

F. HANSON.
Wood-Turning Machine.
No. 214,652. Patented April 22, 1879.

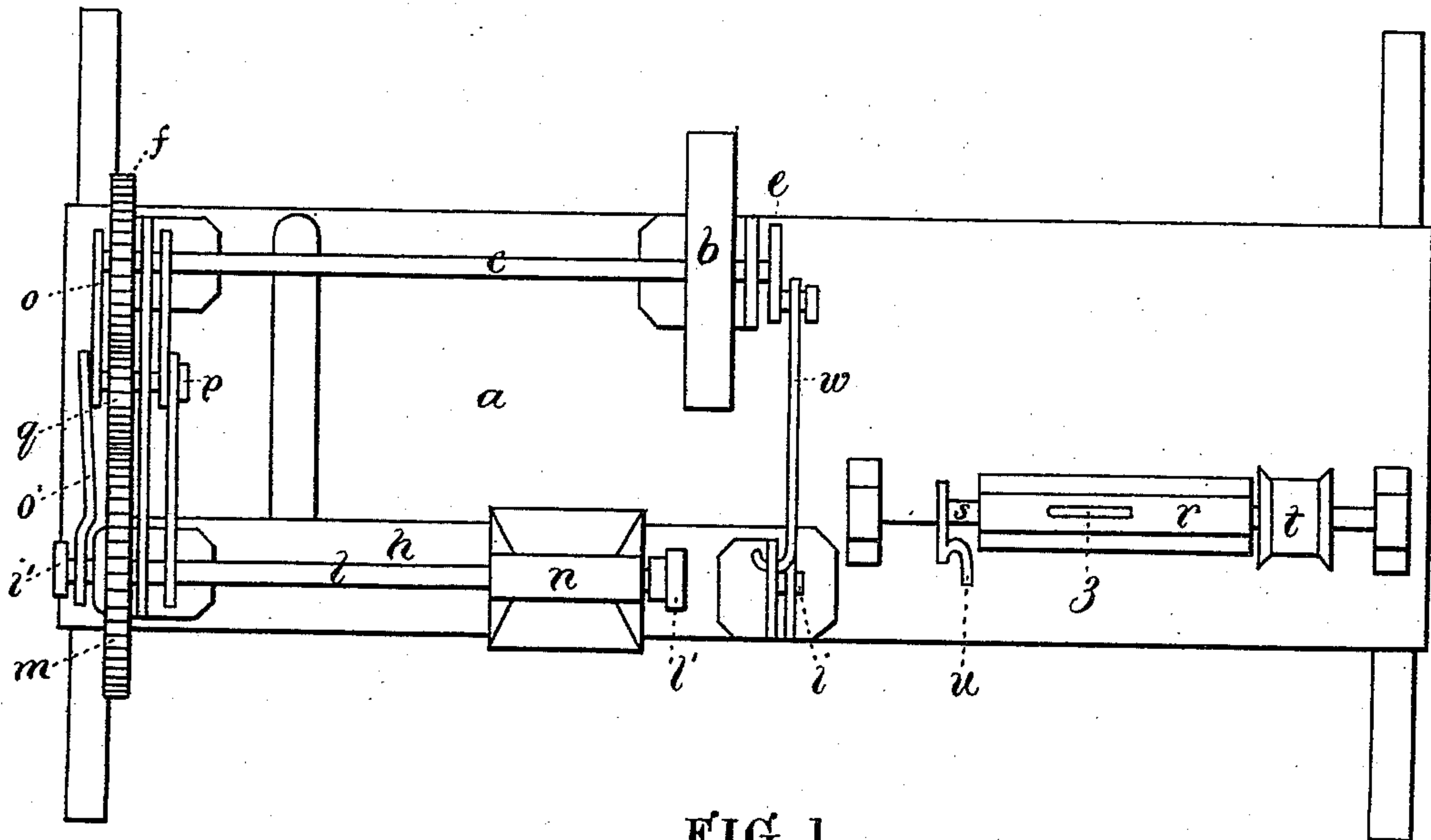


FIG. 1.

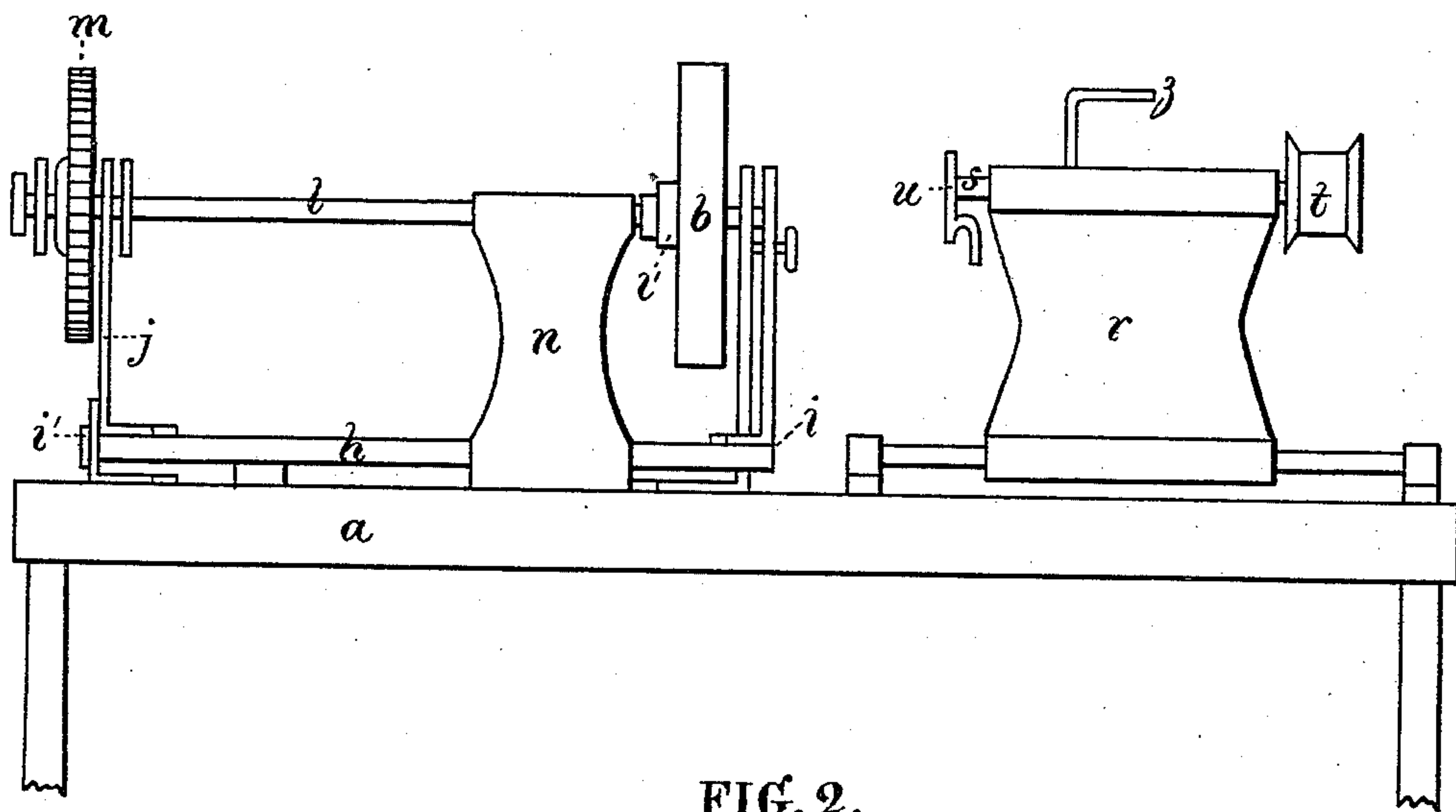


FIG. 2.

WITNESSES:

Chas. H. Kimball.

H. G. Briggs

INVENTOR:

Freeman Hanson

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William Henry Clifford

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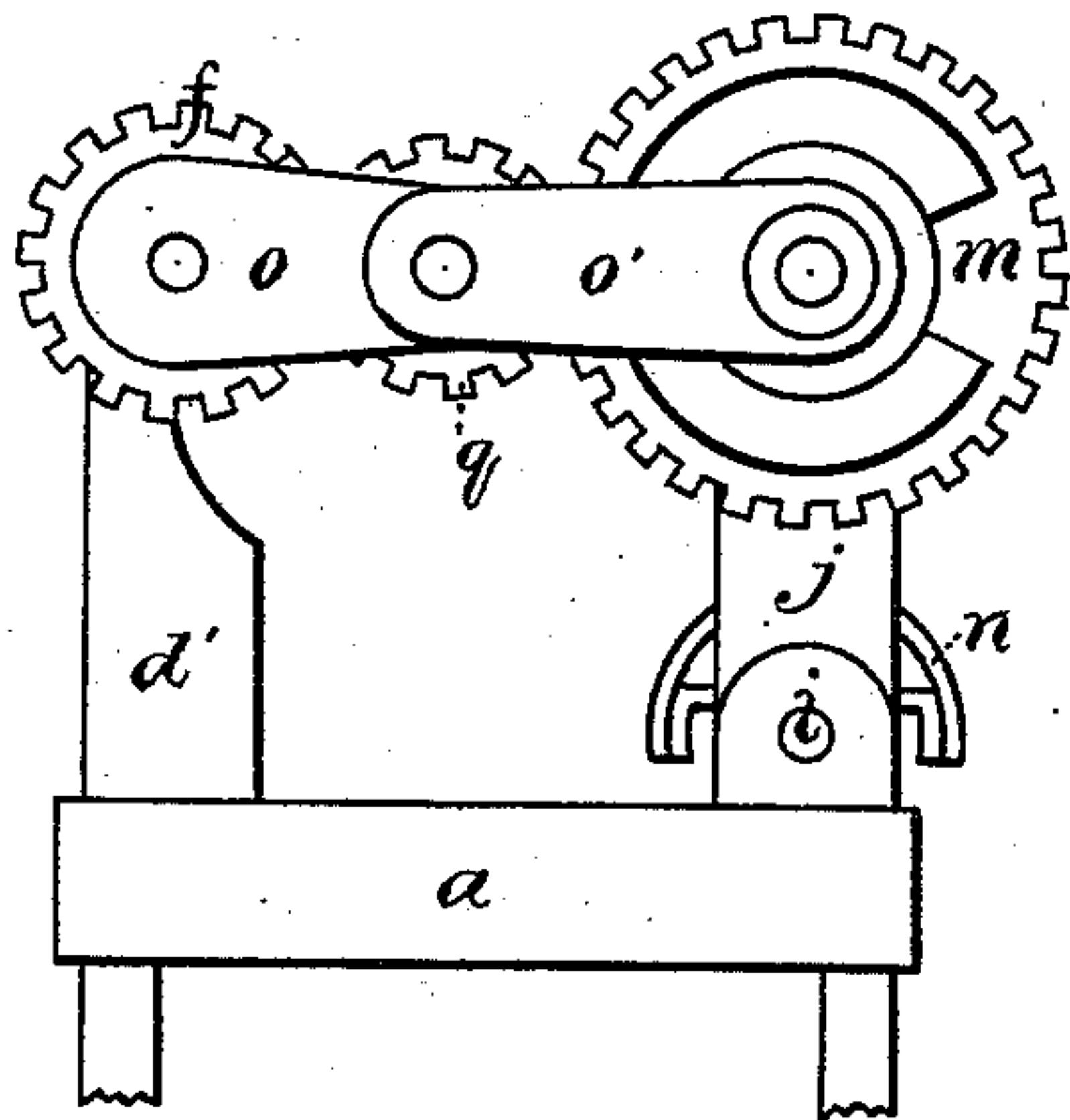


FIG. 3.

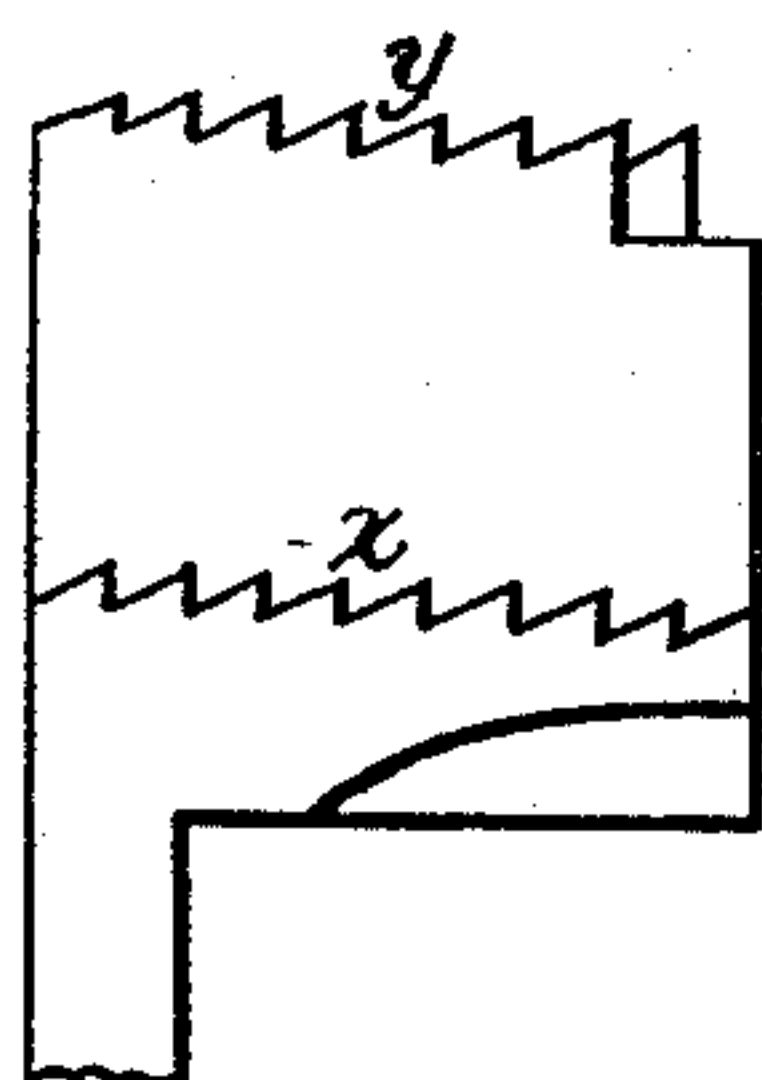


FIG. 6.

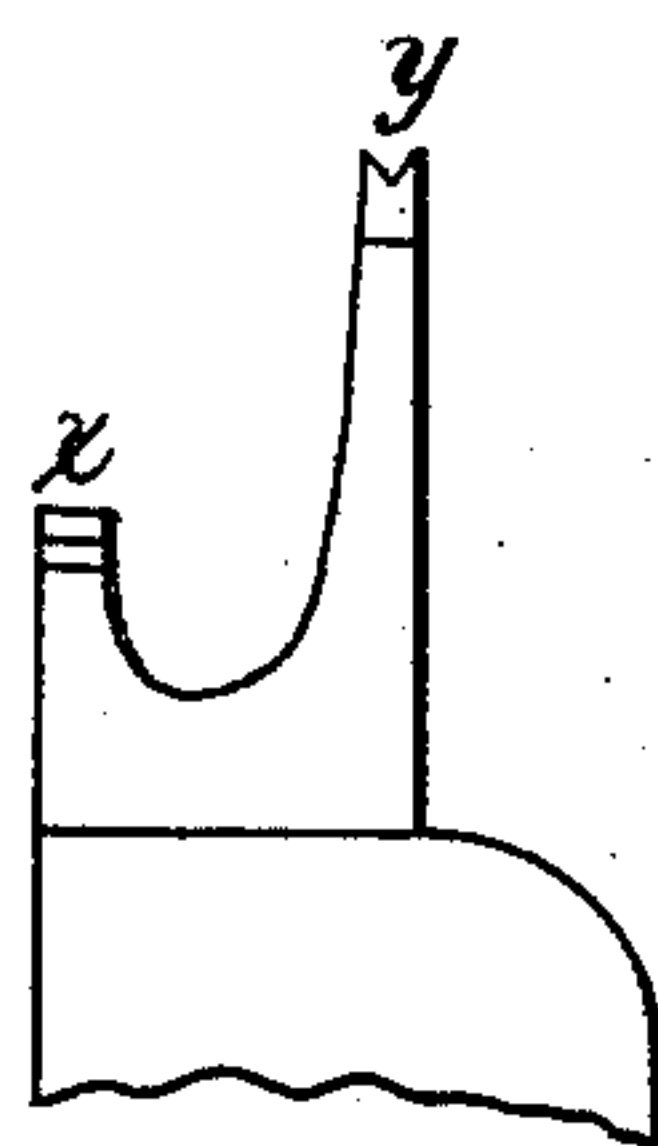


FIG. 7.

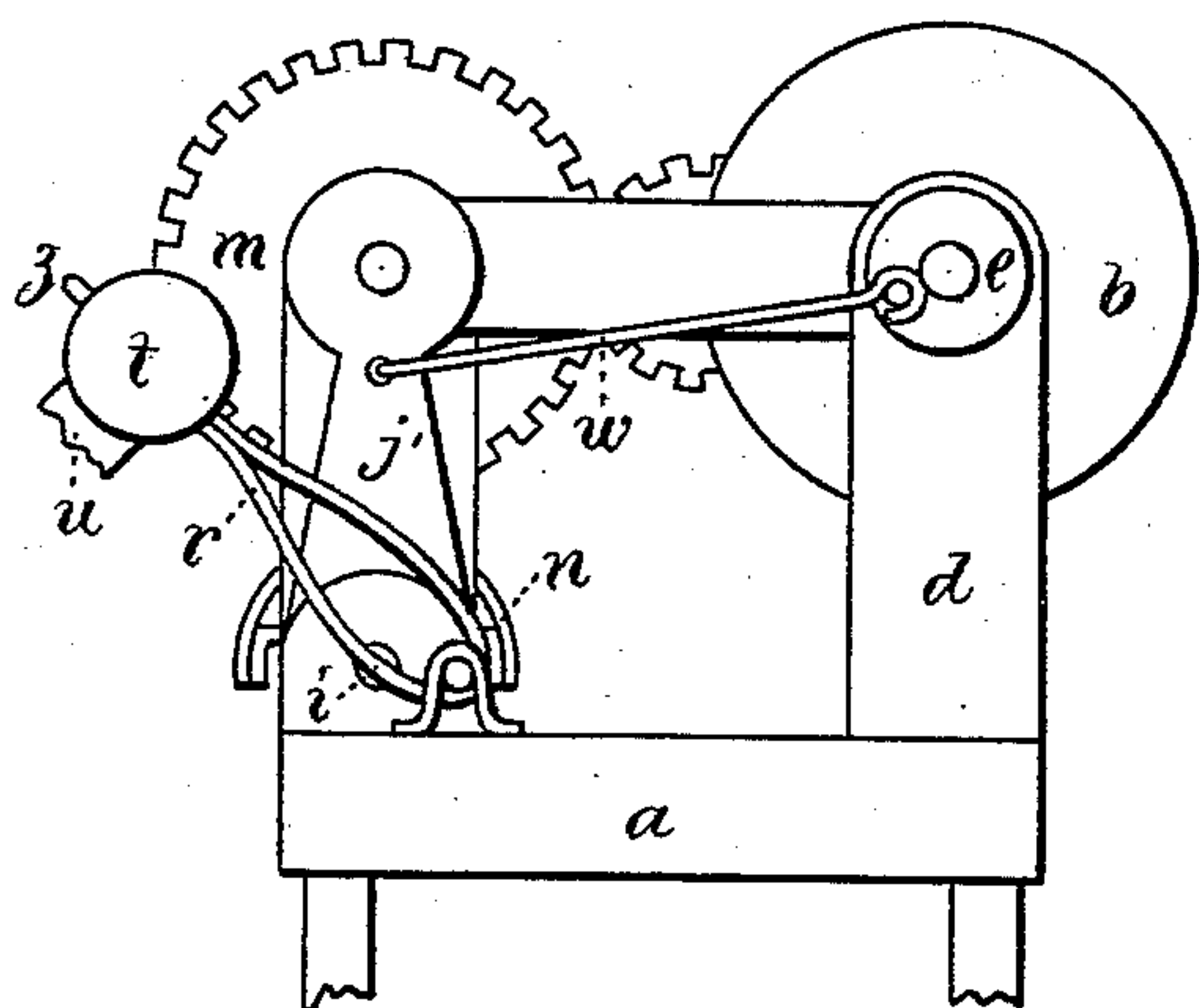


FIG. 4.

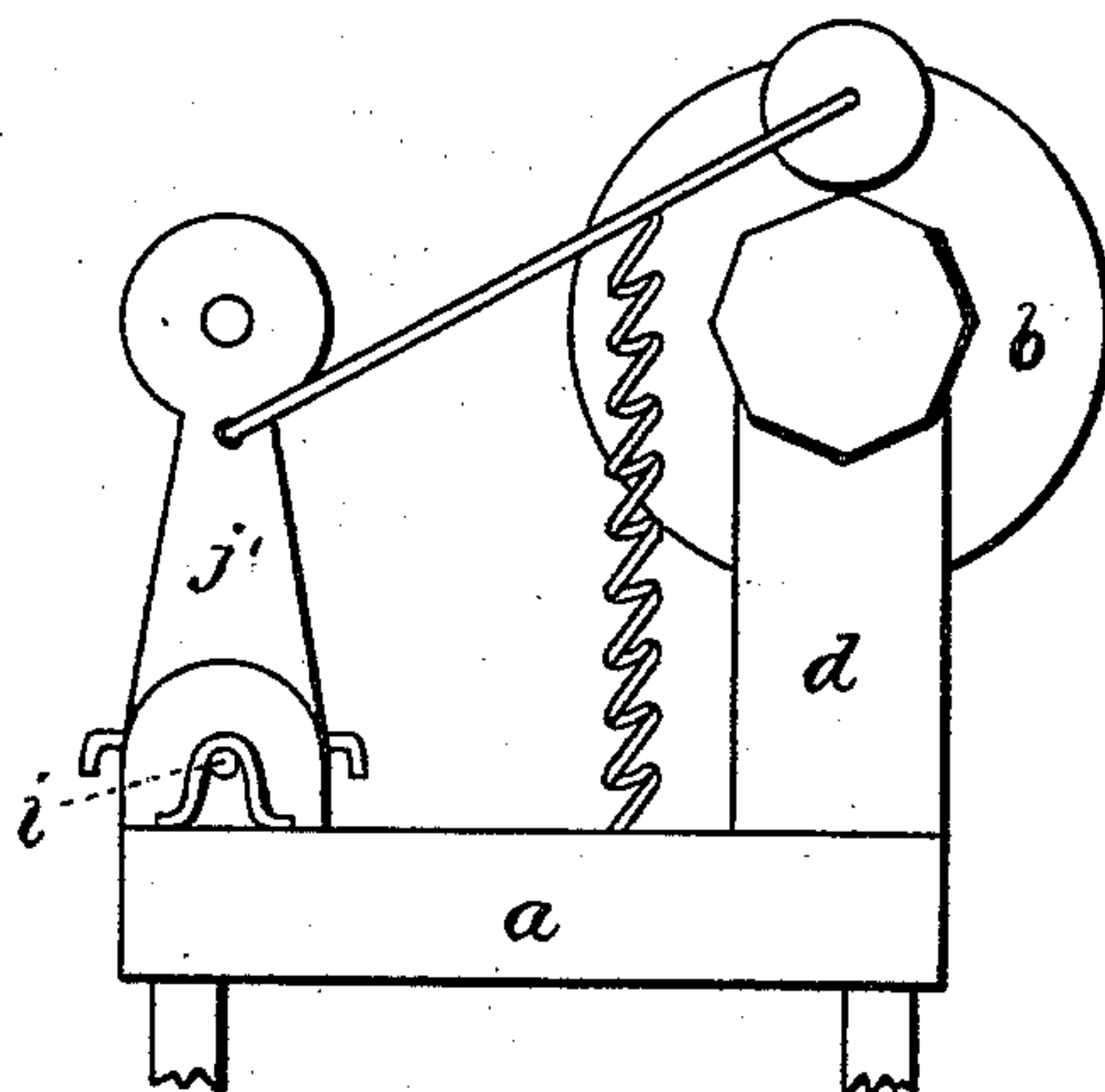


FIG. 5.

WITNESSES:

Chas. H. Kimball.
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UNITED STATES PATENT OFFICE.

FREEMAN HANSON, OF HOLLIS, MAINE.

IMPROVEMENT IN WOOD-TURNING MACHINES.

Specification forming part of Letters Patent No. **214,652**, dated April 22, 1879; application filed February 17, 1879.

To all whom it may concern:

Be it known that I, FREEMAN HANSON, of Hollis, in the county of York and State of Maine, have invented certain new and useful Improvements in Machines for Turning Wood into Different Forms; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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.

Figure 1 shows a top plan. Fig. 2 is a side view. Fig. 3 is an end view, showing geared wheels. Fig. 4 is an end view, showing eccentric and uprights. Figs. 6 and 7 are details of cutting device. Fig. 5 is a detail of a modification of my machine.

Like letters of reference have relation to same parts.

The nature of my invention is to produce a new and improved machine for turning or cutting wood into round, oval, or any irregular shaped forms or disks. To accomplish this result I use the following arrangement and organization of mechanism for operating upon a piece of wood.

In the drawings, *a* represents the base or table-top, on which all the different parts of the mechanism are placed. *b* shows the pulley over which the driving-belt passes. This pulley is secured to the shaft *c*. The shaft is held in position by the standards or uprights *d d'*. This shaft *c* is provided at one end with the crank *e*. At the other end is firmly attached the geared wheel *f*. *h* represents a bed or base piece pivoted at the ends *i i'*. The bed or base piece has rising from it at the ends the uprights or standards *j j'*. *l* is a shaft having on one end the chuck *l'* for holding the wood. On the other is the geared wheel *m*. A groove or channel runs nearly the whole length of this shaft. The groove or channel is to receive a key or projection in the hub of the geared wheel *m*. The object of this is to permit the operator to accommodate the working of the machine to pieces of wood of various lengths by drawing the shaft longitudinally either way through the geared wheel *m*. *n* shows an upright which slides on the bed

or base piece *h*, and holds the end of the shaft *l* nearest the chuck in position. These several parts—the bed or base piece *h*, standards *j j'*, shaft *l*, geared wheel *m*, and upright *n*—taken together, constitute what I call a “rocking device.” *o o'* are two lever-arms passing from the shafts *c* and *l*, and being joined at *p* by a short shaft. Upon this shaft is the geared wheel *q*, which meshes into the geared wheels *f* and *m*, and when the machine is in operation has a perpendicular motion between them, in order to give the proper vibratory backward and forward motion to the rocking device. Attached to the upright *j'* of the rocking device, and passing from the same to the crank *e*, is the rod *w*. *r* is an upright so pivoted to the base *a* as to be moved backward or forward by the hand at the convenience of the operator. At the top end of this upright is attached a short shaft, *s*, one end having the knife or cutting device *u*, the other the small pulley *t*. *z* represents a handle to be used in controlling the upright.

The method of operation is as follows: A piece of wood of any convenient length is fastened into the chuck *l'*, the other end is passed through the opening in the upright *j'*, then the shaft *l* is moved longitudinally, so that the wood will be in position to be acted upon by the cutting device *u*. The belt is then set in motion. As the shaft *c* revolves the rod *w*, connecting the crank *e* and the upright *j'* of the rocking device, and the geared wheels *f*, *m*, and *q* set the rocking device in motion, vibrating backward and forward. The geared wheel *m* is made larger than the geared wheel *f*. By this means the shaft *c* is caused to make more revolutions than the shaft *l*. At the same time the upright *r* is placed in position and power is applied to the pulley *t*, which imparts revolution to the knife or cutting device. All these different motions cause the piece of wood pressing against the knife or cutting device to be operated upon in such a manner as to cut or shape the end into some form other than circular. The knife or cutting device is shown in detail in Figs. 6 and 7. It is so constructed that the saw-teeth (shown at *x*) score or crease the wood at the same time the knife-edge is shaping and cutting the end of the same.

As soon as a disk is properly shaped the operator pushes the upright *r* into such position that the saw-teeth of the cutting device (shown at *y*) enter the crease made by the saw-teeth *x* and cut off the disk.

During the operation of cutting off the disk the upright is gradually moved back into its first position, so that while one disk is being cut off by *y* another one is formed for a repetition of this operation.

If, as a matter of convenience, it should be deemed preferable, the eccentric *e* may be removed and a form of any shape attached to the shaft *c* in its stead, with the rod *w* passing over it and held upon it by a spring, as shown in Fig. 5. Then my invention can be practiced with the same results as in the form before described.

The great advantage claimed for my invention over all others results chiefly from the employment of the new and novel arrangement of the geared wheels, crank, and rocking bed, operating as above described, thus accomplishing by motion what has heretofore been performed by patterns and guides.

If in use the geared wheel *m* is made with twice as many teeth as the geared wheel *f*, the shaft *c* will make two revolutions to one of the shaft *l*, and the disk or form turned will be an oval.

But I do not mean to confine the operation of my invention to the turning of oval forms or disks.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the rocking device, the geared wheels *f* and *m*, being of different sizes, the geared wheel *q*, shaft *c*, rod *w*, and crank *e*, all operating to produce motion, as and for the purposes herein set forth.

2. The pivoted upright *r*, shaft *s*, pulley *t*, knife or cutting device *u*, in combination with the rocking device, the geared wheels *f* and *m*, constructed as described, geared wheel *q*, shaft *l*, working longitudinally, shaft *c*, rod *w*, and crank *e*, operating substantially in the manner and for the purposes set forth.

3. The combination of the shaft *s*, pulley *t*, and cutting device *u*, with its two parts *x* and *y* provided with saw-teeth, substantially as herein described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

FREEMAN HANSON.

Witnesses:

WILLIAM HENRY CLIFFORD,
HERBERT G. BRIGGS.