

No. 846,465.

PATENTED MAR. 12, 1907.

A. GERBER.
GEARING.

APPLICATION FILED MAY 26, 1906.

2 SHEETS—SHEET 1.

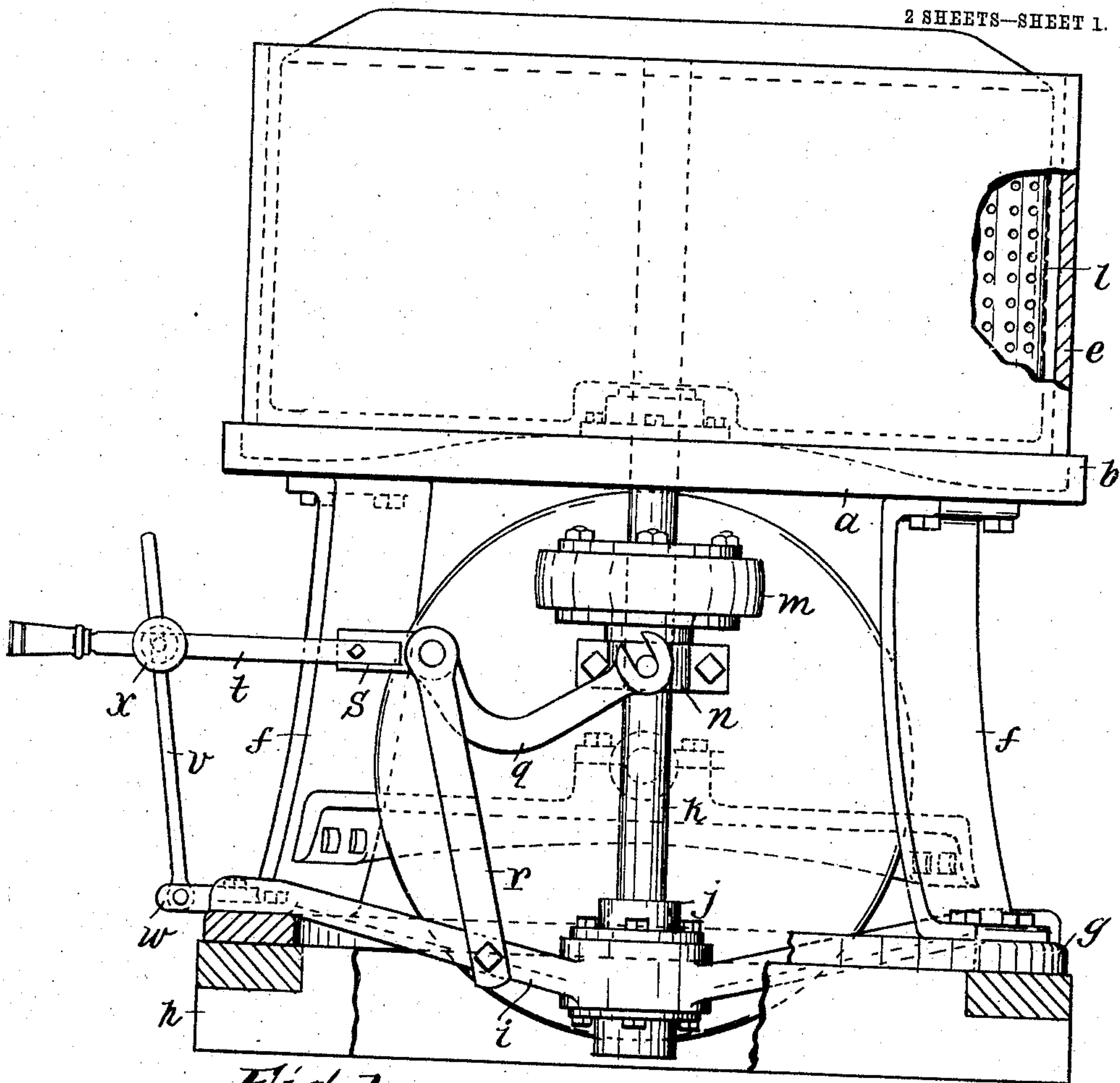


Fig. 1.

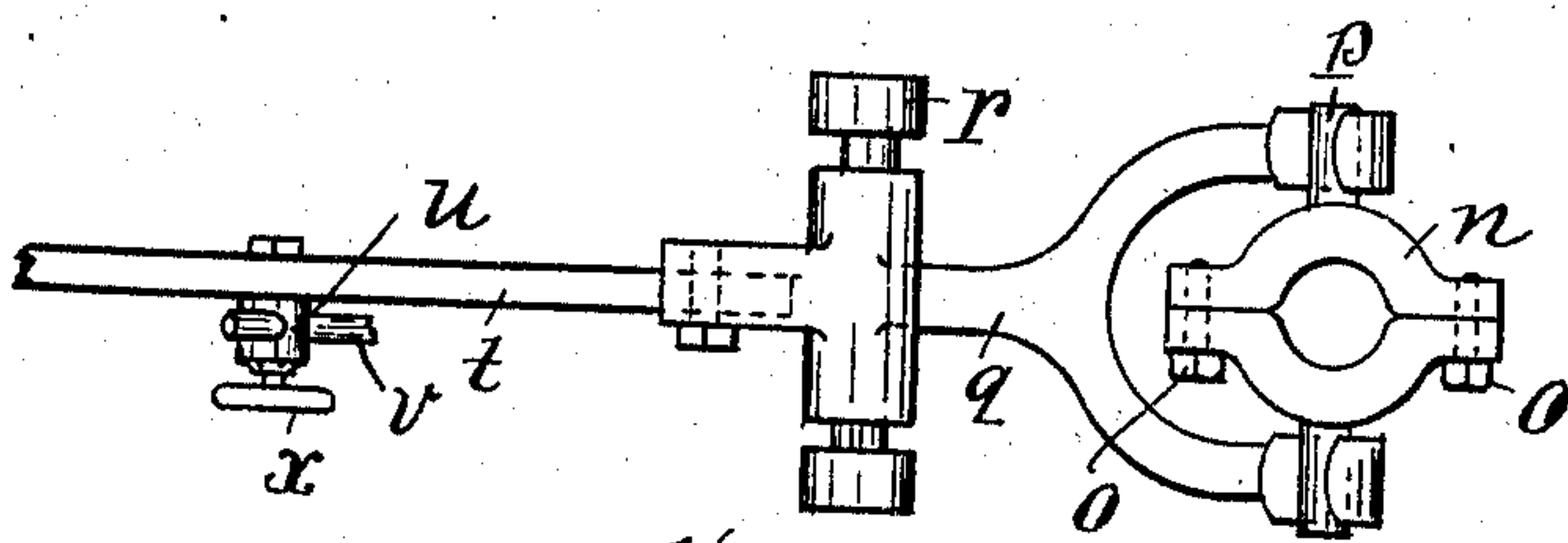


Fig. 4.

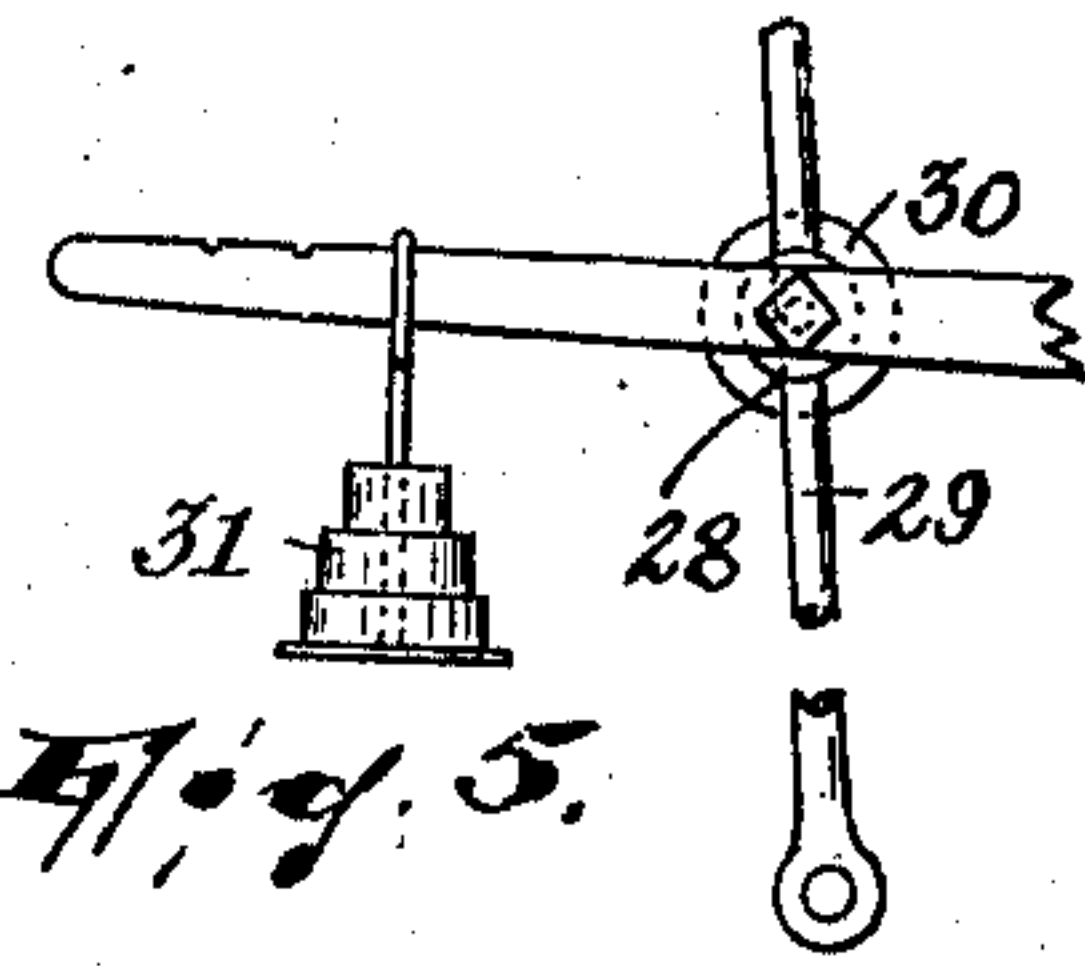


Fig. 5.

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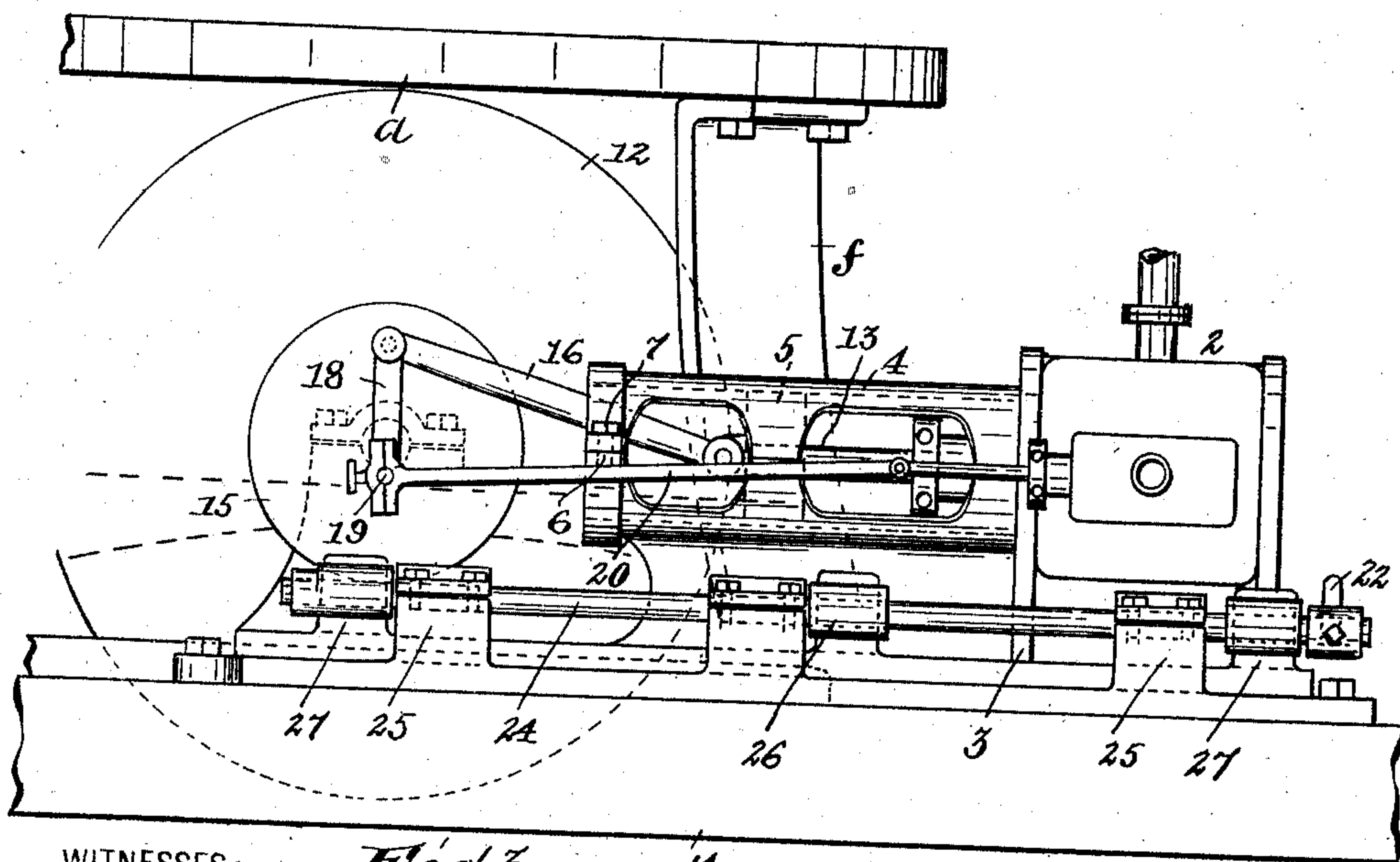
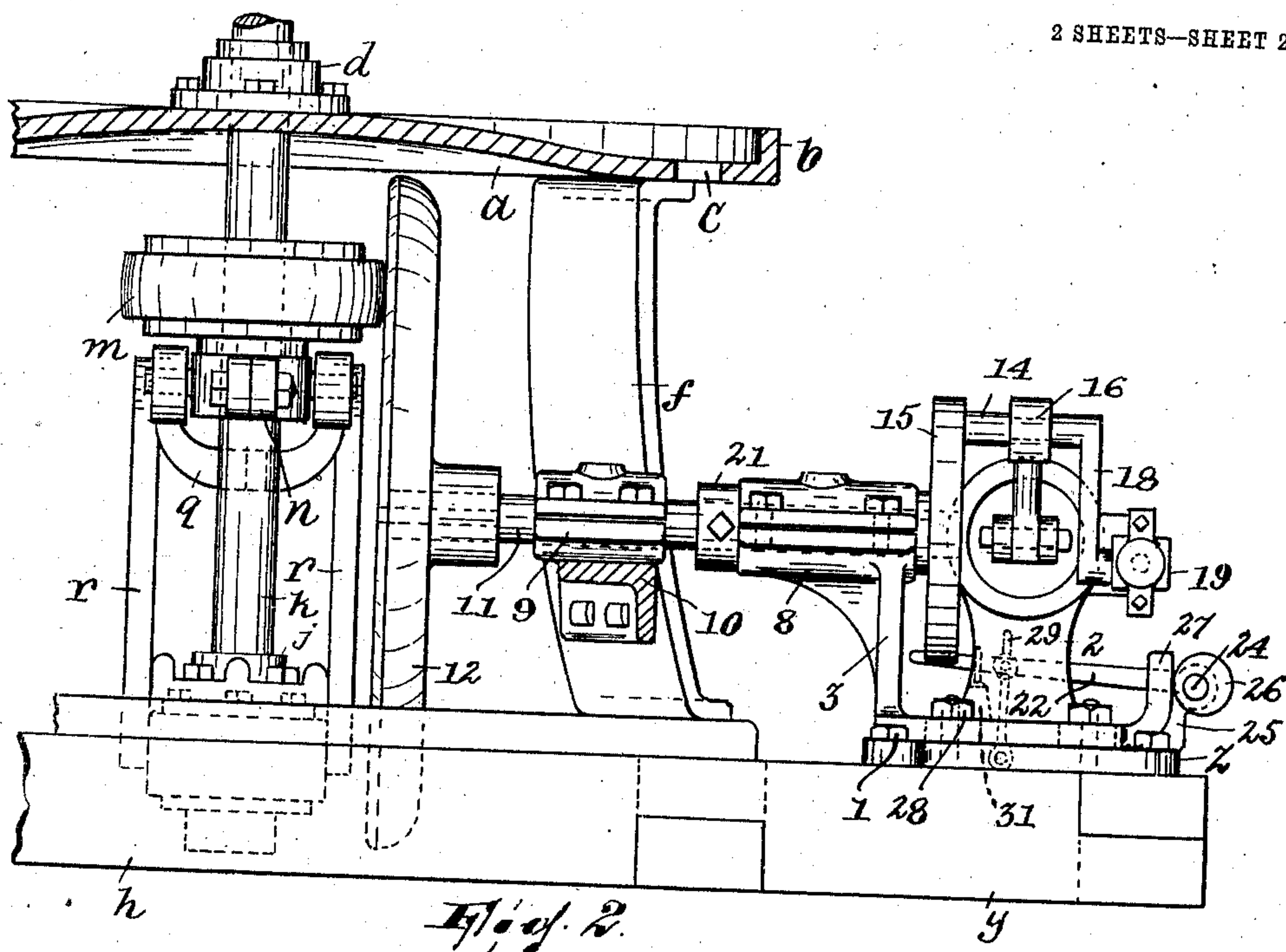
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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GEARING.

No. 846,465.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed May 26, 1906. Serial No. 318,862.

To all whom it may concern:

Be it known that I, ALPHONSE GERBER, a citizen of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Gearing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to hydro-extractors; and it consists in certain improvements in the means for driving the basket of such machines, whereby the speed may be controlled quickly and readily and may be changed from materially high to materially low, according to the use to which the machine is put—*i. e.*, simply as a hydro-extractor or also as an apparatus for washing or weighting silk, under which latter circumstance the basket should rotate slowly in order that the treating liquid will be distributed uniformly through the material. Incidentally said improvements effect an avoidance of undue lost motion between elements in the driving-train, the reduction of vibration to the minimum, and several other advantages, some of which will be made apparent in the following description on a view to the accompanying drawings, wherein—

Figure 1 is a view in front elevation showing the machine partly broken away. Fig. 2 is a view looking from the right of the machine, as shown in Fig. 1, certain parts appearing in section and others being broken away. Fig. 3 is a rear view of the basket-driving means, and Figs. 4 and 5 illustrate details.

In the drawings, *a* is a circular plate of slightly convex form having a vertical circumferential flange *b* and a discharge-outlet *c*. *d* is a central bearing mounted on said circular plate. *e* is a cylindrical shell which seats on the circular plate, fitting within the flange *b*. The foregoing parts are supported by four legs *f*, which rest on an annular base-plate *g*.

h is the bed which may be formed in any suitable manner and supports the base-plate

g. This may be built of cement, or, as shown in the drawings, constructed of heavy mortised beams, or it may have any other form whereby it affords a strong substantial support for the parts it is intended to carry.

On the base-plate *g* rests the ends of the arms of a spider *i*, which carries centrally a step-bearing *j*. The arms *i* are not horizontal but inclined toward the body or bearing portion *j* of the spider, so that said bearing portion is relatively depressed, standing partly below the top surface of the base-plate *g*. In the step-bearing *j* is journaled a shaft *k*, which projects up through the bearing *d* and carries the basket *l*, whose cylindrical wall is perforated in the usual manner.

On the shaft *k* is splined a friction-wheel *m*. This friction-wheel rests on a two-part collar *n*, whose sections are held together removably by bolts *o*. This collar has diametrically opposite trunnions *p*, which are received by the ends of a fork *q*, in turn pivoted in the two members of a stand *r*, itself pivoted in one of the arms of the spider. The fork *q* has its free end grooved, as at *s*, on the side, and in this groove fits one end of a handle *t*, which is bolted to the fork. Said handle carries a block *u*, penetrated by a rod *v*, pivoted in a bracket *w* on the base-plate *g*, and by manipulating a hand-screw *x*, mounted in said block and adapted to take against the rod the handle *t* may be set at any position. In the foregoing means is provided for moving the splined friction-wheel *m* vertically on the shaft *k*.

The bed *h* is extended at the rear, as shown best in Fig. 2, and on such extension *y* thereof rests a plate *z*, which is secured thereto, as by bolts 1. On this plate rests an engine 2 of the reciprocating type, whose frame 3 comprises a cylindrical guide 4 for its cross-head 5. This guide is split, as at 6, and provided with bolts 7 at its outer end, so that lost motion occurring between the cross-head and the cylindrical portion 4 may be taken up from time to time. The frame of the engine also comprises a horizontal bearing 8, in which and a bearing 9, carried by a cross-piece 10, connecting two of the legs *f*, is journaled a horizontal shaft 11. This shaft carries at its inner end a face-plate 12, against which the friction-wheel *m* impinges.

The piston-rod 13 is connected with a crank 14 on a crank-disk 15 on the shaft 11 by the connecting-rod 16, said crank being formed with an extension 18, to whose crank-pin 19, disposed eccentrically of the shaft 11, the link-motion 20 is connected.

The crank-plate 15 and a collar 21 on shaft 11 confine it against movement longitudinally in the bearing 8. In order to insure at all times a positive engagement between the friction-wheel and face-plate, the engine is arranged to have some slight movement on its base *z* toward shaft *k*, a lever 22 extending from a shaft 24, journaled in brackets 25, and also carrying cams 26, engaging lugs 27 on the frame of the engine, being provided for this purpose. This lever may be secured where adjusted by a means similar to that shown in Fig. 4 for securing lever 9, 28 being a block carried by the lever and penetrated by a rod 29, pivoted in plate *z*, and 30 a hand-screw mounted in the block for clamping the block at any position on the rod. Bolts 31 are provided for securing the engine to its base *z*, but they are not adjusted so tightly that the movement of the engine toward the shaft *k* under the action of the lever 22, as above described, is prevented. By this means under all conditions the friction-wheel and face-plate are kept in constant contact with each other, so that lost motion between them is reduced to the minimum. A weight is hung on the lever, the action of which is to cause the parts *m* and 12 to adjust themselves nicely to each other before the securing means shown in Fig. 5 is made use of to fix them where so adjusted.

The driving arrangement herein described makes it possible to impel the basket not only at materially high and materially low speeds but at any speed between these according to the position of the friction-wheel *m* relatively to the center of the face-plate 12. On account of the spider being depressed in its bearing portion *j* the friction-wheel may be, moreover, moved down below the center of the plate 11 while the latter is rotating, so as to cause said face-plate to act as a brake to stop the basket.

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

1. The combination of the frame, a driven shaft journaled therein, a driving-shaft, power-transmitting devices carried the one by one shaft and the other by the other shaft, the one on the driven shaft being splined thereon, means for shifting said last-named device lengthwise of its shaft comprising a lever and a link pivotally connected with the frame and affording a fulcrum for the lever, and means for securing said lever

in any position to which it is movable on its fulcrum, substantially as described.

2. The combination of the frame, a vertical driven shaft journaled in the frame, a friction-wheel splined on the shaft, a collar surrounding the shaft and supporting said friction-wheel, said collar having trunnions, a stand pivoted in the frame, a lever engaged with said trunnions at one end and pivoted in said stand, means for securing the lever at any position to which it is adjusted, a face-plate frictionally engaging the periphery of the friction-wheel, and means for rotating the face-plate, substantially as described.

3. The combination of a suitable bed, a frame comprising a spider having its end portions resting on said bed and its body portion unsustained, a vertical driven shaft stepped in the body portion of said spider, a friction-wheel splined on said shaft, a face-plate frictionally engaging the periphery of the friction-wheel, means for rotating the face-plate, and means for moving the friction-wheel longitudinally of the shaft, substantially as described.

4. The combination of a suitable bed, a frame comprising a spider having its end portions resting on said bed and its body portion depressed, a vertical driven shaft stepped in the body portion of said spider, a friction-wheel splined on said shaft, a face-plate frictionally engaging the periphery of the friction-wheel and having its center above said body portion of the spider, means for rotating the face-plate, and means for moving the friction-wheel longitudinally of the shaft, said friction-wheel being movable below the center of the face-plate substantially to the body portion of the spider, substantially as described.

5. The combination of a bed, a suitable frame resting thereon, a driven shaft journaled in said frame, a friction-wheel splined on said shaft, means for moving said friction-wheel longitudinally of the shaft, an engine arranged on said bed and movable toward said shaft, a driving-shaft journaled in the engine-frame and disposed at right angles to the driven shaft, a face-plate carried by the driving-shaft and engaging said friction-wheel, and means acting to normally move the engine, the driving-shaft and the face-plate toward the driven shaft, substantially as described.

6. The combination of a bed, a suitable frame resting thereon, a driven shaft journaled in said frame, a friction-wheel splined on said shaft, means for moving said wheel longitudinally of the shaft, an engine arranged on said bed and movable toward said shaft, a driving-shaft arranged at right angles to the driven shaft and journaled in the engine-frame, a face-plate carried by the driving-

shaft and engaging said friction-wheel, a
cam-shaft having its cams engaging the en-
gine-frame, and means for causing said cam-
shaft to rotate and thus cause its cams to
5 move the engine-frame, substantially as de-
scribed.

In testimony that I claim the foregoing I

have hereunto set my hand this 21st day of
May, 1906.

ALPHONSE GERBER.

Witnesses:

JOHN W. STEWARD,
H. M. QUICK.