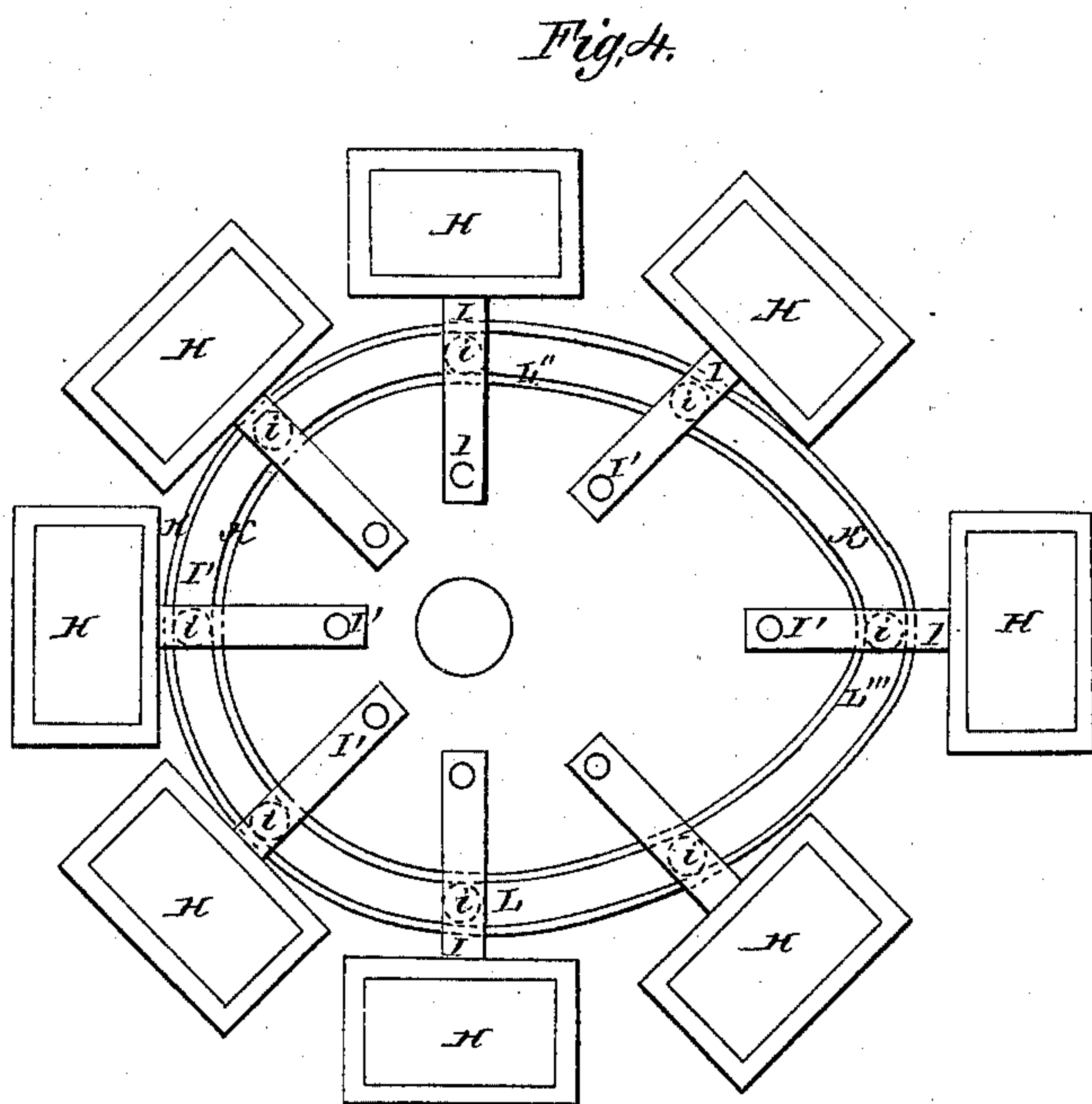
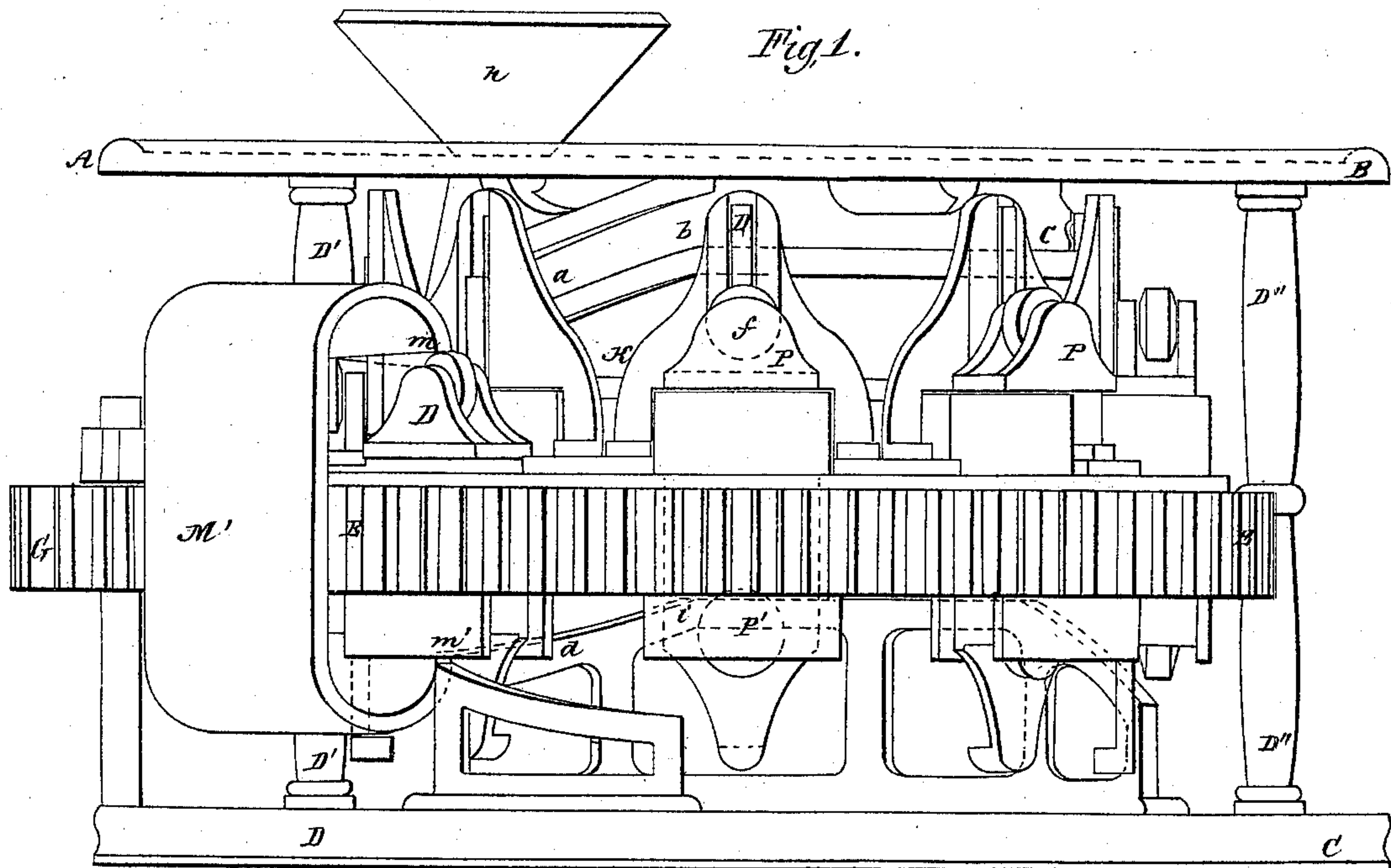


J. W. Jayne,
Brick Machine,

Nº 17,220,

Patented May 5, 1857.



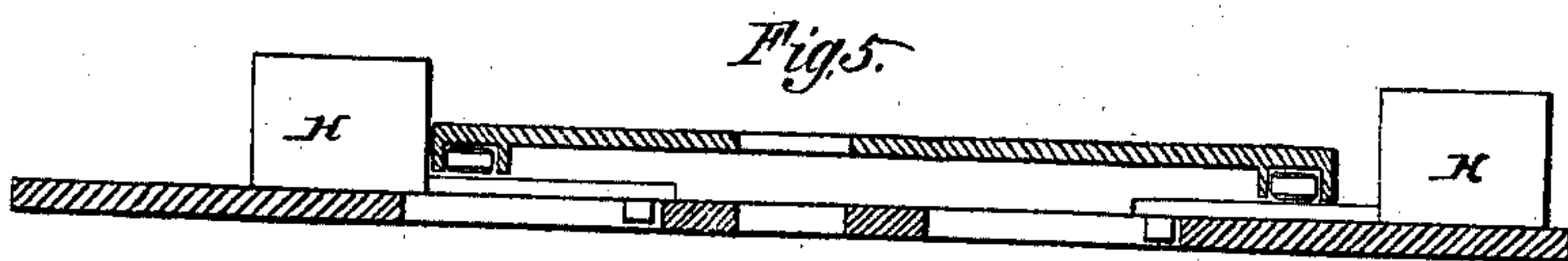
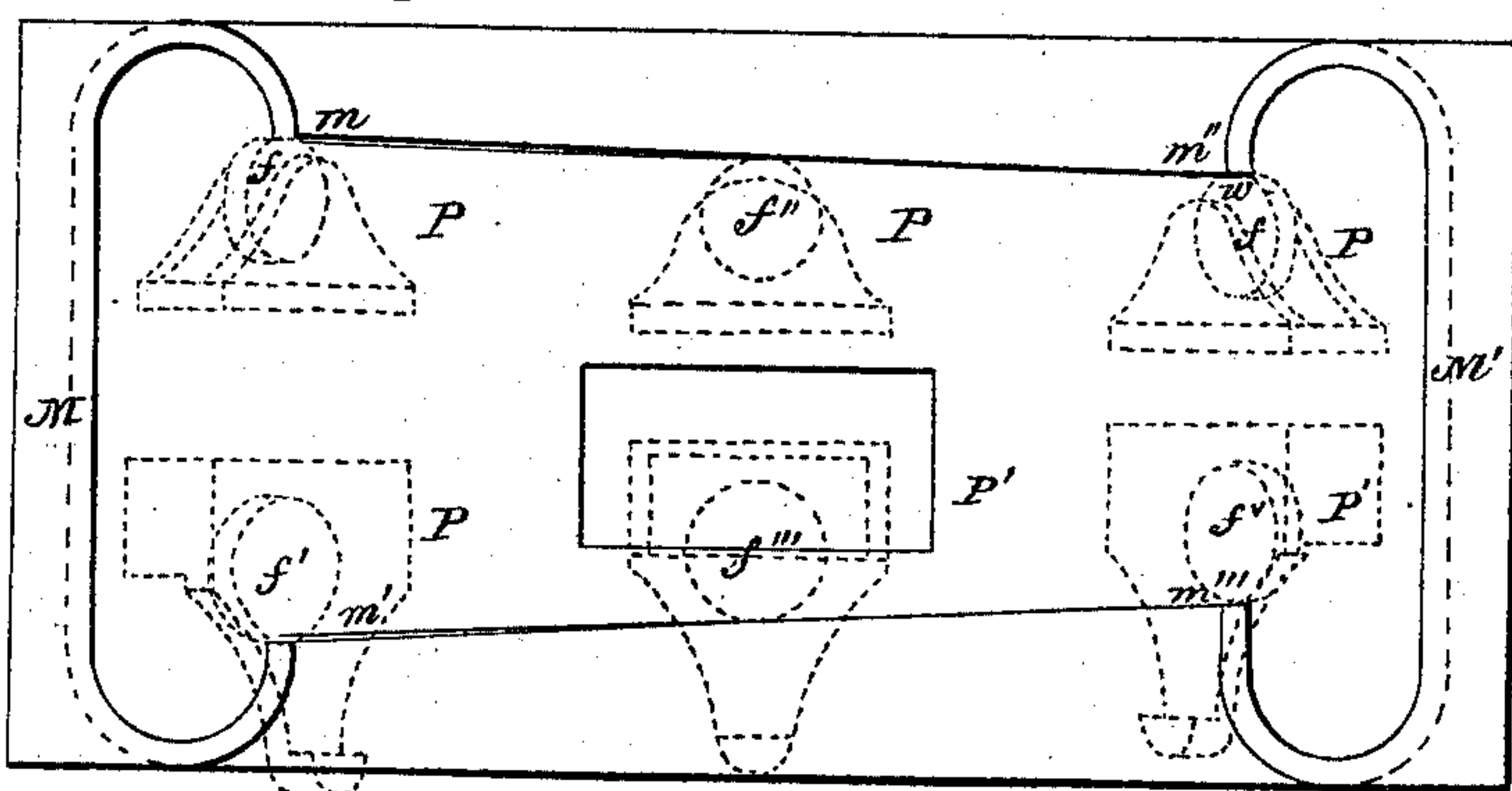
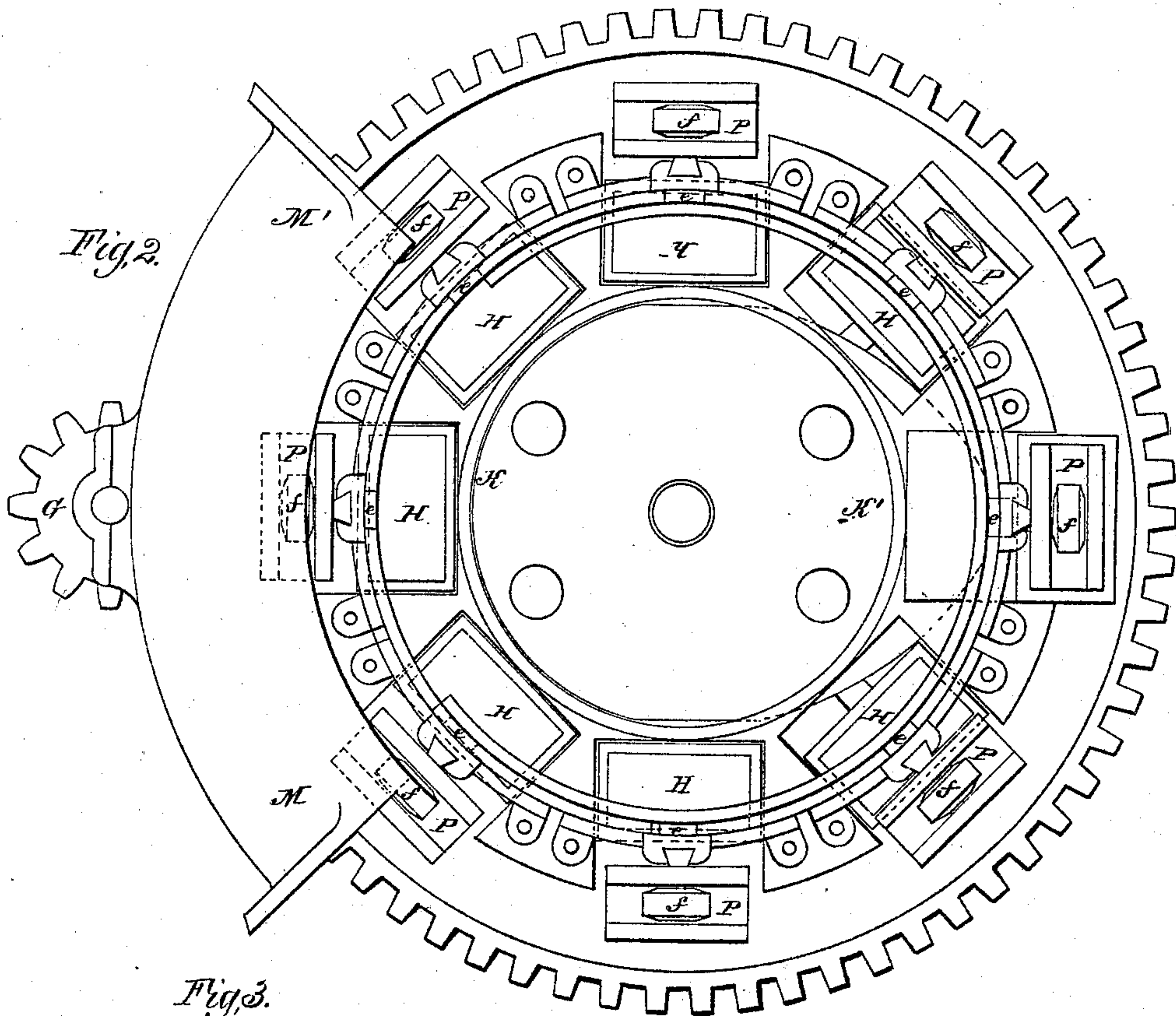
Witnesses.
J. H. B. Jenkins
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Inventor.
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UNITED STATES PATENT OFFICE.

JOSEPH W. JAYNE, OF SANDUSKY, OHIO.

BRICK-MACHINE.

Specification forming part of Letters Patent No. 17,220, dated May 5, 1857; Reissued June 28, 1859, No. 746.

To all whom it may concern:

Be it known that I, JOSEPH W. JAYNE, of Sandusky, Erie county, Ohio, have invented a new and useful Improvement in the Construction of Brick-Machines; and I do hereby declare the following to be a full and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

10 Figure 1 is a side view of my improved machine. Fig. 2 is a top view of the same with the upper cover or frame removed. Fig. 3 is a view of a portion of my machine called the yoke detached. Fig. 4 is an inverted view, or a view as seen from below, of a fixed central plate showing an eccentric slot or guide on its lower surface. Fig. 5 is a sectional view of the same.

A, B, C D is the frame of my machine which consists of a circular bed or base D, C from the circumference of which rise six columns D' D' D'' D'', &c., to support the upper frame or top of the machine A, B. This top A, B, is also circular. A central spindle rests upon a step in the center of the bed or base of the machine and is supported above by a journal in the center of the top frame A, B. On this spindle is placed a main revolving disk wheel E F. This wheel E F should be about four feet in diameter or larger. Around the entire circumference of this wheel, a series of cogs are formed and the wheel is driven by a smaller pinion or cog wheel G geared to it and which smaller wheel is connected with a prime mover of any suitable description. The wheel E, F, is a continuous disk made of iron or other metal. Around the circumference of this disk a series of rectangular openings are cut and a series of rectangular molds are fitted to these openings of the precise sectional shape of a brick, but of greater depth, say a depth of about ten inches. These molds are made of cast iron planed accurately on the inner surface and secured to the disk wheel by bolts and flanges or other similar means.

A series of rectangular boxes or frames H, H, H, H, H, open above and below are placed around the upper surface of the disk wheel E, F. These boxes H, H, H, &c., are of the same internal length as the molds; but are about two inches wider than the

molds. They are for the purpose of charging or filling the several molds with clay. 55 On the inner side of each charger H, H, H, H, a stem I, I', I I', &c., is attached and on each stem there is a small friction roller *i, i*, which fits into an eccentric groove cut or formed on the under surface of a central 60 fixed plate K, K'. This plate K K' is a cast iron disk or plate and is permanently suspended by four or more standards or uprights from the top frame piece A, B. On the under side of this disk is cut an eccentric 65 groove which can be seen by the inverted view shown in Fig. 4 by L L', L'' L'''.

L L' L'' is a true circle and the rest L L''' L'' is of an eccentric shape as shown in Fig. 4. There are also a series of radial 70 grooves formed upon the upper surface of the disk wheel E, F, for the purpose of guiding the chargers H, H, H, H, as they slide in and out. The effect of the eccentric groove L L' L'' L''' in the plate K K' 75 and the friction wheels *i i* is such that as the wheel E, F, revolves each of the chargers H, H, H, H, is made at one part of the revolution to pass under the spout or mouth of the hopper *h* and becomes filled with clay 80 and after passing from the hopper *h* each charger is slid or pushed radially out over one of the molds and begins to discharge its clay into the mold and continues to slide out farther and farther and discharging its clay 85 into the mold until the mold is completely filled, each charger then successively slides radially back and in succession passes again under the hopper to be filled and again to charge the molds. This arrangement of the 90 chargers H H H in connection with the groove on the plate K K' I regard as one of the important features of my improved machine on account of the regularity and certainty of its action. The clay so charged in 95 succession into the molds is afterward pressed in each of the molds in the following manner. On each side of each mold a small presser or follower fits. These pressers or followers are shown at P and P' Fig. 100 3. Each follower is made of cast iron and has a stem attached to it carrying a small friction roller *e, e*, and the larger friction roller *f, f'* is also attached to each presser or follower. These followers or pressers P and 105 P' correspond in section and fill precisely

each of the molds. These followers are made to approximate their pressing surfaces on to the clay by means of their friction rollers $f f'$, &c., passing in the course of the revolution of the wheel E, F, between the converging surfaces of two inclined circular planes. These inclined circular planes are obtained by the construction and arrangement of the yoke shaped piece M M'. This is a heavy circular cast iron piece shown in end view at Fig. 1. It is curved so as to correspond with the circle of the circumference of the wheel E, F. As the wheel E, F, revolves each of the upper pressers P and each of the lower pressers P' are made successively to pass between the inclined edges or surfaces M M'' and M' M''' of the yoke M M'. These surfaces M M'' and M' M''' converge from M toward M' so that these surfaces compress or force the pressers P and P' gradually to approximate and thus bring a regular and constant pressure upon the clay or material included in the mold between them. The position and effect of these converging planes or surfaces of the yoke M M' is shown at Fig. 3 by M M'' and M' M'''.

f and f' and f'' and f''' , f^{iv} and f^v , represent three successive pairs of presses. f and f' are just entering between the planes, f'' and f''' are half way through the planes and consequently their pressing surfaces are approximated to one half of the full extent of pressure, and f^{iv} and f^v are just at the extremity of the converging planes and consequently the extent of pressure exerted here is a maximum.

This mode of employing double converging inclined circular planes in connection with the upper and lower pressers P and P' furnishes a very convenient method of bringing pressure upon the clay in the mold. The pressure is very effectively brought upon both sides of the brick equally and simultaneously. The pressure also is brought on and increased gradually and the work is uniform and continuous. The comparative power required to produce a complete and sufficient pressure is also smaller than in any other apparatus with which I am acquainted.

The pressers P and P' are separated after the pressure is made complete by means of the small rollers or projections e, e , on the stem. The upper projection or roller fits upon a track or groove a, b, c , Fig. 1 which is constructed upon a circular frame and placed immediately below the top plate of the machine. This groove is so made as to rise from a to b and then continues on a bevel for about two thirds of the circle. The little roller e or projection following upon this track causes the upper presser to rise immediately after the followers or pressers P and P' pass from the smaller ex-

tremity of the yoke and thus the upper presser is raised from the clay by the ascent of the projection or roller e upon a, b , and is kept up by the level track until the pressers approach the larger opening of the yoke, when the track a, b, c , is so made as to descend again and permit the upper presser to descend upon the clay before entering between the inclined surfaces of the yoke. This track disappears entirely during that part of the circle while the pressers are between the surfaces of the yoke. The lower presser can be removed by its own gravity or by a similar arrangement of track below.

The operation of the several parts of my machine is as follows. The main disk wheel E, F, carrying the brick molds (say eight or more on its circumference) is kept regularly and constantly revolving say about six to ten revolutions per minute. Each charger H at one part of the revolution of E, F, successively passes under the hopper h and becomes filled with a supply of clay rather more than sufficient to make a brick. The charges in succession move radially out and fill the molds and then slide radially in again to be in turn filled. After the mold is thus filled by the charger the upper and lower followers P and P' (which had been previously kept apart by the track a, b, c , and a corresponding lower track) are released from these tracks and rest upon the surface of the clay above and below. The revolution of E, F, now brings each pan of followers P and P' successively between the converging surfaces M M'' and M' M''' of the yoke M M' and as the rollers f and f' roll along these planes M M'' and M' M''' the pressers P and P' are forced together and a gradual and powerful pressure is exerted on both sides of the clay in the mold and this continues until the pressers pass from the extremity of the yoke, when the track a, b, c , and the rollers or projections e, e , cause the upper pressers to rise entirely above the mold and high enough to allow the brick to escape above, and a small inclined track d, i , causes the lower presser to rise through the mold and push up the formed brick to the level of the upper surface of the wheel E, F, whence it can be removed by hand or be slid off to an adjoining table. The upper pressers P are raised and sustained high enough by the track $a b c$ to permit the free passage of the chargers H, H, beneath.

I do not desire to claim, herein, generally the use of double converging surfaces for pressing bricks.

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

1. The radial sliding and revolving chargers H, H, H, in combination with the

eccentric slot or groove, L, L', L'', L''', and horizontal mold wheel E F, said parts being arranged and operating substantially as above described.

5 2. The combination of the peculiarly shaped yoke M, M, with the mold-wheel E, F, and the sliding and revolving charges

H, H, H, the whole being constructed and operating conjointly, and arranged substantially as above described.

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Witnesses:

J. H. B. JENKINS,

JNO. B. KENNEY.

[FIRST PRINTED 1912.]