

N. H. RICHARDSON.

Rattan Machine.

No. 231,360.

Patented Aug. 17, 1880.

Fig: 1

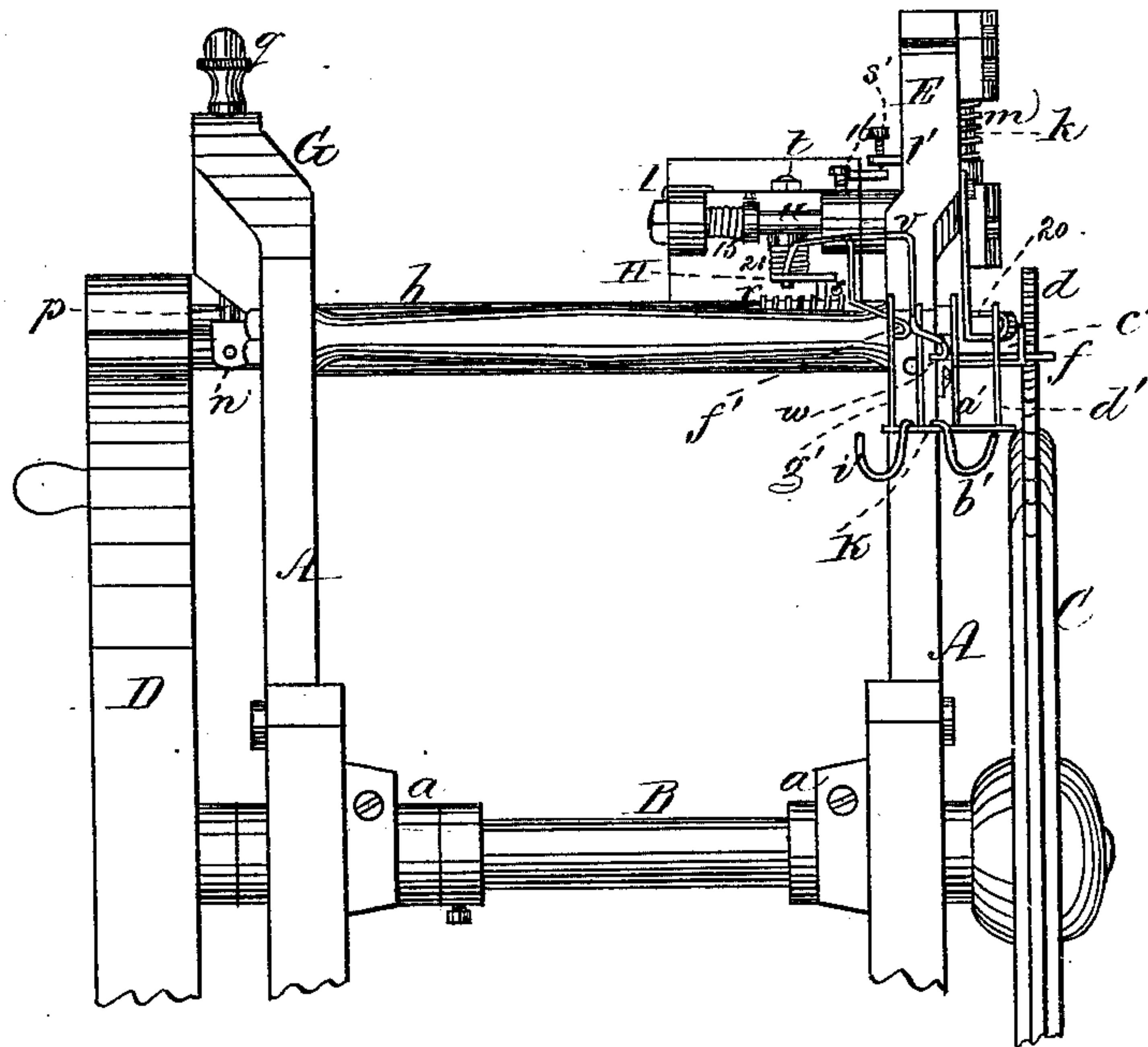


Fig. 2.

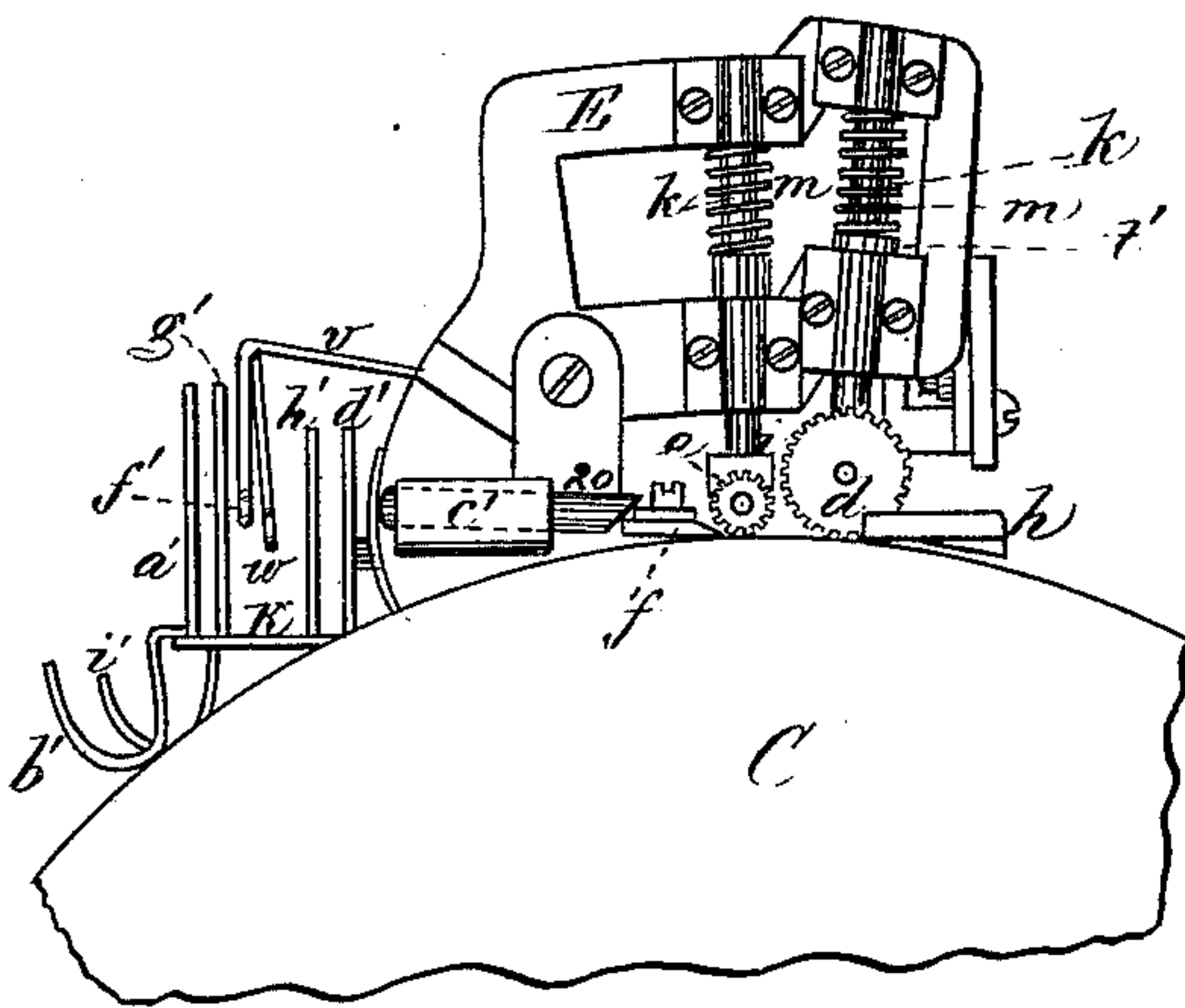
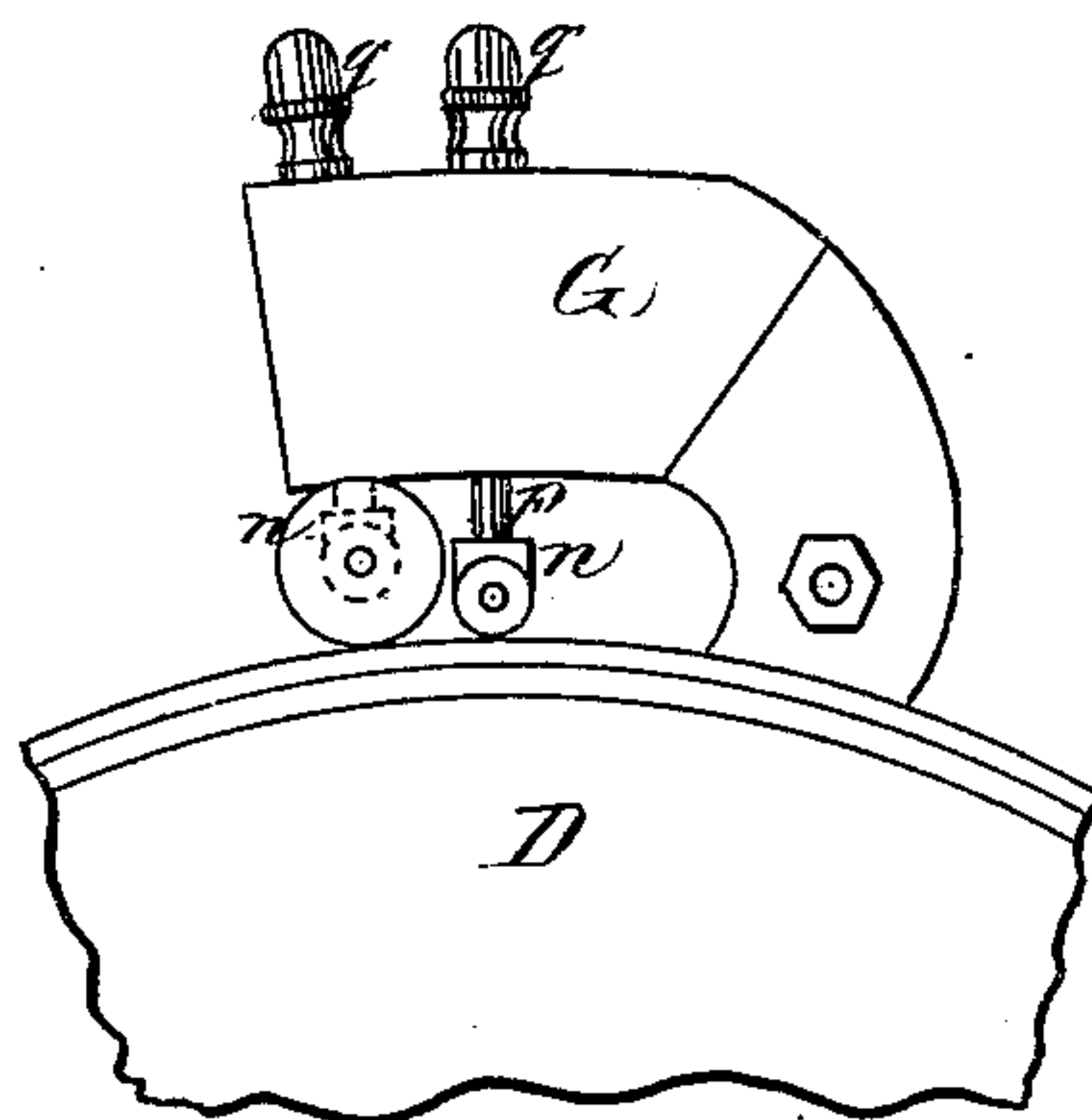


Fig. 3



Witnesses;
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Fig. 5

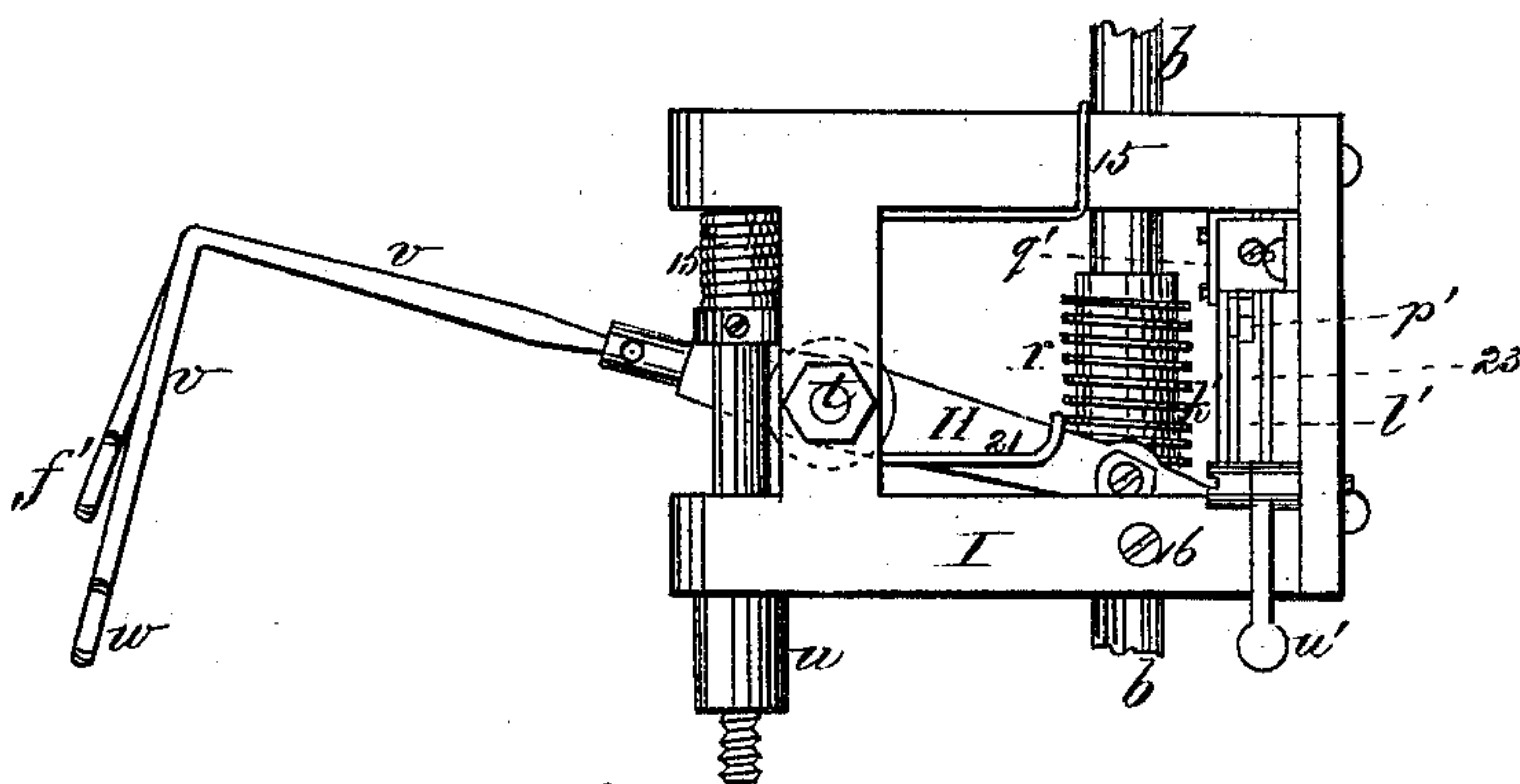


Fig. 6

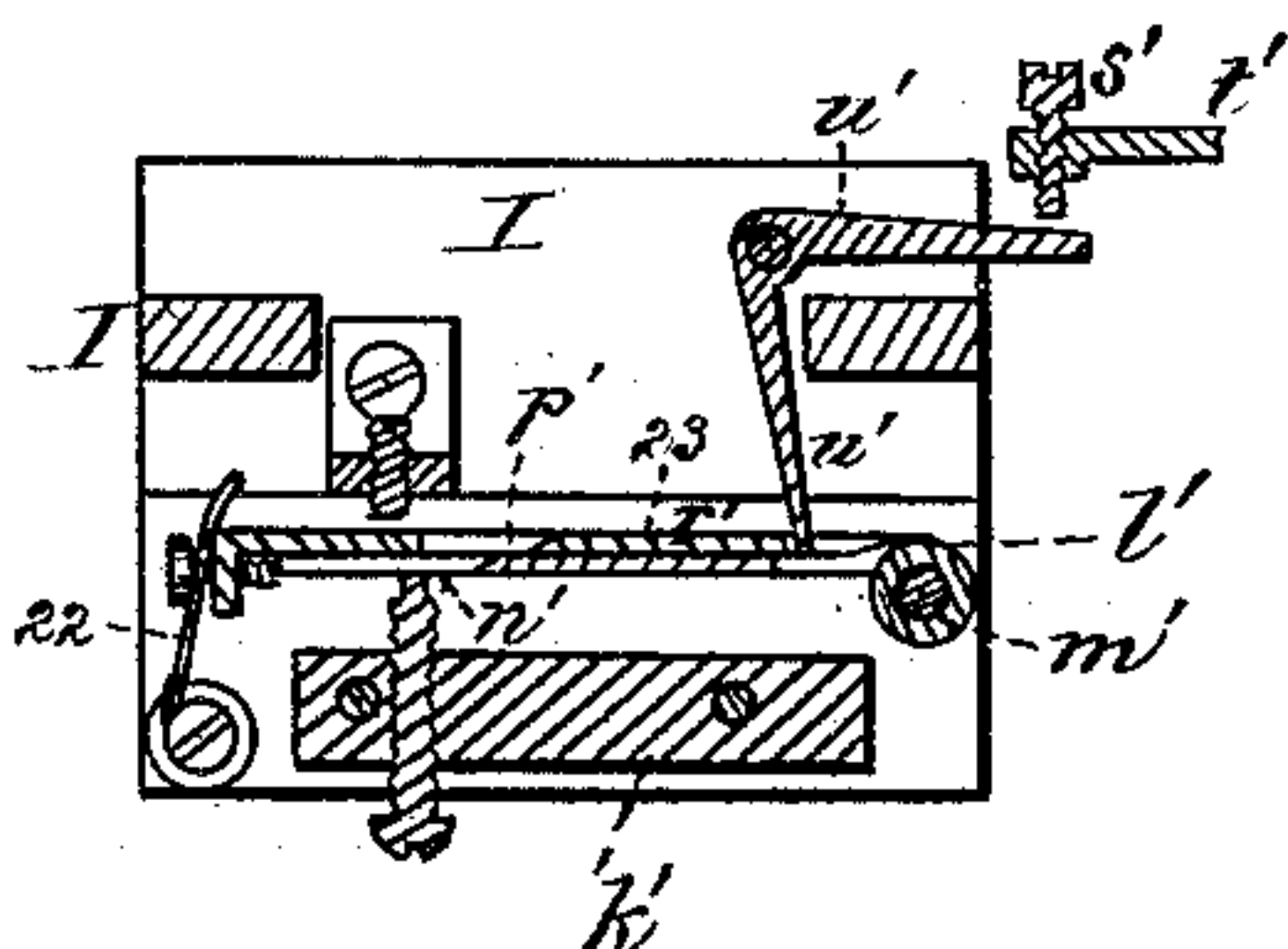


Fig. 7

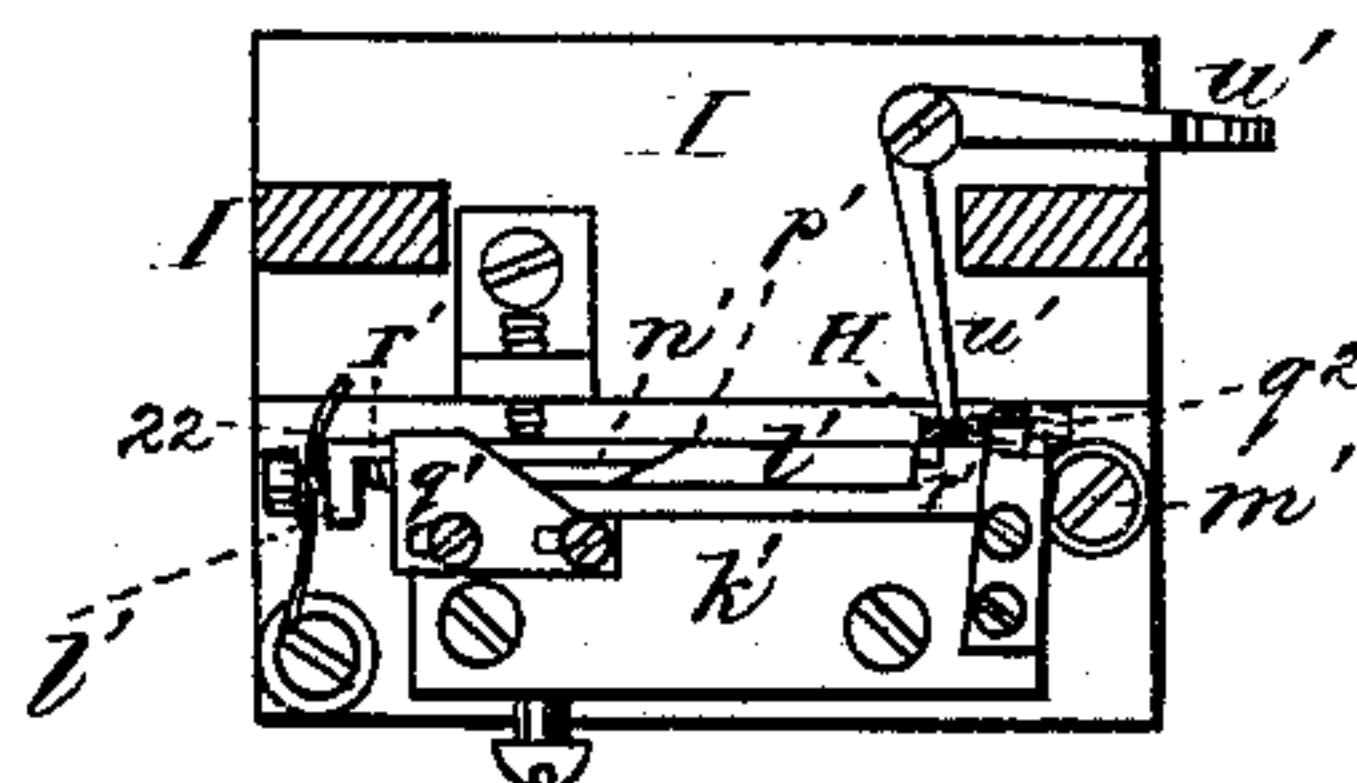


Fig. 8

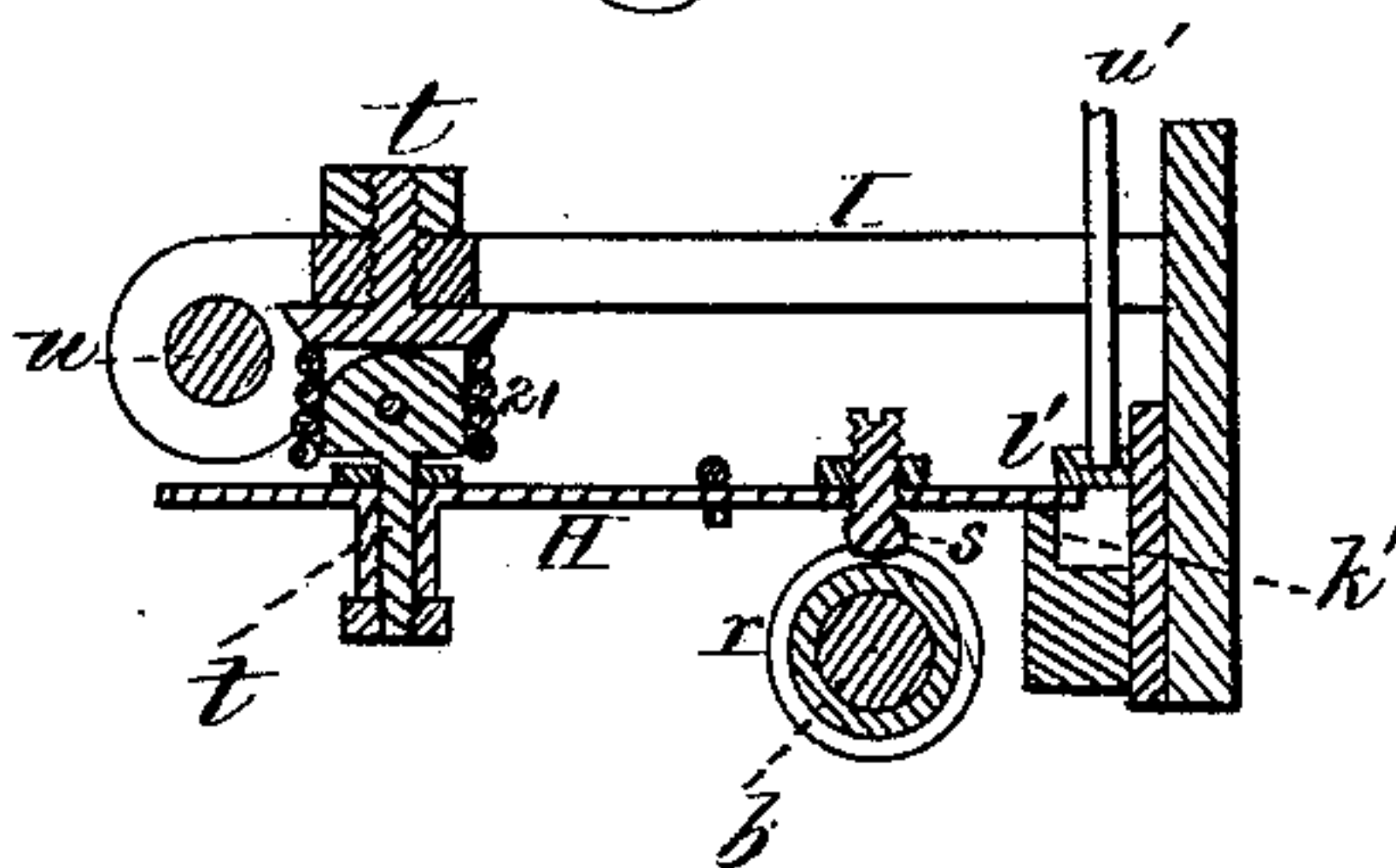


Fig. 11

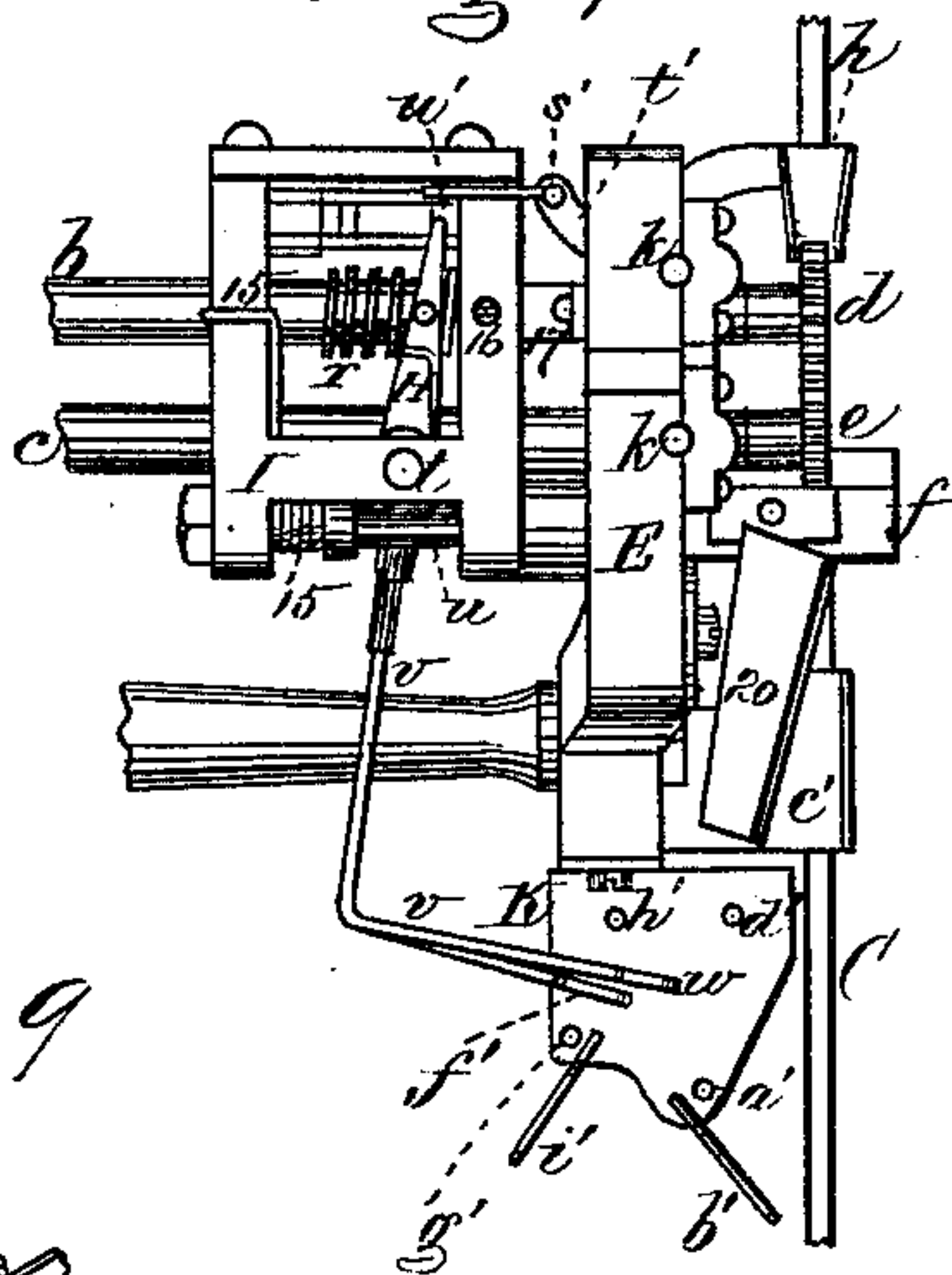
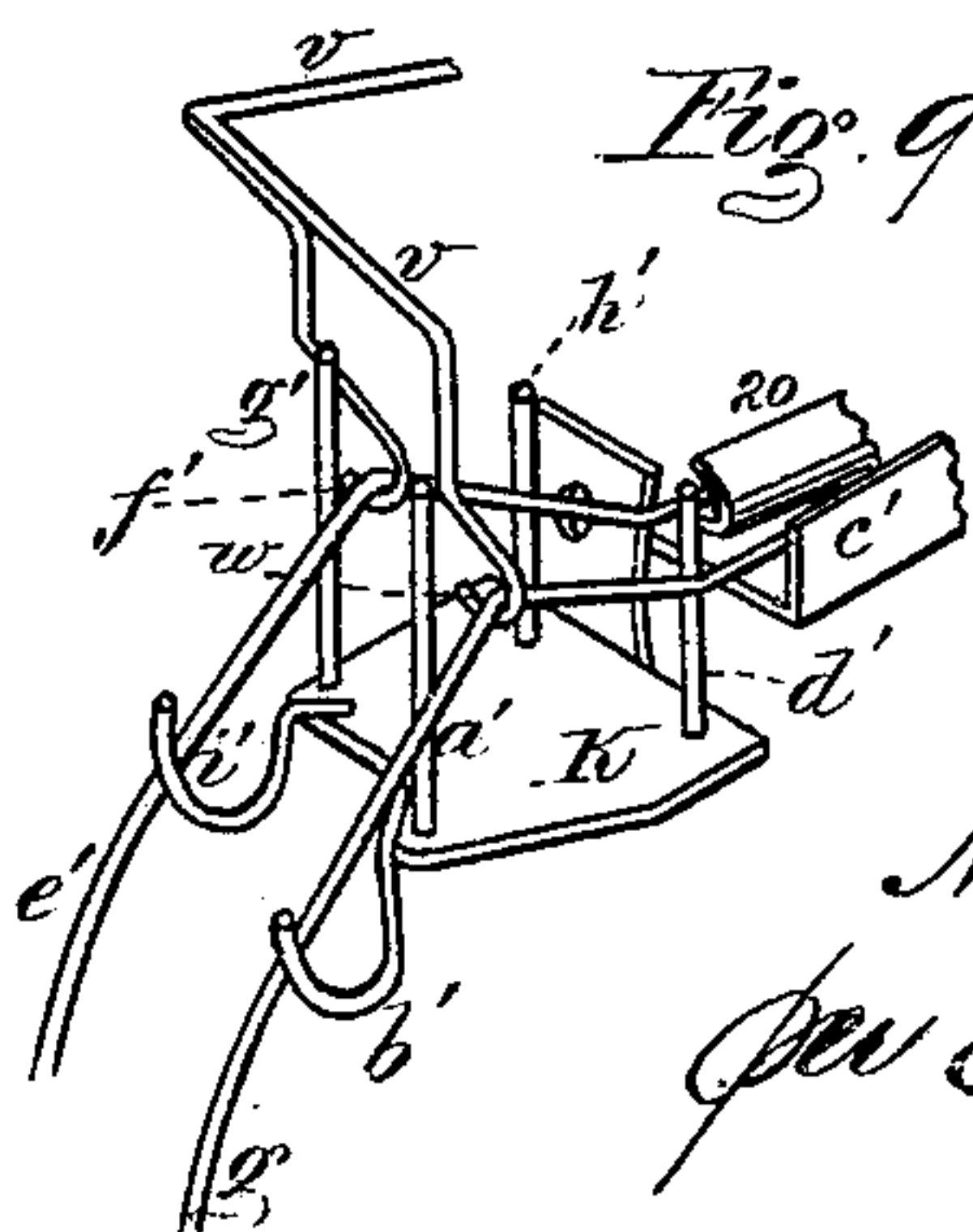


Fig. 9



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UNITED STATES PATENT OFFICE.

NATHAN H. RICHARDSON, OF FITCHBURG, MASSACHUSETTS.

RATTAN-MACHINE.

SPECIFICATION forming part of Letters Patent No. 231,360, dated August 17, 1880.

Application filed March 24, 1879.

To all whom it may concern:

Be it known that I, NATHAN H. RICHARDSON, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented
5 certain Improvements in Rattan-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1 is a rear elevation of a machine for shaving chair-cane having my improvements applied thereto. Fig. 2 is an elevation of the upper portion of one side of the same. Fig. 3 is an elevation of a portion of the opposite
15 side of the same. Fig. 4 is a plan of a portion of the same. Figs. 5, 6, 7, 8, and 9 are details enlarged.

In the manufacture of split rattan or chair-cane it is customary for the attendant to seize
20 the strands at or near the center as they come from the shaving-machine, and after a given quantity has accumulated in the hand it is "evened up" and tied into a hank.

My invention has for its object to provide
25 a mechanism for automatically seizing the strands at a given point and holding them in such a manner that when released they will be in a convenient position for the attendant to grasp and tie up, thus effecting a considerable saving in manual labor, as one person is
30 thereby enabled to care for and tie up the strands from several machines; whereas it has heretofore required one attendant for this purpose for each machine; and my invention consists in the combination, with a rattan-machine, of a mechanism which is automatically
35 thrown into action on the entrance of a strand of cane, and after the passage through the machine of a given length thereof will seize or
40 grasp it and continue to hold it until the entrance of a new strand, when the previous strand is released and allowed to drop over a hook or into a convenient position to be grasped and tied up by the attendant when a sufficient
45 number of strands have accumulated to form a hank of the desired size; and my invention also consists in certain details of construction, as will be hereinafter set forth.

To enable others skilled in the art to under-
50 stand and use my invention, I will proceed to

describe the manner in which I have carried it out.

In the said drawings, A represents the frame-work of the machine, in suitable bearings *a a* in which runs the main shaft B, which
55 carries at one end a large wheel or disk, C, and at the opposite end a friction-wheel, D, which serves to drive the horizontal shafts *b c* of the feed-rolls *d e*.

f is the cutter by which the chair-cane *g*,
60 Fig. 2, is shaved as it passes between the grooved periphery of the wheel C and the feed-rolls, a suitable guide, *h*, being placed in front of the roll *d*.

Each of the shafts *b c* is supported at one
65 end in a bearing, *i*, which is pivoted to the lower bifurcated end of an upright shaft, *k*, which slides in a head or frame, E, and is surrounded by a spiral spring, *m*, against the resistance of which the feed-roll is raised by the
70 strip of cane as it passes between it and the wheel C.

The opposite end of each of the shafts *b c* runs in a bearing, *n*, which is pivoted to the lower bifurcated end of a shaft, *p*, which slides
75 in a head, G, and is pressed down by a screw, *q*, so as to keep the end of the shaft outside the bearing *n* at all times in contact with the periphery of the wheel D, a rubber or other suitable spring being interposed between the
80 upper end of each shaft *p* and its screw *q*.

On the shaft *b* is formed a worm, *r*, which, when the shaft is raised by the introduction of a strand of cane between the roll *d* and the wheel C, engages with a projection, *s*, on the
85 under side of a lever, H, pivoted by a bolt or pin, *t*, to the under side of a frame, I, which is pivoted on a horizontal supporting-shaft, *u*, projecting out from the head E, a spring, 15, serving to keep the frame down in its proper
90 position, which is regulated by adjusting a screw, 16, resting on a stop, 17. The mechanism carried by this frame I is shown enlarged in Figs. 5, 6, 7, and 8, and will be hereinafter particularly described.
95

To one end of the lever H is secured a wire arm, *v*, which is bent into the form seen in Figs. 1, 4, and 5, and is provided at its outer extremity with a hook, *w*, which, by a movement of the lever H, is caused to catch the strand of
100

cane *g*, Fig. 9, after a given length has passed through the machine, and hold it against a pin, *a'*, projecting up from a plate, *K*, until the entrance of a fresh strand of cane, when it is released by a forward movement of the hook, which allows it to drop in a loop over a hook, *b'*, placed in a position to receive it, and as soon as a sufficient quantity of strands have accumulated to form a hank of the proper size they are removed by the attendant and tied up, and the necessity of catching each strand in the hand, as heretofore, and holding them therein until a sufficient number has accumulated is thereby avoided, which enables one attendant to take care of and tie up the strands from a number of machines instead of from one only, as hitherto.

When the strand is drawn by the hook *w* up against the pin *a'*, sufficient friction is created to stop the further advance of that portion of the strand of cane which first passed beyond the hook, the strand after leaving the guide *c'* passing around one side of a guide-pin, *d'*.

The shaving *e'*, Fig. 9, which, after leaving the cutter *f*, passes through a guide, 20, is caught and held by another hook, *f'*, on the arm *v*, which operates in connection with pins *g' h'* in the same manner as the hook *w*, and when the shaving is released it drops in a loop over a hook, *i'*, similar to that *b'*. The hook *f'*, pins *g' h'*, and hook *i'* may, however, be dispensed with, if desired, in which case the shavings *e'* will fall directly onto the floor.

I will now describe the manner in which the required movements are imparted at the proper times to the lever *H* to cause the hooks *w f'* to catch and hold the strand *g* and shaving *e'* and release them to allow them to drop onto the hooks *b' i'*.

As soon as the worm *r* is caused to engage with the projection *s* on the lever *H*, which is effected by the entrance of a strand of cane between the feed-roll *d* and disk *C*, as before described, the lever *H* is vibrated on its pivot by the action of the worm against the resistance of a spring, 21, the inner end of the lever traveling between the edge of the plate *k'* and a lever, *l'*, pivoted at *m'*, this lever having a notch, *n'*, with an incline, *p'*; and just previous to the arrival of the end of the lever opposite to the notch it strikes an incline, *q'*, on the plate *k'*, by which it is raised onto the incline *p'*, the lever *l'* yielding slightly against the resistance of a spring, 22, which movement disengages the projection *s* from the worm *r*, when the spring 21 instantly throws the lever back in the opposite direction until it strikes a stop, *q²*, the inner end of the lever during this movement traveling in contact with the side 23 of the lever *l'*, the pin *t*, on which the lever *H* is pivoted, being jointed to allow of this movement. While the lever *H* is being moved by the worm the hooks *w f'* are being carried forward over and beyond the strand *g* and shaving *e'*, and when the end of the lever is raised by the incline *p'* the hooks *w f'* are de-

pressed so as to lie in the path of the strand and shaving, which are caught and held thereby, as before described, when the lever *H* is released from the worm *r* and thrown back by the spring 21.

The mechanism above described can be constructed so as to release the lever *H* and cause the cane to be seized and held after any given length has passed through the machine, which results in all of the ends of the cane at one extremity of the hank or bunch being brought evenly together.

After the lever *H* has been thrown by the spring 21 against the stop *q²*, it is held in this position with its projection *s* out of contact with the worm *r* by the end of a slide, *r'*, Fig. 6, on the lever *l'*, which projects out into a position to intercept the end of the lever *H* and prevent it from being carried by the downward pressure of the end of the spring 21 onto the edge of the plate *k'*, which is necessary in order that the hooks *w f'* may continue to hold the cane at the points of seizure until the balance of the strand has passed through the machine, when the feed-roll *d* drops onto the periphery of the disk *C*, causing a set-screw, *s'*, on an arm, *t'*, projecting from the shaft *k*, connected with the roll *d*, to come into contact with and depress a bell-crank, *w'*, the lower arm of which is thereby caused to force back the slide *r'* against the resistance of the spring 22, when the inner end of the lever *H*, which has just previously been resting against the end of this slide, is instantly forced down onto the edge of the plate *k'* by the action of the spring 21, when the projection *s* is again in a position to engage with the worm *r* on the latter being raised by the introduction of a fresh strand of cane between the roll *d* and disk *C*, when the lever *H* is again carried forward by the worm, as before. This movement of the lever *H* again carries forward the hooks *w f'*, as before described, which, during this forward movement, release the strand *g* and shaving *e'*, which are then free to drop in looped form onto their respective hooks *b' i'*.

It is obvious that other mechanism than that above described may be employed to grasp the strand, hold and release it while in its passage through the machine; and it is also evident that this mechanism may be operated or thrown into automatic action by any part of the machine, which is raised or depressed by the presence or absence of the strand, or by a feeler or lever actuated by the strand while passing through the machine.

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

1. The arm *v*, provided with the hook *w*, in combination with the lever *H* and pin *a'*, substantially as herein set forth.

2. The arm *v*, provided with the hook *w*, in combination with the lever *H*, pin *a'*, and hook *b'*, substantially as and for the purpose set forth.

3. The shaft *b*, provided with the worm *r*, in

combination with the lever H, arm *v*, provided with the hook, and the mechanism shown and described for automatically disengaging the lever from the worm, substantially as and for
5 the purpose set forth.

4. The lever H, with its projection *s*, and shaft *b*, provided with the worm *r*, in combination with the lever *l'*, with its slide *r'*, bell-crank *u*, set-screw *s'*, arm *t*, and roll *d*, all con-

structed and arranged to operate substantially 10 as herein described.

Witness my hand this 24th day of February,
A. D. 1879.

NATHAN H. RICHARDSON.

In presence of—

P. E. TESCHEMACHER,
CHAS. E. GRIFFIN.