No. 778,049. PATENTED DEC. 20, 1904.

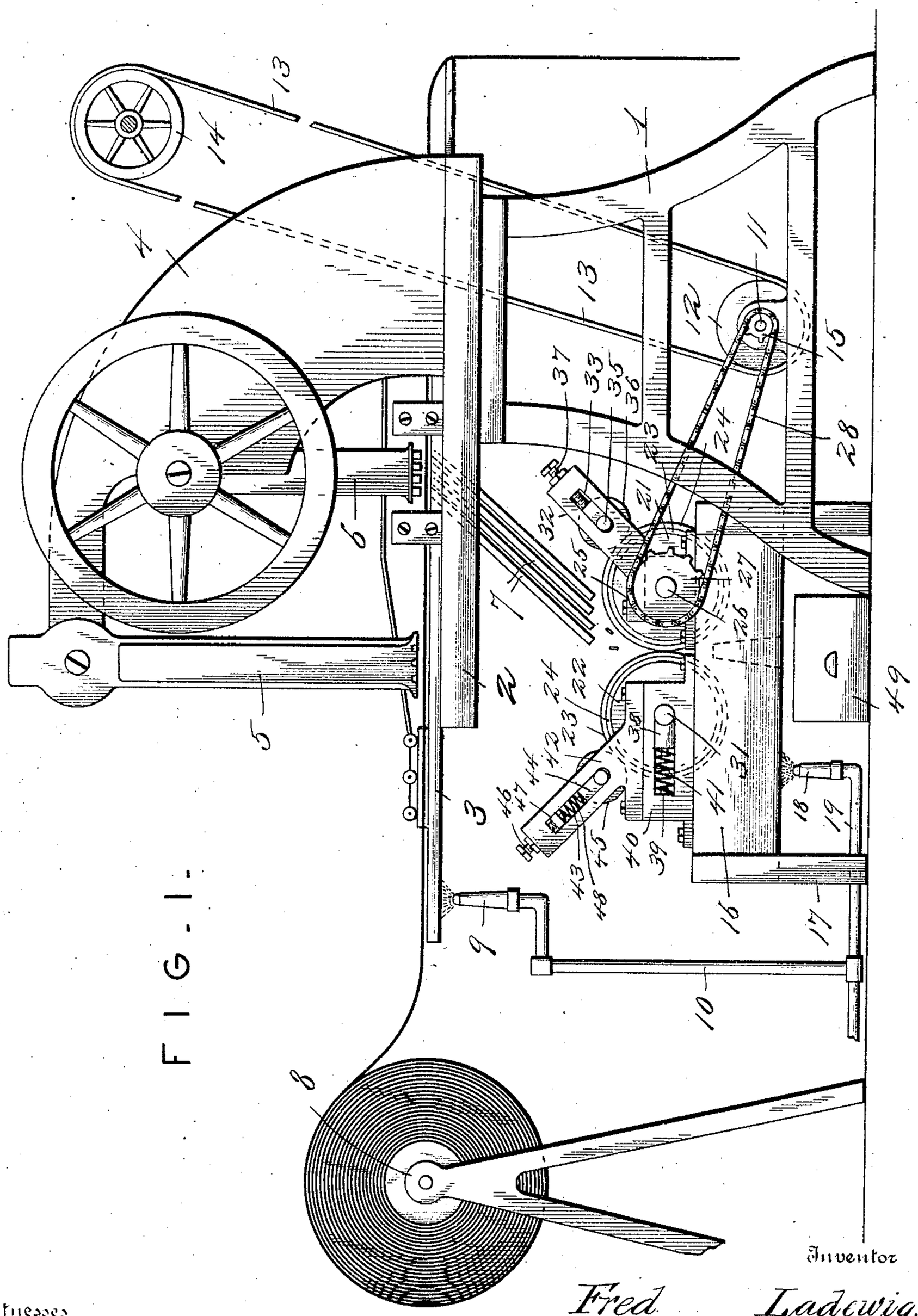
F. LADEWIG.

PARAFFINING MACHINE.

APPLICATION FILED NOV. 24, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

FIG. 1.



Witnesses

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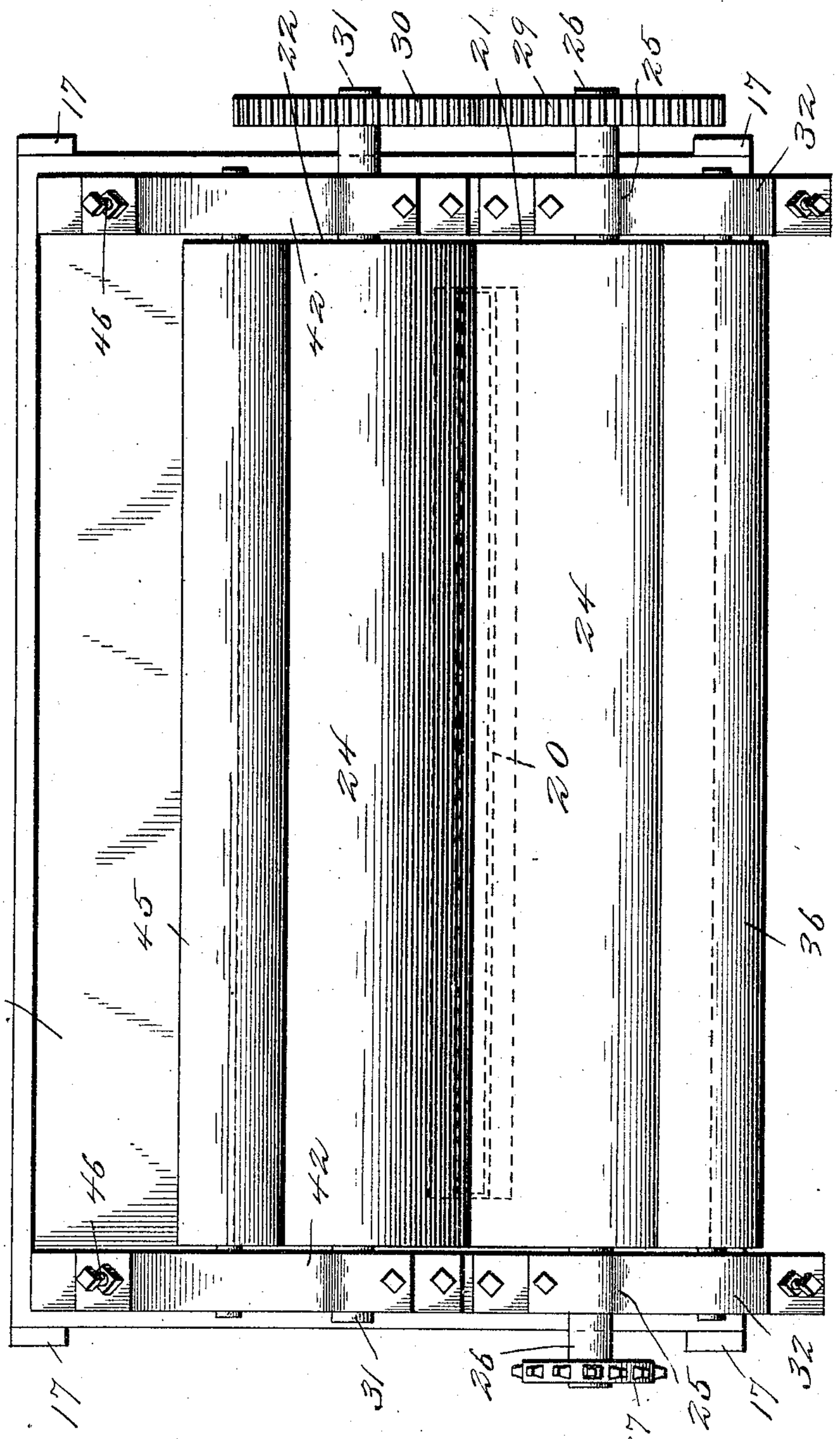
NO MODEL. 3 SHEETS—SHEET 2.

FIG. 2.



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NO MODEL. 3 SHEETS—SHEET 3.

FIG. 3.

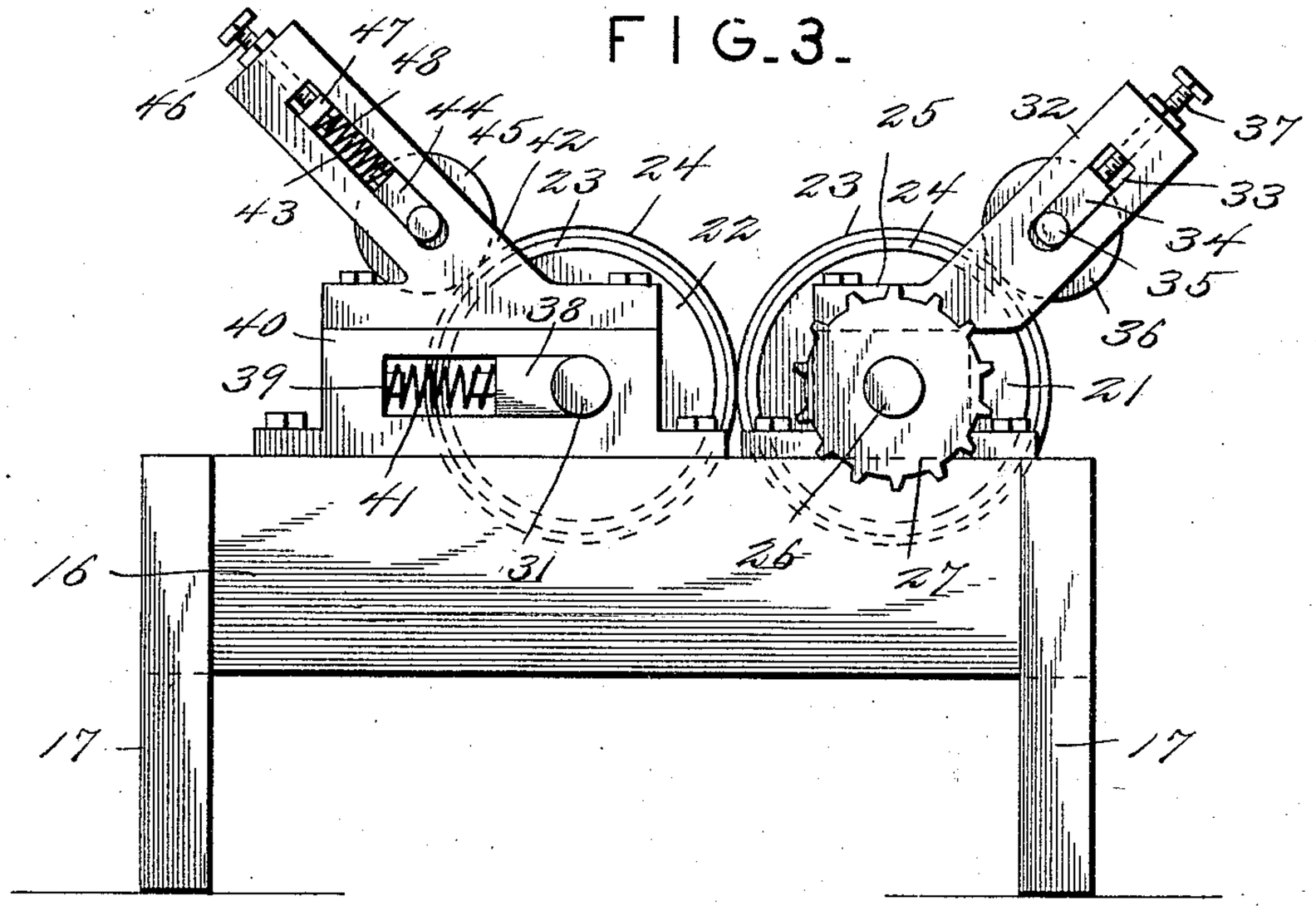
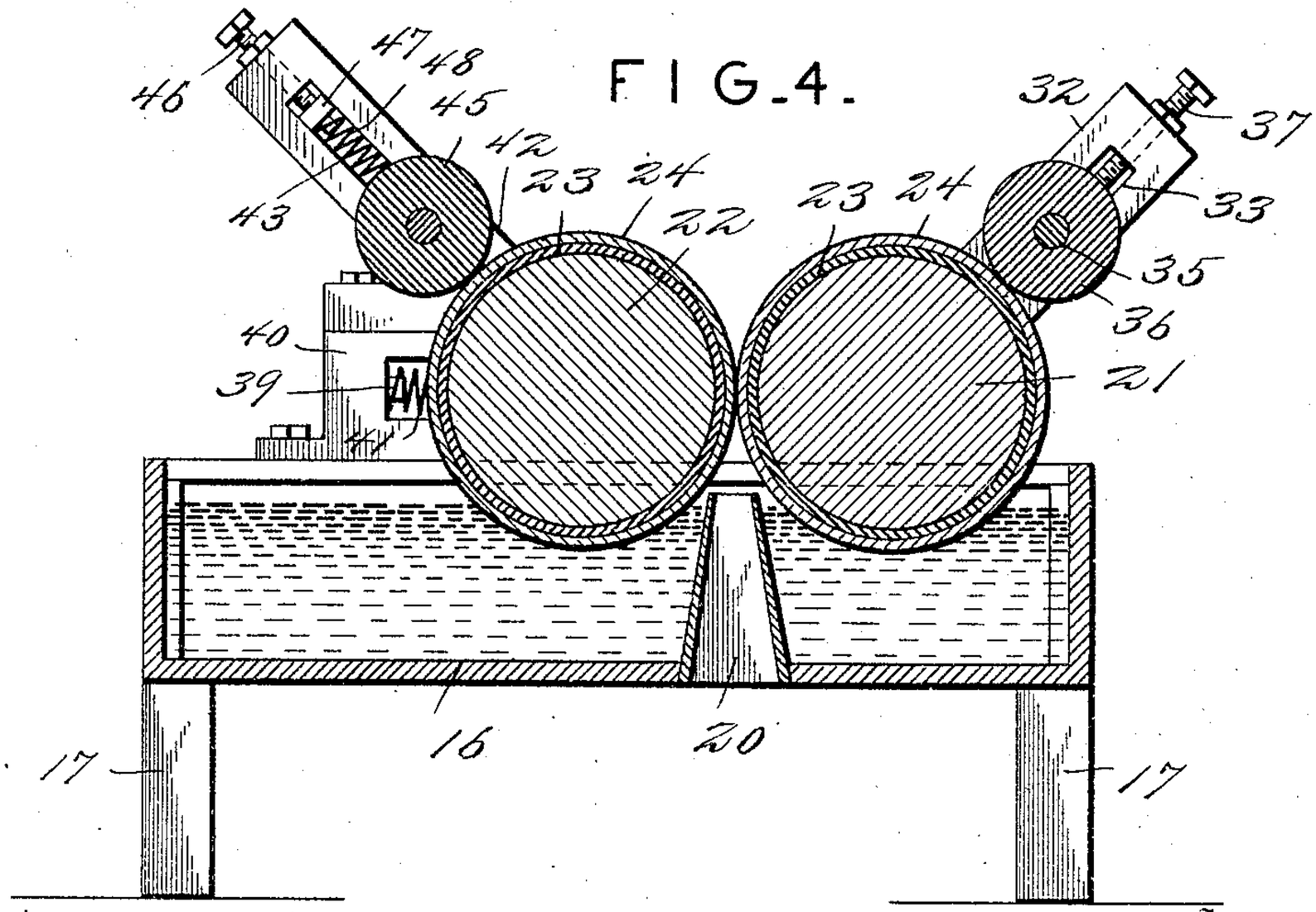


FIG. 4.



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UNITED STATES PATENT OFFICE.

FRED LADEWIG, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO LOUIS BRILL, OF CHICAGO, ILLINOIS.

PARAFFINING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 778,049, dated December 20, 1904.

Application filed November 24, 1903. Serial No. 182,482.

To all whom it may concern:

Be it known that I, FRED LADEWIG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Paraffining-Machines, of which the following is a specification.

This invention relates to a paraffining machine or apparatus particularly adapted for treating the tops of milk-bottles and like receptacles, usually formed of paper, with paraffin and render them waterproof and more durable.

The improved apparatus is intended to be placed in operative relation to a machine for printing and cutting tops for milk-bottles and like devices, and essentially comprises a tank containing melted paraffin and having thereon coating and drying rollers in adjustable contiguity and operated by intermediate means between the same and a machine for printing and cutting tops or similar covers.

The invention further consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a printing and cutting machine, together with coöperating devices showing the paraffining apparatus disposed thereunder and embodying the features of the invention. Fig. 2 is a top plan view, on an enlarged scale, of the paraffining apparatus. Fig. 3 is an enlarged side elevation of the paraffining apparatus. Fig. 4 is a longitudinal vertical section of the same.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The improved paraffining apparatus, as before indicated, is designed for use with a machine for printing and cutting tops for milk-bottles and other like devices, and, as shown by Fig. 1, this machine comprises a frame 1, supporting a table 2, with a plate 3 thereon, and an upstanding neck 4, carrying a printing or stamp attachment 5, and a vertical reciprocating cutter 6, adapted to operate as a punch and form a number of covers at one operation over downwardly-projecting guides 7. At a suitable distance from the machine is a paper-feeding roll 8, and under the forward extremity of the plate 3 is a heating-jet 9, supplied with gas or other material through a pipe 10. Within the frame 1 is a shaft 11, having thereon a band wheel or pulley 12, engaged by a belt 13, running from a suitable power source 14, the said shaft 11 also having a sprocket-wheel 15 on one end.

The machine thus far described is one well known in the art, with the exception of the shaft 11 and its appurtenances for driving the mechanism, which will be presently set forth.

The improved paraffining apparatus or attachment for the machine disclosed consists in a tank 16 of suitable dimensions supported by suitable legs 17 and having a heating-jet 18 projecting upwardly thereunder for keeping the paraffin contained within the tank in melted condition. The heating-jet 18 is supplied with gas or other fuel by a pipe 19, connecting with the pipe 10, which is used in heating a part of the plate 3. The tank 16 has a guide-funnel 20 opening through the bottom thereof and projecting near the upper edge, said funnel extending almost the full length of the tank, as indicated by dotted lines in Fig. 2. The upper reduced end of the funnel-guide is located under the engaging surfaces of rollers 21 and 22, each of which has a single cover 23, of felt, over which is placed a single thickness of canvas 24. The rollers 21 and 22 are of metal and extend down into the tank a sufficient distance to contact with the melted paraffin to practically serve as paraffin-applying rollers. The roller 21 is mounted in rigid bearings 25, and the shaft 26 thereof is projected from opposite ends to respectively receive a sprocket-wheel 27, which is engaged by a chain belt 28, surrounding the sprocket 15 on the shaft 11 of the machine heretofore described, and a spur-gear 29, which meshes with a similar gear 30 on the projected end of the shaft 31 of the roller 22. Disposed at a rearward angle of inclination in relation to the bearings 25 and securely held on the latter are supports 32, having slots 33

therein to receive boxes 34 of less length than the slots. The boxes 34 receive the journals 35 of a controlling-roller 36, which is held in close contact with the covering of the roller 21 by set-screws 37, extending longitudinally into the supports 32 from the upper ends of the latter. The roller 36 squeezes the surplus paraffin out from the covering of the roller 21. The roller 22 has its shaft 31 held in boxes 38, freely movable in slots 39 in opposite end guides 40, springs 41 being interposed between the boxes 38 and the adjacent end walls of the slots 39 to always tend to force the roller 22 in close contact with the roller 21. Rising from the guides 40 are supports 42, inclined reversely to the supports 32 and also having slots 43, in which boxes 44 are movably mounted and receive the journals of a controlling-roller 45, which has the same function as the roller 36, heretofore described. Adjusting-screws 46 extend downwardly into the supports 42 and connect with nuts 47, movably held in the slots 43, and between the said nuts and the boxes 44 springs 48 are interposed to permit the roller 45 to have yielding bearing in relation to the roller 22. The roller 22 is automatically adjustable in the manner set forth to permit the same to compensate for the thickness of the material passing between the two rollers; but it will be understood that to render the paraffining operation effective a strong resistance must be set up in opposition to the movement of the roller 22, and hence the roller 21 is held in a fixed rotating position on the tank. The controlling-roller 45 is always held in contact with the roller 22; but when the latter moves or is forced away from the roller 21 it will be obvious that the said roller 45 will also have to correspondingly move, and the arrangement of springs 48 in connection therewith as explained is employed. It is proposed to dispose under the tank 16 a box or other receptacle 49 to receive the caps or covers falling through the funnel-guide 20.

The guide 7 from the printing and cutting machine heretofore set forth comprises a number of strips of suitable width disposed at a forward angle of inclination and directed toward the point of contact of the two rollers 21 and 22 to insure a disposition of the caps or covers which are cut to fall between said rollers.

In the operation of the machine paraffin is placed in the tank 16 and the jet 18 ignited, it being understood that the body of the tank at least will be formed of metal. After the paraffin is melted and the machine is set in motion the rollers, through the mechanism explained, will also be caused to rotate and revolve toward each other through the spur-gears 29 and 30. The caps or covers as cut by the machine will fall over the parts of the guide 7 between the rollers 21 and 22 and become thoroughly coated and impregnated with the paraffin which is carried up by the rollers from the tank, and after passing through the rollers the caps or covers fall through the funnel-guide 20 into the box or receptacle 49, and thus in the operation of printing, cutting, and coating with paraffin the caps or covers for the bottles or other like devices will be rendered complete without requiring a manual dipping of the caps or covers and with a more satisfactory result in the finished article in view of the fact that the coating of paraffin will be more evenly distributed without loss of the paraffin as in hand coating.

It will be understood that changes in the proportions, dimensions, and minor details of construction may be resorted to without departing from the spirit of the invention.

Having thus fully described the invention, what is claimed as new is—

1. In a paraffining apparatus, the combination of a single tank for holding melted paraffin having a funnel-guide projecting upwardly thereinto and opening through the bottom thereof, and paraffin-applying rollers rotatably held above the upper edge of the tank and projecting into the latter, the one roller being individually adjustable longitudinally toward the other, the upper end of the funnel-guide being in line with the contacting surfaces of the rollers.

2. In a paraffining apparatus, the combination of a single stationarily-supported tank for holding paraffin having a guide projecting upwardly thereinto and opening through the bottom thereof, and paraffin-applying rollers held on, and depending into, the tank, the one roller being adjustable and the other having a stationary plane of rotation and the contacting portions of the rollers disposed over the upper end of the guide.

3. In a paraffining apparatus, the combination of a tank having a guide projecting upwardly thereinto and opening through the bottom thereof, paraffin-applying rollers held on, and depending into, the tank, said rollers having portions of their surfaces always in contact and their contacting portions arranged from the upper end of the guide, and controlling-rollers arranged above and in contact with the applying-rollers for removing the surplus paraffin therefrom.

4. In a paraffining apparatus, the combination of a tank having a guide extending upwardly thereinto and opening into the bottom, a pair of rotatable rollers held on the tank above the guide, and controlling-rollers arranged above and bearing on the aforesaid rollers for relieving them of surplus paraffin.

5. In a paraffining apparatus, the combination with a machine for printing and cutting paper for forming caps or covers, of a guide device extending downwardly at an angle from the said machine, and a paraffining apparatus having a pair of applying-rollers disposed under the said guide device, and a tank support-

ing the said rollers having a guide extending upwardly thereinto and opening through the bottom thereof, the upper end of the guide being in line with the portions of the rollers in contact with each other.

6. In a paraffining apparatus, the combination of a tank for holding paraffin, and paraffin-applying rollers supported on the tank and each having a single cover of felt over which is placed a single thickness of canvas.

7. In a paraffining apparatus, the combination with means for holding liquid material, of applying-rollers supported on said means and each having a covering of felt over which is placed an outer thickness of harder absorbent material.

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

FRED LADEWIG.

Witnesses:

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H. GOLDSTINE.