

(No Model.)

7 Sheets—Sheet 1.

J. E. SMITH.

MACHINE FOR BUNCHING CIGARS.

No. 397,396.

Patented Feb. 5, 1889.

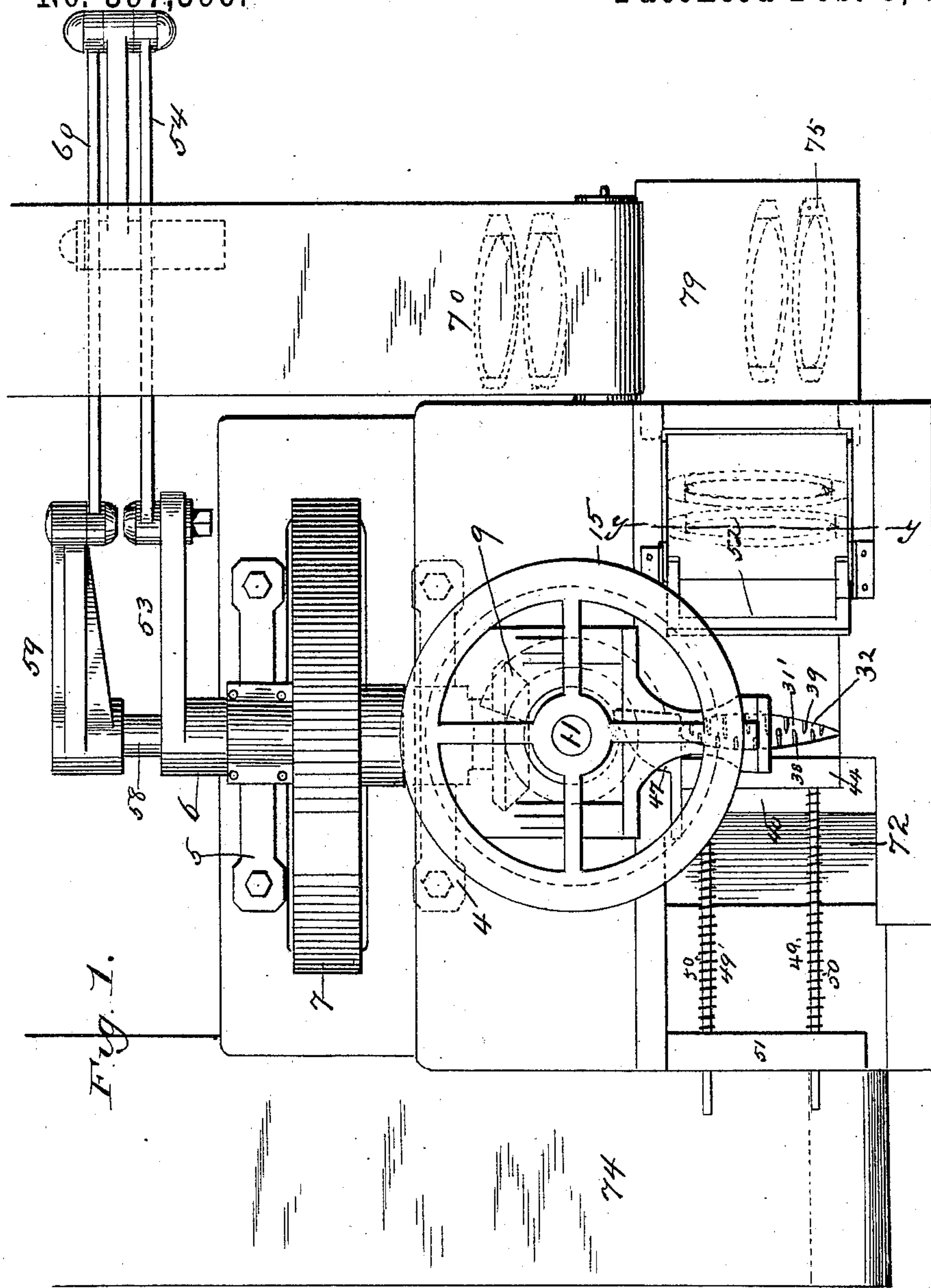


Fig. 1.

Witnesses:

W. H. Mortimer
Francis X. Quinlan

Inventor :

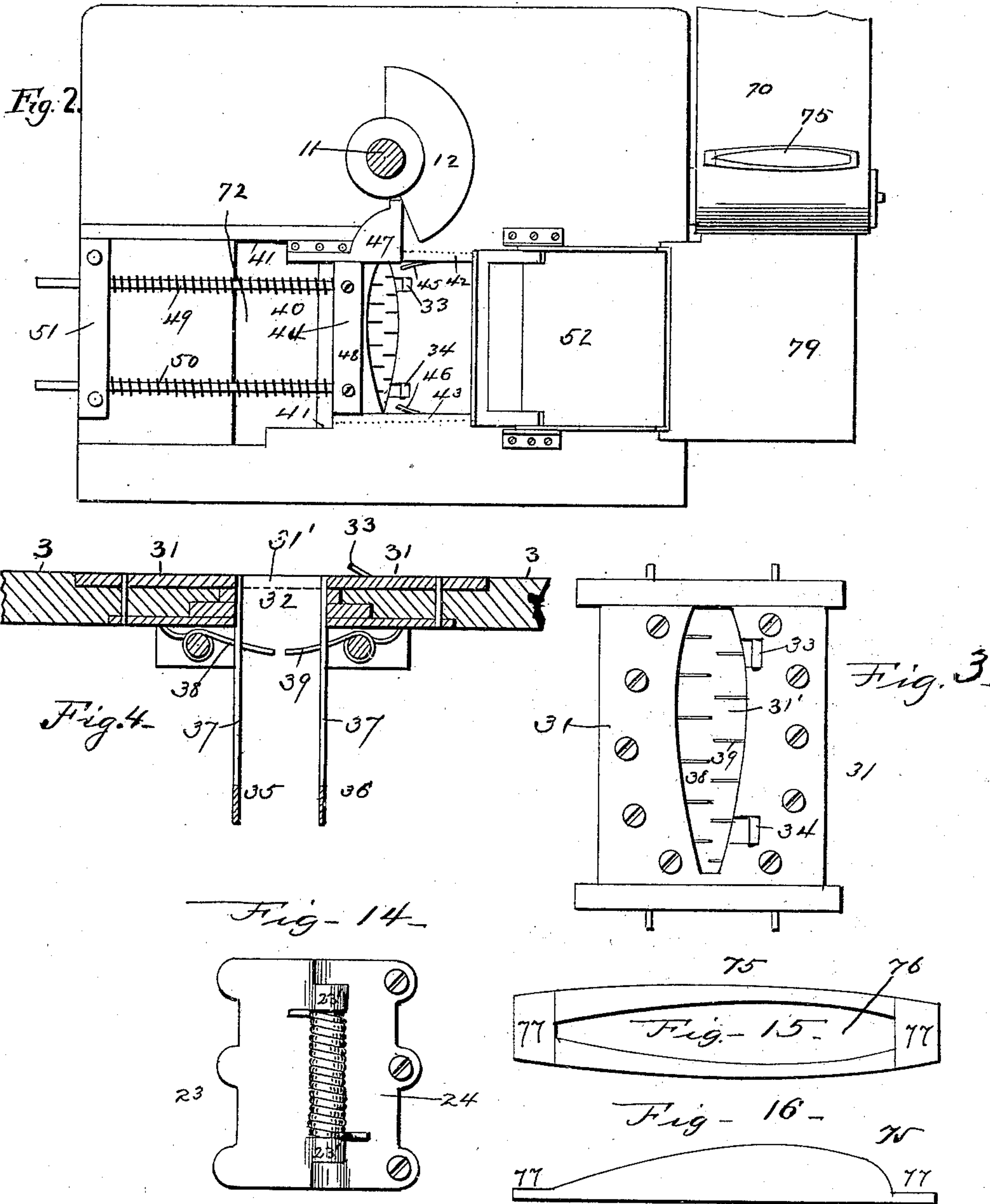
James Edward Smith,
by *John J. Moore,*
his Attorney.

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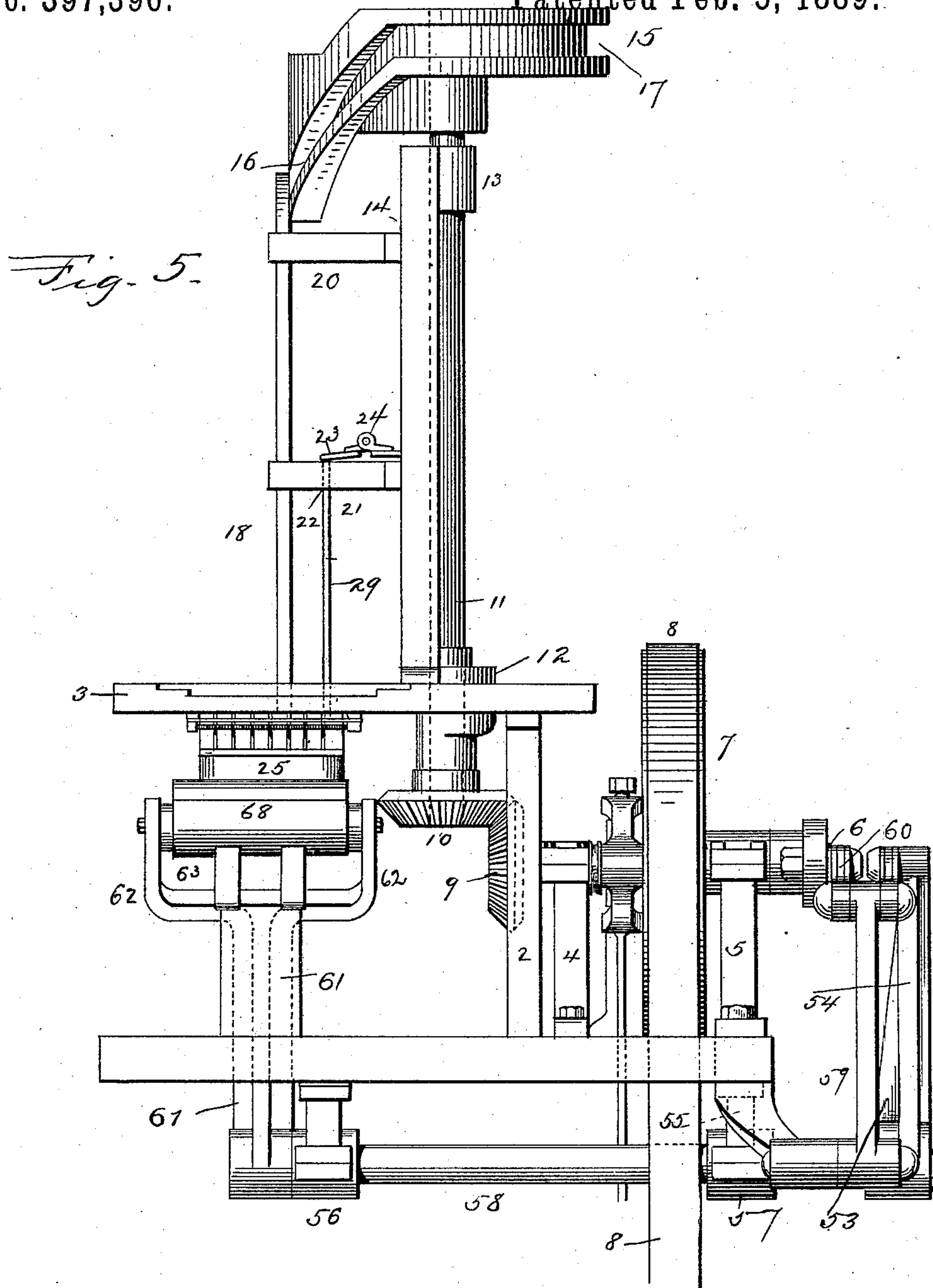
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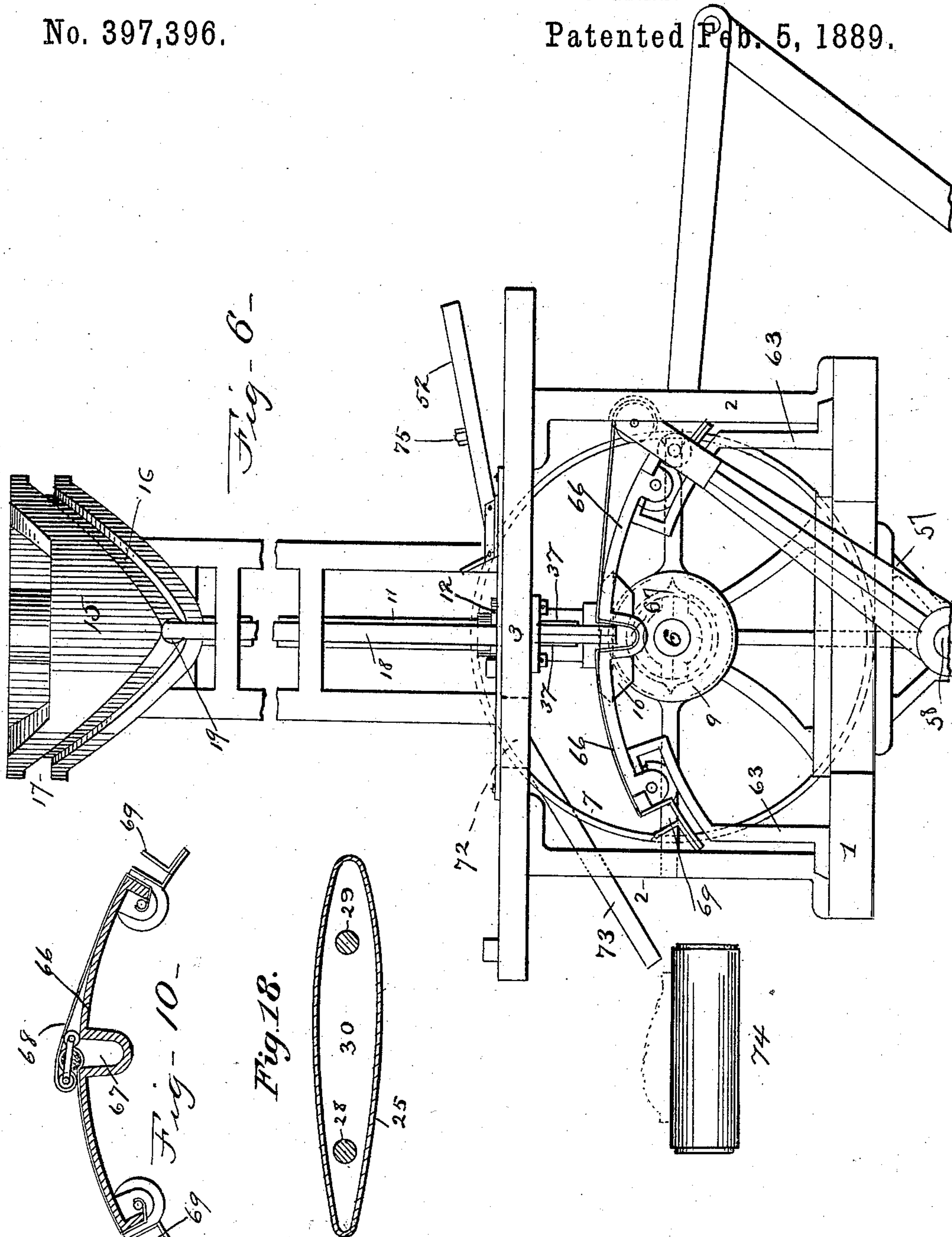
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Witnesses:

M. M. Mortimer
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(No Model.)

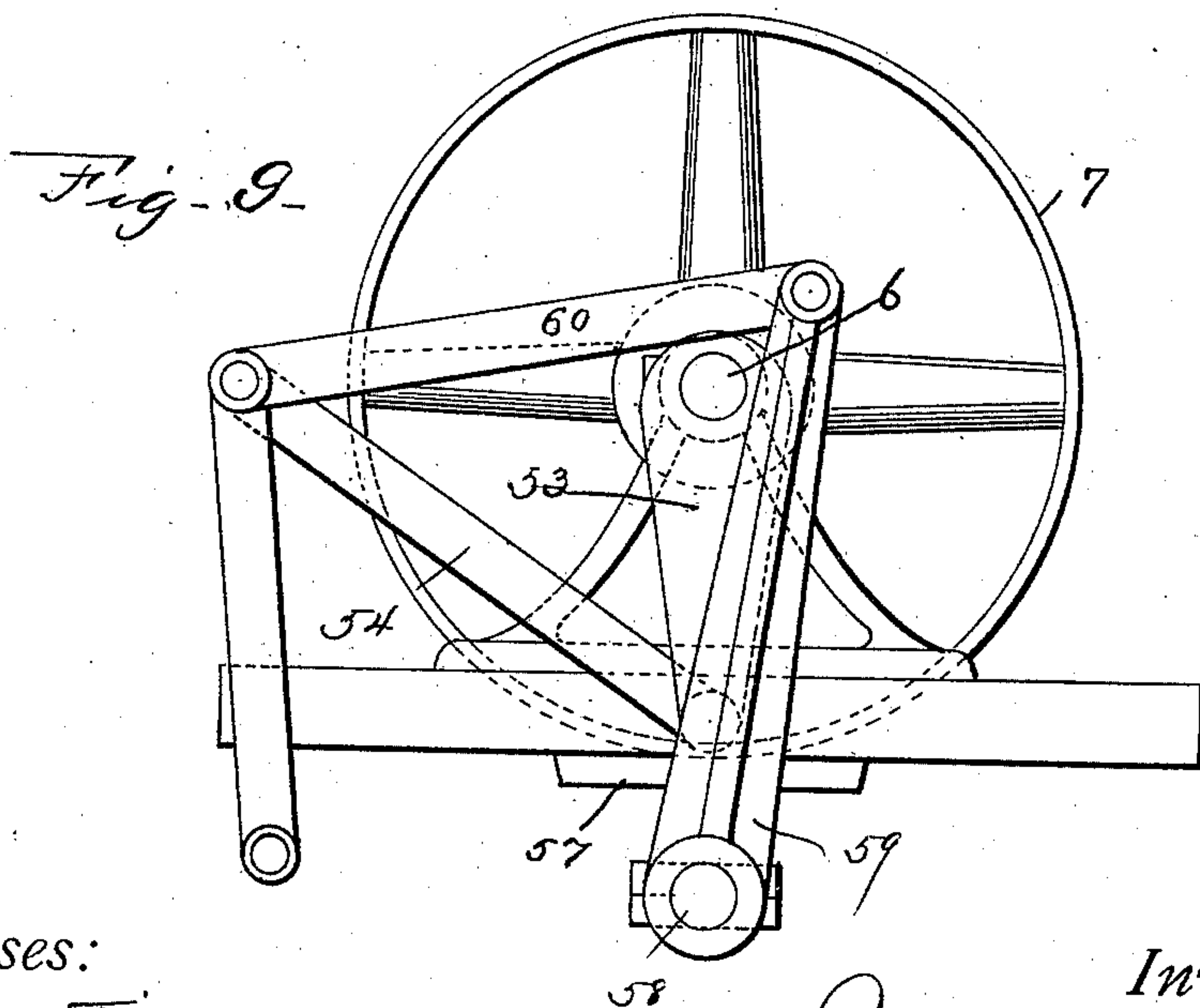
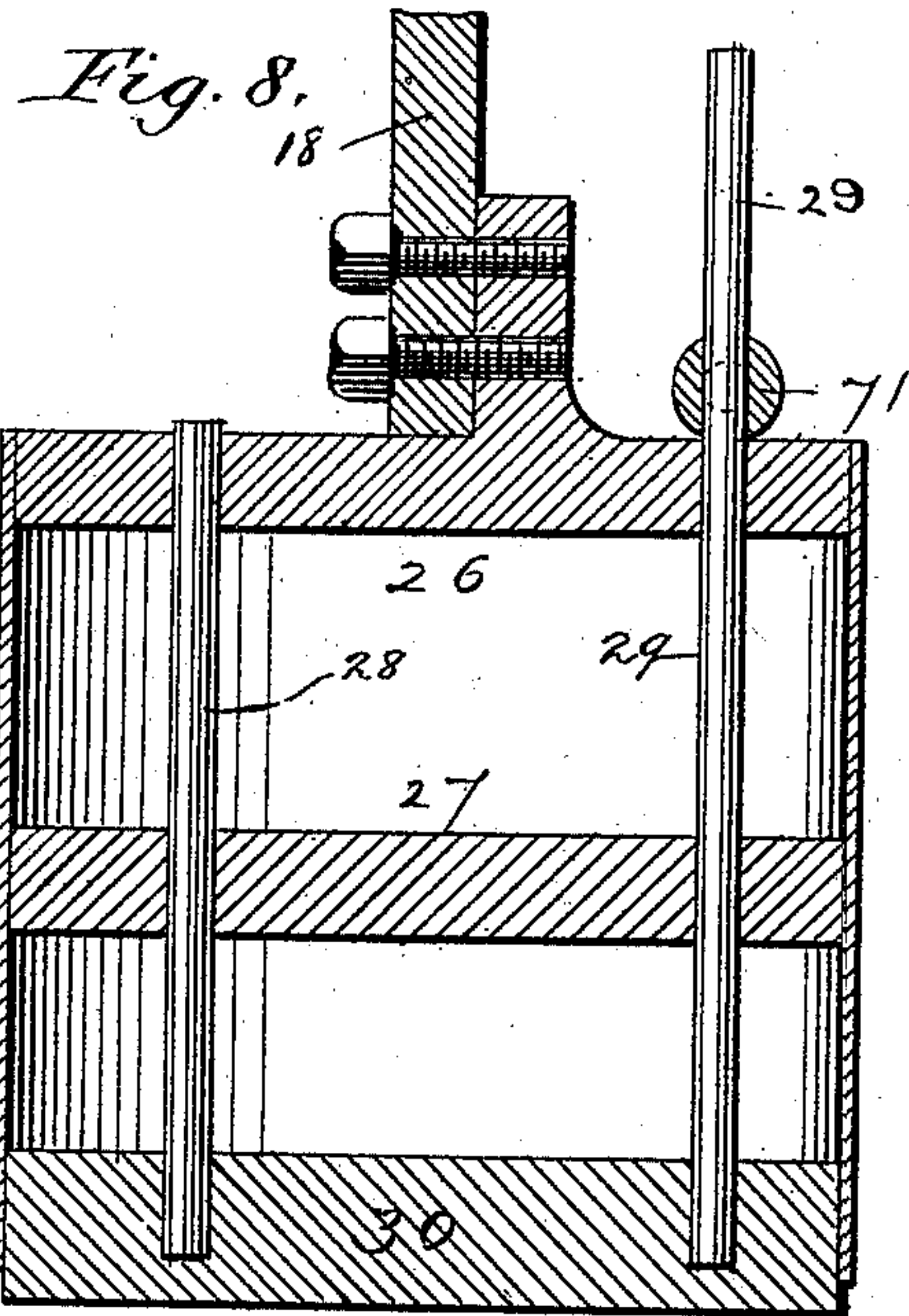
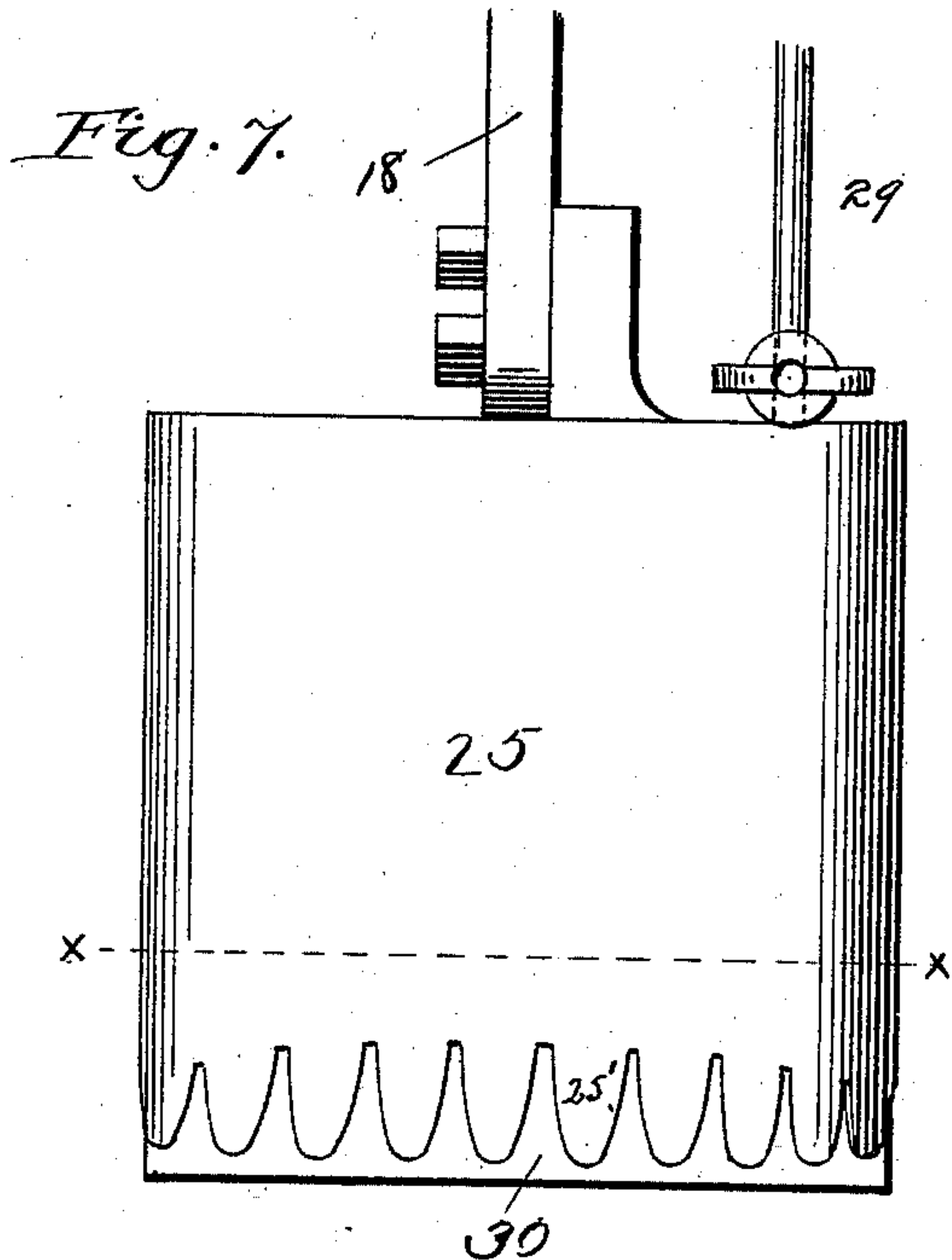
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J. E. SMITH.

MACHINE FOR BUNCHING CIGARS.

No. 397,396.

Patented Feb. 5, 1889.



Witnesses:

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(No Model.)

7 Sheets—Sheet 6.

J. E. SMITH.

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Fig-11-

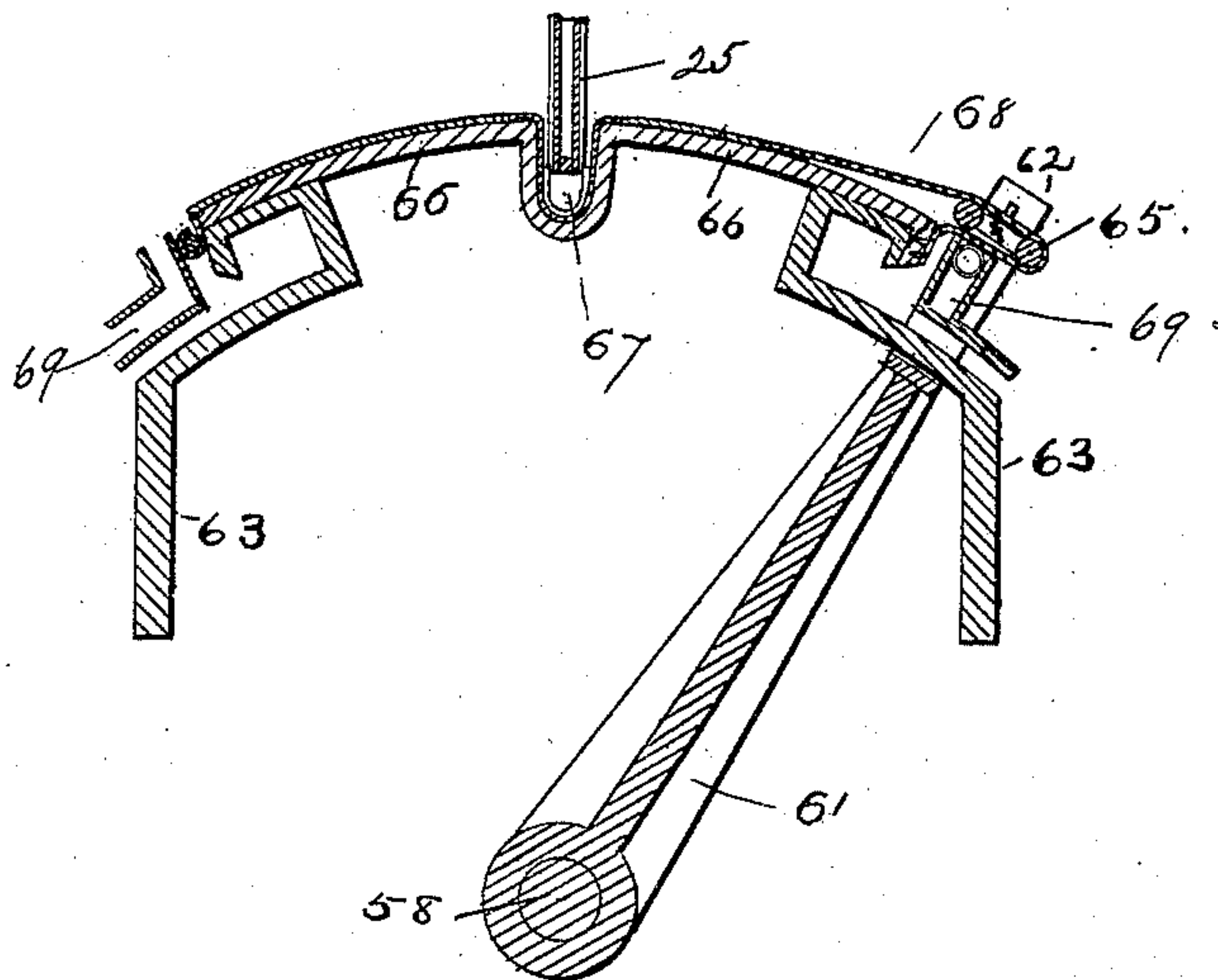
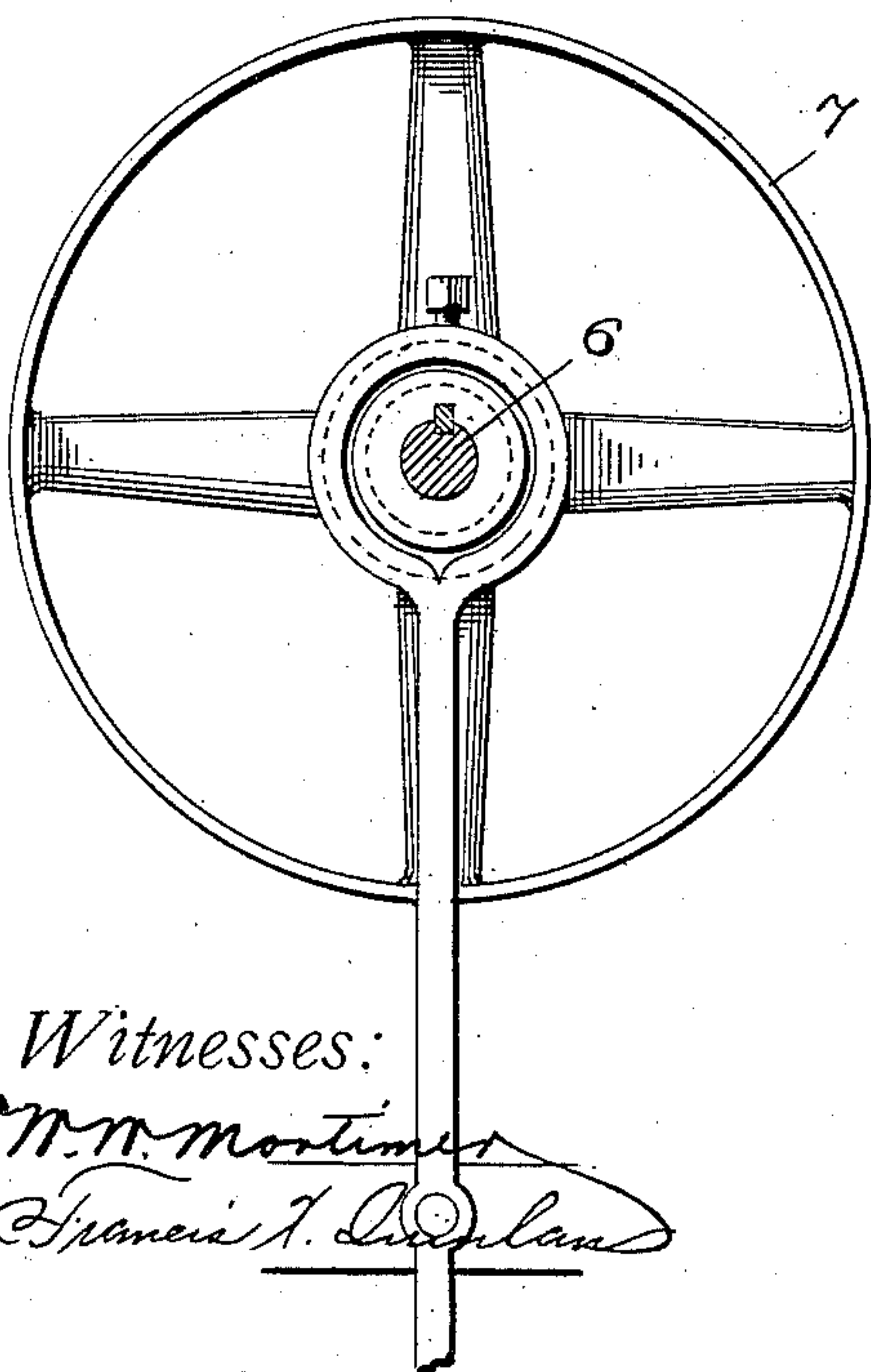


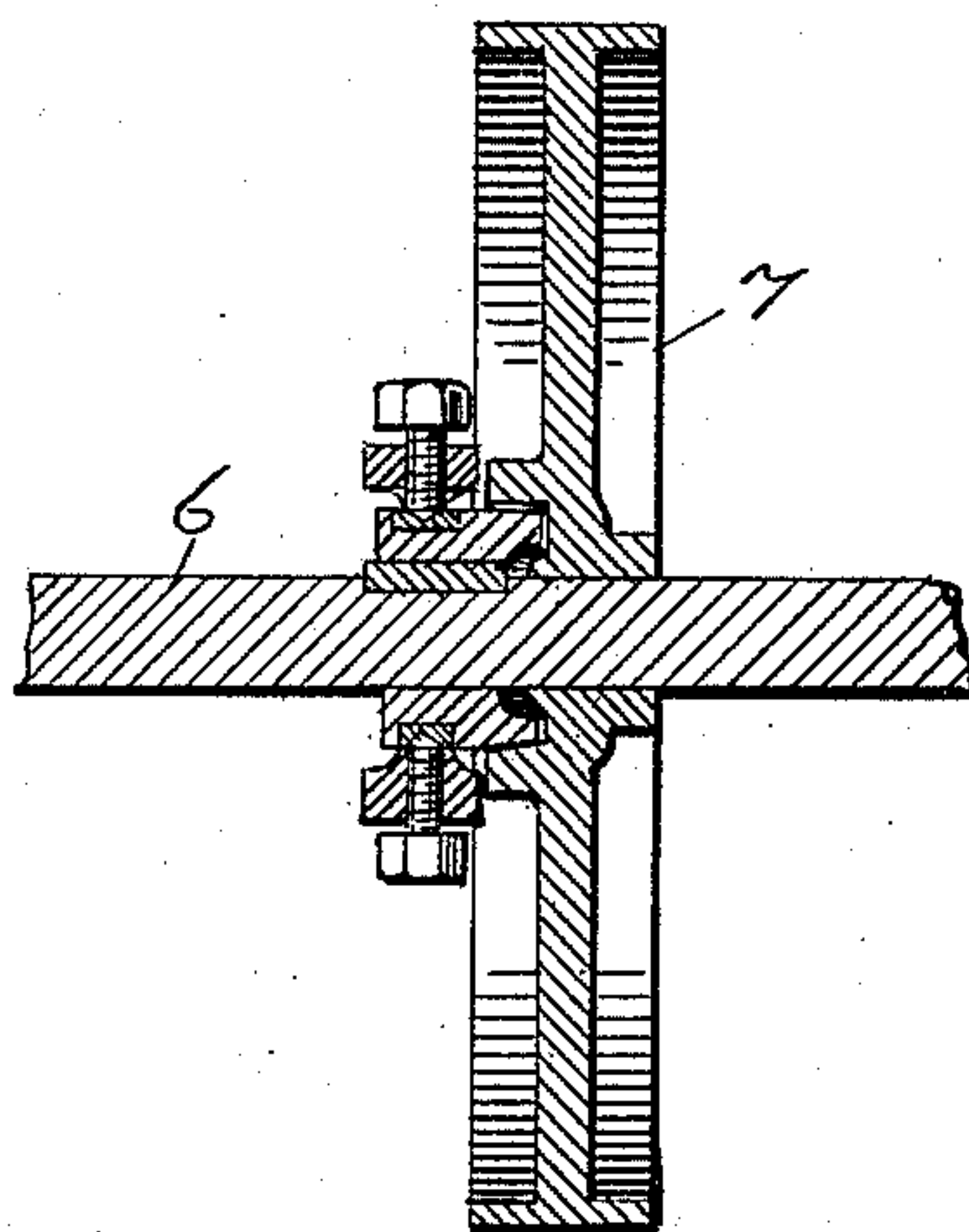
Fig-12-



Witnesses:

N. N. Mortimer
Francis T. [unclear]

Fig-13-



Inventor :

James Edward Smith
by *John Moore*
his Attorney.

(No Model.)

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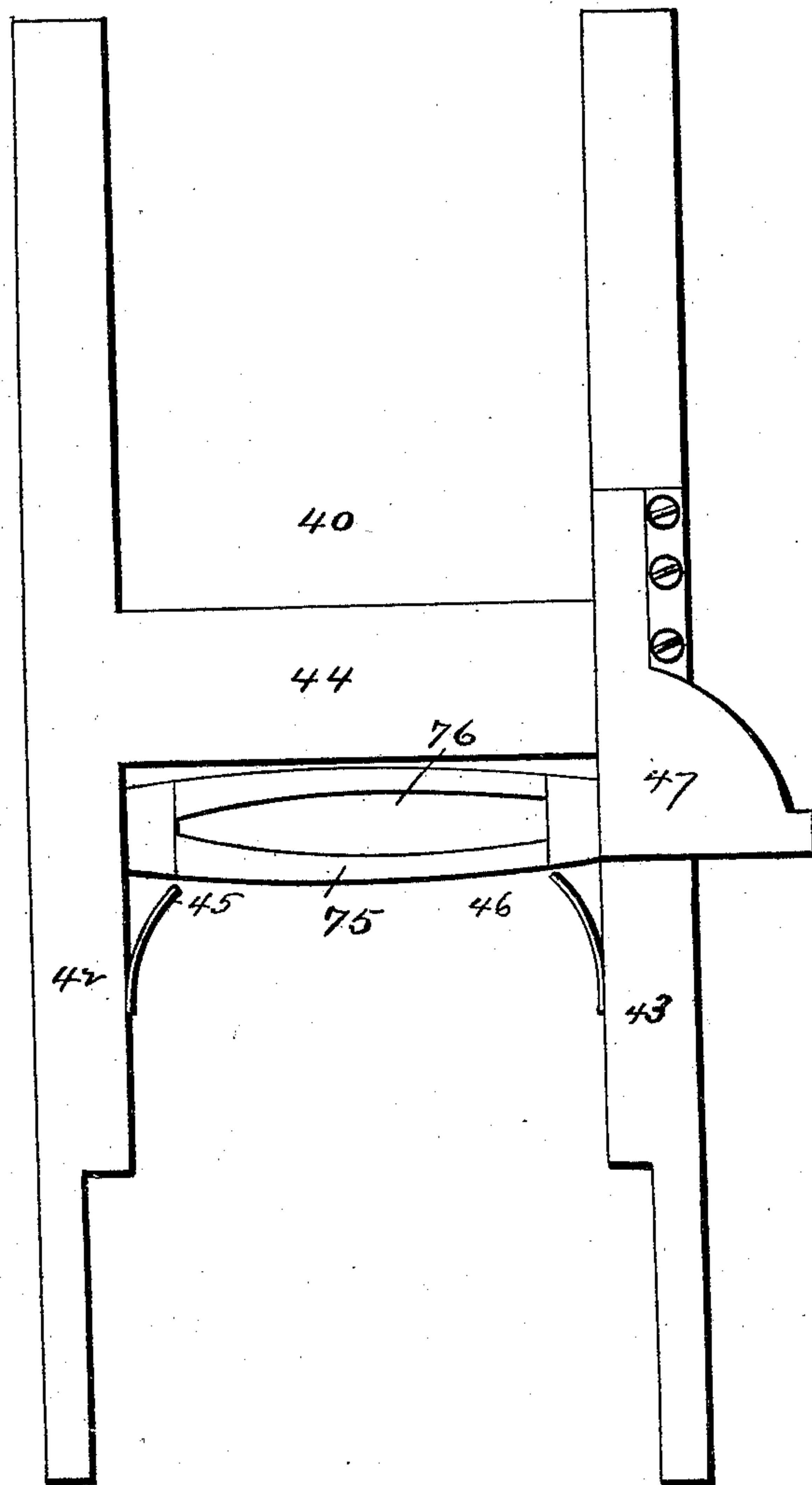
J. E. SMITH.

MACHINE FOR BUNCHING CIGARS.

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Fig-17.



WITNESSES.

Mortimer Redman.
R. W. Bishop.

James Edward Smith,
INVENTOR

by *O. M. Moore,*
Attorney

UNITED STATES PATENT OFFICE.

JAMES EDWARD SMITH, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO ADOLPH MOONELIS AND BENJAMIN LICHTENSTEIN, OF SAME PLACE.

MACHINE FOR BUNCHING CIGARS.

SPECIFICATION forming-part of Letters Patent No. 397,396, dated February 5, 1889.

Application filed November 9, 1887. Serial No. 254,666. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWARD SMITH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for Bunching Cigars; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to cigar-bunching machines; and it consists of the novel combination of devices and peculiar construction and arrangement of parts, as will be hereinafter fully described and claimed.

Among other things my invention has for its object to provide a cigar-bunching machine with a reciprocating carriage for receiving at regular intervals one of a series of molds containing the fillers of tobacco from a feeding-table, and to hold the said molds in position over an opening in the main table of the machine for a vertically-reciprocating plunger to pass through the mold and opening in the table and carry the filler to the rolling and pressing devices to be formed into a bunch; to provide mechanism for automatically moving the carriage to discharge the empty mold after the filler has been removed therefrom by the plunger and to return the said carriage in position to receive another filled mold; to improve the construction of the plunger and adapt it to receive and hold the filler in proper position and due alignment while carrying it from the mold to the bunch rolling and pressing devices; to provide mechanism arranged to operate in conjunction with the plunger for positively forcing the filler well up into the plunger when the latter passes through the opening in the main table, and thereby prevent the escape and waste of the filler; to provide devices for positively and automatically ejecting the filler from the plunger as the latter is elevated and properly deposit the filler on the rolling apron; to provide mechanism for feeding the molds to the machine after

they have been properly filled and to carry the empty molds away after they have been discharged therefrom; and, finally, to improve the rolling and pressing devices for forming the bunch, as will be more fully described hereinafter.

In the accompanying drawings, Figure 1 is a top plan view of a cigar-bunching machine constructed in accordance with my present invention. Fig. 2 is a top plan view of the main table thereof, with the vertical power-shaft in section and the carriage in position for a mold to align with the opening in the main table. Fig. 3 is a detail top plan view of one of the plates, which is secured to the table over the opening therein, showing the position of the pressure-fingers for entering the plunger and forcing the filler up into the same. Fig. 4 is a detail vertical sectional view of the plate shown in Fig. 3, showing the pressure-fingers in elevation and the guards for the plunger. Fig. 5 is an end elevation of the entire machine, with the feeding-table and carriage removed therefrom. Fig. 6 is a side elevation of the machine, showing the feeding-table. Fig. 7 is a side elevation of the plunger, with a portion of the rod thereof broken away. Fig. 8 is a vertical sectional view taken centrally through the plunger. Fig. 9 is an enlarged detail view, in side elevation, of the mechanism employed for transmitting to a supplementary shaft a rocking motion from the main driving-shaft of the machine. Fig. 10 is a sectional view of a portion of the rolling-table, taken longitudinally through the same and showing the relative positions of the apron and pressing-rollers when the bunch has been removed from the groove or depression in the rolling-table. Fig. 11 is a like view of the table and the rocking arm carrying the pressing-rollers, showing the position of the parts when the plunger enters the depression or groove in the table. Figs. 12 and 13 are detail views of the driving-shaft, the driving-band pulley, and the clutch for coupling the shaft and pulley. Fig. 14 is a detail top plan view of the spring-controlled pressure cap or plate for depressing the rod and follower of the plunger when the latter begins its upward movement from the rolling-

table after depositing the filler in the groove in the table. Figs. 15 and 16 are detail views, in top plan and side elevation, of one of the molds. Fig. 17 is an enlarged plan view of the carriage detached from the machine, with a mold in position thereon. Fig. 18 is a horizontal sectional view through the shell of the plunger on the line *x x* of Fig. 7; and Fig. 19 is a transverse sectional view taken through the feeding-table 52 on the line *y y* of Fig. 1, with a mold in place thereon.

Referring to the drawings, in which like figures of reference denote corresponding parts in all the figures, 1 designates the bed-plate of my cigar-bunching machine, upon which are erected vertical standards 2, that support the main table 3 of the machine, said bed-plate, the table, and standards being all firmly united or secured together in any well-known manner. At one side of the standards 2 and table 3 are another pair of standards, 4 and 5, which are also bolted to the bed 1, and in the upper ends of these standards 4 5 are secured bearings, in which is journaled the main driving-shaft 6 of the machine. A driving-pulley, 7, is loosely mounted on this main driving-shaft 6, at one side of the main table 3, over which passes a belt, 8, running from a line of shafting, or a suitable motor for rotating the shaft 6 continuously in one direction; and in order to stop and start the machine at will I provide a clutch of the form more clearly shown in Figs. 12 and 13 of the drawings. This clutch is operated by a suitable lever, (seen in Fig. 6;) but I do not deem it necessary to describe this clutch in detail, as it forms no part of my present invention.

On the inner end of the main driving-shaft 6 of the machine is secured a bevel gear-wheel, 9, which meshes with a similar wheel, 10, secured to the lower extremity of a vertical power-shaft, 11, which passes through the main table 3, rises for a suitable distance above the same, and is journaled at its ends in suitable bearings, the upper bearing being numbered 13, and is supported in a vertical frame, 14, fixed to the main table 3 of the machine. The lower end of this vertical power-shaft 11 has fixed thereto a cam, 12, which is arranged immediately above the upper face of the main table 3, as indicated in Figs. 2, 5, and 6, and to the upper end of this vertical shaft 11 is secured a cam, 15, having in its periphery a continuous groove, 16 17, the part 17 of the groove being arranged in a horizontal plane, while the part 16 inclines obliquely thereto, as indicated very clearly in Figs. 5 and 6. Both of these cams 12 and 15 are fixed to the vertical shaft 11, so as to rotate or turn therewith, and the cam 12 projects from one side of the shaft, while the oblique part 16 of the cam 15 is arranged on the reverse side of said shaft. (See Fig. 5.) The object of thus arranging the two cams on the vertical power-shaft 11 is to cause the cam 12 to force the carriage out of line with an opening in the table 3 immediately after the elevation of the

plunger and over a discharge-opening in the main table, so that the mold in the carriage will drop into said discharge-opening, and after such empty mold is discharged the push-springs force the carriage into proper position again for receiving a new mold, as will presently appear. The vertically-reciprocating plunger consists of a shell, 25, and a vertical rod, 18, which are firmly united together by bolts, (see Figs. 7 and 8,) and to the upper end of the rod 18 is connected a friction-roller, 19, that fits in the groove in the cam 15, whereby as the cam rotates the plunger is reciprocated vertically. This plunger is arranged in the vertical plane of a transverse slot or opening, 32, formed at a suitable point in the main table 3 of the machine, at one side of the vertical power-shaft 11, and this opening has its sides curved to assume, approximately, the longitudinal contour of a cigar-bunch. To permit the shell of the plunger to readily pass through this opening 32, and to retain the filler in proper shape with the leaves of tobacco in due alignment, the shell of the plunger is also shaped to assume the approximate shape of a bunch in horizontal cross-section, as indicated in Fig. 18 of the drawings. This shell is made hollow and of a suitable size to receive a single filler, and within the shell, in the upper part thereof, are fixed plates or heads 26 and 27, through which pass vertical rods 28 and 29, which serve to guide a vertically-reciprocating platen or follower, 30, that is arranged in the lower open end of the shell 25, as shown in Fig. 8. One of these rods, 28, is shorter than the other rod, 29, and the short rod is fixed in the shell, while the other longer rod, 29, is extended above the shell, and is connected at its lower end to the follower or platen 30, to automatically depress the latter when the plunger begins its upward movement, to thereby positively eject the filler from the lower open end of the shell 25 of the plunger.

Secured to one side of the vertical fixed frame 14 are two horizontal brackets or guides, 20 and 21, arranged one below the other, and having suitable aligned openings, through which the vertical rod 18 of the plunger is guided. To the lower bracket or guide, 21, of the frame 14 is secured a spring-controlled cap, 23 24. (See Figs. 5 and 14.) The sections or leaves 24 25 of this cap are hinged together by a transverse pintle or shaft that is fitted in suitable lugs, 23', on the meeting ends of the leaves or sections, and around this pintle is placed a coiled spring, which serves to normally depress one of the sections or leaves. One section, 24, is firmly secured to the bracket or guide 21, while the other section, 23, is arranged immediately over a vertical opening in said bracket, through which the upper end of the longer rod, 29, of the plunger passes, as seen in Fig. 5, whereby the leaf or section 23 is adapted to normally press upon the upper extremity of the rod 29 to offer resistance to the elevation

thereof when the plunger begins to ascend, and thus depress the rod 29 and the follower attached thereto to expel the contents of the plunger positively therefrom.

5 Around the lower edges of the shell 25 of the plunger are formed a series of incisions or scallops, 25', which are arranged at suitable regular intervals and extend vertically into the shell for a suitable distance, and when the
10 plunger descends the spring-fingers 38 and 39, arranged below the openings 31' and 32, are adapted to enter these incisions or scallops to more effectually force or press the filler into the shell of the plunger and to keep the filler
15 in due alignment.

A flat plate, 31, is countersunk in the upper face of the main table 3 of the machine, immediately over the opening 32 thereof, and in this flat plate is formed a similar opening,
20 31', that corresponds in size and shape to the opening 32 and aligns therewith. (See Fig. 4.) At one side of the openings 31' and 32 are arranged spring-stops 33 and 34, which are secured in the plate 31, and extend a suitable
25 distance above the face thereof, to take against one side of a mold when it aligns with the openings 31' and 32, to prevent the mold from retrograde movement. These stops 33 and 34 are in the path of the molds when being con-
30 veyed from the feeding-table to the openings 31' and 32, and they are inclined in the direction that the molds travel to permit the latter to slide freely over the same, these stops yielding readily to the force or pressure of the
35 molds and assuming their normal positions above the upper face of the plate 31 after the mold passes.

Depending from the under side of the main table 3 are vertical guides 35 and 36, which
40 are suitably fixed to the table, and are arranged on opposite sides of the vertical openings 31' and 32, for the plunger to pass between the same. These guides are slotted nearly the entire length, and through the slots project the series of yielding fingers 38 and 39,
45 which are hung on suitable pins or shafts, and are arranged immediately below the table 3. These two series of spring-fingers project toward one another and alternate with each
50 other, and they extend across the space between the guides 35 and 36 in the path of the plunger, to enter the incisions in the shell thereof and press the tobacco well up into the shell, so that it will not become displaced and
55 is kept in due alignment. These spring-fingers yield or give as the plunger descends, and they serve to hold the tobacco from falling upon the rolling-table and going to waste should it accidentally escape from the mold
60 when it is in line with the openings 31' and 32, as is obvious.

In the upper face of the main table 3 of the machine is formed a longitudinal recess or groove, 41, which extends the length of the
65 table, and in this recess is fitted a reciprocating carriage, 40. (Shown in Fig. 17.) This carriage is adapted to slide back and forth in

the groove or recess, in which it is guided in a direct line; and it consists of two flat parallel side pieces, 42 and 43, which are united
70 at an intermediate point of their length by a transverse bar, 44. To the inner face of the parallel sides of the carriage, at a short distance one side of the transverse bar 44, I secure two springs, 45 and 46, which have one
75 end united to the carriage and project laterally therefrom at their free ends, so as to hold the mold in the carriage when the latter is operated by the cam 12 and forced toward the discharge-opening 72 in the table 3. (See
80 Figs. 1 and 2.) These springs yield or give when the mold is fed to the carriage, and after it passes the springs the latter spring outward and lie in front of the mold to prevent the latter from being displaced and to
85 insure the mold moving with the carriage to the opening 72, where the empty mold drops from the carriage by gravity and falls through the discharge-opening 72 onto an inclined discharge-table 73, from whence it slides upon a
90 conveying-belt, 74, that carries the mold back to the operators, to be filled by hand and again fed to the machine.

An arm or projection, 47, is secured to one of the sides of the carriage, and extends lat-
95 erally therefrom in the path of the cam 12 to be struck by the latter during a part of each rotation thereof, and thus force the carriage toward the opening 72, for the purpose above stated, and this carriage is returned to its
100 normal position to receive the molds by means of push-springs 49, which are coiled around guide-rods 50, that are secured to the cross-bar 44 of the carriage and pass through a fixed guide, 51, at the rear of the table 3, as
105 shown in Fig. 2.

Depending from the under side of the bed 1 of the machine are vertical hangers 56 and 57, which carry aligned bearings, in which is jour-
110 naled a rock-shaft, 58, that extends at its ends beyond the bearings to carry arms 59 and 61, for purposes presently explained. This shaft 58 is rocked or oscillated by motion transmitted from the continuously-rotated main driv-
115 ing-shaft 6 through the links 54, 55, and 60. (See Fig. 9.)

To one end of the main driving-shaft 6 is secured a crank, 53, which rotates continuously therewith, and to the free end of this crank is pivoted one end of the link 54, which
120 has its opposite end pivoted to one end of each link 55 and 60, the other end of the link 55 being pivoted to a fixed point on the bed 1, as indicated in dotted lines in Fig. 1. The free end of the link 60 is pivoted to the outer
125 end of the arm 59, and the crank of the shaft 6 is shorter than the arm 59, whereby the arm 59 and the shaft 58, to which it is secured, are rocked, as the crank 53 and shaft 6 rotate con-
130 tinuously. The arm 61 extends upwardly from the inner end of the rock-shaft, and the upper free end of said arm is bifurcated to provide two branches or prongs, 62, which are separated a suitable distance to embrace a

rolling-table, 66. (See Figs. 5 and 6.) This rolling-table is supported on suitable standards, 63, which are fixed to the table and the bed 1, and the upper face of the rolling-table is curved, as shown in Figs. 6, 10, and 11. This table is provided with a deep depression or recess, 67, which is formed transversely therein and in line with the openings 31' and 32 and in the vertical plane of movement of the plunger. (See Fig. 6.) Over this table is arranged the rolling-apron 68, which is attached at its ends to the ends of the table in any suitable manner, and this apron passes over a pair of rollers, 65, which are journaled in the bifurcated ends 62 of the rocking-arm 61. These rollers are of uniform diameter and arranged side by side, parallel with each other, and the ends of the apron are first passed over these rollers and then connected to the table, as seen in Fig. 11. A space of suitable width is provided between these rollers to receive the bight in the apron and the filler therein, when the said rollers advance and traverse the rolling-table, as indicated in Fig. 10 of the drawings. At each of the ends of the rolling-table is provided a trough or receptacle, 69, into which the bunch, after it has been rolled and pressed and the binder wrapped around the same, is deposited at the completion of the stroke of the rocking arm 61. Each trough or receptacle is made of one or more pieces of metal, with an open upper side, and it is suitably secured to one end of the rolling-table 66, substantially flush therewith, and in proper position to receive a bunch after the binder has been wrapped around the same.

At one side of the openings 31' and 32 in the main table 3 of the machine is an inclined feeding-table, 52, which is suitably fixed in place on the table and has its lower end terminating a short distance one side of said openings in the table to properly deliver the molds 75 to the carriage. These molds 75 are shown in detail in Figs. 15 and 16 of the drawings, and they have a longitudinal opening, 76, formed therein, which corresponds to the longitudinal contour of the bunch to be formed. This opening extends through the mold so that it is open and free for the plunger and filler to pass therethrough, and the ends of the mold are reduced, as at 77, to adapt the same to slide in grooves or ways 78, formed in the sides of the feeding-table 52, whereby the molds are properly fed in correct position to the carriage.

Projecting beyond one end of the table 3, on the side of the opening 32 on which the feeding-table is located, is another smaller table, 79, upon which the molds, after being properly filled by hand, are deposited by a traveling belt, 70, which is suitably arranged to carry the molds from the operators, who fill the molds by hand. The molds are of proper depth to contain enough tobacco to form a bunch of the proper size, and the width and length of the opening therein is such as to

regulate the size of the bunch. Of course the shape and dimensions of the mold can be varied to make cigars of different shapes and sizes by merely constructing the opening therein to conform to the desired shape.

The operation of my improved cigar-bunching machine is as follows: The molds are filled with tobacco to the desired depth and placed on the belt 70, by which they are carried to the table 79 and deposited thereon. The attendant places the molds by hand on the feeding-table as required, down which they slide, and are properly presented one at a time to the carriage, when the latter is forced back toward the openings 31' and 32 after having discharged an empty mold. The mold slides past the retaining-springs 45 and 46 on the carriage and the springs 33 and 34 on the plate 31, these two sets of springs yielding to the passage of the mold and immediately returning to their normal positions to hold the mold in line with the openings 31' and 32 and to prevent displacement of the mold when the plunger descends. As soon as the mold arrives in position over the openings 31' and 32 the plunger descends and passes through the opening in the mold, the openings 31' and 32, between the gates or fingers 38 and 39, and carry the filler from the mold and deposit it on the rolling-apron and in the depression 67 in the rolling-table. As the plunger presses between the spring pressure-fingers, the latter enter the incisions or scallops in the lower edge of the shell thereof, and thereby force the filler well up into the shell. As the plunger strikes the rolling-apron it presses it into the depression in the rolling-table to thereby form the bight in the apron, as seen in Figs. 10 and 11, and at the beginning of the upstroke of the plunger the cap 23 presses on the upper end of the rod 29 to hold it down temporarily, and thus cause the platen or follower 30 to positively eject the filler from the shell, after which the follower and rod are elevated with the plunger to their normal positions. As soon as the plunger is raised clear above the mold the cam 12 strikes the arm or projection 47 on the carriage and forces the latter and the mold therein toward the opening 72, through which the mold falls or drops by gravity when in line therewith, and descends upon an inclined chute or board, 73, to the belt 74, from whence it is delivered to the operators. After the plunger is elevated the rollers carried by the rocking arms 61 advance over the surface of the rolling-table, and when the front one of the rollers 65 arrives over the depression or groove 67 the bight in the apron is raised out of the depression, and as the arm continues to advance the bight and bunch are forced into the space between the two rollers 65. As these rollers are in contact with the top of the rolling-table, they operate to roll the bunch and wrap the binder around the same, the binder having previously been placed on the apron and over the depression in the rolling-table prior to the descent of the

plunger with the filler. When the rocking arm and the rollers 65 thereof arrive at the opposite end of the rolling-table from whence they started, the rollers pull upon the apron and straighten out the bight therein, so that the bunch is discharged from the apron and drops into one of the troughs, from whence it is removed by hand. The rocking arm is now returned to its normal position (shown in Fig. 1) to adjust the apron properly over the rolling-table to receive the next filler carried from the succeeding mold by the plunger on its next downstroke, and the operation repeated, a new mold being fed to the machine each time the carriage is returned to its position in juxtaposition to the openings 31' and 32 by the push-springs.

Changes in the form and proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my invention.

No claim is herein made to the devices shown in a prior application filed by me July 20, 1887, Serial No. 244,805.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cigar-bunching machine, the combination of a main table having an opening therein, as 32, a reciprocating carriage sliding on the table and remaining normally at rest while in juxtaposition to the opening therein, an open mold independent of the carriage and adapted to be fed thereto while the carriage is at rest, so that the mold aligns with the opening in the table, said mold being detachably connected to the carriage to be automatically discharged therefrom at the limit of movement of the carriage away from the opening, a vertically-reciprocating plunger adapted to pass through the mold and opening, and mechanism for moving the carriage and mold away from the opening to discharge the mold from the carriage, substantially as described.

2. In a cigar-bunching machine, the combination of a table having an opening therein, as 32, a reciprocating carriage working on said table, a feeding-table, an open mold adapted to slide on the feeding-table and rest on the carriage in line with the opening in the table, and mechanism for moving the carriage to convey the mold away from the opening, substantially as described.

3. In a cigar-bunching machine, the combination of a table having an opening, 32, and a discharge-opening, 72, at one side of said opening 32, a reciprocating carriage, an open mold normally held by the carriage over the opening 32, a plunger adapted to pass through the mold and opening 32, and mechanism for moving the carriage to convey the mold to the discharge-opening 72, substantially as described.

4. In a cigar-bunching machine, the combination of a main table having an opening, 32, therein, a reciprocating carriage sliding on the

main table, an independent open mold adapted to be placed in the carriage, a rolling-table beneath the main table and having a transverse pocket or depression therein arranged in line with the opening 32, an apron connected to the rolling-table, a rocking arm having the pressure-rollers, and a hollow plunger adapted to pass through the aligned mold and opening to receive the contents of the mold and deposit the same on the apron within the depression of the rolling-table, substantially as described.

5. In a cigar-bunching machine, the combination of a main table having an opening, 32, a reciprocating carriage sliding on the table, an independent open mold adapted to be fed to the carriage when the latter is at rest, devices on the carriage for detachably holding the mold thereon, a plunger, and mechanism for moving the carriage away from the opening 32 to discharge the mold at its limit of movement away from said opening, substantially as described.

6. In a cigar-bunching machine, the combination of a carriage having the retaining-springs on the opposing edges of the sides thereof, an open mold adapted to be placed in the carriage and be held in position therein by the springs, a plunger, and devices for reciprocating the carriage, substantially as described.

7. In a cigar-bunching machine, the combination of a main table having an opening, 32, and a discharge-opening at one side thereof, a reciprocating carriage sliding on the table and having the retaining-springs arranged to receive a mold between the same, an independent open mold adapted to be fed to the carriage when the latter is at rest and to be held in line with the opening 32 by the retaining-springs, and devices for forcing the carriage away from the opening 32 to discharge the mold into the discharge-opening, into which it drops by gravity, substantially as described.

8. In a cigar-bunching machine, the combination of a table having an opening therein, a plate fixed to the table over the opening and having the projecting stops 33 and 34 at one side thereof, a carriage, a mold adapted to be placed in the carriage, a plunger, and mechanism for reciprocating the carriage, substantially as described.

9. In a cigar-bunching-machine, the combination of a table having an opening therein, a carriage fitted to slide on the table, an open mold, devices for holding the mold in the carriage and in line with the opening in the table, the yielding stops 33 and 34, arranged at one side of the opening in the table to prevent retrograde movement of the mold, and a plunger, substantially as described.

10. In a cigar-bunching machine, the combination of a table having an opening therein, a carriage, a mold, a reciprocating plunger adapted to pass through the mold and opening in the table, and the spring-fingers sup-

ported below the table and arranged across the opening therein to enter the plunger as it descends and force the filler therein, substantially as described.

5 11. In a cigar-bunching machine, the combination of a table having an opening therein, a carriage, an open mold, a reciprocating plunger having an open-bottom shell at its lower end, and a series of fingers supported on the
10 table below the opening therein and arranged across the latter in the path of the plunger, the two series of fingers being alternately arranged with respect to each other and carried by independent supports on opposite
15 sides of the opening, substantially as described.

12. In a cigar-bunching machine, the combination of a table having an opening therein, a carriage, an open mold, a reciprocating plunger provided at its lower end with a shell having vertical incisions around its edges, and a series of fingers arranged across the opening in the table and adapted to enter the incisions in the shell as the plunger descends, substantially as described.

13. In a cigar-bunching machine, a reciprocating plunger having a shell at its lower end, said shell being shaped to conform substantially to the longitudinal contour of a bunch
30 and having the vertical incisions at its lower edge, substantially as described.

14. In a cigar-bunching machine, a reciprocating plunger having an open-bottom shell formed with vertical incisions which extend
35 upwardly from the open end thereof, substantially as described.

15. In a cigar-bunching machine, the combination of a table having an opening therein, the depending slotted guides fixed to the table
40 on opposite sides of said opening, the spring-fingers fitting in the slots of said guides and extending across the opening, a carriage, an open mold, and a plunger, substantially as described.

16. In a cigar bunching machine, the combination of a table having an opening, 32, and a discharge-opening, 72, at one side thereof, a reciprocating carriage, an open mold adapted to be held in the carriage, an
50 inclined feeding-table at one side of the opening 32, upon which the molds are placed, a discharge table or chute, 73, on the opposite side of said opening and below the discharge-opening, and mechanism for reciprocating the
55 carriage, substantially as described.

17. In a cigar-bunching machine, the combination of a table having the openings 32 and 72, a reciprocating carriage having a laterally-extended projection at one side, an
60 open mold adapted to enter the carriage, a vertical shaft having a cam, 12, for striking the projection on the carriage to force the latter away from the opening 32, a plunger operated by a cam at the upper end of the
65 vertical shaft, and springs for returning the carriage in juxtaposition to the opening 32 after the empty mold has been discharged

through the opening 72, substantially as described.

18. In a cigar-bunching machine, the combination of a table having the openings 32 72
70 arranged in different vertical planes, an open mold, a carriage having the side pieces between which the mold is fitted when in line with the opening 32, a plunger, devices im-
75 pinging against the mold and connected to the carriage for holding the mold in position therein while being conveyed from the opening 32 to the discharge-opening 72, and devices for moving the carriage and mold over
80 the discharge-opening 72, through which opening the empty mold falls by gravity when in line therewith, substantially as described.

19. In a cigar-bunching machine, the combination of a main table having an opening, 32, therein, a stationary rolling-table beneath the main table and having a transverse depression or pocket arranged in line with the opening, a reciprocating carriage having an open
85 mold, an apron connected to the rolling-table, a rocking arm having two spaced pressure-rollers, over which the apron passes, a hollow plunger adapted to pass through the mold and opening 32 to receive the contents of the mold,
90 and a movable platen housed within the hollow plunger and adapted to positively eject the contents of the plunger when the latter enters the transverse depression of the rolling-table, substantially as described.

20. In a cigar-bunching machine, the combination, with the main table having an opening therein, the rolling-table having an apron, a carriage carrying an open mold, and a rock-
100 ing arm provided with the pressure-rollers, of a hollow reciprocating plunger, a movable platen housed within the plunger, and a rod connected to the platen and controlled by suitable devices to depress the platen as the plunger rises and positively eject the contents of
105 the same, substantially as described.

21. In a cigar-bunching machine, the combination of the main and rolling tables, the main table having a vertical opening therein, a carriage having an open mold on the main table,
115 an apron on the rolling-table, a rocking arm having pressure-rollers, and a hollow plunger having a movable follower or platen therein for positively ejecting the filler therefrom upon the rolling-apron, substantially as described.

22. In a cigar-bunching machine, the combination, with a main table having an opening therein, a carriage, an open mold, a rolling-table provided with an apron, and a rocking arm
125 having the spaced pressure-rollers, of a hollow plunger having a series of vertical incisions in its lower edge, a series of fingers arranged below the opening in the main table in the path of the plunger and adapted to enter the incisions
130 as the plunger descends, a movable platen normally housed with the plunger at a point above the termination of the incisions thereof, a rod connected to the platen, and devices

for retarding the upward movement of the rod and platen when the plunger is elevated to thereby depress the platen upon the tobacco below the same and positively eject it from the plunger, substantially as described.

23. In a cigar-bunching machine, the combination of a hollow reciprocating plunger having an open lower end, a fixed guide in the plunger, a movable platen housed therein, a rod connected to the platen, and a spring-cap secured to the machine and normally pressing on the rod to retard the upward movement thereof and depress the platen in the plunger as the latter begins its upward movement, substantially as described.

24. In a cigar-bunching machine, the combination of a table, 3, having an opening therein, a rolling-table provided with a transverse depression in line with the opening, an apron connected at its ends to the rolling-table, a rocking arm carrying a pair of spaced presser-

rolls which are adapted to ride on the rolling-table beneath the apron, and a plunger, substantially as described.

25. In a cigar-bunching machine, the combination of the main and rolling tables, the main table having a vertical opening therein, a carriage, an open mold, an apron connected to the rolling-table, a plunger, a rock-shaft journaled beneath the rolling-table and carrying a swinging arm, a main driving-shaft, and devices intermediate the main driving-shaft and rock-shaft for transmitting and conveying the motion of the main shaft to the rock-shaft, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES EDWARD SMITH.

Witnesses:

R. K. ELLIOTT,

FRANCIS X. QUINLAN.