

(No Model.)

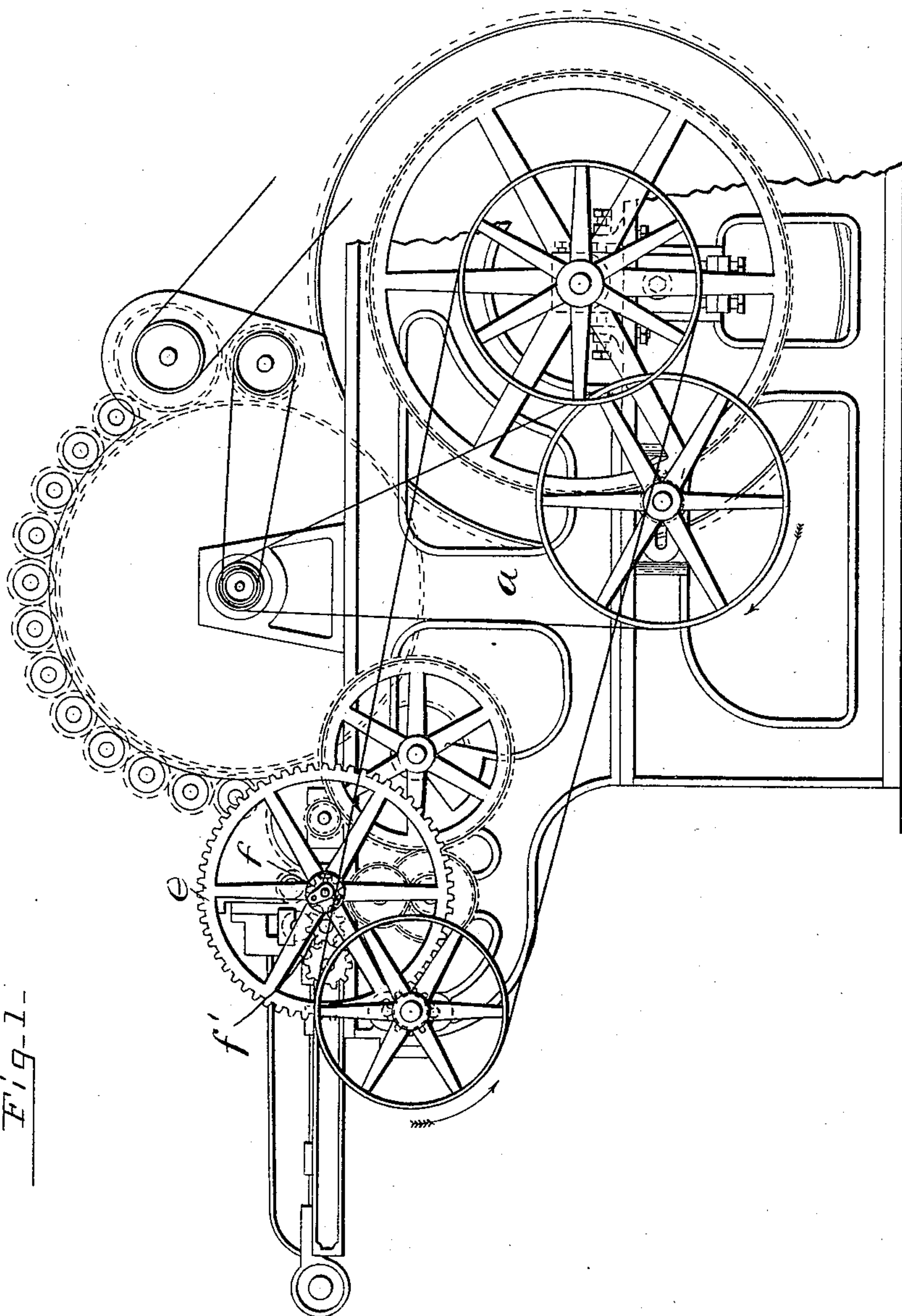
3 Sheets—Sheet 1.

J. INGRAM.

STOP MOTION FOR THE FEED ROLLS OF GARNETT MACHINES.

No. 451,234.

Patented Apr. 28, 1891.



WITNESSES=
Clarence E. Appleton
David T. H. Ford

INVENTOR=
James Ingram
PER *Wright, Brown & Crossley*
ATTY-S-

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3 Sheets—Sheet 2.

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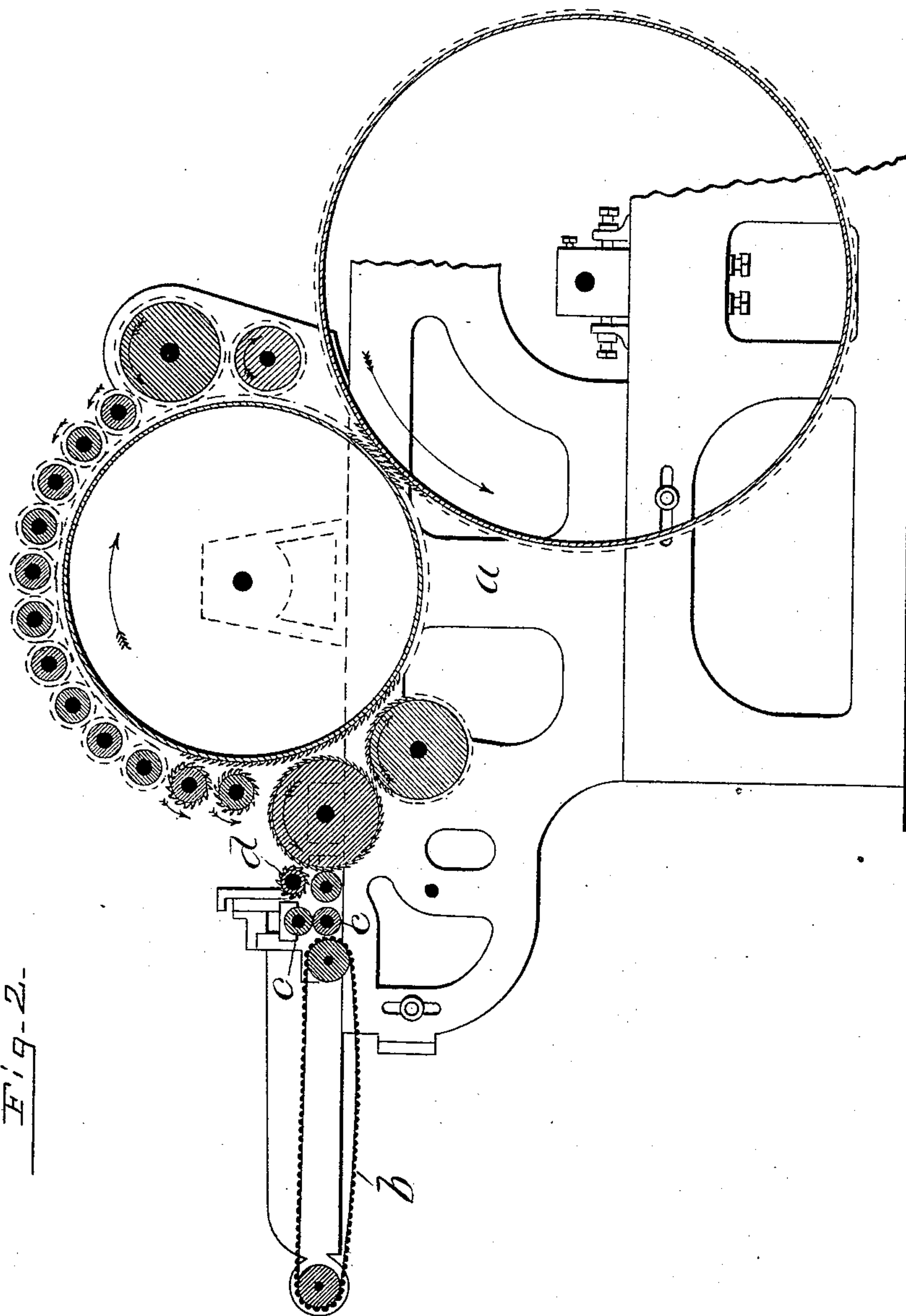


Fig. 2.

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(No Model.)

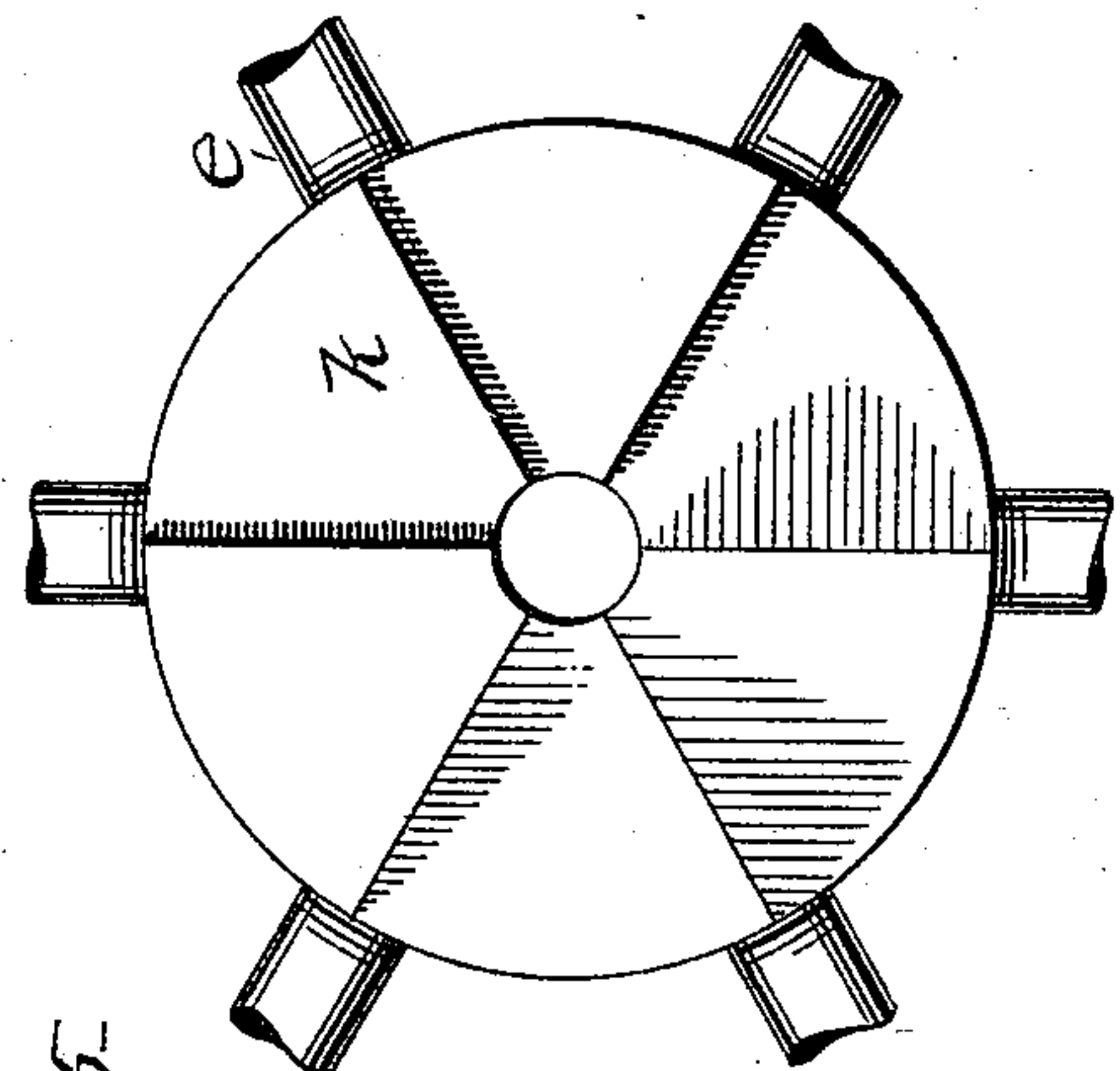
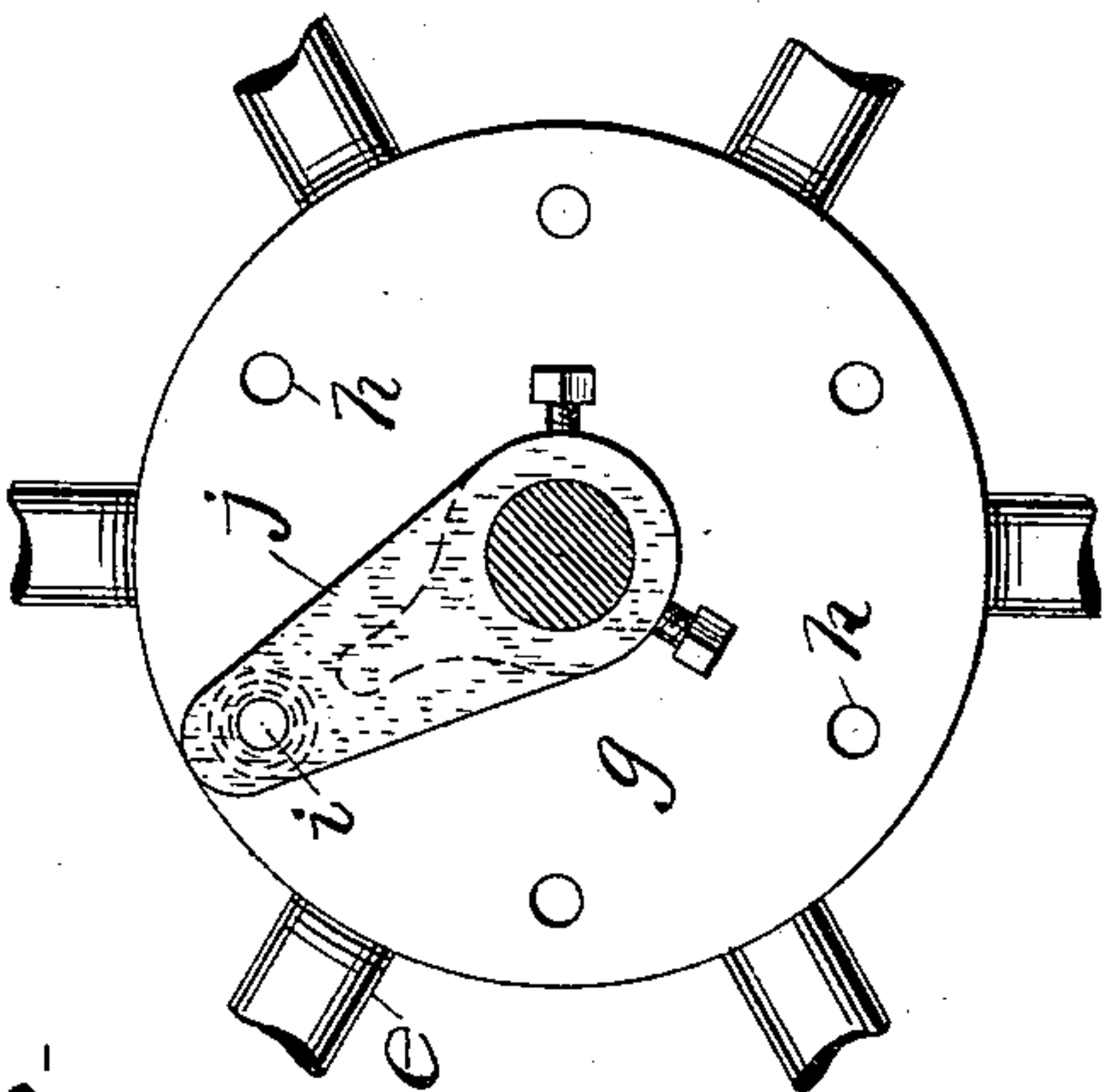
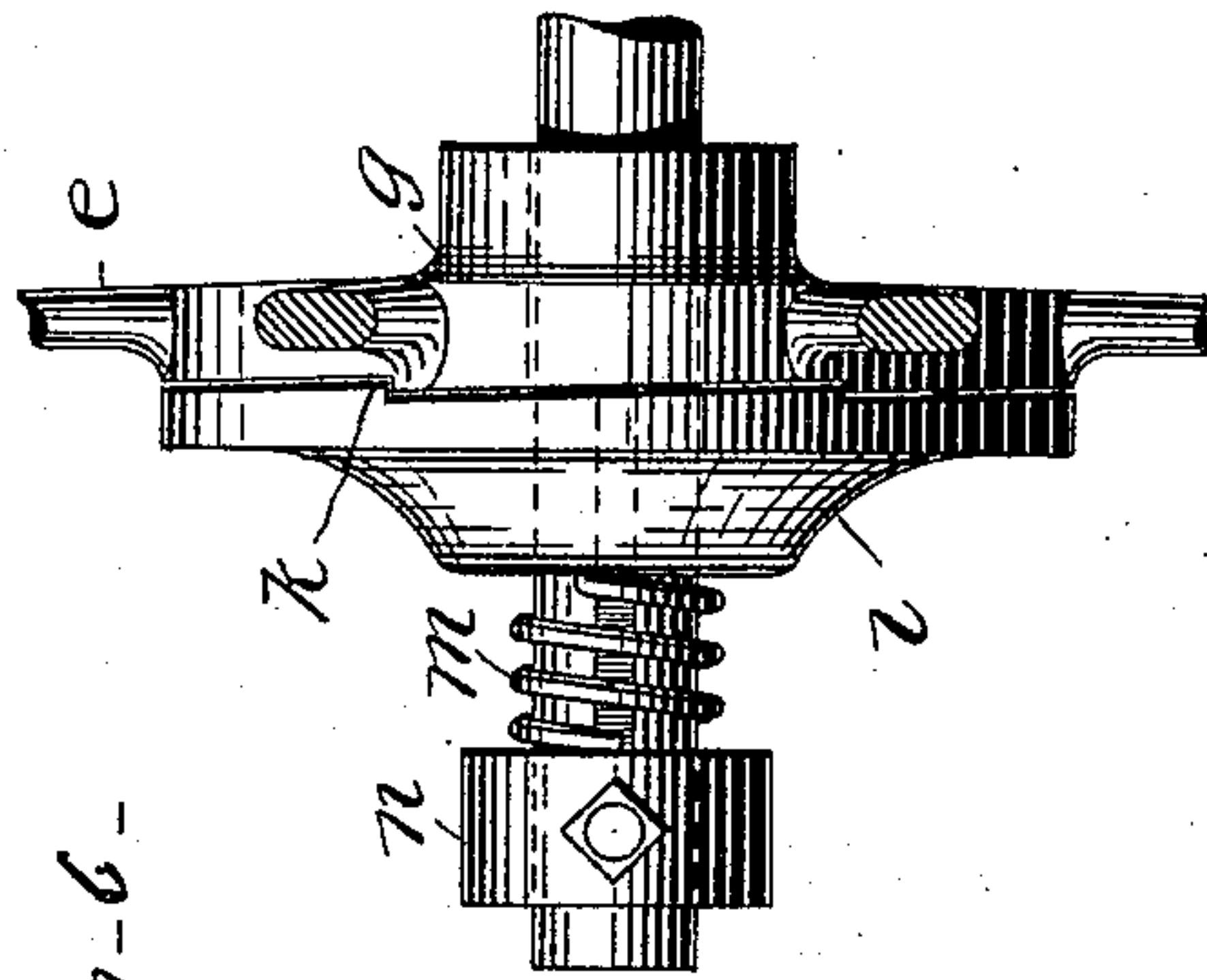
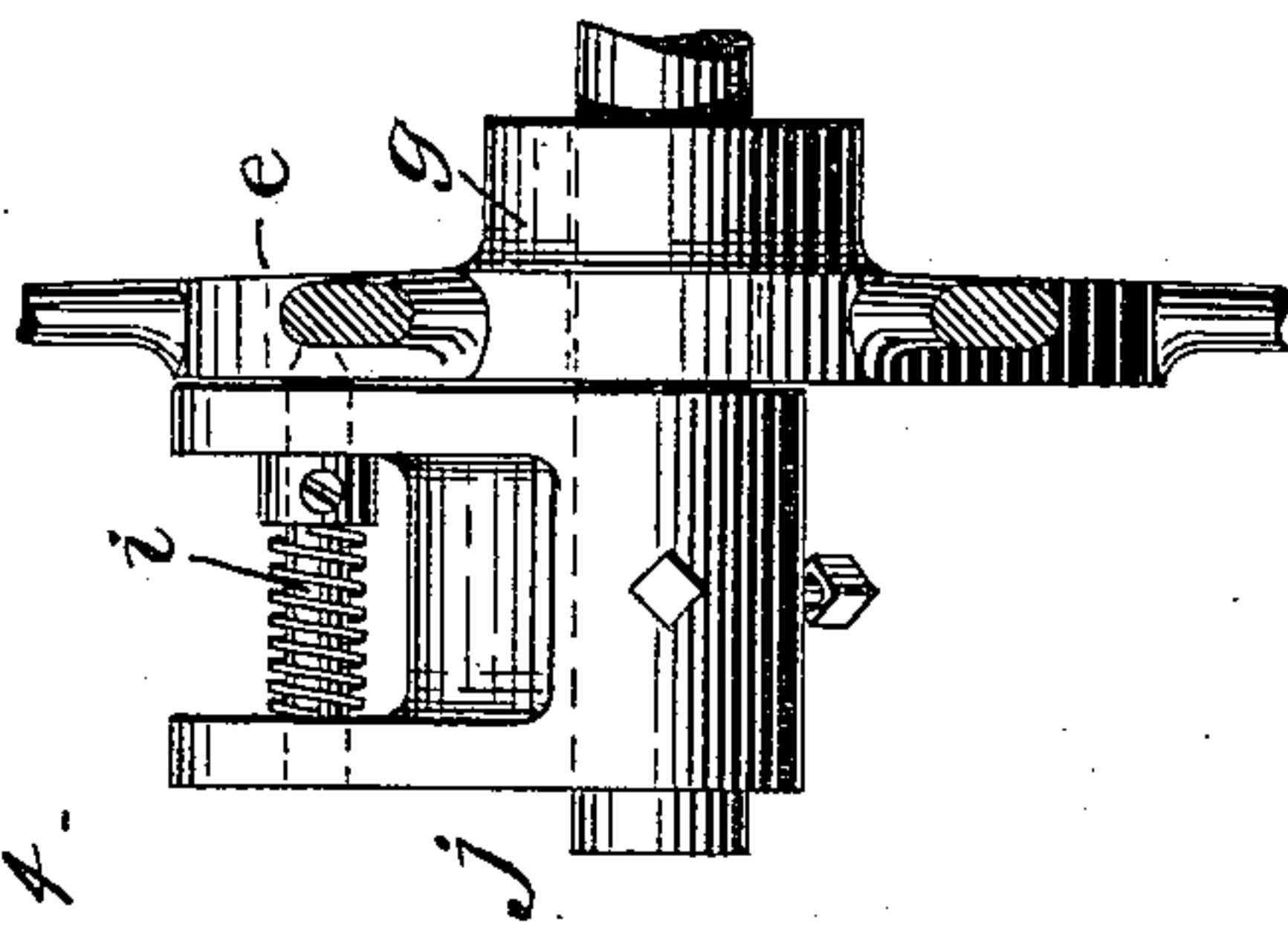
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UNITED STATES PATENT OFFICE.

JAMES INGRAM, OF LAWRENCE, MASSACHUSETTS.

STOP-MOTION FOR THE FEED-ROLLS OF GARNETT MACHINES.

SPECIFICATION forming part of Letters Patent No. 451,234, dated April 28, 1891.

Application filed September 6, 1890. Serial No. 364,184. (No model.)

To all whom it may concern:

Be it known that I, JAMES INGRAM, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Stop-Motions for the Feed-Rolls of Garnett Machines, of which the following is a specification.

My invention has relation to "Garnett" machines, so called, which machines are adapted to comb out twisted or tangled fibers or waste, whether from cards, mules, spinning-frames, or other sources in the manufacture of textile fabrics. It not infrequently happens that the material fed to these machines contains nails, screws, nuts, and other metallic articles, and that the presence of these things in the stock is not discovered until after they have passed into the machine and wrought series damage upon the teeth of the cylinders and other parts, the repairing of which damage is extremely expensive.

It is the object of my invention to provide such improvements as will avoid the mishaps mentioned, and at the same time prevent an unduly uneven feed, or the feeding of large knotted bunches to the cylinders, which would result in imperfect work, if not in mischief to the parts of the machine.

To the foregoing ends my invention consists in equipping the means for operating the feed-rolls with a "give-away" or stop-motion of such construction that when a hard or unyielding substance, or a mass of stock of too great bulk or density, arrives at the feed-rolls and passes between the same the operation of the feed-rolls will cease, until the mischief-making substance is removed from the bite of the feed-rolls.

The improvements comprise frictional means for connecting the feed-roll driving-gear with said rolls, so that when undue strain is brought upon the driving-gear, as when a nail passes into the bite of the feed-rolls, the frictional connection between the driving-gear and the feed-rolls will give way and the former will operate without operating the latter.

Reference is to be had to the annexed drawings and to the letters of reference marked thereon, forming a part of this specification, the same letters designating the same parts

or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a side elevation of so much of a Garnett machine as it is necessary to show in order to illustrate my invention. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a side view of the hub, a portion of the spokes, and the shaft of the feed-roll operating-gear, showing my improvements employed in connection therewith. Fig. 4 is an end view of the parts shown in Fig. 3. Fig. 5 is a view similar to Fig. 3, showing a modification. Fig. 6 is an end view of the hub of the gear shown in Fig. 5.

In the drawings, *a* represents the frame of the machine.

b is the feed-apron.

c c are the feed-rolls; *d*, the lick-in, and *e* the gear which, through the medium of the pinions *f f'*, operates the feed-rolls *c c*.

The gear-wheel *e* is a driven gear, being operated by another gear (not shown) connected with the machine or by other suitable means, and is arranged to turn on its shaft without operating the same unless clutched or locked thereto by frictional or other yielding means, which I will now proceed to describe.

The face of the hub *g* of the driving-gear *e* is provided with numerous recesses or holes *h*, adapted to receive the end of a spring-pressed stud or pin *i*, adapted to move longitudinally in bearings formed in a hub *j*, rigidly secured to the shaft of the feed-roll alongside of the hub *g* of the driving-gear. Should a metallic substance or an unduly large knot or bunch of material pass into the bite of the feed-rolls, so as to cause undue strain on the driving-gear, the inclined or rounded end of the pin will cause it to slip out of the recesses or holes *h* and ride on the face of the hub of the gear, the latter turning independently of and without operating the former.

Instead of employing the hub *j* and spring-pressed pin *i*, I may corrugate the face of the hub *g* of the driving-gear, or provide it with numerous inclined faces *k*, as shown in Figs. 5 and 6, constructing the adjacent face of the hub *l*, splined on the shaft of the feed-roll in a similar manner, and hold said hub in frictional contact with the hub of the driving-wheel by means of a spring *m*, interposed be-

tween said hub, and a collar *n*, rigidly secured to the end of the shaft.

Other means for clutching or locking the driving-gear with the feed-rolls may be provided, it being necessary only that the connection should be sufficient to secure the driving of the feed-rolls only when a regular amount of material is fed therethrough and to yield when undue strain is brought thereon.

While the present improvements are particularly designed for use on Garnett machines, it is obvious that they may be applied to feed-rolls of other machines, such as rag-pickers, &c., and I do not therefore limit myself to the use of the improvements in connection with the Garnett machine.

Having thus explained the nature of my invention and described a way of constructing and using the same, I declare that what I claim is—

1. The combination, with the feed-rolls, of

the driving-gear arranged to turn on one of the rolls independently thereof, and a hub fixedly secured to the feed-roll and having a yielding clutch connection with the driving-gear, as set forth. 25

2. The combination, with the feed-rolls, of the gear on one of the feed-rolls, adapted to turn loosely thereon, the hub of the gear being provided with holes or recesses, and a hub rigidly secured to said feed-roll and provided with a spring-pressed pin adapted to enter said holes or recesses, as set forth. 30

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 28th day of July, A. D. 1890. 35

JAMES INGRAM.

Witnesses:

ARTHUR W. CROSSLEY,
A. D. HARRISON.