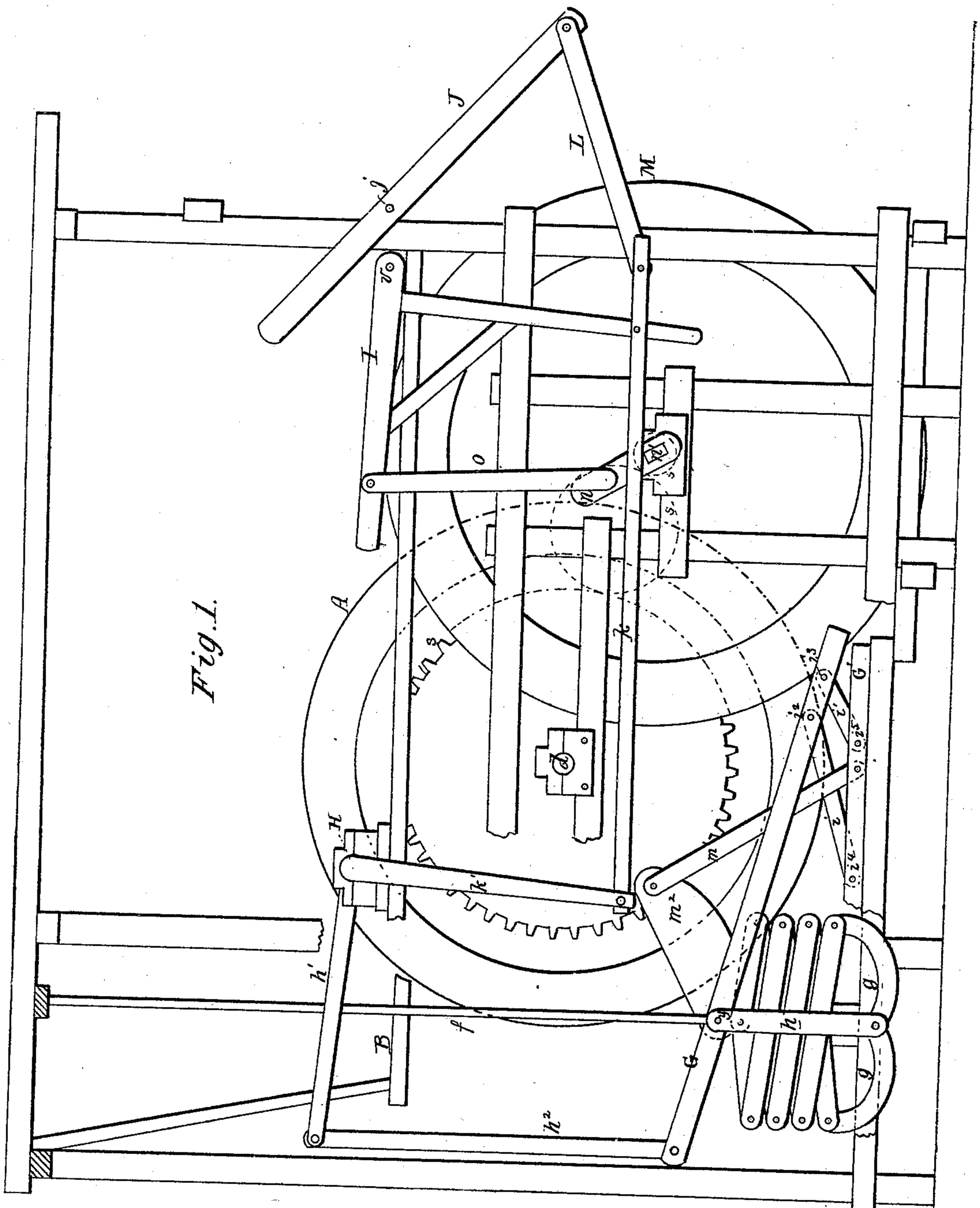
3 Sheets—Sheet 1.

J. L. SCOTT.

APPARATUS FOR TRANSMITTING MOTION.

No. 171,052. Patented Dec. 14, 1875.



Witnesses:
Otis F. Pressley
Courtney, A. Cooper.

Inventor:
J. L. Scott
By his atty
Charles E. Foster

3 Sheets—Sheet 2.

J. L. SCOTT.

APPARATUS FOR TRANSMITTING MOTION.

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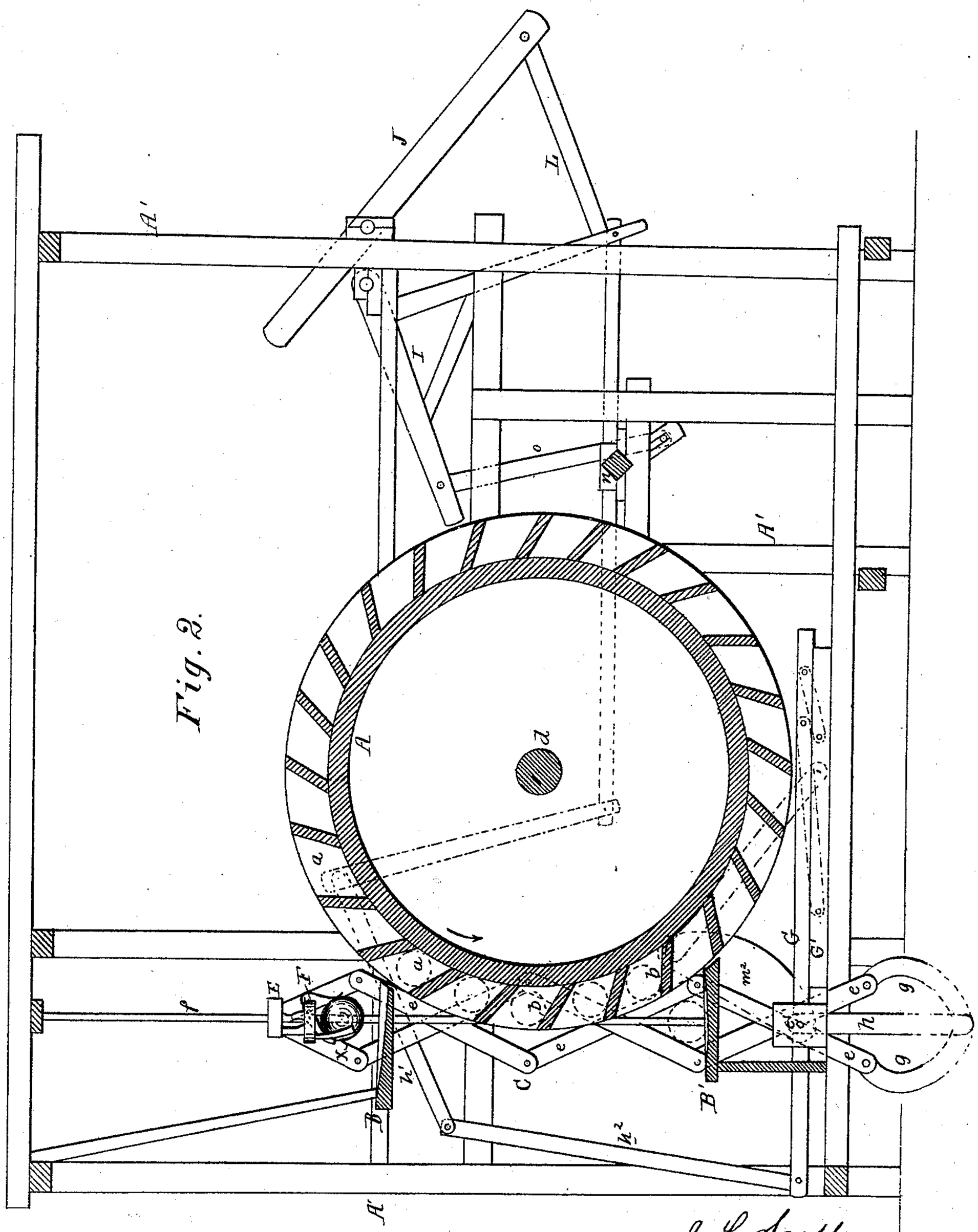

Fig. 2.

Witnesses
Thos. F. Presbury
Courtney, A. Cooper.

Inventor
J. L. Scott
By his atty
Charles E. Foster

3 Sheets—Sheet 3.

J. L. SCOTT.

APPARATUS FOR TRANSMITTING MOTION.

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Fig. 4.

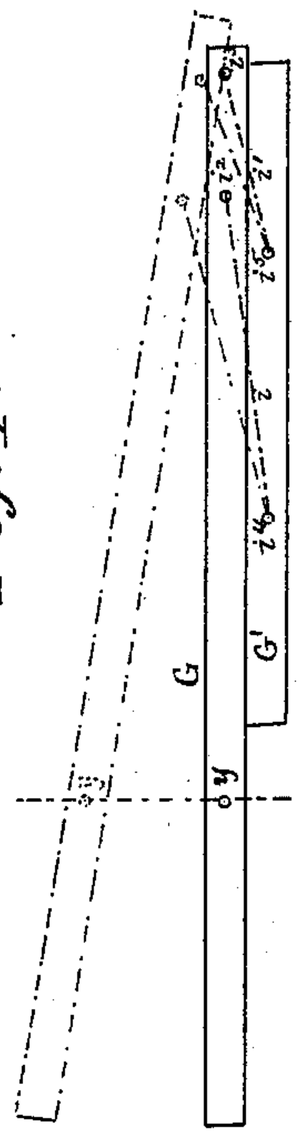


Fig. 5.

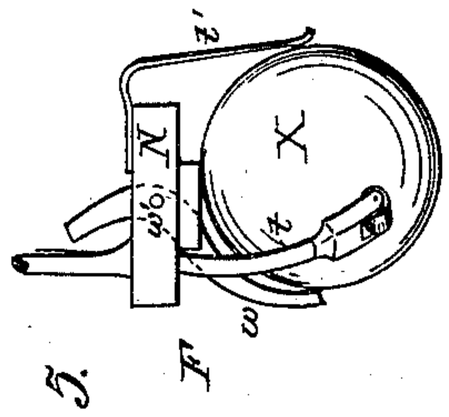
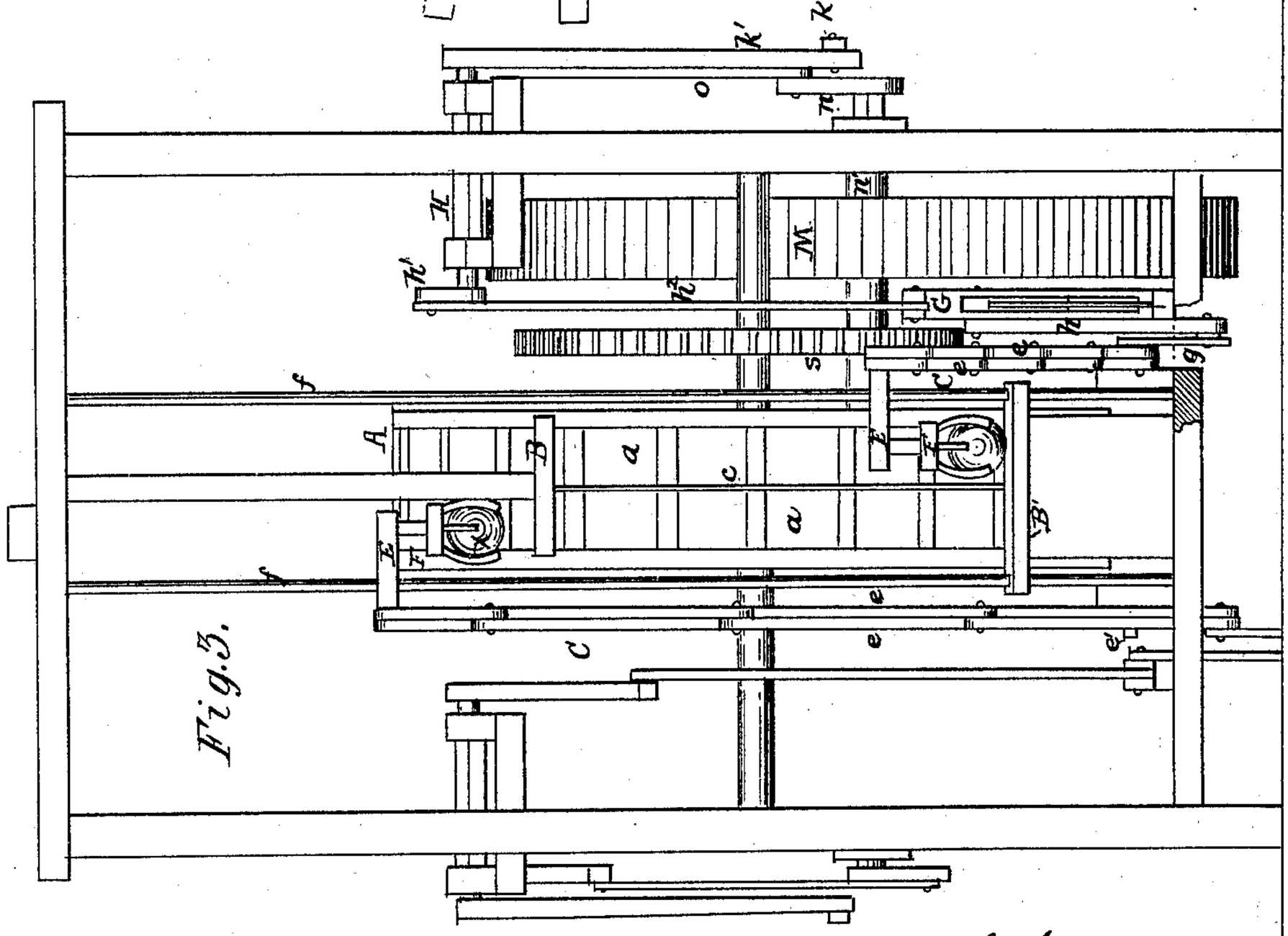


Fig. 3.



Witnesses:
Otis T. Peasley
Courtney, A. Cooper.

J. L. Scott
By his atty
Charles E. Foster

UNITED STATES PATENT OFFICE.

JAMES LEANDER SCOTT, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN APPARATUS FOR TRANSMITTING MOTION.

Specification forming part of Letters Patent No. **171,052**, dated December 14, 1875; application filed December 3, 1875.

To all whom it may concern:

Be it known that I, JAMES LEANDER SCOTT, of Brooklyn, Kings county, New York, have invented an Apparatus for Transmitting Motion, of which the following is the specification:

The subject of my invention is an apparatus, constructed as fully described hereafter, whereby a reciprocating motion imparted to a lever is made the means of elevating a series of balls, depositing them successively upon the periphery of a wheel, and rotating the latter.

In the accompanying drawing, Figure 1 is a side elevation illustrating one mode of constructing the machine. Fig. 2 a sectional elevation, Fig. 3 an end view, and Figs. 4 and 5 detached views, of parts of the apparatus, Fig. 5 being drawn to an enlarged scale.

A is a wheel, the shaft *d* of which turns in suitable bearings supported by the frame A′, and having in the periphery buckets or pockets *a*, formed by inclined vanes *b*, each pocket being divided by a longitudinal partition, *c*, as shown in Fig. 3. Opposite the edge of the wheel are two platforms, B B′, the former above and the latter below the axis *d;* the platform B′ being arranged at a point slightly below that at which the adjacent vanes *b* assume a horizontal position. If a weight, X, be deposited in each of the pockets *a* between the platforms B and B′, the wheel, being loaded at one side, will rotate in the direction of its arrow, and as each weight approaches the platform B′ it will drop outward upon said platform. It will be apparent that by successively elevating the weights from the platform B′ to the platform B, from which they roll into the pockets, the load will be maintained at one side of the wheel, and its continued rotation will be insured. At one side of the wheel near its edge is an extension-frame, C, consisting of a series of arms, *e*, connected together to form a "lazy-tongs," which is pivoted at *e′* to the frame of the machine, and is connected at the upper end to a carrier, E, which slides upon a guide, *f*, and to which is secured a grapple, F. Two curved links, *g g*, are connected to the lower arms of the extension-frame, and to a link, *h*, pivoted to a lever, G. The lever G is operated from a rock-shaft, H, through the medium of an arm, h^1, and connecting-rod h^2. A frame, I, pivoted at *v* to the frame of the machine, is connected by a rod, *k*, to an arm, *k′*, of the lever H, motion being imparted to the frame from an arm or frame, J, (pivoted at *j* to the frame,) through the medium of a connecting-rod, L. Power is applied to the lever J, imparting a reciprocating vibrating motion thereto, when the extension-frame C will be alternately and quickly raised and depressed through the medium of the frame I, rock-shaft H, lever G, and their arms and connecting-rods. On each descent of the frame C the grapple F will seize one of the weights X upon the lower platform B′, and upon the next upward movement will carry the weight to a position above, and discharge it upon the platform B, from which it will pass into the adjacent pocket *a* of the wheel, a constant rotation being thus imparted to the latter, from which the motion is transferred to any desired object, through the medium of suitable gearing or belts. It will be apparent that the frame C must rise and descend as many times during the revolution of the wheel A as there are pockets in the latter, and at regular intervals; in order, therefore, to preserve unison between the movements of the lever J and the wheel A, I connect the frame I by an arm, *o*, to the crank *n* of a shaft, *n′*, geared to the shaft *d*, through the medium of gears *s s*, Fig. 1, properly proportioned. To carry the crank *n* over its dead-center, I provide the shaft *n′* with a fly-wheel, M. In order to insure the vertical movement of the pin *y*, which connects the link *h* to the extension-frame, I construct a "parallel motion" by connecting the lever G to a horizontal bar, G′, through the medium of links *i* i^1, the pivots i^2 i^3 connecting said links to the bar G, being nearer together than the pivots i^4 i^5, connecting them to the bar G′. The lengths of the links are so proportioned and their pivots so arranged, as shown in Fig. 4, that, as the lever G is elevated or depressed, the pin *y* will move in a vertical line. In order to prevent any lateral motion of the lever G, an arm, m^1, extends through a slot in the lever, is pivoted at its lower end to the bar G′, and at its upper end to a plate, m^2, extending into said slot, and secured by the pin *y*. The construction of

the grapple F is shown in Fig. 5, in which N represents a block or hub, to which are connected two rigid curved arms, *t t*, and an elastic arm, *t'*, curved outward at its lower end. Through a slot in the hub extends a curved arm or trigger, *w*, pivoted to a pin, *w'*. When the grapple is forced upon a sphere, *x*, from above, the arm *t'* will yield, allow the sphere to pass inward and rest upon the curved arms *t t*, and will retain it in that position.

When the trigger is brought, by the ascent of the grapple, against any stationary object, its lower end will bear forcibly against the sphere and thrust it outward from the grapple. On reference to Fig. 1, it will be seen that the curve of each arm *g* gradually increases from the point of connection with the link *h*. As before stated, each bucket *a* is divided by a partition, *c*. This permits the use of two series of weights, X, with one wheel, A, the elevating and operating mechanism before described being duplicated and arranged upon the opposite side of the wheel, to operate the second series of weights.

I do not claim the arrangement of devices for imparting a vertical movement to the link *h*, as this may form the subject of another application for Letters Patent; but

I claim as my invention—

1. The extension-frame C carrying a grapple, F, combined with the platforms B B', and with the wheel A, as set forth.

2. The combination of the extension-frame C, lever J, rock-frame I, and their connecting arms and rods, as specified.

3. The combination of the extension-frame C and the grapple, consisting of the hub N, arms *t t*, elastic arm *t'*, and trigger *w*, substantially as set forth.

4. The combination of the extension-frame C, lever G, and curved arms *g*, and link *h*, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

J. L. SCOTT.

Witnesses:

CHARLES E. FOSTER,

COURTNEY A. COOPER.