

No. 707,746.

Patented Aug. 26, 1902.

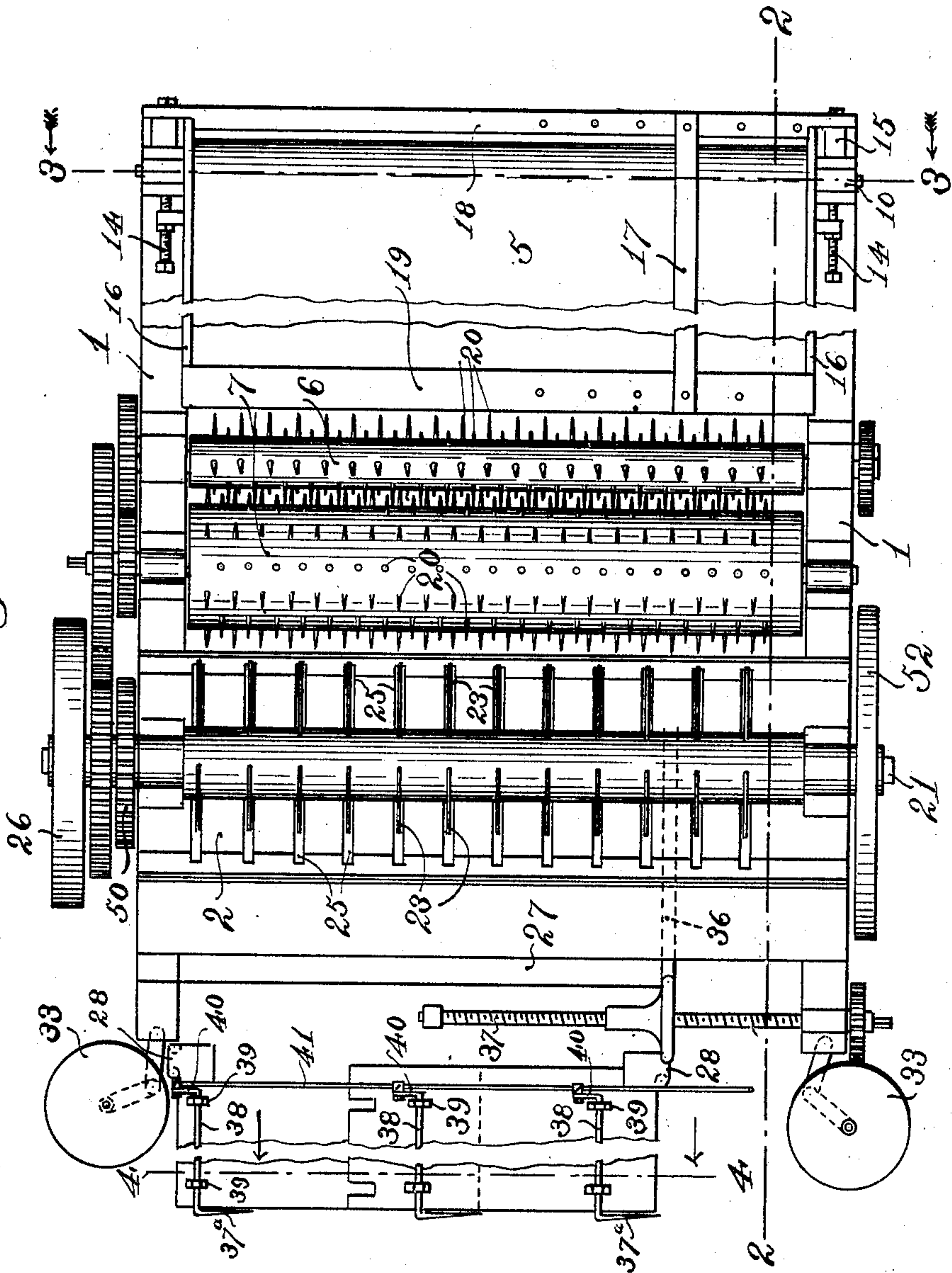
K. WESSEL.
MATTRESS FILLING MACHINE.

(Application filed Aug. 16, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses:

C. F. Wilson

Arthur C. Loz

Inventor:

Karl Wessel

By Rudolph L. Loz

Attorney

No. 707,746.

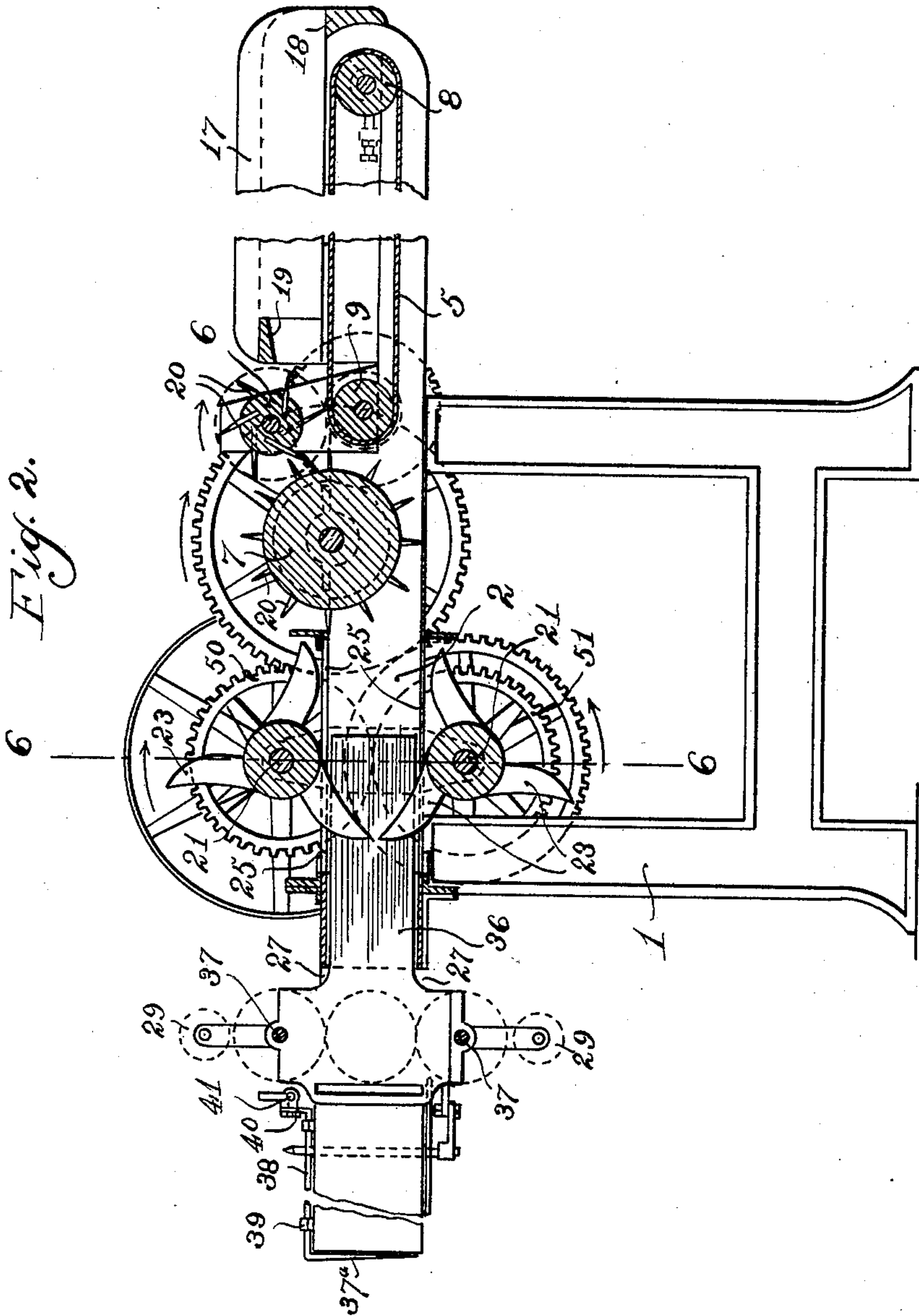
Patented Aug. 26, 1902.

K. WESSEL.
MATTRESS FILLING MACHINE.

(Application filed Aug. 18, 1901.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses:

C. F. Wilson

Arthur C. Lutz

Indenter:

Karl Wessel

By *Rudolph Lutz*

Attorney

No. 707,746.

Patented Aug. 26, 1902.

K. WESSEL.
MATTRESS FILLING MACHINE.

(Application filed Aug. 16, 1901.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 3.

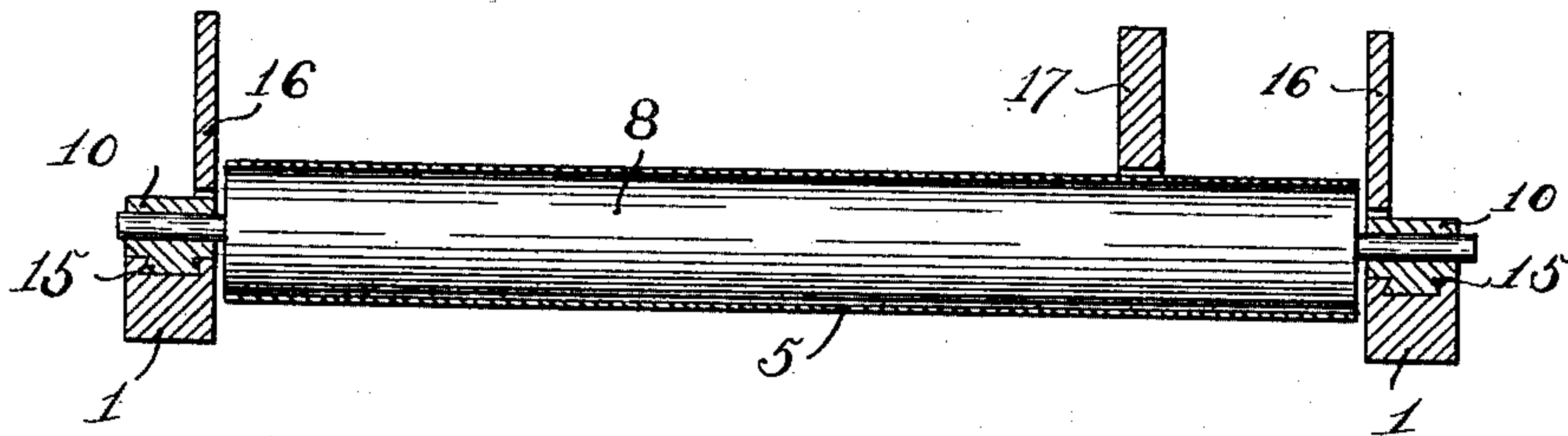


Fig. 4.

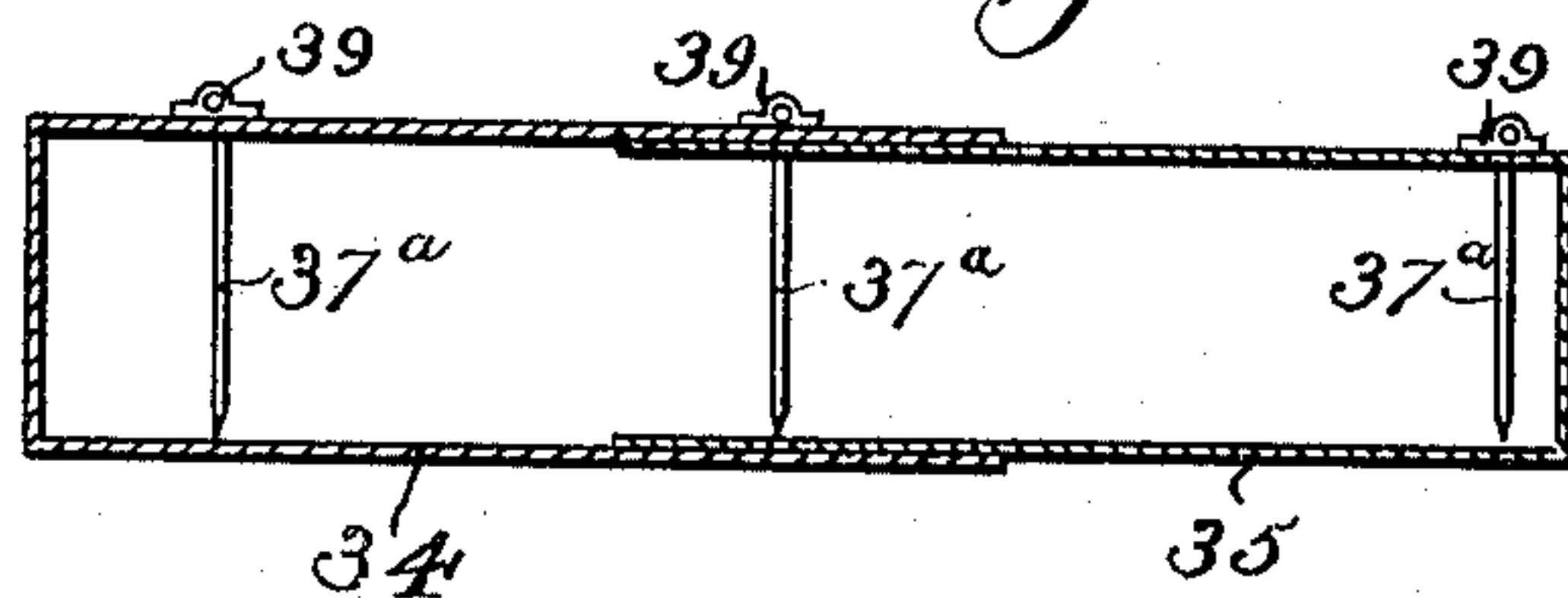


Fig. 5.

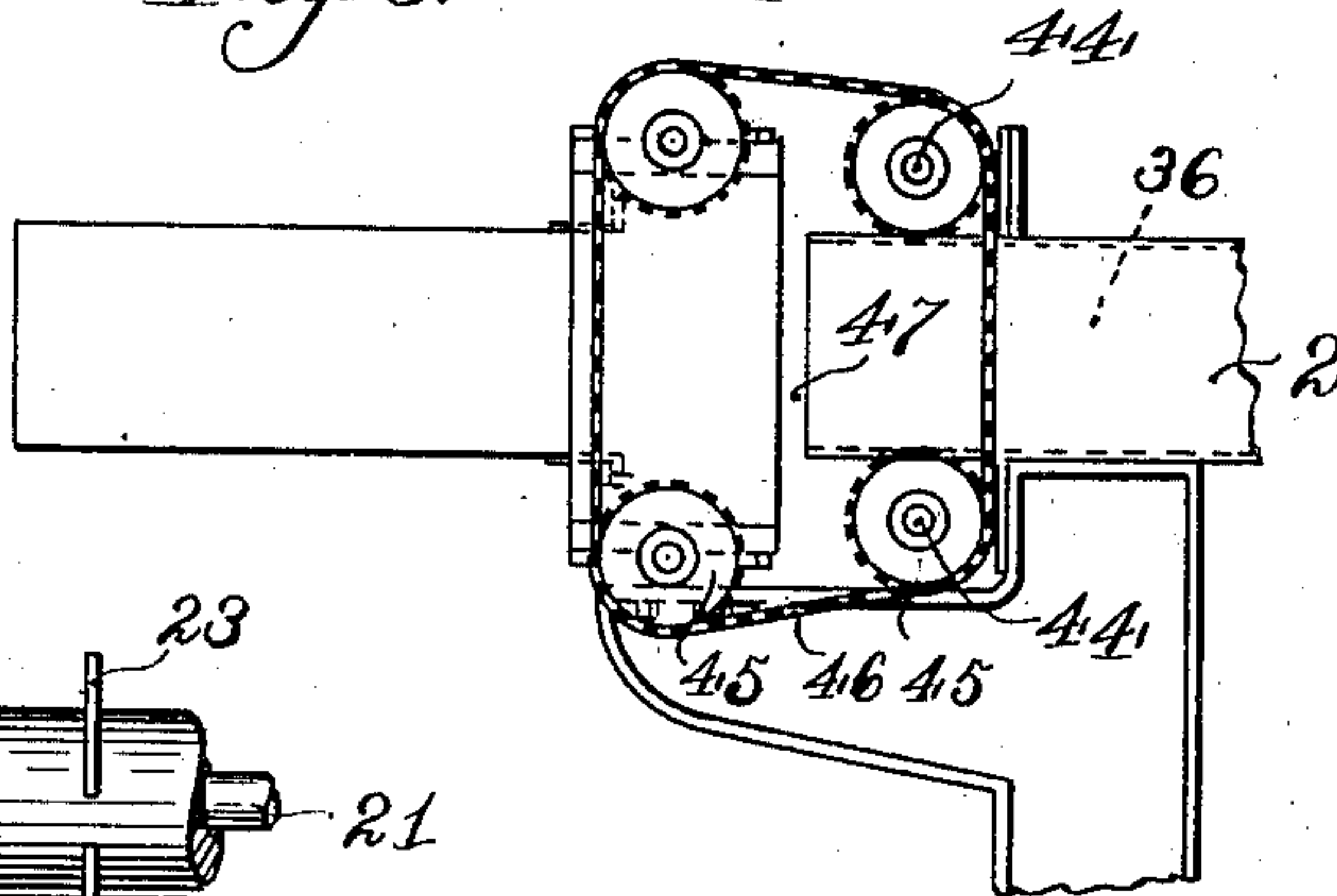
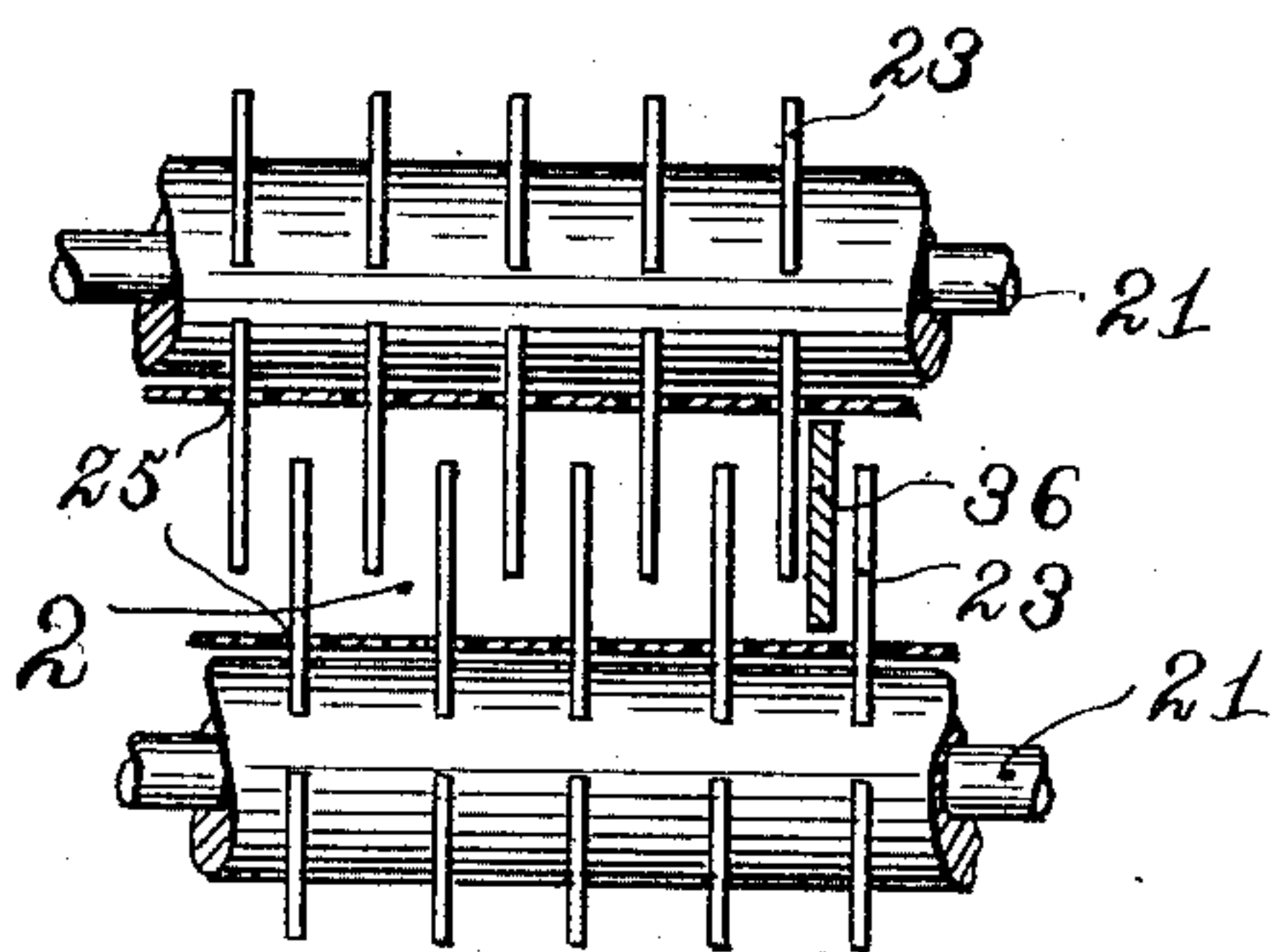


Fig. 6.



Witnesses:

C. H. Wilson

Arthur W. Lotz

Inventor:

Karl Wessel

By Rudolph L. Lotz
attorney

UNITED STATES PATENT OFFICE.

KARL WESSEL, OF ST. PAUL, MINNESOTA, ASSIGNOR TO THE CURLED FIBRE MANUFACTURING COMPANY, OF ST. PAUL, MINNESOTA, A CORPORATION OF DELAWARE.

MATTRESS-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 707,746, dated August 26, 1902.

Application filed August 16, 1901. Serial No. 72,278. (No model.)

To all whom it may concern:

Be it known that I, KARL WESSEL, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Mattress-Filling Machines; and I do hereby 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.

This invention relates to mattress-filling machines.

The object of the invention is to provide a machine which is simple in construction and efficient in operation for filling or stuffing mattresses and the like.

A further object of the invention is to provide a machine of the class referred to which is continuous in operation.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in top plan of a machine embodying the principles of my invention. Fig. 2 is a longitudinal section of the same on the line 2 2, Fig. 1, looking in the direction of the arrows. Fig. 3 is a transverse section on the line 3 3, Fig. 1, looking in the direction of the arrows. Fig. 4 is a view similar to Fig. 3 on the line 4 4, Fig. 1, looking in the direction of the arrows. Fig. 5 is a view in side elevation, parts broken off, of the delivery end of the machine, showing a slightly-modified arrangement embraced within the scope of my invention. Fig. 6 is a fragmentary detail section on the line 6 6 of Fig. 2.

In machines of the class to which this invention relates it is desirable to provide for the continuous and uniform feed of the filling material into the mattress or other cover

or ticking to the one end that the filling material may be uniformly and evenly distributed in the cover or tick. It is also desirable to provide means whereby the filling material may be properly straightened or disentangled before being introduced into the tick or cover and that provision be made for adjustably regulating the size or width of the mattress or other cushion to be produced, so as to accommodate the machine to the production of various sizes of mattresses, cushions, or the like. It is also desirable to provide means for restraining the material without interrupting the feed thereof while a completely-filled cover or tick is being removed. It is also desirable to provide means for supplying a lining to the filling adapted to be introduced into the mattress cover or tick along with the filling.

In the accompanying drawings I have shown an illustrative embodiment of means for accomplishing these and other desirable objects and which is the best form in which I at present contemplate carrying the principles of my invention into practiced operation, but to which I do not desire to be limited or restricted.

In the drawings reference-sign 1 designates a frame of suitable and convenient construction and arrangement, adapted to support the various working parts of the machine. Suitably arranged on or supported by the frame 1 is a closed feed passage or chute 2, extending longitudinally of the machine and having a series of slots 25 in the top and bottom walls thereof. Suitably journaled in the frame and respectively above and below the feed-passage 2 and extending transversely across the machine are shafts 21, upon each of which are mounted a series of feed-arms 23, arranged to operate through the slots 25. Continuous rotation is imparted to the shafts 21 in any suitable or convenient manner—as, for instance, by a belt-wheel 26, mounted on one of the shafts 21 and driven from any suitable source of power. Intermeshing gears 50 51, respectively mounted on the shafts 21, serve to secure rotation of said shafts in opposite directions, as indi-

cated by the arrows in Fig. 2. If desired and in order to secure a steady action of the feeding-shafts 21, a balance-wheel 52 may be mounted on one of said shafts. In practice I prefer to form the forward feed or engaging edges of the arms 23 convex or curved in a reverse direction with reference to the direction of rotation thereof. The purpose of this is to enable said arms to be withdrawn from the mass of filling material being fed thereby and through the slots 25 without tending to withdraw any of the material during the rotary sweep of said arms into and out of the feed passage or chute 2 through said slots 25.

From the foregoing description it will be seen that filling material introduced to the feed passage or chute 2 and presented to the action of the feeding devices is continuously progressed or fed by such feeding devices evenly and uniformly through the feed-passage 2 and in a continuous stream, as distinguished from a reciprocating-plunger feed, which accumulates and feeds successive bunches at each stroke of the plunger.

The filling material may be delivered into the feed passage or chute 2 in many different ways. I have shown a simple mechanism which I have found efficient for this purpose, comprising an endless carrier or apron 5, operating over rollers 8 and 9. The carrier or apron 5 may be held taut in any convenient manner—as, for instance, by mounting the journal-boxes 10 thereof in guides 15, and set-screws 14 serve to secure the desired adjustment of said boxes. If desired, the material may be confined on the feed-apron by the side boards or pieces 16.

In order that the filling material may be combed and straightened out into proper and suitable condition to be stuffed into a mattress or cushion tick or cover, I provide suitable combing or carding devices, and a convenient arrangement is to interpose said combing or carding devices between the feed carrier or apron and the feeding-arms 23. The specific construction of carding or combing devices may be varied throughout wide limits. I have shown a simple arrangement which I have found well adapted for the purposes in view and comprising rollers 6 and 7, suitably journaled in the frame 1 and provided with pins or teeth 20. The roller 6 is journaled adjacent to and somewhat above the point of delivery of the feed apron or carrier 5, and roller 7, which is of larger diameter than roller 6, is journaled to the rear of but adjacent to roller 6 and in a lower plane. The rollers 6 and 7 are suitably geared together to rotate in the same direction, as indicated by the arrows in Fig. 2, and the roller 6 is designed to rotate at a somewhat-higher surface speed than the speed of travel of the feed belt or apron 5, and roller 7 is designed to travel at a higher surface speed than the surface speed of roller 6. From this construction it will be seen that the filling ma-

terial delivered by the feed apron or carrier 5 is engaged by the teeth 20 of roller 6 and carded or combed and straightened, and such material is taken off the teeth of roller 6 by the teeth of roller 7, which travel in the opposite direction, at the point where the teeth on one of said rollers pass those on the other and is still further carded, combed, or straightened and delivered into the receiving end of the feed passage or chute 2 and to the action of the feeding-arms 23, by which such material in proper and straightened condition is continuously and evenly progressed or fed toward the delivery end of the feed passage or chute 2. A cover or tick is arranged to receive the filling material as it emerges from the delivery end of the feed passage or chute. A convenient arrangement is to telescope the cover or tick over the delivery end of said passage or chute, and the feed of the material gradually withdraws such cover or tick in an evenly and uniformly filled condition. When a cover or tick has been filled and is ready to be removed and a new cover or tick placed in position to be filled, it is desirable to restrain the delivery of the material from the chute or feed-passage without arresting the operation of other parts of the machine. This result may be accomplished in many different ways. I have shown a simple means for accomplishing this object, but to which my invention is not to be limited or restricted, and wherein I journal rock-shafts 38 in suitable bearings 39, adjacent to the delivery or discharge end of the feed passage or chute, and having arms 37^a arranged to be projected across the delivery end of said chute or passage when said shafts 38 are rocked in their bearings to form stops for the material. Each of the shafts 38 is provided with a crank-arm 40, and a rod 41 is arranged to connect all of the crank-arms 40 to secure coincident rocking movement of said shafts. Thus when a cover or tick has become filled the arms 37^a are swung or rocked into position across the delivery end of the feed passage or chute, thereby forming stops to restrain the discharge of the filling material while a filled cover or tick is being removed and an unfilled one is being put in position to be filled, the continuous operation of the feeding belt or apron, the carding or combing rollers, and of the feeding-arms 23 not being arrested, the material merely accumulating in the feed passage or chute and against the stop-arms 37^a.

It may sometimes be desirable to introduce into the tick or covering a lining along with the filling and which lining covers the surface of the filling and is interposed between such filling and the cover or tick. This lining may be introduced along with the filling into the cover or tick in many specifically different ways. I have shown a simple arrangement in Figs. 1 and 2, wherein the lining material is carried in rolls 29 and 33. The rolls 29 are respectively arranged above and be-

low the feed passage or chute 2 and supply the lining material in the form of sheets or webs which pass into the feed passage or chute through transverse slits or openings 27 in the top and bottom walls thereof and form linings for the top and bottom surfaces of the mass of material being progressed through the feed passage or chute and into the mattress cover or tick by the feed of such material. Similarly the rolls 33 are arranged at opposite sides of the feed chute or passage and supply linings for the side or edge surfaces of the mass of filling material through the side openings 28 in the side walls of the feed passage or chute 2.

In Fig. 5 I have shown a slight modification, wherein instead of forming slits or openings through which the lining material is introduced into the feed passage or chute said passage or chute is made in two slightly-depressed sections, leaving a space 47 between the meeting ends of said sections and through which space the lining material is introduced. With this arrangement I am enabled to supply a lining which will entirely cover the surface of the mass of filling material.

In a practical and commercial machine of the class and character above set forth it is desirable to make provision for the filling or stuffing of mattresses, cushions, and the like of various sizes or widths on the same machine. This result I accomplish by providing means for adjustably regulating the transverse width of said passage or chute. In the particular embodiment shown I form the feed passage or chute at the delivery end thereof in two transversely-telescopic portions 34 35, as clearly shown in Fig. 4, and I provide one of said portions, as 35, with an extension-plate 36, arranged to extend forwardly of the machine to a point adjacent to the feed-arms 23. A screw-rod 37 may serve to adjust the portion 35 and its extension-plate 36 toward and from the section or portion 34. In order to correspondingly confine and limit the feed of the filling material to the laterally-adjusted position of the section 35, I may provide a board 17 and adjust the same laterally upon the supporting-bars 18 19, as clearly shown in Fig. 1, to limit the space in which the filling material is deposited upon the feed apron or carrier 5.

In the construction shown in Fig. 5 the extension-board 36 terminates with the end of one of the sections of the feed passage or chute and is adjusted laterally coincidently with the lateral adjustment of the telescopic portion 35 by means of screw-rods 44, said screw-rods being connected for simultaneous actuation by means of sprockets 45 and sprocket-chain 46.

Many variations and changes in the details of construction and arrangement would readily suggest themselves to persons skilled in the art and still fall within the spirit and scope of my invention. I do not desire, there-

fore, to be limited or restricted to the exact details shown and described; but,

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. In a mattress-filling machine, a feed chute or passage adapted to receive a mattress or other cover over the discharge end thereof, and having openings or slots in the wall thereof, in combination with a shaft arranged to extend transversely of said chute or passage and carrying fingers arranged to project through said slots or openings and into said chute or passage, and means for rotating said shaft whereby the filling material introduced to said chute or passage is engaged by said fingers and is continuously fed thereby through and discharged from said chute or passage into said cover, as and for the purpose set forth.

2. In a mattress-filling machine, a feed chute or passage adapted to receive a mattress or other cover over the discharge end thereof, shafts arranged on opposite sides of said chute or passage and to extend transversely thereof, fingers mounted upon said shafts and arranged to project into said chute or passage, and means for rotating said shafts in opposite directions, whereby the filling material introduced into said chute or passage is continuously fed through and discharged from said chute or passage and into said cover, as and for the purpose set forth.

3. In a mattress-filling machine, the combination with a feed chute or passage, of feed-shafts extending transversely of said chute or passage and carrying feed-fingers arranged to project into said chute or passage, means for delivering the filling material into said chute or passage, and means for rotating said feed-shafts whereby such filling material is continuously fed through said chute or passage, as and for the purpose set forth.

4. In a mattress-filling machine, the combination with a feed chute or passage having a discharge end, means for delivering a filling material into said feed chute or passage, and movable feeding-fingers arranged to project into said chute or passage and having rearwardly-curved front or feeding edges, as and for the purpose set forth.

5. In a mattress-filling machine, the combination with a feed chute or passage having a discharge end, the walls of said chute or passage being slotted, feed-shafts transversely arranged and having feed-fingers arranged to operate through said slots, the forward or feeding edges of said fingers being curved rearwardly with reference to the direction of rotation of said shafts, means for rotating said shafts, and means for delivering a filling material into said feed chute or passage, as and for the purpose set forth.

6. In a mattress-filling machine, a feed chute or passage, means for delivering the filling material into said chute or passage, means for straightening or combing said filling material, and feed-fingers arranged to project into said chute or passage and means for actuating the same to continuously and uniformly feed the material through said passage or chute, as and for the purpose set forth.

7. In a mattress-filling machine, a feed chute or passage, means for delivering the filling material thereto, feeding devices arranged to project into said chute or passage for continuously feeding the material there-through, in combination with restraining devices arranged on the delivery side of said feeding devices for restraining the discharge of the material without arresting the action of said feeding mechanism while a filled mattress is being removed, as and for the purpose set forth.

8. In a mattress-filling machine, the combination with mechanism for continuously feeding the filling material, of restraining-fingers arranged on the delivery side of said feeding mechanism, and adapted to be projected into the path of the material for restraining the discharge thereof without arresting the action of said continuous-feeding mechanism, as and for the purpose set forth.

9. In a mattress-filling machine, a feed chute or passage, means for delivering the filling material thereto, means for continuously feeding such material through said passage or chute, and rock-shafts having arms arranged to be projected into the path of said material to restrain the discharge thereof while a filled mattress is being removed, as and for the purpose set forth.

10. In a mattress-filling machine, the combination with a feeding chute or passage, means for delivering the filling material thereto, rotating fingers arranged to project into said chute or passage to continuously feed the material therethrough, and means for adjusting the transverse width of said chute or passage, as and for the purpose set forth.

11. In a mattress-filling machine, the combination with a feed chute or passage adapted to receive a mattress or other cover over the discharge end thereof, said chute or passage being adjustable in transverse width, feed-fingers arranged to project into said chute or passage, and means for moving said fingers

to continuously feed the material and discharge the same into said cover, as and for the purpose set forth.

12. In a mattress-filling machine, the combination with a feed chute or passage, means for delivering a filling material thereto, said chute or passage provided with slots in the top and bottom walls thereof, shafts journaled above and below said chute or passage through said slots, said arms or fingers co-operating to feed the filling material toward the delivery end of said chute or passage, and means for rotating said shafts, as and for the purpose set forth.

13. In a mattress-filling machine, a delivery-carrier, combing devices arranged adjacent to the point of delivery of said carrier, a feed chute or passage, fingers arranged to project into said chute or passage to continuously feed the material therethrough, whereby the filling material is continuously progressed toward the discharge end of said feed chute or passage, as and for the purpose set forth.

14. In a mattress-filling machine, a delivery-carrier, combing or straightening devices arranged adjacent to the delivery end of said carrier, a feed passage or chute adapted to receive the filling material from said straightening or combing devices, feed-fingers arranged to project into said feed chute or passage, and means for actuating these several parts, as and for the purpose set forth.

15. In a mattress-filling machine, a delivery-carrier, means arranged adjacent to the delivery end thereof for straightening and combing the filling material delivered therefrom, a feed chute or passage adapted to receive the filling material from said scraping or combing devices, movable feed-fingers arranged to operate in said chute or passage for continuously feeding the filling material toward the discharge end of said chute or passage, means for actuating these several parts, and means for applying a lining to the surface of said filling material as it progresses through said chute or passage, as and for the purpose set forth.

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

KARL WESSEL.

Witnesses:

THOS. K. OTTIS,
GUY CHASE.