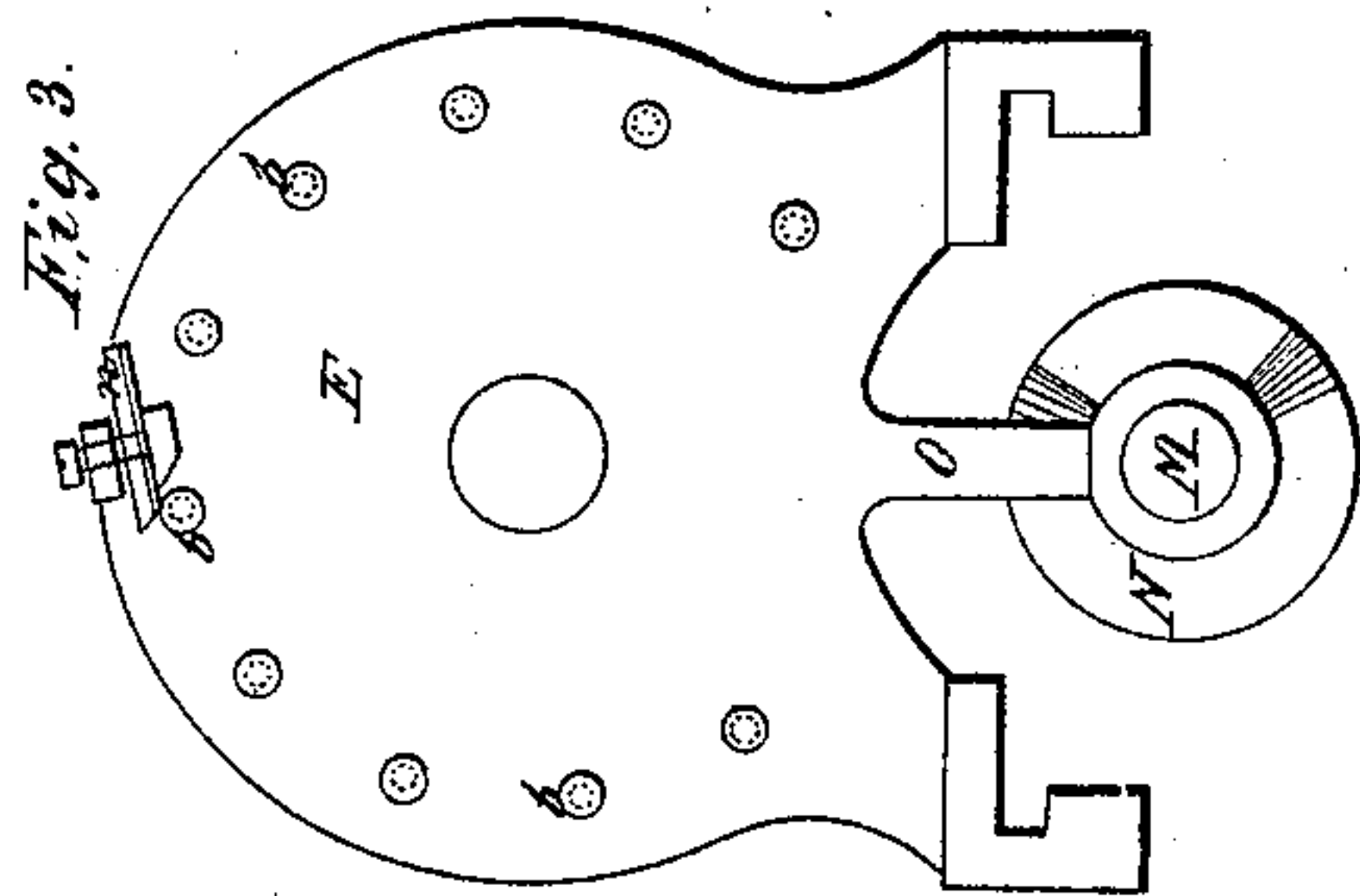
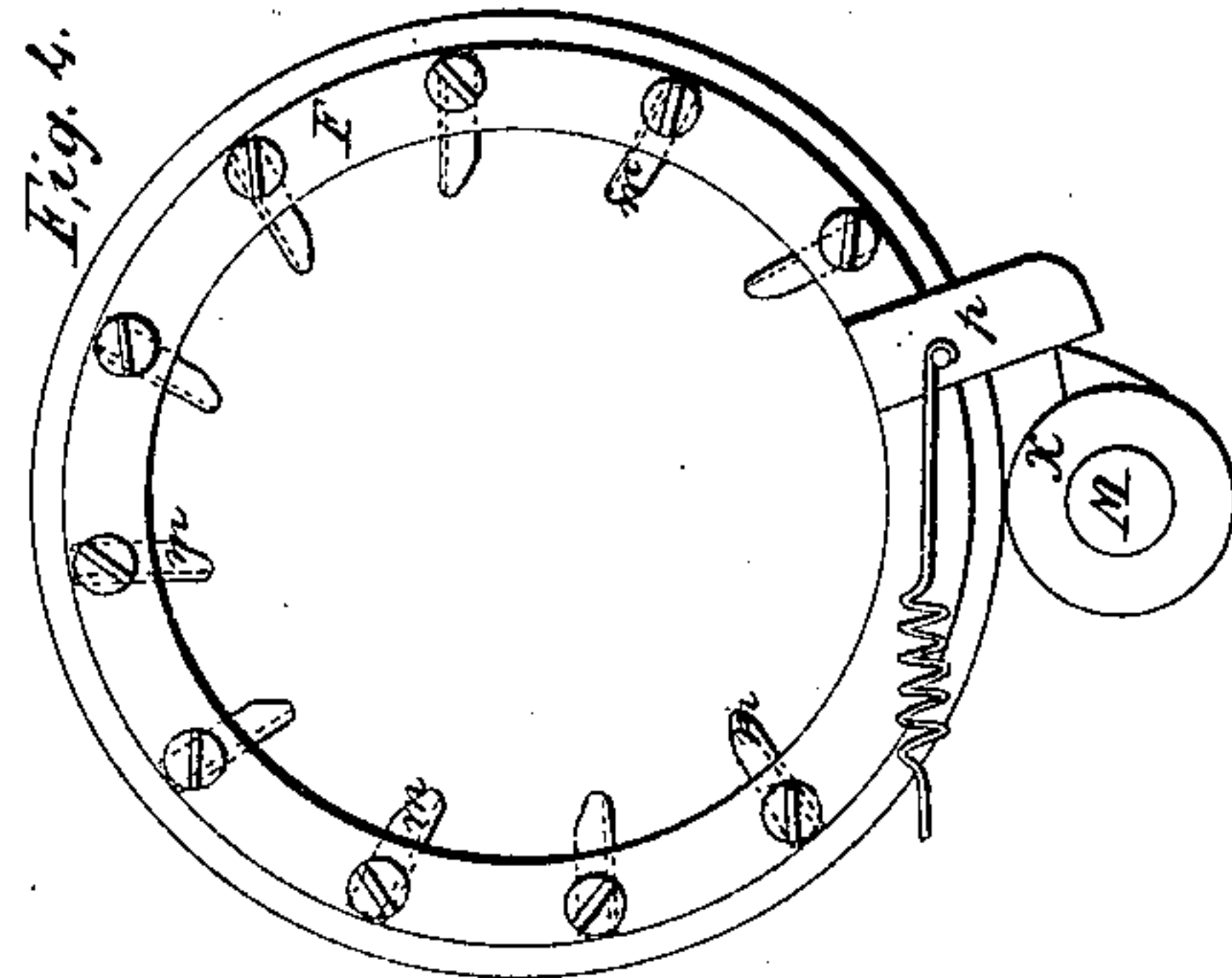
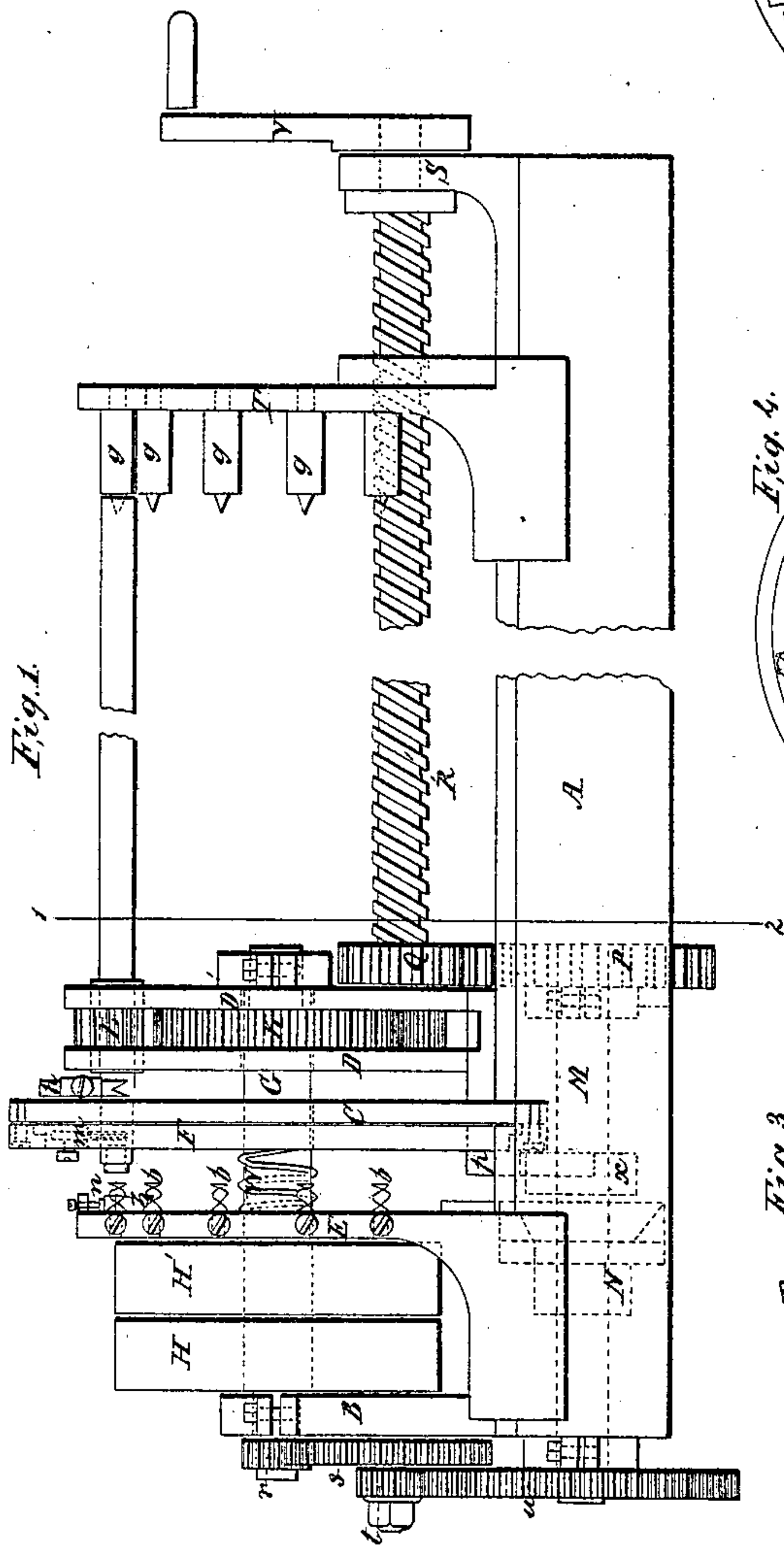
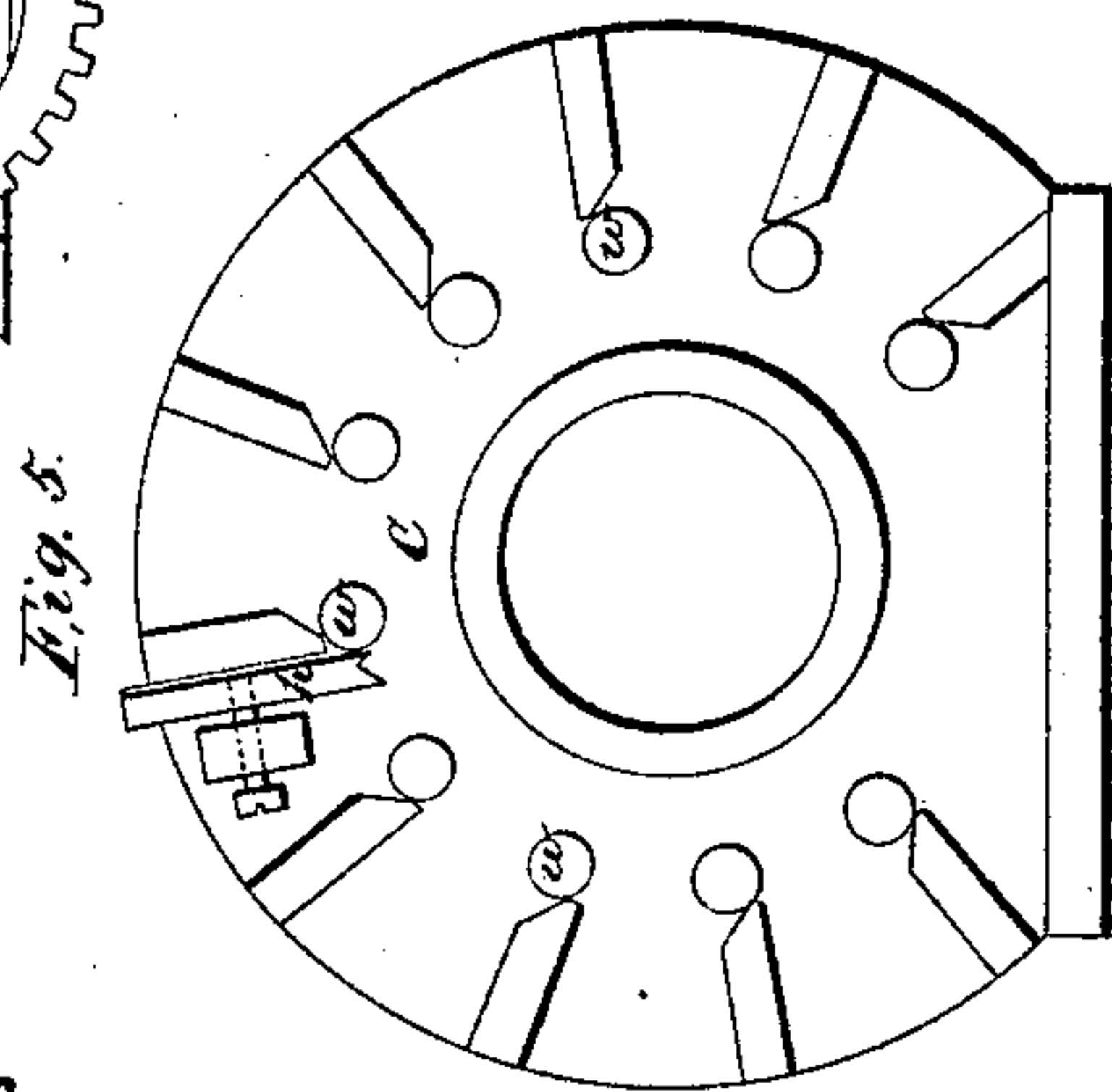
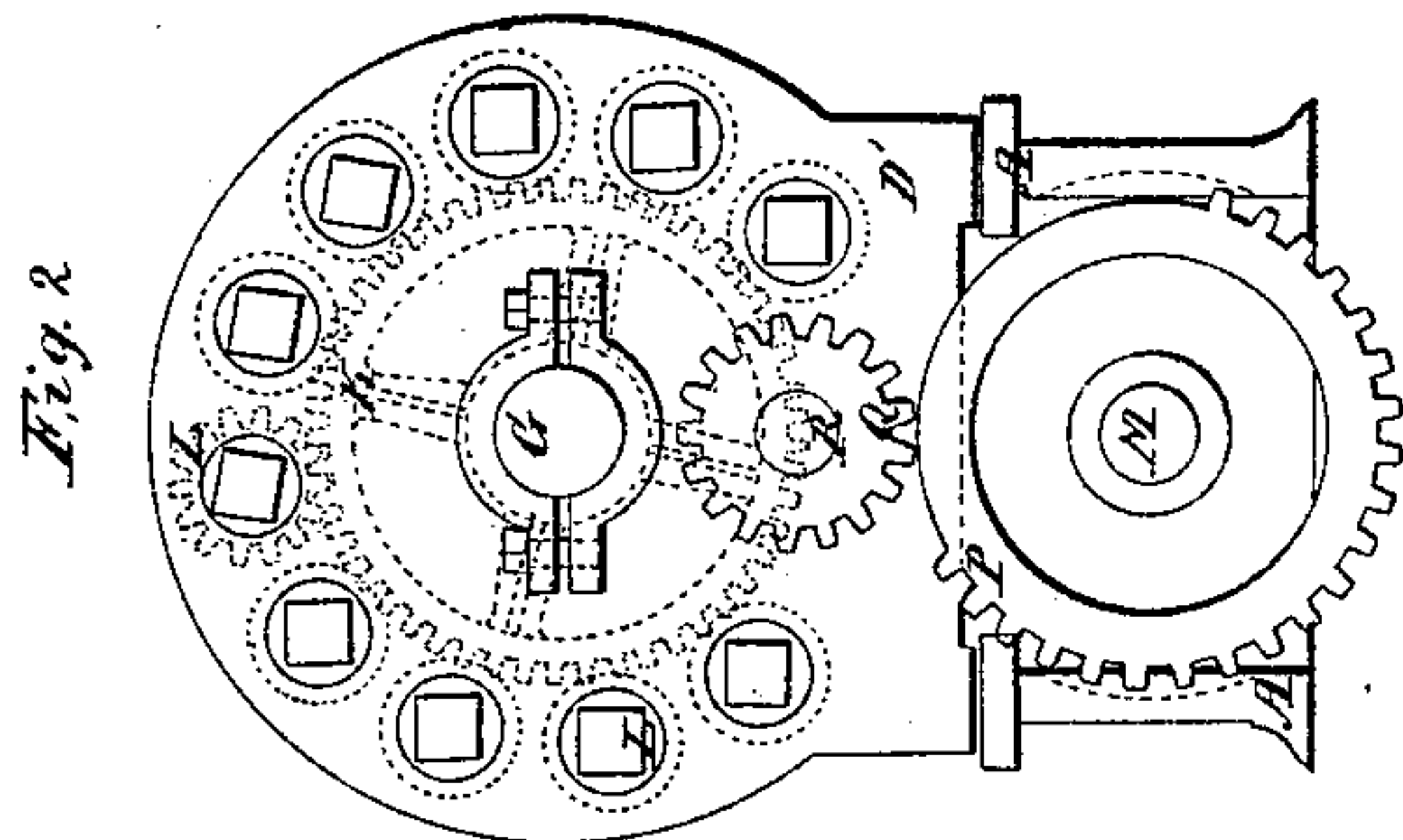


*A. & F. Brown,
Gage Lathe.*

Nº 13,158.

Patented July 3, 1855.



UNITED STATES PATENT OFFICE.

ADOLPH BROWN AND FELIX BROWN, OF NEW YORK, N. Y.

BORING AND TURNING WOOD.

Specification of Letters Patent No. 13,158, dated July 3, 1855.

To all whom it may concern:

Be it known that we, ADOLPH BROWN and FELIX BROWN, of New York, in the county and State of New York, have invented a new and useful Machine for Boring and Turning Wood; and we hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1, is a longitudinal elevation Fig. 2, a transverse section at the line I and II and the other figures represent detail parts to be referred to in the following description.

The accompanying drawings of the machine represent the same arranged for the purpose of turning and boring wooden boxes.

A is the bedplate similar in its construction to a common turning lathe bed.

B, C, D and D' are supports firmly attached to the bedplate A.

G is the driving shaft, running in bearings on the supports B and D', and passing freely through the supports E, C, and D. This shaft has two pulleys H and H' the one fast and the other running loose. Near the forward end of this shaft is a wheel K firmly attached, and running between the supports (D and D') and working into wheels (L), situated around the circumference of said wheel (K).

E is a support resting upon the bedplate (A,) and capable of a motion backward and forward. To this support (E) the tools (b,) for boring out the wood are attached, as well as the knives (n) for turning a recess on the end of the wood, for the reception of the cover. On the lower side of this support (E) is a projection (O) (Fig. 3) working against the face of a cam (N), through which said cam this support (E) receives a forward motion and is retained in that position the required length of time. A spiral spring (W), situated around the driving shaft (G), and between the fixed support, (C) and the face of the support (E), acts upon said support (E) in such a manner as to keep the same pressing against the face of the cam (N), and to move this support (E) backward, as soon as the projection (O) comes opposite a recess made for that purpose in the face of the cam (N).

N is a cam fast on the shaft M and re-

ceiving motion from the same. This cam is made with a projecting surface part of the way around, the remaining part forming consequently a recess in such a manner that the projection O of the support E, which as before described is pressed hard against the surface or face of the cam, is alternately pressed forward when opposite the projecting surface and alternately allowed to be pressed backward when opposite the recess on said cam.

F is a ring, attached to the support (C) in such a manner as to allow of a circular motion being given to the same. To this ring (F) the tools (m) for cutting off the boxes, when finished, are attached. On the lower side of this ring is a projection (p) (Fig. 4) against which a cam (X) acts, in such a manner as to communicate to the ring (F) sufficient motion to press the tools (m) into the wood, when the box requires to be cut off. This cam (X) is situated on the shaft (M) receiving motion from the same.

L are wheels worked from the wheel (K) and running in bearings in the supports (D and D'). These wheels have square, or other shaped, suitable holes in the center, through which the wood to be turned and bored passes, communicating therefore their motion to the wood and guiding it at the same time.

M, is a shaft situated between the bedplate (A) and running in suitable bearings, and worked from the driving shaft (G) through the gearing (r, s, t, and u.) On the forward end of this shaft (G) is a wheel (P) firmly attached, working into a wheel (Q) fast on the screw (R.) This wheel (P) has some of its teeth cut off, by which arrangement said wheel (P) will during part of its revolution not act upon the wheel (Q), and consequently the screw (R) will remain stationary during that part of the revolution of the wheel (P) where the teeth are cut off.

(R) is a screw running the whole length of the bedplate from the support (D') to the end and turning in a bearing on the support (D') and in the bearing (S) attached to the end of the bedplate. At the end of this screw (R), a handle (V) is fixed, to work the same by hand.

T is a support sliding on the bedplate (A) and provided with a nut in which the screw (R) works, and through which a forward

and backward motion is communicated from said screw (R) to the support T. To this support centerbits (*g*) are attached, corresponding with the centers of the holes in the wheel (L). On these centerbits (*g*) the wood is attached and supported in such a manner as to allow the same to turn freely.

h, are knives attached to the forward side of the support (C) and by which said knives the outside of the wood is turned off the required size.

The operation of the machine is as follows: Square pieces of wood of the required size and length are put through the square holes of the wheels (L) and upon the center bits (*g*) and then the machine is set agoing. The wheel (K) which acts upon the wheels (L), through which the wood passes, turns said wheels (L) and consequently the wood. The screw (R) worked by the wheels (Q) and (P) moves the support (T) and consequently all the different pieces of wood toward the supports (C) and (E) while the wood is revolving. The wood comes therefore first in contact with the fixed knives (*h*) attached to the support (C), by which the outside of said wood is turned off the required size. The wood being continually pressed forward by the action of the screw (R), as before described passes then through suitable holes (*w*) (Fig. 5) in the support (C) and comes then against the boring tools (*b*) fast on the support (E) by which said tools the wood is then bored out the required depth for a box and then the end of the wood coming in contact with the knives (*n*), likewise fast to the support (E) the recess or neck for the reception of the cover is cut on the wood. When the wood has been brought in thus far, the wheel (P) has turned so far around, that the space where the teeth have been cut off comes opposite the wheel (Q) acting therefore for some time not upon the wheel (Q), and consequently the screw (R) remains now stationary. As this screw (R) as before described moves the support (T) and consequently the wood toward the tools, the wood will now only turn around, without being moved forward. During the time that the wood is not pressed forward the cam (X) acts upon the projection (*p*) of the ring (F) in such a manner as to press the knives (*m*), fast to said ring, against the wood, and cutting thereby the wood through.

When the wood is partly cut through, the cam (N), has moved so far around as to

bring the recess on said cam opposite the projection (O) of the support (E), when the spring (W) acting against the support (E) presses said support away, so as to bring the boring tools (*b*) out off the wood and clear of the same so as to allow the cut off boxes to fall down freely.

When the box is cut off, the cam (X) leaves the projection (*p*) of the ring (F), and leaving therefore said ring at liberty to be moved back again in its original position, so as to bring the knives (*m*) clear off the wood.

By the time the wood has been cut off and the ring (F) has been brought back again (which may be done either by spring or weight or by a second cam fixed on the shaft M) the wheel (P) has turned so far around that its teeth come again into the teeth of the wheel (Q), turning therefore again the screw (R) and consequently the wood will be again pressed forward, when the above described operation will be repeated. The projecting part of the cam (N) presses now again against the projection (O) of the support (E), bringing thereby said support forward again ready to bore out the wood as soon as the latter is pressed against it. The length of a box and the depth the same is to be bored out, is regulated and varied by the relative proportions of the wheels (P) and (Q). The ring (F) may have likewise several knives different in shape attached to it, and receive, by an alteration of the cam (X), several distinct motions or a second ring with suitable knives attached may be applied, by which means any other form and shape may be made such as for example turning wooden tool handles, or spools to wind yarn on, &c.

What we claim as our invention and desire to secure by Letters Patent is:

1. We claim the manner of guiding and turning around the wood by passing said wood through suitable holes made through the wheels L, thereby allowing the wood to be fed up to the tools at the same time the same is turned around.

2. We claim the ring (F) with the tools for cutting off the wood attached, arranged and worked as specified.

ADOLPH BROWN.
FELIX BROWN.

Signed in presence of—
J. D. MENSING,
HENRY E. ROEDER.