

(No Model.)

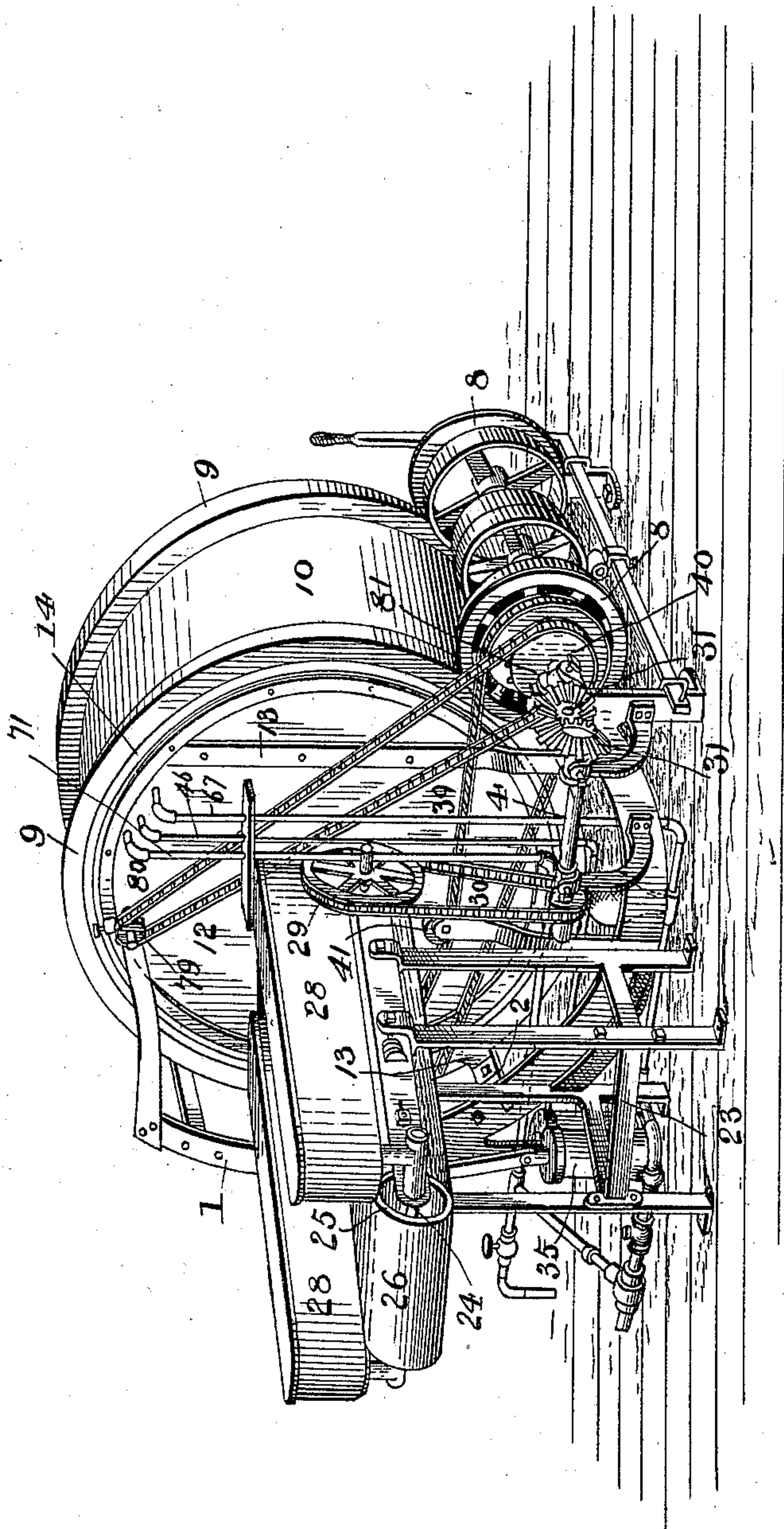
5 Sheets—Sheet 1.

J. H. KESTER.

MACHINE FOR CASING AND FLAVORING TOBACCO.

No. 561,325.

Patented June 2, 1896.



Witnesses:
F. L. Curand
J. L. Coombs

Inventor:
John H. Kester,
by *Laurel Baggett*
Attorneys.

(No Model.)

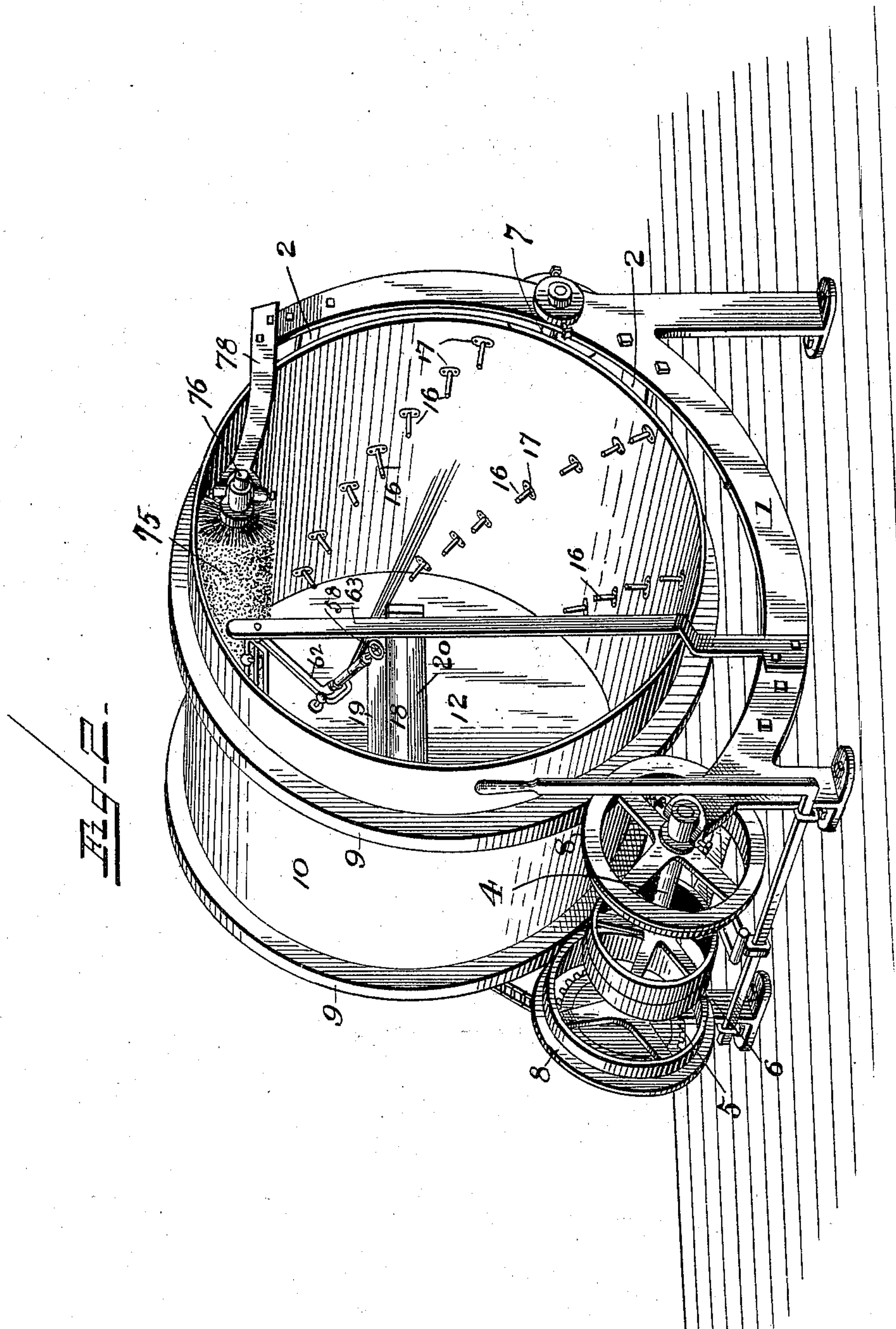
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Witnesses:
F. L. Ourand
J. L. Coombs

Inventor:
John H. Kester,
by Sam. Puggitt & Co.
Attorneys

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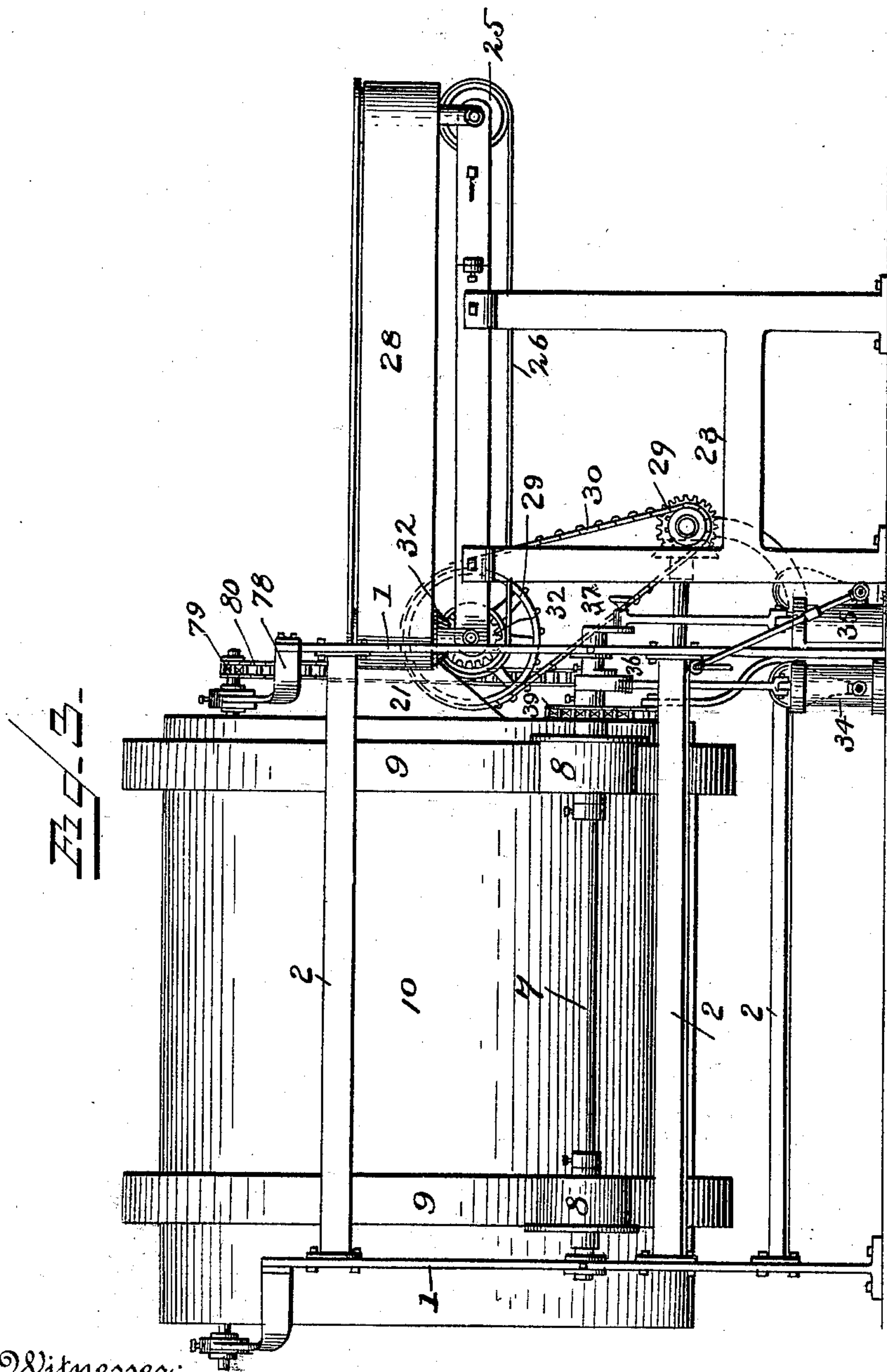
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F. L. Curran
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Inventor:
John H. Kester,
Sam. Baggett & Co.
Attorneys

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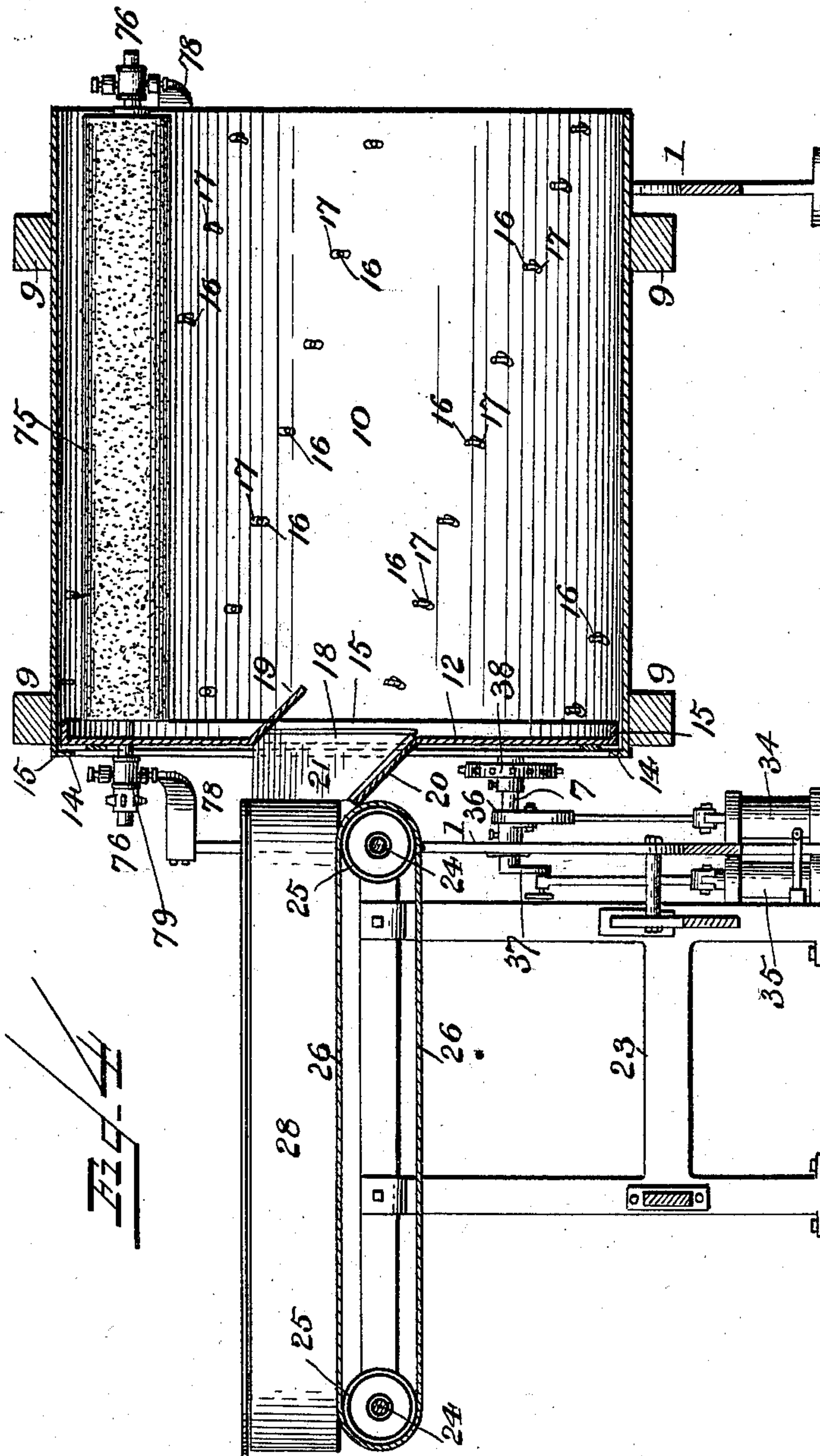
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Patented June 2, 1896.



Witnesses:
H. L. Ourand.
H. L. Coombs.

Inventor:
John H. Kester,
By Louis Ruggen & Co.
Attorneys.

(No Model.)

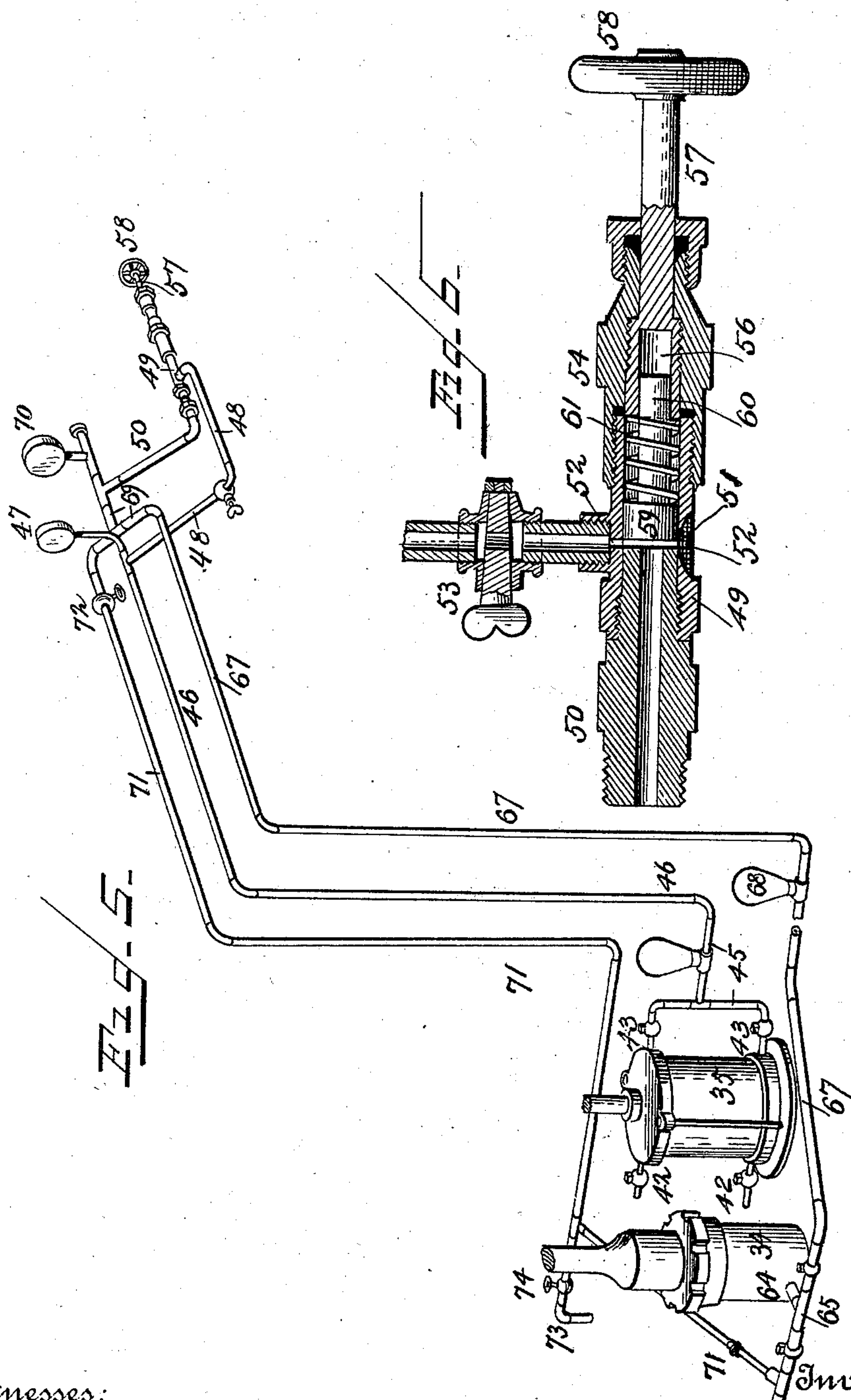
5 Sheets—Sheet 5.

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Inventor:
John H. Kester
By Sam. Baggett & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JOHN H. KESTER, OF WINSTON, NORTH CAROLINA.

MACHINE FOR CASING AND FLAVORING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 561,325, dated June 2, 1896.

Application filed June 10, 1895. Serial No. 552,318. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. KESTER, a citizen of the United States, and a resident of Winston, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Machines for Casing and Flavoring Tobacco; 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, which form a part of this specification.

My invention relates to machines for casing and flavoring tobacco; and its object is to provide an improved construction of the same, which shall possess superior advantages with respect to efficiency in operation.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a tobacco casing and flavoring machine constructed in accordance with my invention. Fig. 2 is a similar view taken from the opposite side. Fig. 3 is a side elevation. Fig. 4 is a longitudinal sectional view. Fig. 5 is a detail perspective view of the air and liquid-flavoring pumps, the sprayer or atomizer, and the connections, the said pumps being somewhat different in form and size from those shown in the other views. Fig. 6 is a longitudinal sectional view of the atomizer or sprayer.

In the said drawings, referring now to Figs. 1, 2, 3, and 4, the reference-numeral 1 designates two curved frames, one at each end of the machine, connected together by transverse struts 2 and provided with legs 3. Journaled in bearings at one end of said frames is a transverse driving-shaft 4, provided with fast and loose pulleys 5 and 6, and means for shifting the driving-belt (not shown) from one to the other of said pulleys for the purpose of starting and stopping the machine. This, however, forms no part of my invention, and a detailed description, therefore, is not necessary. Also journaled to said frames, intermediate their ends, is a transverse shaft 7, and loosely mounted thereon are flanged wheels 8, with which engage peripheral rims 9 of a rotatable drum 10,

similar wheels being secured to the driving-shaft 4, the construction of which is such that when the driving-shaft 4 is rotated a corresponding movement will be imparted to the drum, and the flanges of the wheels 8 engaging with the outer sides of the rims will hold the same against lateral movement. This drum is open at the rear end and its front end closed by means of a stationary head 12, which, however, is not connected with the drum, but supported by standards 13, (see Fig. 1,) secured to one of the struts 2 and riveted thereto. By this construction the drum is entirely separate from the head, and for the purpose of making a close joint between the drum and the head the said front end of the drum is formed with an annular inwardly-extending flange 14, while the head is formed with a peripheral flange 15, as seen in Fig. 4. Secured to the inner surface of the drum is a series of pins 16, having oblong bases 17, provided with apertures for the passage of rivets or bolts by which they can be secured in place. These pins are arranged in a series of spiral rows, so that the tobacco fed to the drum is carried up and tumbled and gradually fed to the rear or open end of the drum.

At or about the center of the stationary head is a feed-opening 18, formed by first making a transverse slit and then in the ends thereof making vertical slits at right angles thereto. This will form two wings 19 and 20, the upper one 19 of which is bent inward at an angle (see Fig. 4) and the lower one 20 bent outward at a similar angle. Side wings 21, beveled at their lower edges, are then secured to the sides of said openings, forming a chute by which the tobacco from the feeding-aprons is delivered to the drum.

The feeding mechanism (see Figs. 1, 3, and 4) consists of a frame 23, transverse shafts 24 having rollers 25, over which passes a horizontal apron 26, vertical shafts (not shown) at each end of the frame provided with rollers, around which pass the side vertical aprons 28. These rollers are driven by means of sprocket wheels and chains 29 and 30, bevel-pinions 31, and bevel-pinions 32. I make no claim herein to said feeding mechanism, the same being shown in the Letters Patent granted to me February 12, 1895, No. 534,162,

and therefore description and illustration are unnecessary.

Located at one side of the machine, at the front end thereof, is an air-pump 34 and a liquid-flavoring pump 35. The piston-rod of the air-pump is connected with an eccentric 36 on the shaft 7, (see Fig. 3,) while the piston-rod of the liquid-pump is connected with a crank 37 on the same shaft. This shaft is provided with a sprocket-wheel 38, with which engages a sprocket-chain 39, passing around and engaging with a sprocket-wheel 40 on the driving-shaft 4, an idler-pulley 41 engaging with the said chain to regulate the tension. (See Fig. 1.)

The liquid-flavoring pump (see Fig. 5) is a double-acting one, the numeral 42 designating the inlets and 43 the outlets, which latter are connected with a pipe 45 provided with an air-pipe 46. This pipe 46 extends upwardly and then inwardly, passing through the stationary head into the drums, and at the end is provided with an ordinary gage 47. Connected with this pipe and extending at right angles therefrom is an angular pipe 48, the end of which is connected with an atomizer or spraying device, consisting of a coupling 49, interiorly screw-threaded at its inner end and exteriorly screw-threaded at the outer end. To the said inner end is secured a pipe 50, connected with the pipes hereinafter described, which are connected with the liquid-pump. This coupling is provided upon one side with a concave recess 51 and with two diametric openings 52, the upper one of which communicates with the pipe 48, which is provided with a turn-cock 53 for regulating or cutting off the air-blast. At its outer end the coupling is provided with a sleeve 54, formed with differential bores to receive a socket 56 and a rod 57, formed integral with each other, and the said stem is provided with a hand-wheel 58. The socket is screw-threaded exteriorly to engage with corresponding threads in the coupling. Located in the said coupling is a piston 59, provided with a stem 60, which works in the socket 56. Encircling this stem and confined between the end of the socket and the piston is a coiled spring 61. The atomizer is supported and held in place by an arm 62 engaging with the inner end thereof and connected with a standard 63, secured to the frame 1 at the rear or open end of the machine.

The liquid-pump, which is here shown as being single-acting, may be of any suitable construction and is provided with an outlet 64, connected with a coupling 65, with one end of which is connected a pipe 67, provided with an air-chamber 68, and extends upward and inward into the drum and parallel with the air-pipe. At its outer end it is turned inwardly and connected with a pipe 69, with which the pipe 50, leading to the atomizer, is connected. This pipe 69 is provided with a pressure-gage 70. Connected with the opposite end of the coupling 65 is a pipe 71, simi-

lar to pipe 67, and also connected with pipe 69 and provided with a stop-cock 72. This pipe 71 is also provided with a blow-off pipe 73, having a stop-cock 74.

Located in the upper part of the drum and contacting with the interior thereof is a horizontal rotatable cylindrical brush 75, mounted upon a shaft 76, journaled to and supported by brackets or arms 78, secured to the frames 1. At its front end the said shaft is provided with a sprocket-pinion 79, connected by a sprocket-chain 80 with a sprocket-wheel 81 on the driving-shaft 4, the construction being such that said brush will be rapidly rotated in one direction while the drum slowly rotates in the opposite direction.

The operation of the machine is as follows: The liquid-pump being connected with any suitable source containing liquid flavoring, such for instance as a licorice solution, the cocks 72 and 74 being closed and cock 53 opened, and the machine is set in motion. The tobacco is placed on the feeding-apron and is carried to the chute and delivered to the rotating drum, the spirally-arranged pins of which will catch and carry it upward and then allow it to drop down, when it will be caught by the next teeth of another row or rows and the operation be repeated. By this means the tobacco will be tumbled and agitated in the drum, so as to cause the flavoring material to be evenly and thoroughly distributed, and will finally emerge at the rear open end of the drum. At the same time this is taking place the liquid-pump will force the flavoring solution to the atomizer, which, meeting the air-blast from the air-pump at a right angle, will be forced out of the atomizer in the form of a fine spray onto the tobacco which is being agitated and tumbled in the drums. The brush contacting with the drums and rotating in an opposite direction thereto will prevent the accumulation of dirt, so that the drum will always be kept clean. By means of the screw-threaded stem located in the atomizer and the hand-wheel the tension of the spring which presses against the piston 59 can be regulated, so as to regulate the quantity of the solution delivered from the atomizer.

When it is desired to cut off the supply of flavoring material to the atomizer, cock 72 is opened, when the liquid or flavoring solution will circulate through the pipes 67 and 71 without entering the atomizer, the spring in the coupling forcing the piston 59 up against the end of pipe 50 and cutting off the supply to the atomizer by reason of the reduction of the pressure in the said liquid-pipes.

Having thus fully described my invention, what I claim is—

1. In a machine for casing tobacco, the combination with the curved end frames, the struts secured thereto, the rotatable drum open at one end and provided at the other end with a stationary head, the standards secured to one of said struts, and secured to the said

head, of the driving-shaft journaled to said frames, the flanged wheels secured thereto, the shaft at the opposite side of the drums and the flanged wheels loosely mounted thereon, the spraying mechanism and the brush contacting with said drum and rotating in an opposite direction thereto; substantially as described.

2. In a machine for casing tobacco, the combination with the frames, the rotatable drum having an inwardly-extending flange at its front end, and the spirally-arranged pins, of the stationary head having a peripheral flange; substantially as and for the purpose specified.

3. In a tobacco-casing machine, the combination with the rotatable drum open at one end and provided with the spirally-arranged pins, of the stationary head at the opposite end of the drum, the oppositely-bent wings formed integral with said head and the beveled side wings; substantially as described.

4. In a tobacco casing and flavoring machine, the combination with the rotatable drum open at one end and provided at the opposite end with a stationary head, the spirally-arranged pins and the brush contacting with the drum and rotating in an opposite direction thereto, of the air and liquid pumps and means for operating the same, and the atomizer comprising the coupling with which said air and liquid pipes are connected at right angles to each other, having an outlet alined with or opposite to the air-pipe, the piston located in said coupling, the stem, the coiled spring, the socket, the rod, and the hand-wheel; substantially as described.

5. In a tobacco casing and flavoring machine, the combination with the rotatable drum open at one end and provided with a stationary head at the other end, the spirally-arranged pins, and the brush contacting with the drum and rotating in an opposite direction thereto, of the air and liquid pumps, the pipes connected with the air-pump leading to the drum and provided with an angle-pipe, having a regulating-cock, the atomizer connected with said angle-pipe, the coupling connected with the liquid-pump, the pipes secured to each end thereof and extending into the drum, the stop-cock in one of said pipes, and the pipe leading to the atomizer with

which said liquid-pipes are connected; substantially as described.

6. In a tobacco casing and flavoring machine, the combination with the rotatable drum, open at one end and provided with a stationary head at the other end, and the spirally-arranged pins, of the spraying mechanism, and the brush contacting with said drum and rotating in an opposite direction thereto; substantially as described.

7. In a tobacco casing and flavoring machine, the combination with the rotatable drum, open at one end and provided at the other end with a stationary head, the spirally-arranged pins, the peripheral ribs, the driving-shaft, the flanged wheels secured thereto, the shaft at the opposite side of the drum, the flanged wheels loosely mounted thereon, the crank and eccentric connected with said shaft, and the liquid and air pumps, of the rotatable brush located in and contacting with said drum, the arms or brackets to which said brush is journaled, the sprocket pinion and chains for rotating said brush, the sprocket-wheel on the driving-shaft with which said chain engages, and the atomizer located in said drum and connected with the liquid and air pumps; substantially as described.

8. As an improved article, an atomizer for a tobacco casing and flavoring machine, comprising the screw-threaded coupling provided with diametric openings, the air and liquid pipes connected therewith, at right angles to each other, the screw-threaded sleeve having a differential bore, and connected with said coupling, the screw-threaded socket having a cylindrical recess in its inner end, its rod and handle, the piston located in said coupling, its rod working in the recess in said socket, and the coiled spring embracing said piston-rod and confined between the inner end of said socket and the piston, substantially as described.

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

JOHN H. KESTER.

Witnesses:

BENNETT S. JONES,
THEO. MÜNGEN.