

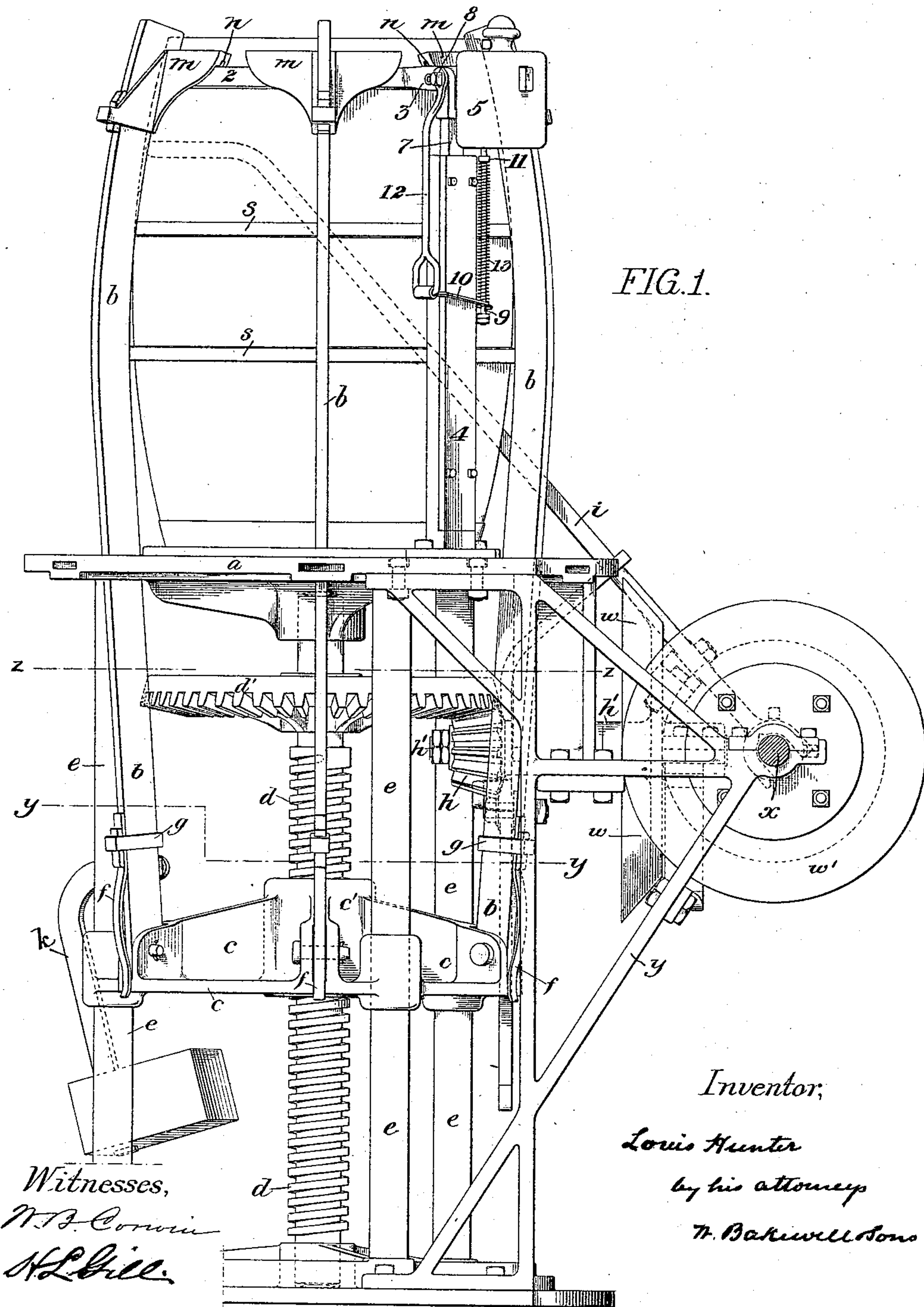
(No Model.)

4 Sheets—Sheet 1.

L. HUNTER.
BARREL HOOPING MACHINERY.

No. 454,800.

Patented June 23, 1891.



Witnesses,
M. B. Corwin
H. L. Bill

Inventor,
Louis Hunter
by his attorney
T. B. Bakewell Sons

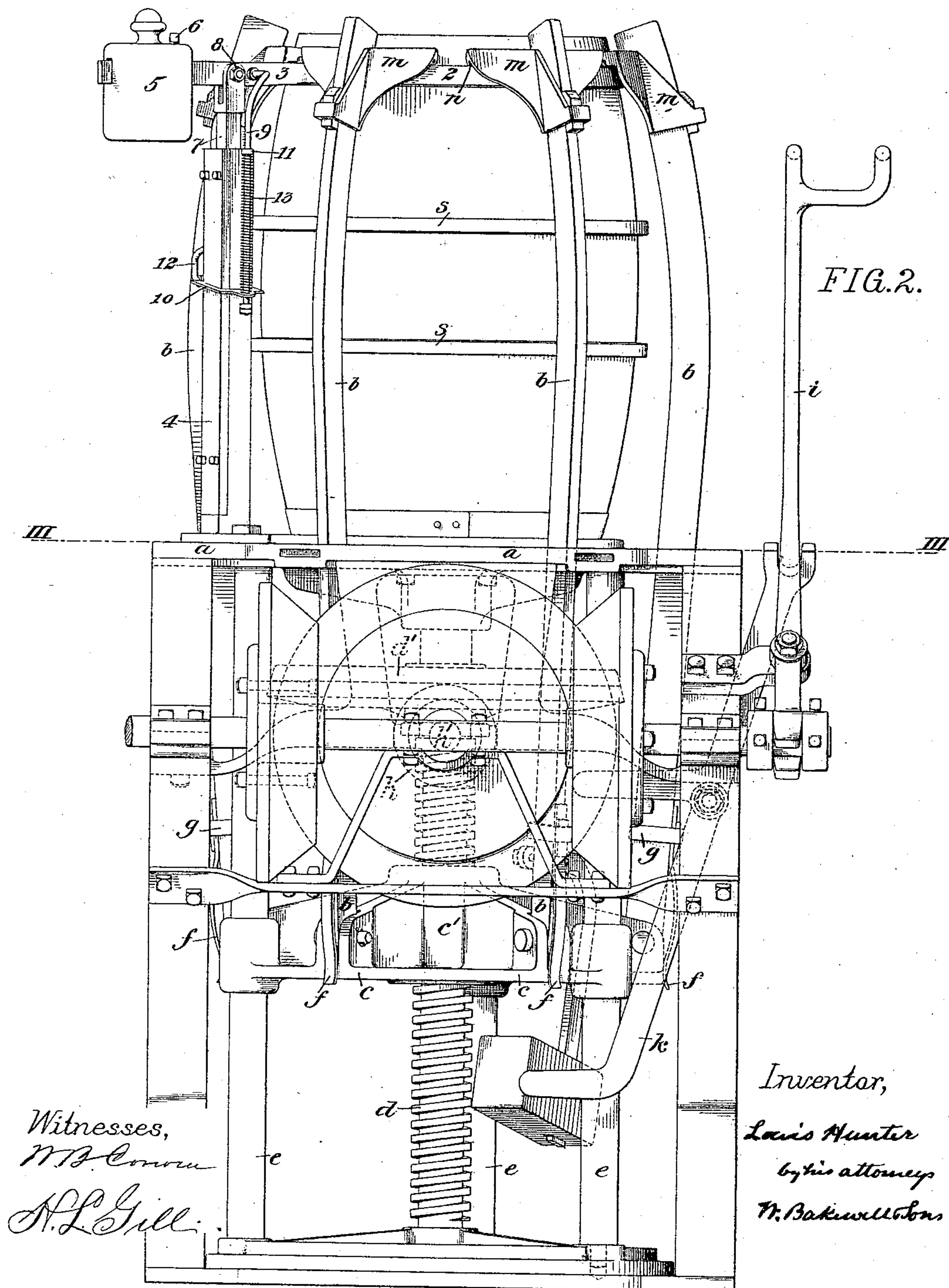
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Patented June 23, 1891.



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(No Model.)

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Fig. 3.

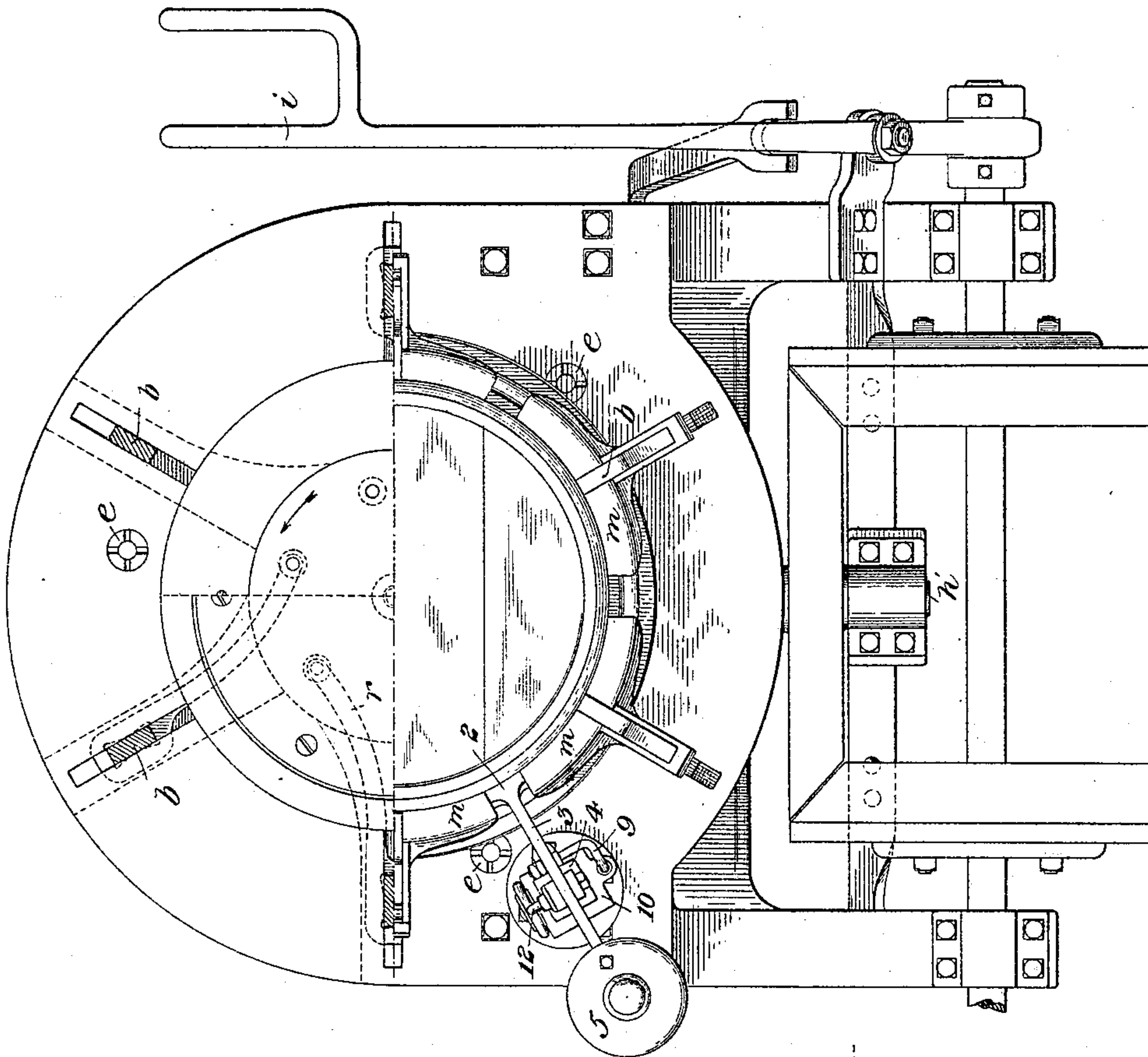
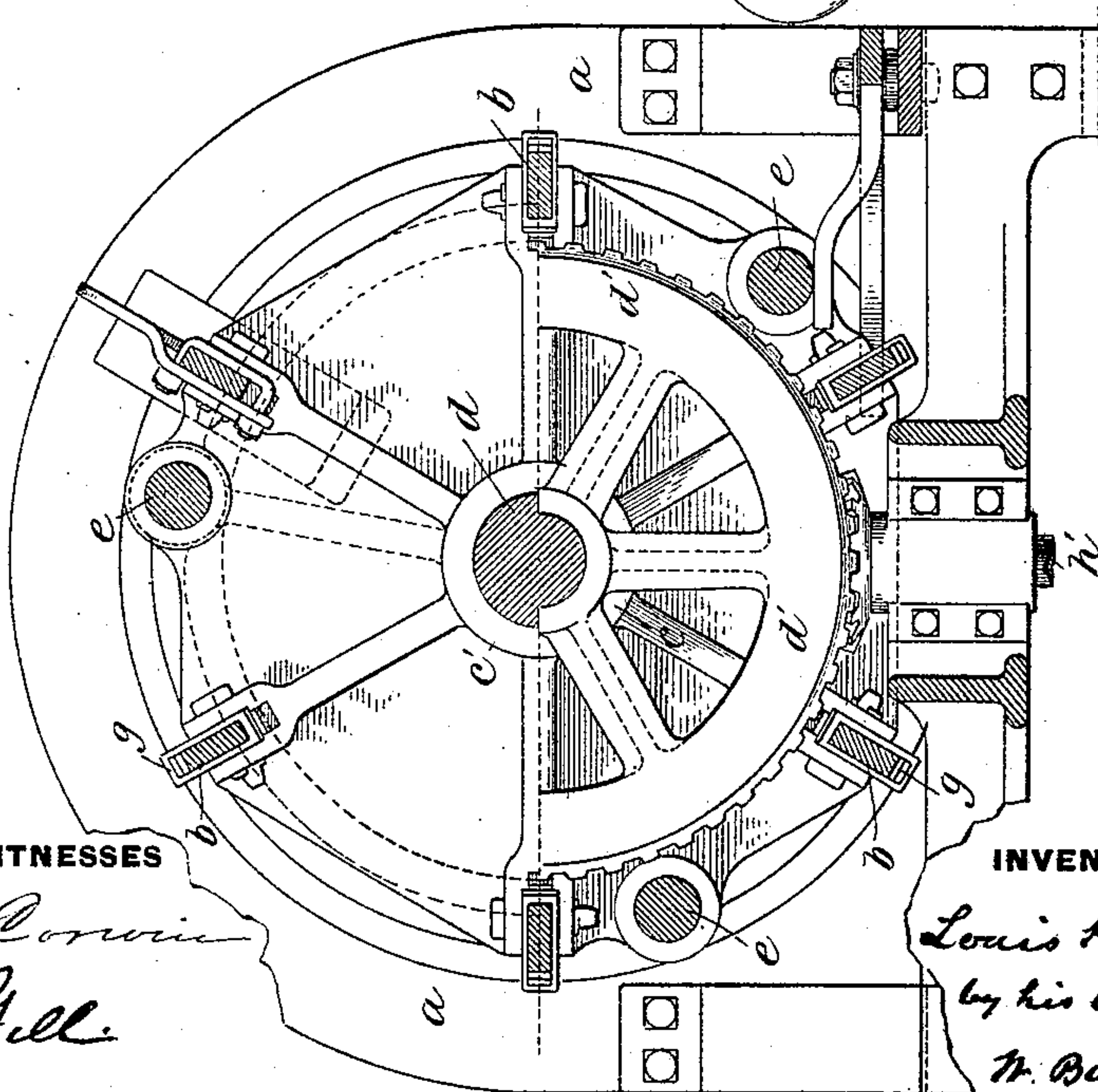


Fig. 4.



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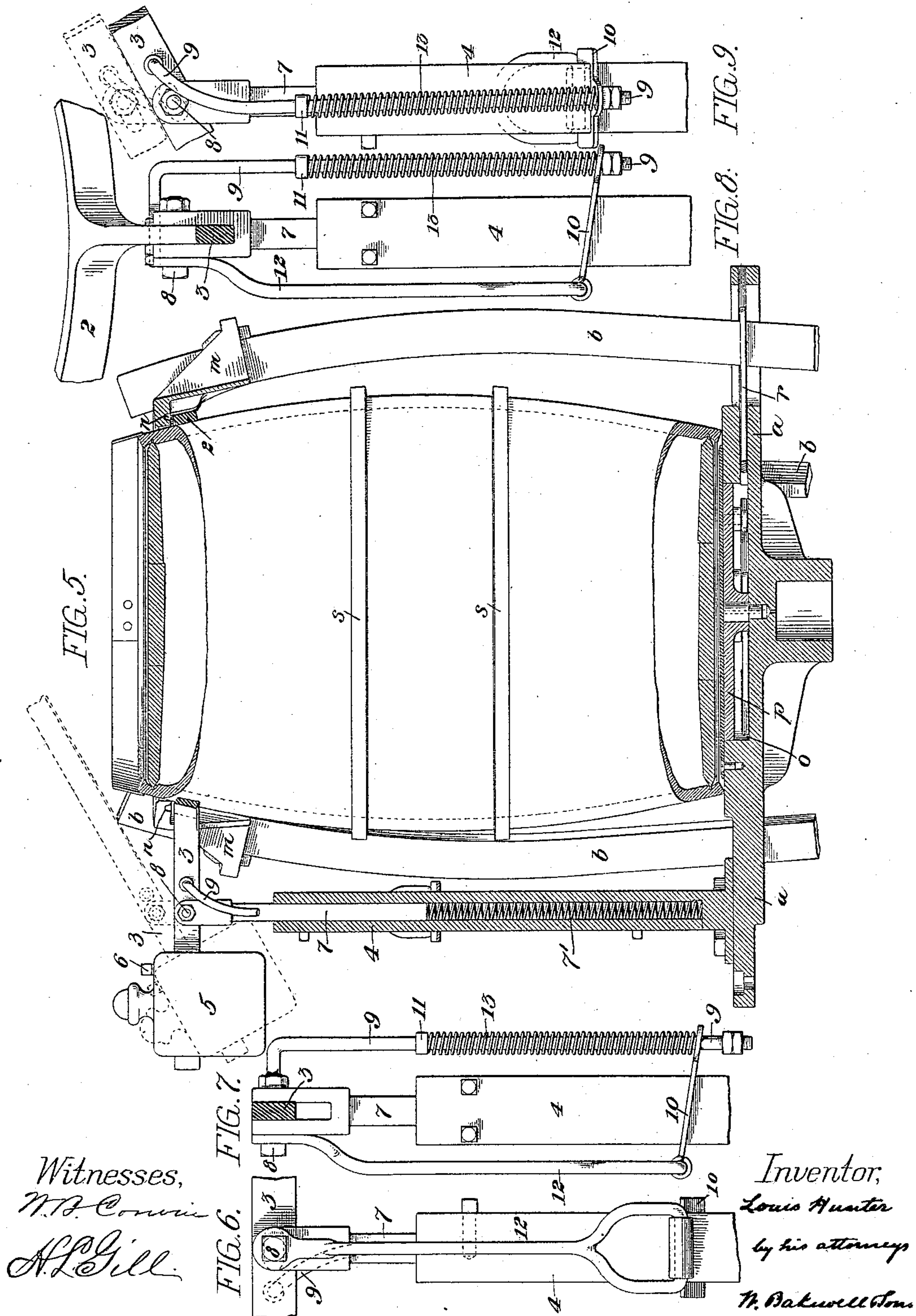
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L. HUNTER.
BARREL HOOPING MACHINERY.

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Patented June 23, 1891.



UNITED STATES PATENT OFFICE.

LOUIS HUNTER, OF OLEAN, ASSIGNOR TO THE STANDARD OIL COMPANY OF NEW YORK, OF NEW YORK, N. Y.

BARREL-HOOPING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 454,800, dated June 23, 1891.

Application filed September 23, 1890. Serial No. 365,917. (No model.)

To all whom it may concern:

Be it known that I, LOUIS HUNTER, of Olean, in the county of Cattaraugus and State of New York, have invented a new and useful Improvement in Barrel-Hooping Machinery, of which the following is a full, clear, and exact description.

My improvement is designed to facilitate the putting on of the end or chine hoop at each end of a wooden barrel by means of the ordinary hoop-driving machine, being an improvement thereon; and it consists in the use of a catch-hoop in connection with the mechanism of the barrel-hooping machinery, which catch-hoop, when the staves, trussed together in the form of a barrel by the ordinary truss-hoops, are placed on the bed-plate of the machine, is lowered over the upper end of the staves, so as to be in position to engage the hoop-driving arms, and which may then be driven downward, so as to close up the staves at the chine and hold them in that situation while the chine-hoop is placed on the barrel by the driving machinery, and which is so constructed and arranged that the catch-hoop may be automatically raised off the barrel after the chine-hoop is driven home. I use the term "catch-hoop" to distinguish the device from the truss-hoops which are used (at an earlier stage in the manufacture of barrels) to hold the staves together in barrel form, the catch-hoop being used as a temporary chine-hoop after the head is placed in the croze to draw the staves tight, and thus force the head into the croze and there hold it while the chine-hoop is being placed in the end of the staves and driven down sufficiently by the arms and hand-pieces, after which the catch-hoop, being no longer needed, is raised from off the barrel; also in certain details of construction herein-after described.

I will now describe my invention, so that others skilled in the art to which it appertains may employ the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a barrel-hooping machine provided with my improvement. Fig. 2 is a like view of the same at right angles to the elevation shown in Fig. 1. Fig. 3 is a plan view, partly in horizontal section,

on the line III III of Fig. 2. Fig. 4 is a horizontal sectional view on the lines *y y* and *z z* of Fig. 1. Fig. 5 is a side elevation, partly in section, showing the chine-hoop in position to be driven on the barrel, the catch-hoop being on the barrel below the chine. Fig. 6 is a side elevation of the locking-stirrup. Fig. 7 is an end elevation of the same, showing the locking-rod and spring. Figs. 8 and 9 are similar views of the locking devices, showing the position assumed when the catch-hoop is in its raised position.

Like symbols of reference indicate like parts in each view.

In the drawings illustrative of my invention I have shown the same as applied to one of the forms of barrel-hooping machines in general use, which consists, chiefly, of a stationary platform *a*, on which the barrel is placed and supported, and a series of reciprocating hoop-driving arms *b*, which extend vertically upward through openings in the platform *a* and are hinged or pivoted below the platform radially and at substantially uniform distance apart to a head *c*, which is provided with a central threaded collar or hub *c'*, through which the vertical revolving threaded shaft *d* passes, the platform being guided by posts *e*.

In order to raise and lower the head *c*, and with it the arms *b*, the vertical screw-shaft *d* is caused to revolve by a miter cog-wheel *d'*, keyed onto it near to its upper end, which cog-wheel gears into a mitered pinion *h* at one end of a short power-shaft *h'*, at the other end of which is keyed a beveled friction-wheel *w*. This beveled friction-wheel *w* is placed between two other beveled friction-wheels *w' w'*, keyed onto a transverse shaft *x*, supported by a bracket *y* from the frame of the machine, which shaft *x* is capable of being slid on its bearings so as to bring one or the other of the friction-wheels *w'* in contact with the intermediate friction-wheel *w*, so that by sliding the shaft *x* in one direction or the other the direction of motion of the cog-wheel *h* and the bevel-wheel *d'* may be reversed at pleasure by means of the shifting-arm *i*, pivoted to the frame of the machine in such position as to be operated by the hand of the workman or automatically by

means of a bar *k*, which is also pivoted to the frame of the machine and which has a crotch at its upper end to engage the shifting-arm, as shown in Fig. 2.

5 At or near the lower end of the driving-arms *b* are springs *f*, which are secured to the arms *b* by an adjustable clamp *g* on each arm *b*, the free end of the springs bearing on the head *c* so as to press the arms *b* toward a com-
10 mon center.

At the upper or outer end of each of the hoop-driving arms *b* of this machine I prefer to use hand-pieces *m*, such as are shown in the drawings; but as this specific device is
15 not my own invention, I do not claim it, excepting in combination with the other parts of the machinery, as hereinafter set forth. These hand-pieces are designed to prevent the buckling or twisting of the thin metallic
20 chine-hoop as it is driven on the barrel by the driving-arms *b*, and to this end they consist of separate hands, one of which is detachably fastened or secured to the end of each of the arms *b* in any suitable manner. Each
25 of these hand-pieces has a projection on each side of the central slot through which the arm *b* passes, which projection is curved on the arc of a circle to correspond with the curvature of the chine of the barrel and extends
30 on each side of the central part, so as to give a firm hold on the outer edge of the chine-hoop. The curved projection is also flanged inwardly toward the center of the barrel, so as to form a ledge to rest on the top of the
35 catch-hoop, and a groove *n* in the under side of the ledge, having substantially the same curvature as the chine of the barrel, serves to receive the upper edge of the chine-hoop. My improved catch-hoop mechanism, how-
40 ever, may be used without these hand-pieces, in which case the upper extremity of each driving-arm is simply notched or hooked in the usual manner. The arms *b* are moved toward and from the barrel, as may be de-
45 sired, in the usual way.

In the ordinary operation of this machine in so far as described the barrel-staves are placed in position in the truss-hoops and on the table or platform *a*, and the hoops are
50 driven down by lowering the arms *b* by means of the screw-head and shaft and the operating mechanism, the hand-pieces *m* or hoops on the extremities of the arms engaging with the hoops and drawing them down into place.

55 As already stated, one of the main features of my improvement is the catch-hoop 2, which is preferably made of iron, and which is of such diameter as, when drawn down by the driving-arms, to draw the staves together at
60 the chine and to leave room above the catch-hoop for the chine-hoop to be placed on the chine of the barrel. This catch-hoop has a radial arm 3 extending outwardly beyond the standard 4, to which standard it is pivoted,
65 and at the outer end of the arm 3 is a sliding weight 5, which is secured adjustably on the arm by the set-screw 6, and is adjusted so as

to balance the catch-hoop or give it a slight upward tendency when not held down by friction of the staves or the action of the lock-
70 ing device hereinafter described.

As the catch-hoop has to be drawn down over the staves, it is necessary that its pivotal points should be capable of being correspondingly
75 lowered, and also of being raised, so as to enable the hoop to be lifted off the barrel. This I effect automatically by the following device: The catch-hoop is not pivoted directly to the standard, but to a plunger 7, which en-
80 ters the cavity of the standard 4, (made hollow for that purpose,) and below the plunger and within the cavity of the standard is a spiral spring 7', which raises the plunger or allows it to sink, according to the exigency of
85 the raising and lowering of the catch-hoop.

In order to hold the catch-hoop down on the barrel against the tendency of the weight 5
90 on the hoop-arm to tilt it and of the spring 7 to raise it, I connect with the arm 3 of the catch-hoop at a point slightly inside of the pivotal point 8 a locking-rod 9, which ex-
95 tends downward to a stirrup 10, which surrounds the hollow standard 4. This locking-rod passes at its lower end through a hole in the stirrup, between which and the shoulder
100 11 on the rod is a spiral spring 13, which tends to raise the locking-rod and with it the arm 3 of the catch-hoop. The stirrup is connected on the opposite side of the standard 4 to the lower end of a rod 12, which at its up-
105 per end is attached to the pivotal point of the arm 3 of the catch-hoop. The effect of this is to cause the stirrup when canted downward at one side to bind on the standard, and thus, without a positive locking action, to hold the
110 catch-hoop in position when lowered, and when the hands *m* or hooked ends of the hoop-driver arms *b* are raised from the hoop. When it is desired to raise the catch-hoop, a slight upward knock on the hoop will over-
115 come the holding action of the locking device and permit it to be automatically raised by the weight.

The operation is as follows: The barrel
115 ready trussed and with heads loosely inserted in place is set on the platform *a*. The arms *b* are then raised and the catch-hoop is drawn down over the chine of the barrel and is driven down to place by a further down-
120 ward movement of the arms *b* and hands *m*, which draw the ends of the staves together at the chine and hold them in that position. The chine-hoop is then placed on the barrel and driven home in like manner, which, by drawing the staves together, loosens the catch-
125 hoop, which then rises by the combined action of the weight 5 and spring 7 to the position shown by dotted lines in Fig. 5, and the lock is loosened by the raising of the locking-rod 9, so that the catch-hoop is in position for re-
130 peated action.

It should be noticed that my catch-hoop is not operated by the machinery by which the hoops are driven, and therefore that it is not

necessarily attached to the hoop-driving machine proper, but may be directly pivoted to some fixed portion of the machine, or its standard or support may be so attached or the catch-hoop and its support may be constructed as a separate mechanism to be located when in use in proximity to the hoop-driving machinery.

I claim—

10 1. In combination with driving-arms and machinery for raising and lowering them, substantially such as described, a catch-hoop pivotally connected to the machine, so as to be lowered by the driving-arms and capable
15 of being automatically lifted from the barrel, substantially as and for the purposes described.

20 2. In a barrel-hooping machine, the combination, with driving-arms having hands to engage the hoops, of a catch-hoop pivoted to the machine and capable of being raised and lowered, substantially as and for the purposes described.

3. In a barrel-hooping machine, the combi-

nation, with hoop-driving arms, of a catch-hoop and a spring-plunger, to which it is pivotally connected with its standard or support, so as to permit of the rising and falling of the pivotal point of the catch-hoop, substantially as described.

4. In a barrel-hooping machine, the combination of the catch-hoop pivotally connected to a reciprocating support or standard, a balance-weight, and a locking device, substantially as and for the purposes described.

5. In a barrel-hooping machine, the combination of a catch-hoop pivotally connected to a spring-plunger mounted in a suitable standard and provided with a balance-weight, with a locking-rod composed of the arms 9 12, spring 13, and stirrup 10, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 2d day of August, A. D. 1890.

LOUIS HUNTER.

Witnesses:

W. B. CORWIN,
JOHN K. RUPERTUS.