

No. 758,763.

PATENTED MAY 3, 1904.

A. LUTZE.

MACHINE FOR FORMING PATS OF BUTTER OR CAKES OF OTHER MATERIAL.

APPLICATION FILED MAY 2, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

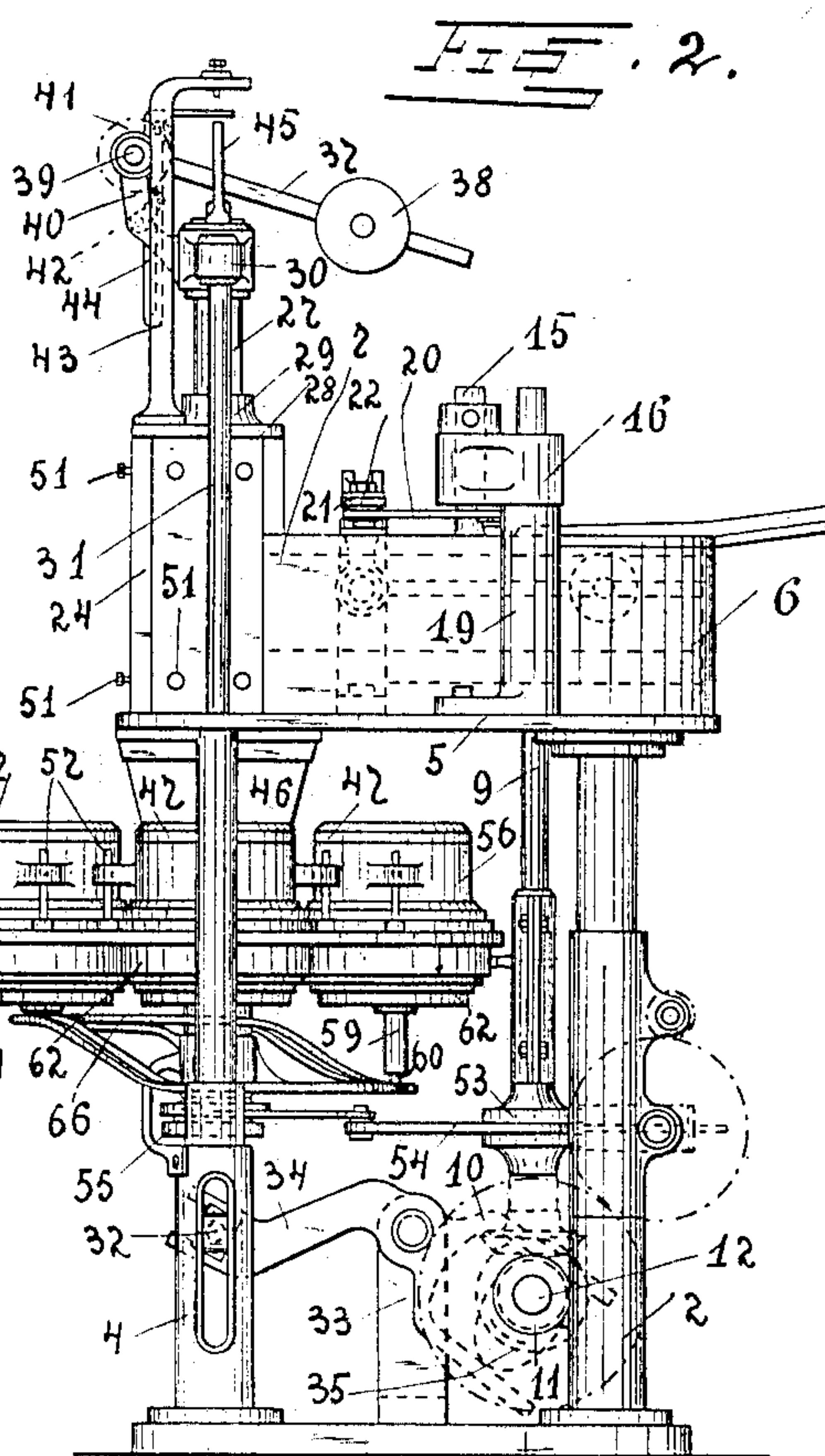
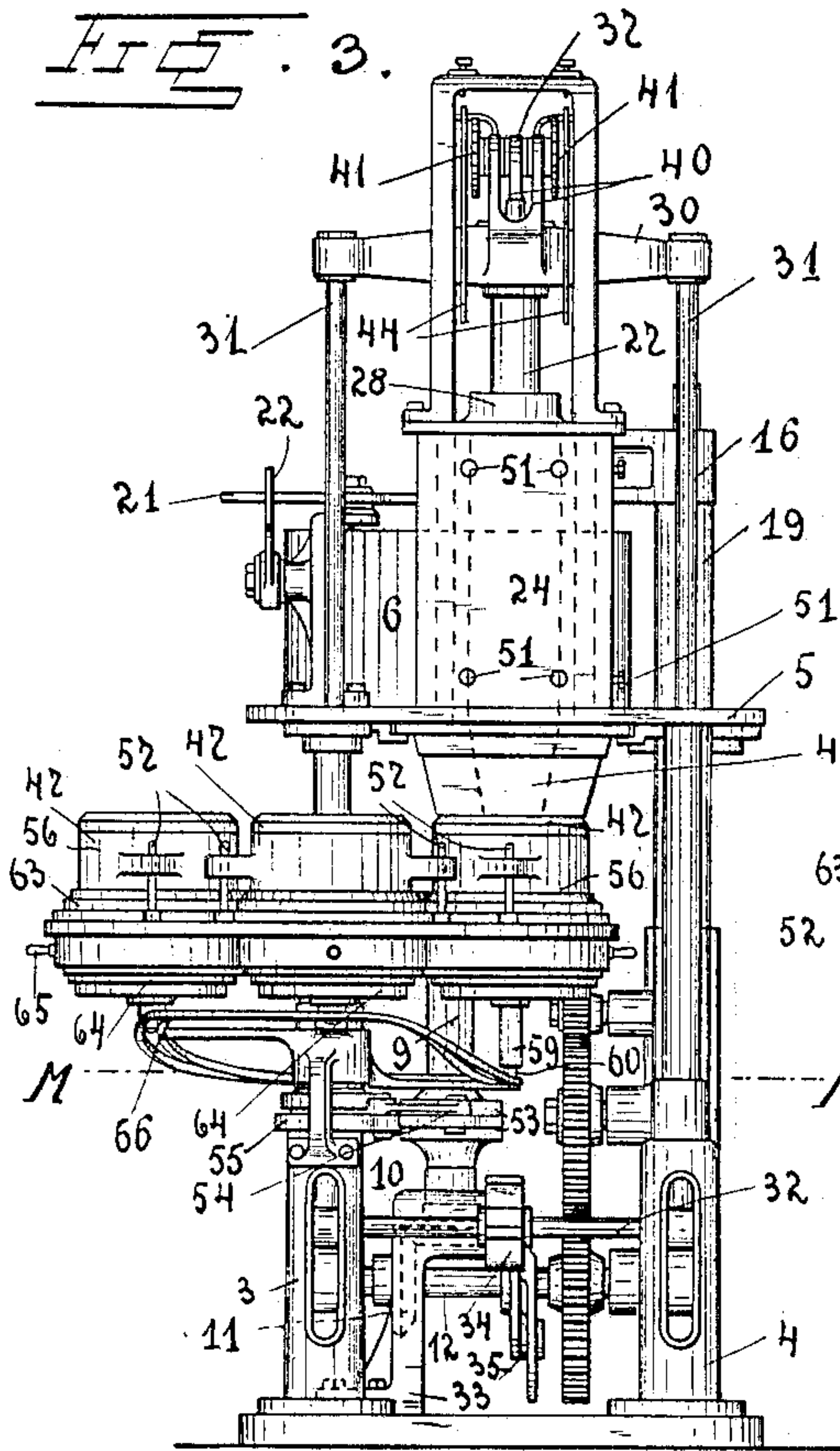
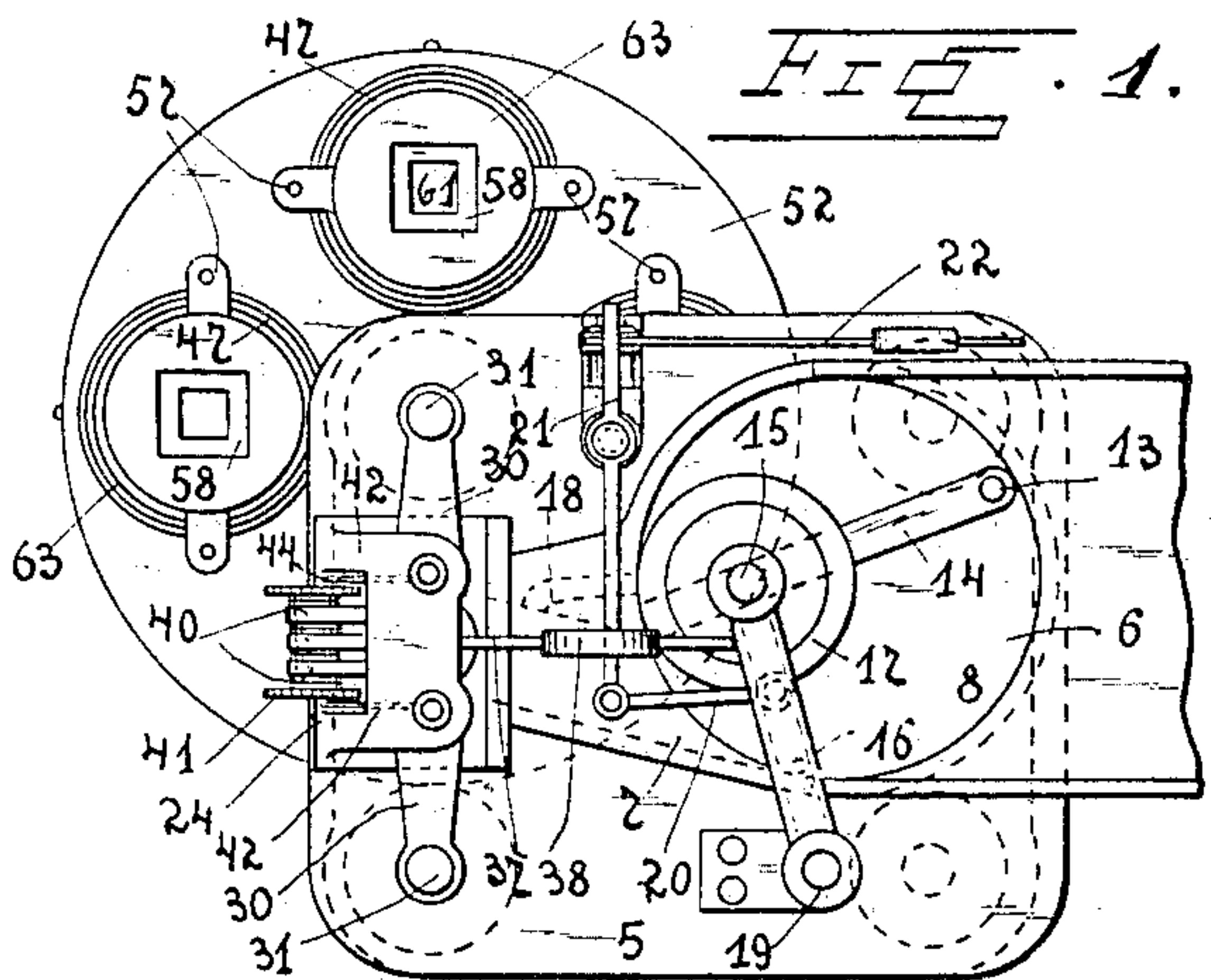
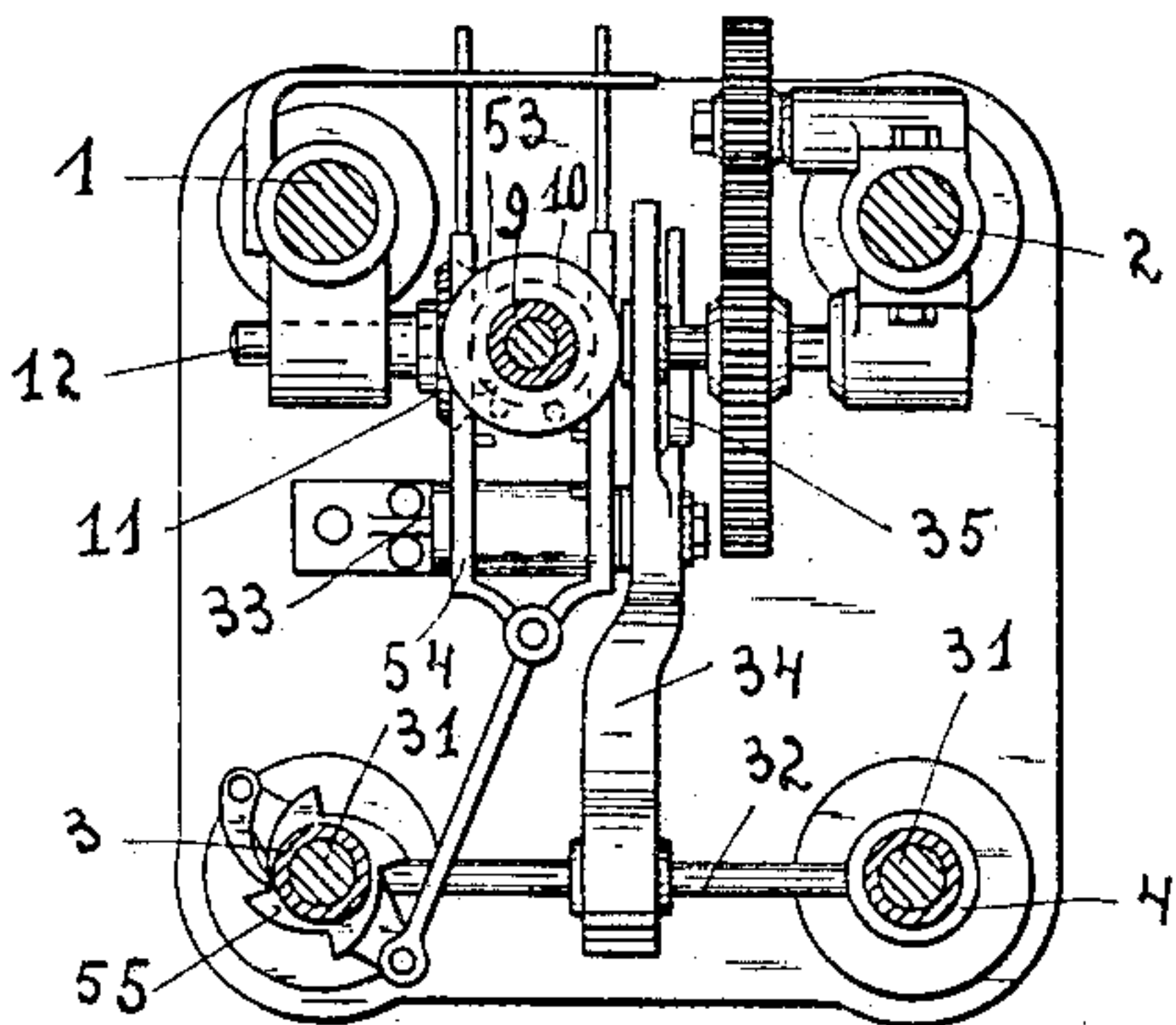


Fig. 4.



Witnesses:-

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Wm. M. Munk

Inventor:

A. Lutz
by *Eustace W. Hopkins*
Att'y.

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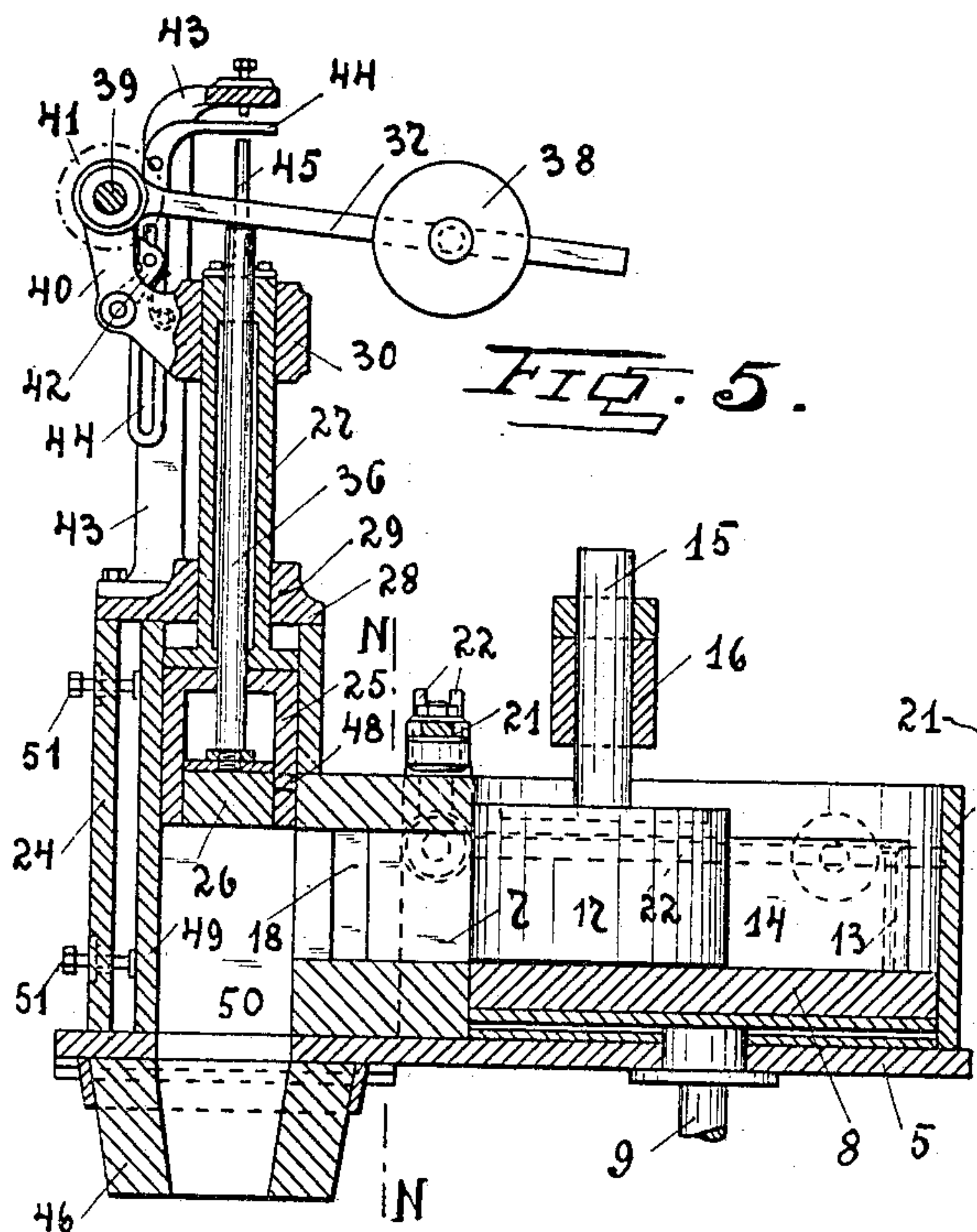


FIG. 5.

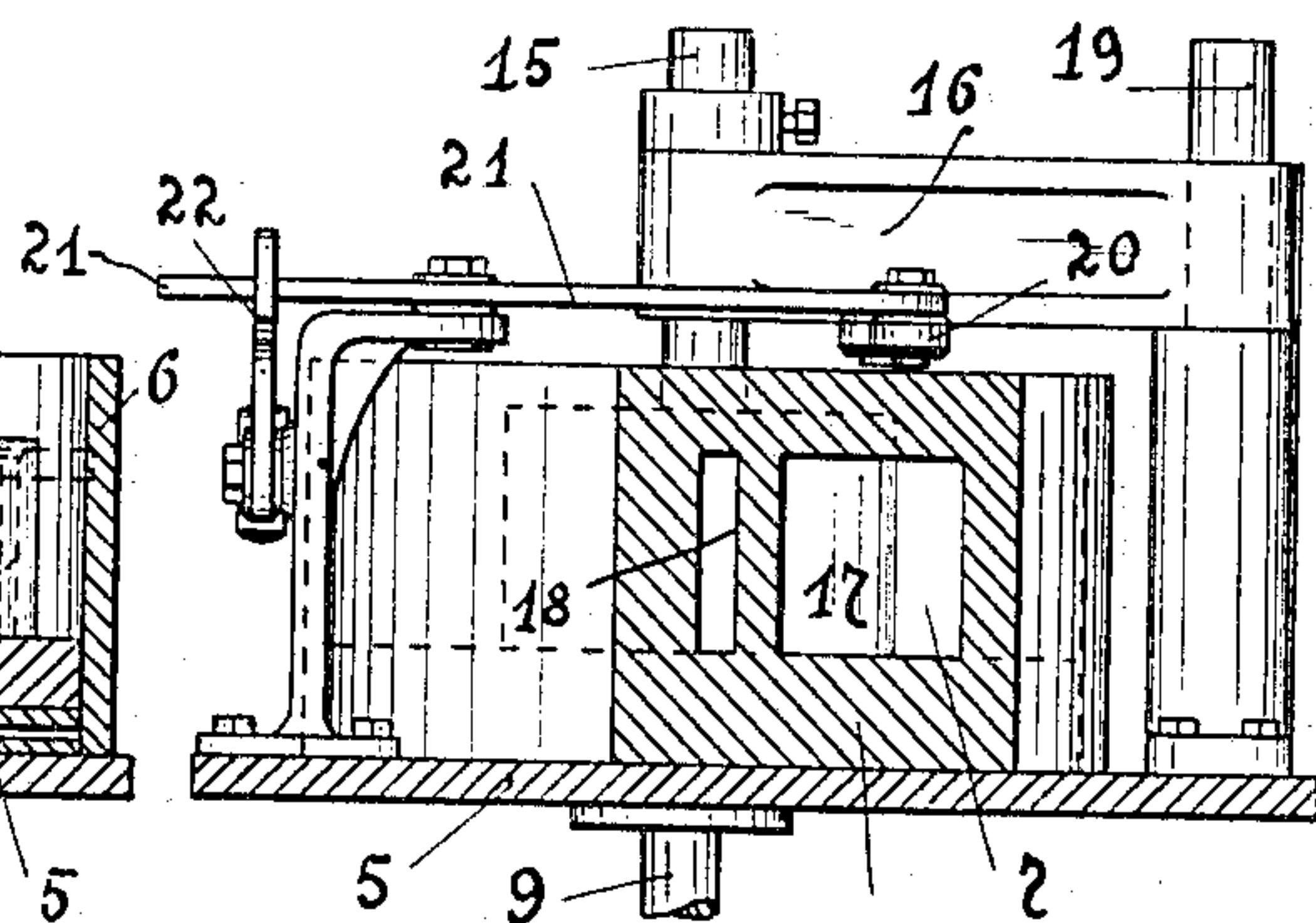
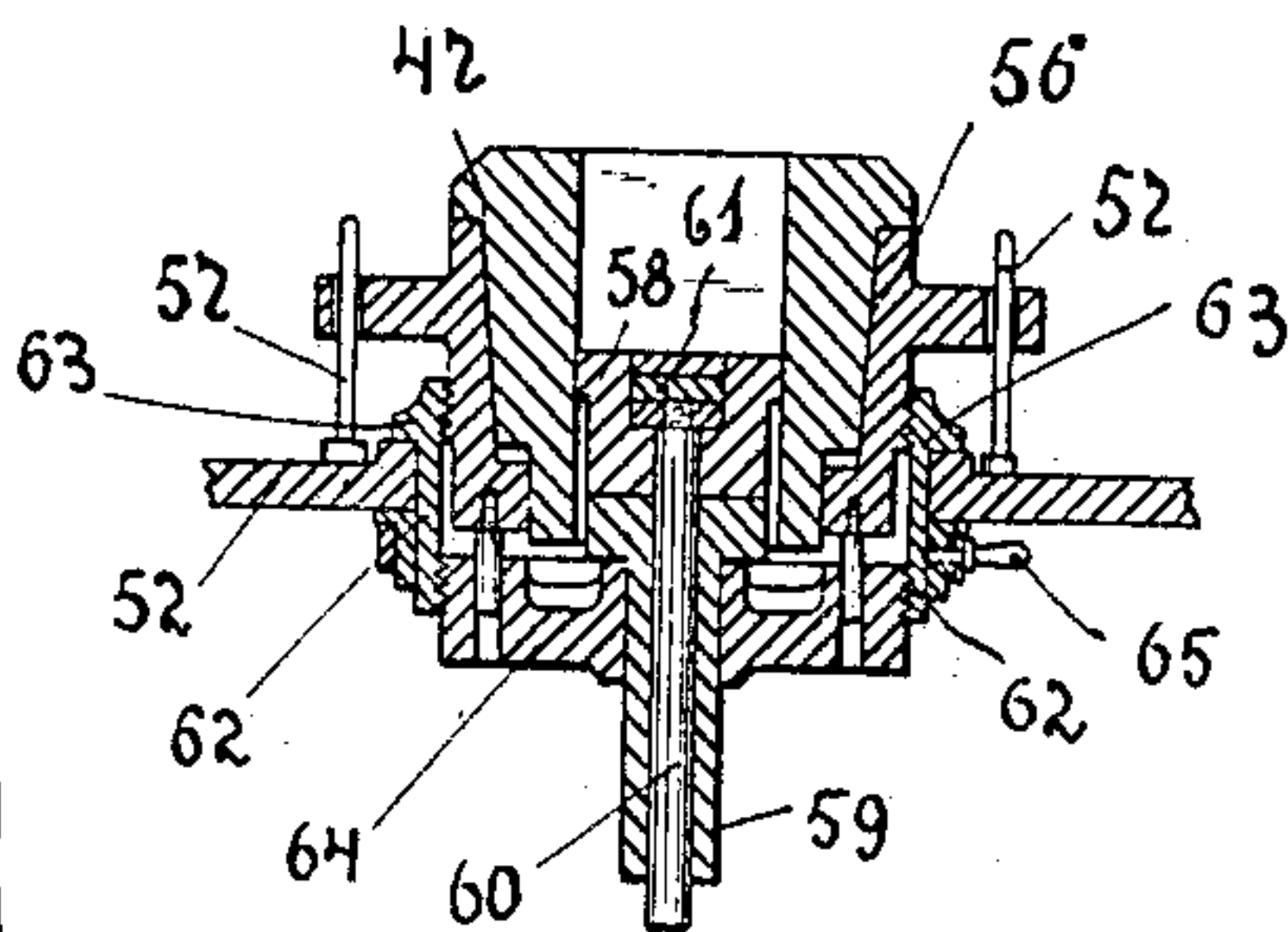
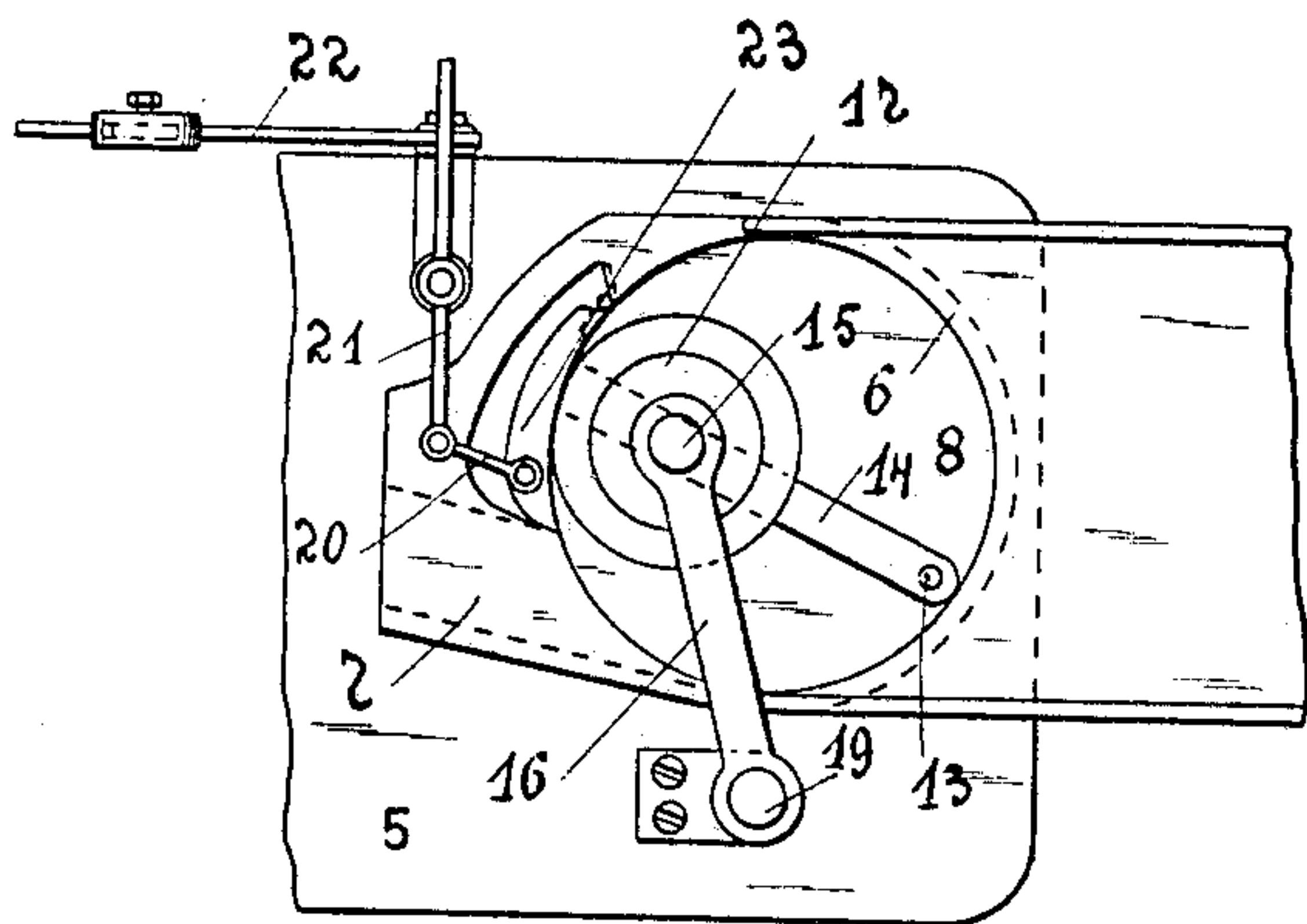


FIG. 6.

FIG. 7.



Witnesses:
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Superintendent

Inventor:
A. Lutze
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No. 758,763.

PATENTED MAY 3, 1904.

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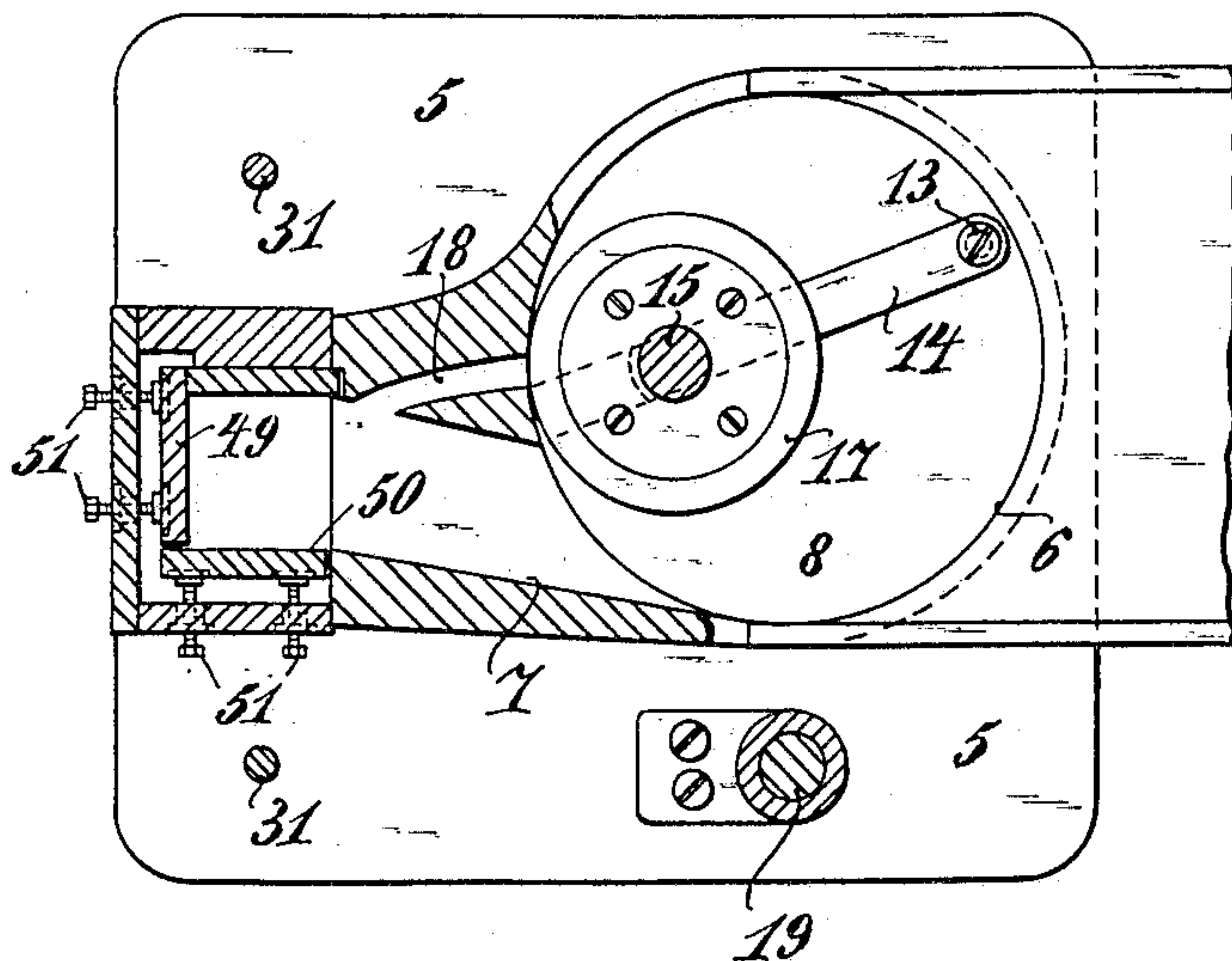
MACHINE FOR FORMING PATS OF BUTTER OR CAKES OF OTHER MATERIAL.

APPLICATION FILED MAY 2, 1903.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 5a



Witnesses:

John M. H. H.
Max K. H.

Inventor:

Alfred Lutze
by Eustace W. Hoppening
att'y.

UNITED STATES PATENT OFFICE.

ALFRED LUTZE, OF HALLE-ON-THE-SAALE, GERMANY.

MACHINE FOR FORMING PATS OF BUTTER OR CAKES OF OTHER MATERIAL.

SPECIFICATION forming part of Letters Patent No. 758,763, dated May 3, 1904.

Application filed May 2, 1903. Serial No. 155,342. (No model.)

To all whom it may concern:

Be it known that I, ALFRED LUTZE, a subject of the German Emperor, and a resident of Halle-on-the-Saale, Germany, have invented
5 a new and useful Machine for Forming Pats of Butter or Cakes of other Material, of which the following is a description.

The present invention consists of a machine for forming pats of butter or cakes of other
10 material of similar qualities, the object being to produce pats or cakes of substantially equal weight in that the mass or the quantity of the mass acted on at each pressing operation is subjected to a substantially even pressure at
15 all parts.

In order to render the present specification easily intelligible, reference is had to the accompanying drawings, in which similar numerals of reference denote similar parts
20 throughout the several views.

Figure 1 is a plan of the machine; Fig. 2, a front elevation of the same. Fig. 3 is an elevation of the machine seen from the left-hand side of Fig. 1; Fig. 4, a horizontal section on the line M M of Fig. 3. Fig. 5 is a
25 central vertical section through the upper part of the machine drawn to a larger scale. Fig. 5^a is a horizontal section through the tub and feed-channel. Fig. 6 is a section on line N N of Fig. 5. Fig. 7 is a part plan of a modification of a part of the machine, and Fig. 8 is a vertical section through one of the molds.

The table 5 of the machine is supported on the posts 1, 2, 3, and 4, of which the latter
35 two are hollow. This table carries the butter-tub 6, having a rotary bottom 8 and being in communication with the space underneath the stamp by means of a channel 7. The bottom 8 of the tub is mounted on a vertical shaft 9, suitably supported in the machine-frame and driven from the driving-shaft 12 by means of
40 bevel-gears 10 and 11. A feed-wing 14 is pivotally supported on a pin 13, fixed in the bottom 8 of the tub, and this wing works in a corresponding orifice in a rotary drum 17,
45 also mounted to rotate within the tub and supported on a downwardly-extending pin 15, carried by an arm 16, pivotally mounted on

a post 19 on the table 5 and connected by a link 20 with one end of a lever 21, mounted
50 to turn in a horizontal plane and held in a normal position by means of the upwardly-turned finger of a weighted lever 22. At a point in the channel 7 close to the space beneath the stamp an auxiliary channel 18 is provided leading
55 from the said channel 7 back to the tub 6, and the drum 17 is mounted in the tub, so as to partially close the channel 7 with its surface and to slightly press the material before it enters the said channel 7. In the modification shown
60 in Fig. 7 the same effect may be attained when the drum 17 is mounted on a stationary pivot by providing a door 23 adjacent to the drum, which is connected by the link 20 to the lever 21,
65 controlled by the weighted lever 22, in which case if too much of the material is fed to the channel 7 or the pressure in the same becomes too high the surplus material will press the door 23 open and pass back behind the drum
70 17 into the tub 6. In the device illustrated in Fig. 1 the surplus material or butter will pass back into the tub through the auxiliary channel 18 when the pressure in the channel 7 is great enough to raise the weighted lever
75 22, and such surplus material will force the movable drum away from the outlet of the channel 18 and enter the tub again, whereupon the weighted lever 22 will return the drum 17 to its normal position.

The housing 24 for the stamp is provided
80 with two adjustable walls 49 and 50, arranged at right angles to each other and adjustable by means of screws 51, so that in the event of the stamp swelling out through the moisture or for other reasons a sticking of the
85 same will be prevented by slightly adjusting the movable walls 49 50 of the housing. A double stamp is employed consisting of the plunger 26, having its upwardly-extending rod 36, and a hollow plunger 25, having a hol-
90 low rod 27, guided at 29 in the top plate 28 of the housing and having attached to its upper end a cross-head 30. The latter carries at each end downwardly-extending rods 31, which are guided in the hollow standards 3
95 and 4 of the machine, and these rods 31 are

connected together at their lower ends by means of a cross-bar 32, Figs. 3 and 4. This rod 32 is embraced by the bifurcated end of a double-arm lever 34, mounted in a suitable standard 33, Fig. 2, and having a wide fork at its opposite end which embraces a cam 35, mounted on the driving-shaft 12, and this mechanism serves to periodically raise and lower the said cross-head 30 and with it the hollow plunger 25. The plunger-rod 36 of the plunger 26 is provided with a pin and washer at its upper end, by means of which it rests on the head of the hollow rod 27, and when in this position the plunger 26 is flush with the plunger 25 at its lower surface. The hollow plunger 25 is provided with a lateral orifice 48 for purposes hereinafter set forth. The cross-head 30 is provided with rigid arms 40, in which is supported a pin 39, to which is keyed a lever 37, carrying a weight 38, and at each projecting end of the pin 39 ratchet-wheels 41 are provided. In these latter ratchets 42 engage, pivotally supported on the said arms 40 and having laterally-extending pins in engagement with slots of two swinging arms 44, pivoted in their turn to standards 43, mounted on the top plate 28 of the stamp-housing. The upper ends of these swinging arms 44 are turned round and lie in the path of movement of fingers 45, mounted at the upper part of the rod 36 and moving therewith, while the lever 37 of weight 38 rests on the top of the said rod 36. The operation of this part of the device is as follows: When the stamp 25 26 is depressed by the cam 35, it will force the butter or other mass below it out at the mouthpiece 46 and into the mold 47, hereinafter particularly set forth. If the pressure in the mold is too great, the plunger 26 will be forced back into the hollow plunger 25, and the whole plunger being at this time down, any surplus butter will escape through the opening 48 back into the channel 7 and be worked off at the next operation. Thus the material being worked will never be subjected to a pressure exceeding the resistance of the weighted lever 37. When the lever 37 is raised by the movement of the plunger 26 backward in the hollow plunger 25, the ratchet-wheels 41 will be turned and the pawls 42 will engage the same and retain the lever 37 in the raised position for the time being. When the cam 35 raises the cross-head 30 again, and with it the plunger-rod 36, (at the end of its upward movement,) the fingers 45 will tip the swinging arms 44 by contact with their bent round ends, and these being linked to the pawls 42 will turn these latter and bring them out of engagement with the ratchet-wheels 41, so that the weighted lever will fall to its normal position, and no pressure being under the plunger 26 at this time the latter will fall back into alignment with the lower surface of the hollow plunger

25, so that the parts will be in the normal position for the next descent of the plunger.

The molds 47 are mounted on a table 52, supported on the hollow post 3, four molds being advantageously arranged, and a cam 53 on the shaft 9 operates a slide 54, carrying a pawl, to turn a ratchet-wheel 55, in connection with the said table, ninety degrees at each revolution of the said shaft 9. This pawl device is well known and needs no further description. If more than four molds are employed, the ratchet-wheel would have to be turned a correspondingly smaller distance at each revolution of the shaft 9, as will be readily understood.

The mold is illustrated in Fig. 8 and consists of the wooden mold 47, having exterior metal sleeve 56, adapted to fit with its two ears over pins 57 of the table 52. A nut 62, having a shoulder 63, is screw-threaded to the lower part of the sleeve 56 and rests with its shoulder on a corresponding supporting-flange of the table 52, the lower part of the said nut extending through an orifice in the said table. The lower part of the nut is internally screw-threaded and the bottom plate of the mold (indicated at 64) is screwed into the nut. The boss of this bottom plate serves to guide the hollow stem 59 of the bottom 58 of the mold proper, and within this hollow stem the stem 60 of a stamp 61, mounted in the bottom plate and normally lying slightly below the top face of the said plate, may move vertically up and down. When in its lowest position, the stem 60 extends slightly below the hollow stem 59. The bottom plate 58 rests with its shoulder on the upper surface of the boss of the plate 64, and this plate is provided with a handle 65, so that it may be easily turned in its screw-threaded part of the nut 62, and thus the bottom 58 of the mold 47 may be easily and accurately adjusted vertically in the mold.

A fixed cam-path 66 is mounted beneath the table and is slotted along a portion of its length. When the table is turned a quarter of a turn, the full part of the cam first forces the stem 60 of the stamp 61 upward and impresses the word or symbol on the stamp into the butter or other material and then the said stem 60 falls into the slot of the cam and allows the stamp to return to its normal position, while the stem 59 then contacts with the edges of the cam and forces the finished pat out of the mold, the next mold simultaneously being brought under the plungers 25 26.

I claim as my invention—

1. In a machine for forming pats of butter or cakes of other material of substantially equal weight, the combination of a plunger-housing and a plunger therein to compress the material, a tub and a channel to establish communication between the said plunger-housing and the tub, a rotary bottom to the

said tub and a feed-wing pivoted thereto in proximity to the periphery of the same, a rotary drum mounted in the said tub and through which the said feed-wing extends a channel in the mold-chamber to return a part of the material being pressed back to the tub when the pressure to which the mechanism is adjusted is exceeded and a weighted-lever system to control the opening of said channel substantially as described.

2. In a machine of the class specified, the combination of a plunger-housing and a plunger therein, a tub to contain the material and a channel from the said tub to the said plunger-housing, a rotary bottom to the said tub and a feed-wing pivotally supported on the said bottom in proximity to the periphery of the same, a drum extending into the said tub and through which the said wing passes, the said drum being mounted to partially close the opening of the channel leading to the plunger-housing, and means for returning the surplus quantity of the mass fed to the housing, when the pressure is too great in the manner and for the purpose substantially as described.

3. In a machine of the class specified, the combination of a plunger-housing and a tub to receive the material being worked, a channel between the said housing and tub means for feeding the material to the said channel and an auxiliary channel from the plunger-housing end of the same back to the tub, through which surplus material may be returned to the said tub and means for opening up the tub end of the said auxiliary channel when the pressure of the material exceeds a certain limit substantially as described.

4. In a machine of the class specified, the combination of a plunger-housing, means for feeding the material to the same and for returning any surplus material fed thereto, a double plunger in said housing and means for reciprocating the same, the solid plunger being mounted within a hollow plunger, an opening in the hollow plunger and means for forcing the solid plunger up and uncovering the opening on the downward stroke of the plunger, when the pressure of the material exceeds a certain limit and for returning the solid plunger to its normal position on the upward stroke of the plunger substantially as described.

5. In a machine of the class specified, the combination of a plunger-housing having a double plunger therein the said double plunger consisting of a solid plunger and a hollow plunger surrounding the same, a weighted lever to control the said solid plunger and means for raising and lowering the hollow plunger positively, an orifice in the walls of the hollow plunger through which the excess of material may pass when the pressure in the housing becomes excessive means for retaining

the weighted lever in its raised position until the latter part of the upward movement of the plunger and means for then releasing the weighted lever at the latter part of the upward movement of the plunger and means for feeding the material under treatment to the plunger-housing substantially as described.

6. In a machine of the class specified, the combination of a plunger-housing having a plunger therein, means for vertically reciprocating said plunger, a tub and a channel from the said tub to the plunger-housing, means for feeding the material in the tub through the said channel to the housing, a channel in the housing through which the surplus material is returned from the housing back to the tub and means in connection with the said plunger for returning further surplus material back to the channel through the plunger during the pressing operation in the manner and for the purpose substantially as described.

7. In a machine of the class specified, the combination of a plunger-housing having a vertically-reciprocatory double plunger therein, a mouthpiece at the bottom of said housing, a tub in connection therewith and means for feeding the material to be treated to the housing from the tub, a rotary table having molds therein and means for periodically feeding a mold underneath the said mouthpiece, and a channel in the housing for returning surplus material to the feed-channel and the tub before and during the pressing operation substantially as described.

8. In a machine of the class specified, the combination of a plunger-housing having a double reciprocatory plunger therein, a tub to contain the material being treated and means for feeding the same to the plunger-housing, a channel to return the surplus material to the tub, a mouthpiece at the bottom of the said housing, a rotary table underneath the same and means for periodically turning the same, a set of molds on the said table which are periodically brought under the said mouthpiece, movable bottoms to the said molds and means for adjusting the same in the molds and a stamp in the mold-bottom and means for forcing the same into the material in the mold and withdrawing it during the movement of the mold-supporting table and means for forcing the finished pat or cake out of the mold by the movement of the said table substantially as described.

9. In a machine of the class specified, the combination of a plunger-housing and a vertically-reciprocatory plunger therein, a tub to contain the material being treated and means for forcing the material to the plunger-housing and a channel in the said housing for returning surplus material to the tub, before and during the pressing operation, a rotary table mounted beneath the plunger-housing and a mouthpiece to the latter, a series of

molds on the said table and means for inter-
mittently moving the said table to bring the
said molds successively under the said mouth-
piece, a vertically-movable bottom to each
5 mold and means for adjusting the same in the
mold in the manner and for the purpose sub-
stantially as described.

In witness whereof I have hereunto set my
hand in presence of two witnesses.

ALFRED LUTZE.

Witnesses:

MORITZ SPREER,
RUDOLPH FRICKE.