

No. 869,782.

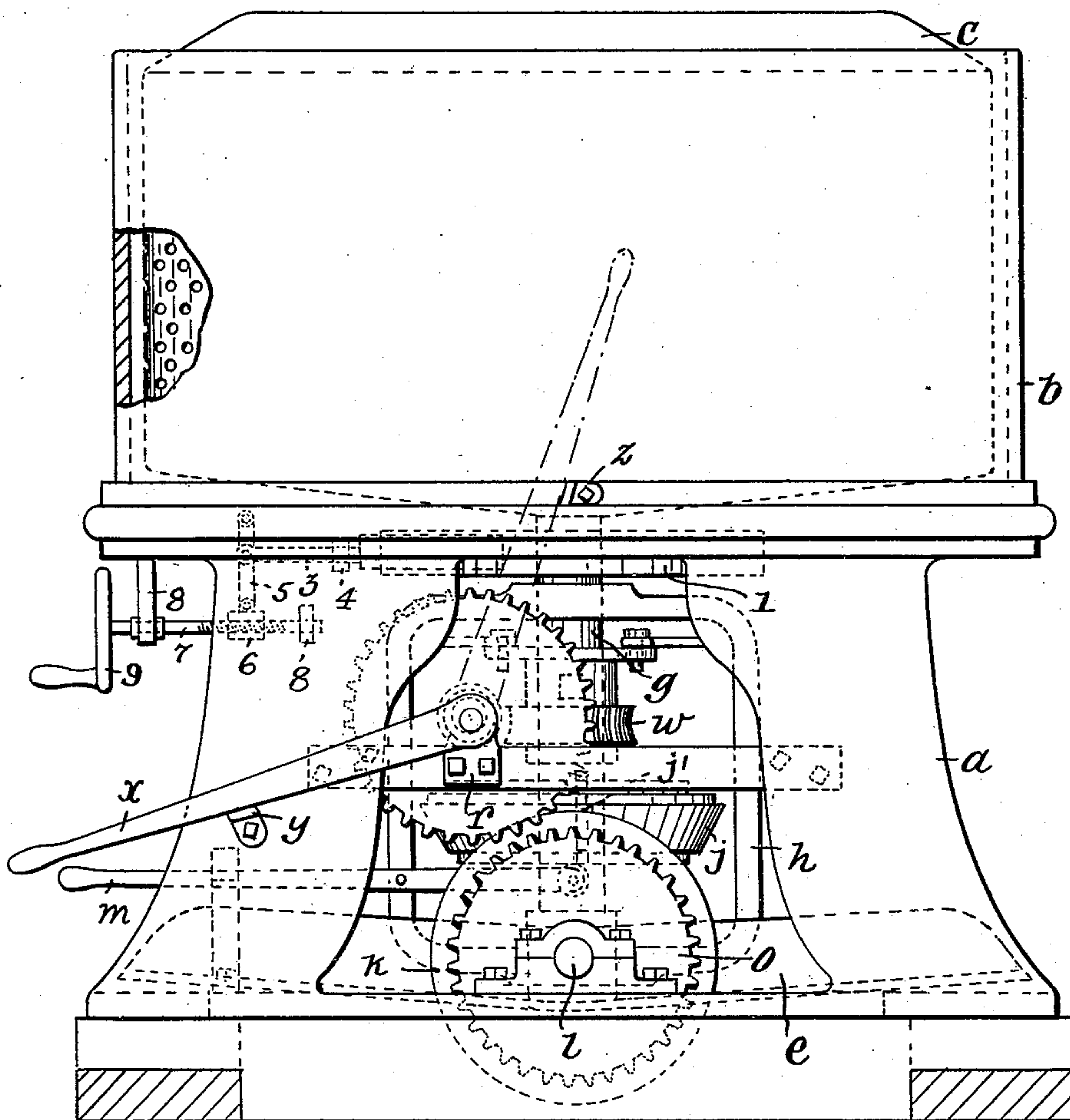
PATENTED OCT. 29, 1907.

H. HOTT.

SPEED CHANGING MECHANISM FOR HYDRO EXTRACTORS.

APPLIOATION FILED APR. 11, 1908.

2 SHEETS—SHEET 1.



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WITNESSES:

INVENTOR

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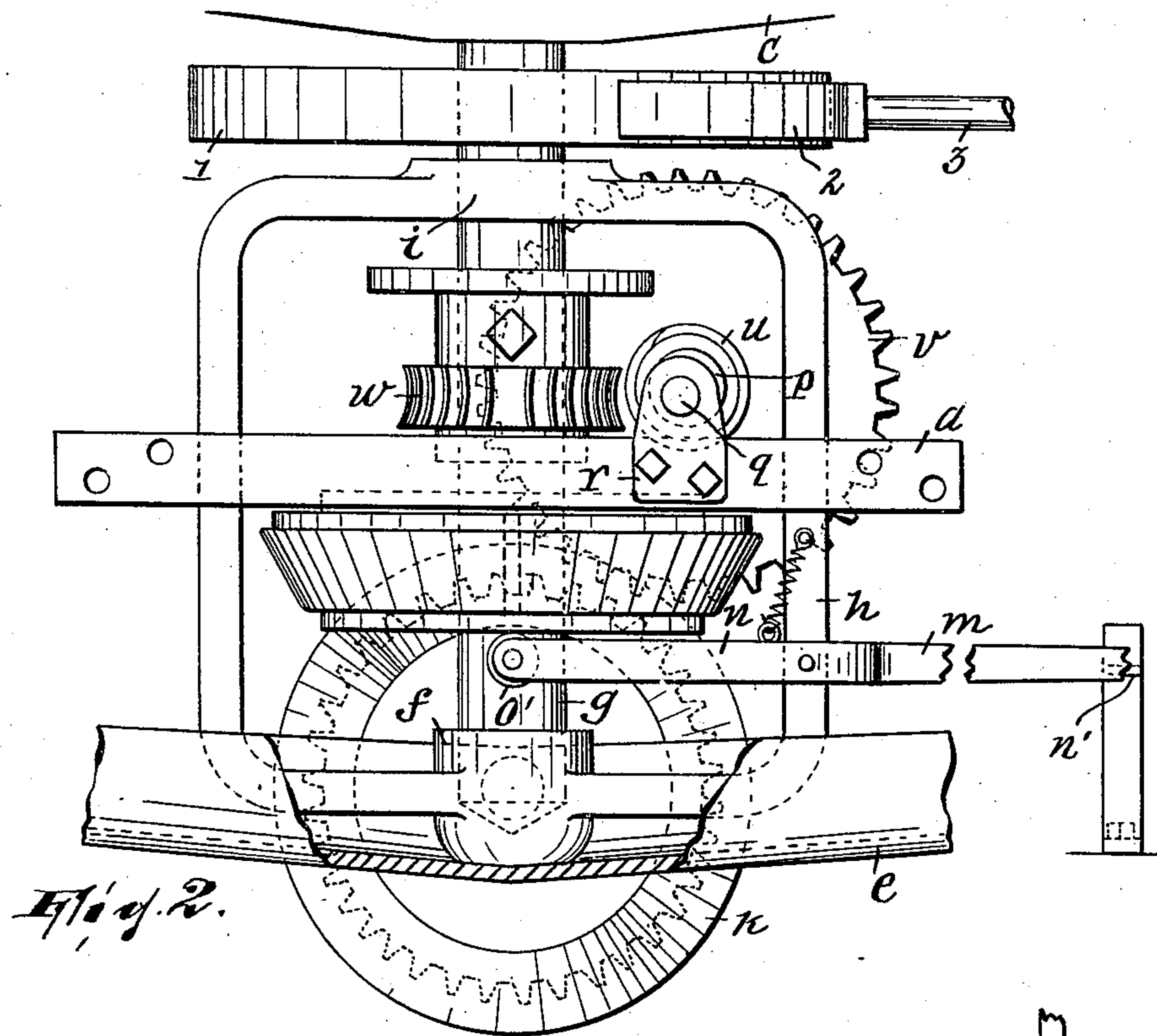


Fig. 2.

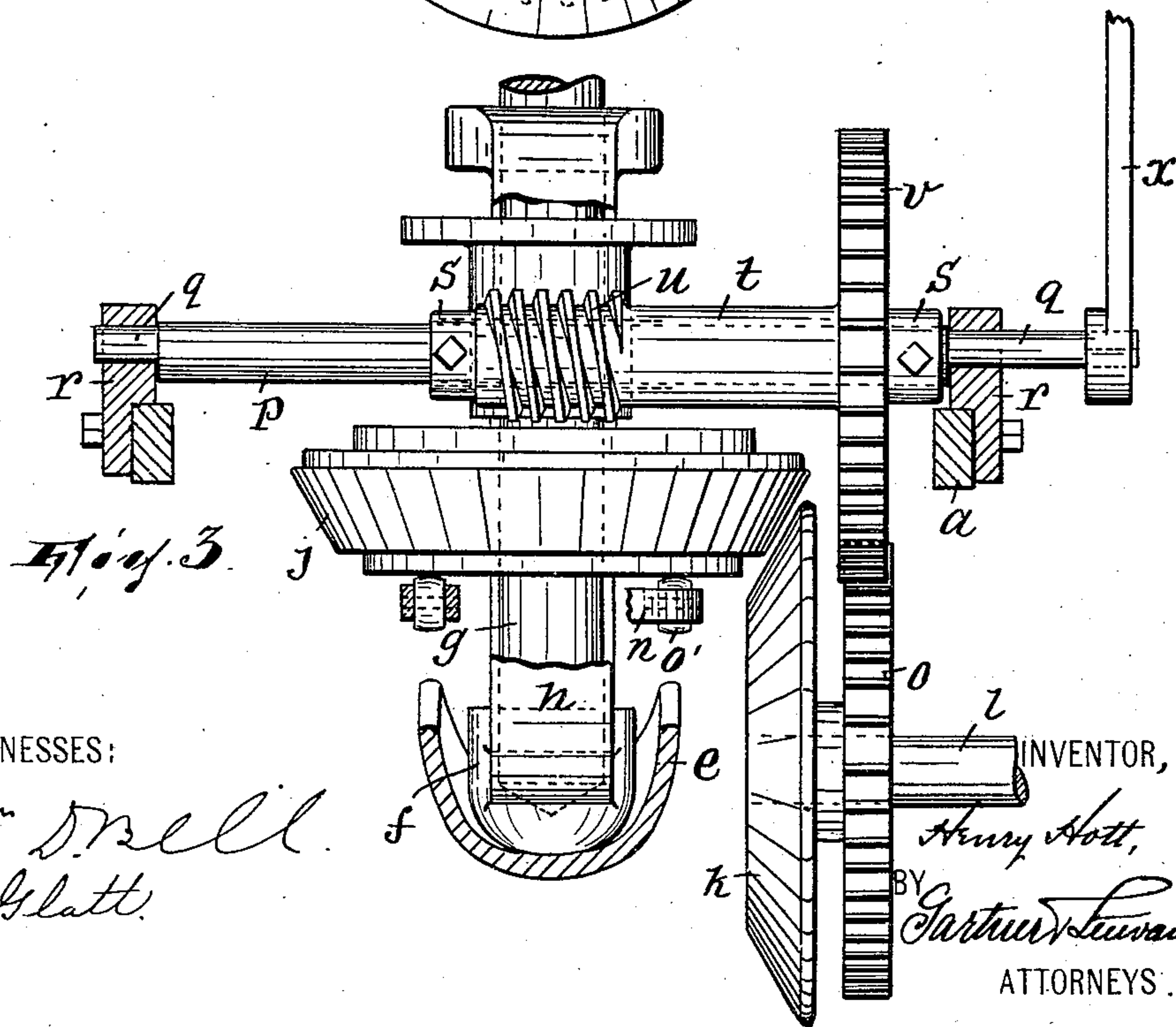


Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY HOTT, OF PATERSON, NEW JERSEY, ASSIGNOR TO THE AUGER & SIMON SILK DYEING COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SPEED-CHANGING MECHANISM FOR HYDRO-EXTRACTORS.

No. 869,782.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed April 11, 1906. Serial No. 311,108.

To all whom it may concern:

Be it known that I, HENRY HOTT, a citizen of the United States, residing in Paterson, county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Speed-Changing Mechanism for Hydro-Extractors; 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.

The object of this invention is to so construct the power transmitting mechanism between the drive shaft and basket shaft of a hydro extractor that the speed of the basket shaft may be quickly and conveniently altered from one materially high to one materially low, and so make the machine available not only for "drying" or extracting but for use in charging the materials with a suitable liquid or solution. For instance, a great saving in time, labor and expense may be effected in a dyeing establishment if the machine may be also used in the process of weighting the silk or other material being treated, which process requires passing the solution containing a weighting substance through the silk; while a rotary action of the basket at this time is found desirable, still the speed must be relatively slow, else the solution will impregnate the materials unevenly, owing to the centrifugal action. The extracting or high speed varies from 600 to 1500 revolutions per minute, while the slow speed should approximate only 15 or less. It is practically impossible to provide an engine or motor which is capable of running the basket, interchangeably, at speeds having such a disparity between them. Hence the necessity for a speed changing mechanism interposed between the drive shaft and basket shaft.

This invention will be found fully illustrated in the accompanying drawings, wherein,

Figure 1 is a view in side elevation of a hydro-extractor of well known type provided with the speed-changing mechanism; Fig. 2 is a view in rear elevation, partly in section, of so much of the machine as comprises the improvement; and, Fig. 3 is a view looking at the parts shown in Fig. 2 from the right of said figure.

In the drawings, *a* is the pedestal or base of the machine; *d* the circular shell or casing; *c* the basket, the same being perforated in the usual manner; *e* a trough-shaped cradle supported in the base *a* at both ends; *f* a step-bearing for the shaft *g* which carries the basket *c*; *h* a rectangular frame carried by the step bearing and providing a bearing at *i* for the shaft *g*; *j* a friction wheel on shaft *g* and *k* another friction wheel coactive with

friction wheel *j* and mounted on the engine shaft *l*, all of which are or may be the same as in hydro extractors of the type shown in the drawings.

In the present instance, the friction wheel *j* is not fixed against movement lengthwise of shaft *g*, but is splined thereon as at *j'*; when the machine is employed as a hydro-extractor, the friction wheel *j* is down and operatively engages friction wheel *k*, whereby the basket may be driven from the engine shaft *l* at the maximum speed, but when the machine is employed in weighting, etc., a lever *m* having a fork *n* carrying rollers *o'* adapted to take against the under face of the friction wheel *j* may be pressed upon at its outer end to raise the friction wheel *j* out of contact with friction wheel *k*, said lever being held in this position by a suitable stop *n'*. The basket shaft is thus cut off from the engine shaft *l*. In order to reconnect the basket shaft *g* with the engine shaft for slow speed, the following mechanism is employed: On the engine shaft *l* is a gear wheel *o*. *p* is a shaft having eccentric trunnions *q* journaled in bearings *r* suitably mounted in the base *a*, and on this shaft, between collars *s*, is journaled a sleeve *t* formed with a low pitched worm *u* and a gear *v*. On shaft *g* is a worm wheel *w*. The arrangement of shaft *g* relatively to worm wheel *w* and gear *o* is such that upon turning said shaft on its trunnions *q* gear wheel *v* and worm *u* will either engage or disengage with gear wheel *o* and worm wheel *w*, respectively. *x* is a lever secured to one of the trunnions *q*. When this as a handle is engaged with a stop *y* on the base *a*, the parts *v* and *u* are disengaged from the parts *o* and *w*; when the handle is against a stop *z*, *i. e.* in its dotted line position in Fig. 1, said parts *u* and *o* and *w* mesh with each other. By this means, after engaging or disengaging friction wheels *j* and *k* with respect to each other, the power from shaft *l* to shaft *g* may be either cut off or established by way of the parts *o*, *u*, *t*, *v* and *o*, so as to change the speed.

On reference to Fig. 1 it will be seen that the "high" part of the eccentric shaft *p* is so arranged with reference to the lever *x* as to be between the limits of movement of said lever marked by its positions when against the stops *y* and *z*; hence, gravity acting on the shaft and the rotary members which it carries tends to maintain the lever against either stop until it is manually moved toward the other, past the center of gravity.

The braking means shown in Figs. 1 and 2, comprises a brake wheel 1 on shaft *g*, a brake shoe 2 engageable therewith, a brake rod 3 carrying said shoe and movable in guides 4, a link 5 pivoted in the base *a* and pivotally connected to the rod 3, a nut 6 pivotally connected with the link and arranged on a screw 7 journaled in bearings 8 and a hand wheel 9 on said screw.

Having thus fully described my invention, what I

claim and desire to secure by Letters Patent of the United States is:

5 The combination of the base, the driven shaft, the drive shaft, power-transmitting devices arranged one on the drive shaft and the other on the driven shaft, an eccentrically mounted rotary part, an intermediate power-transmitting device journaled on said rotary part and adapted to operatively connect said devices, a radial operating part rotative with said rotary part, and spaced stops located

one on each side, and each adapted to limit the movement, 10 of said operating part, said eccentric part having its high part located between its limits of movement with the operating part, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 7th day of April 1906.

HENRY HOTT.

Witnesses:

JOHN W. STEWARD,

WM. D. BELL.