

No. 667,385.

Patented Feb. 5, 1901.

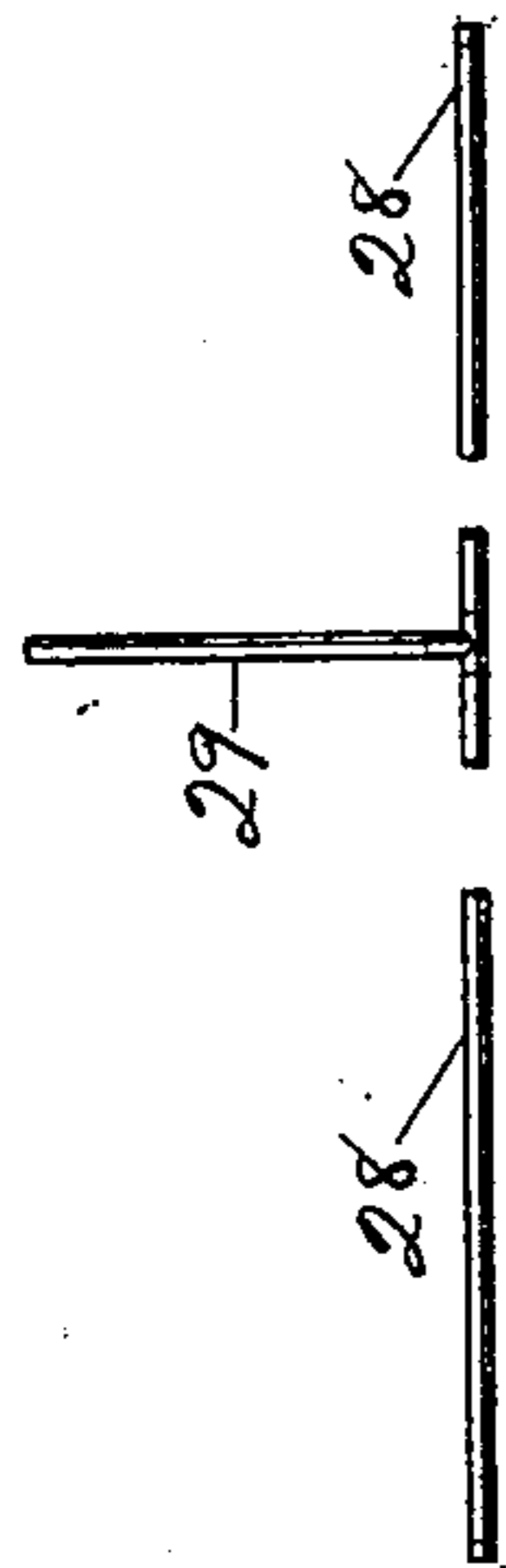
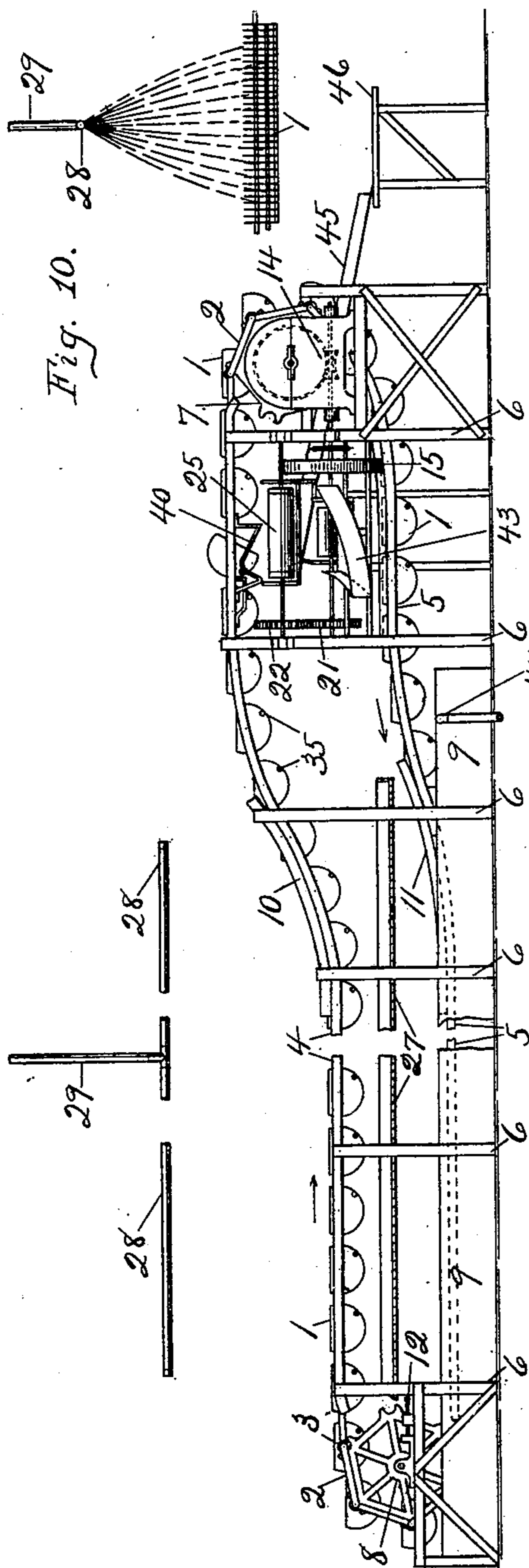
F. W. BRIGHT.

MACHINE FOR COOLING CANNED MEATS.

(Application filed Apr. 14, 1900.)

3 Sheets—Sheet 1.

(No Model.)



WITNESSES:

K. M. Imboden,
M. L. Lange.

Fig. 1.

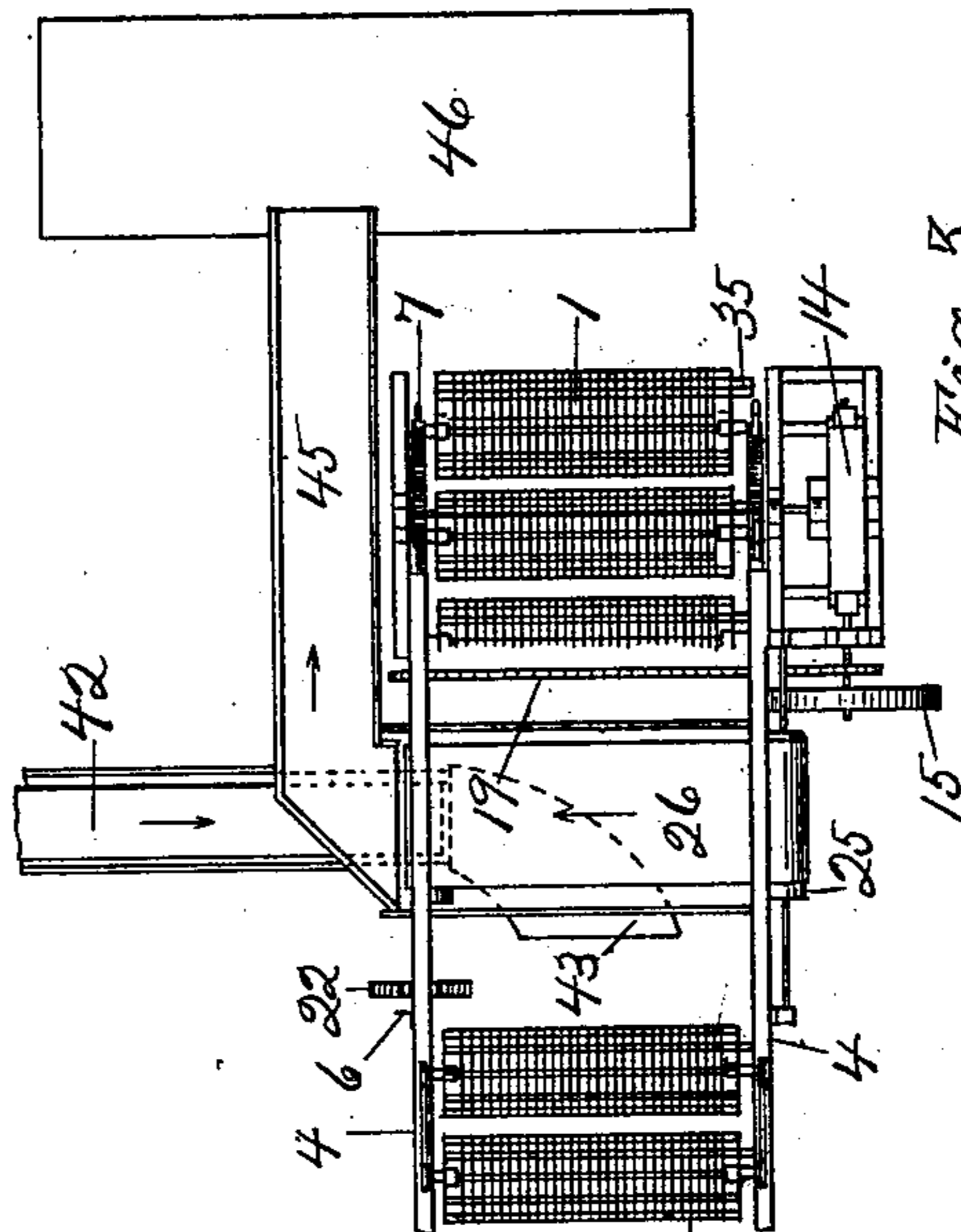


Fig. 3.

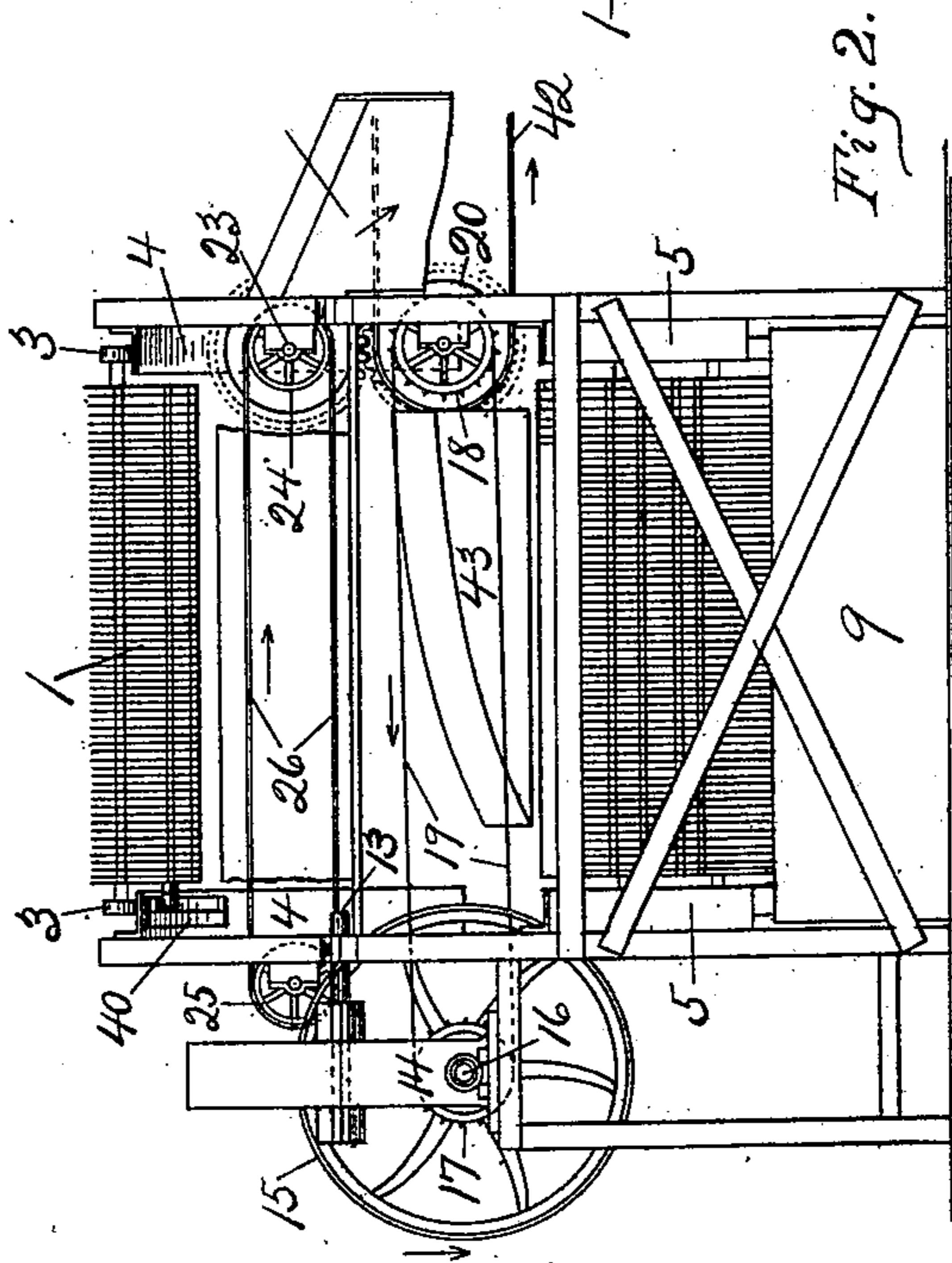


Fig. 2.

INVENTOR,

Frederick W. Bright,

BY HIS ATT'YS,

Higdon & Higdon.

No. 667,385.

Patented Feb. 5, 1901.

F. W. BRIGHT.
MACHINE FOR COOLING CANNED MEATS.

(Application filed Apr. 14, 1900.)

(No Model.)

3 Sheets—Sheet 2.

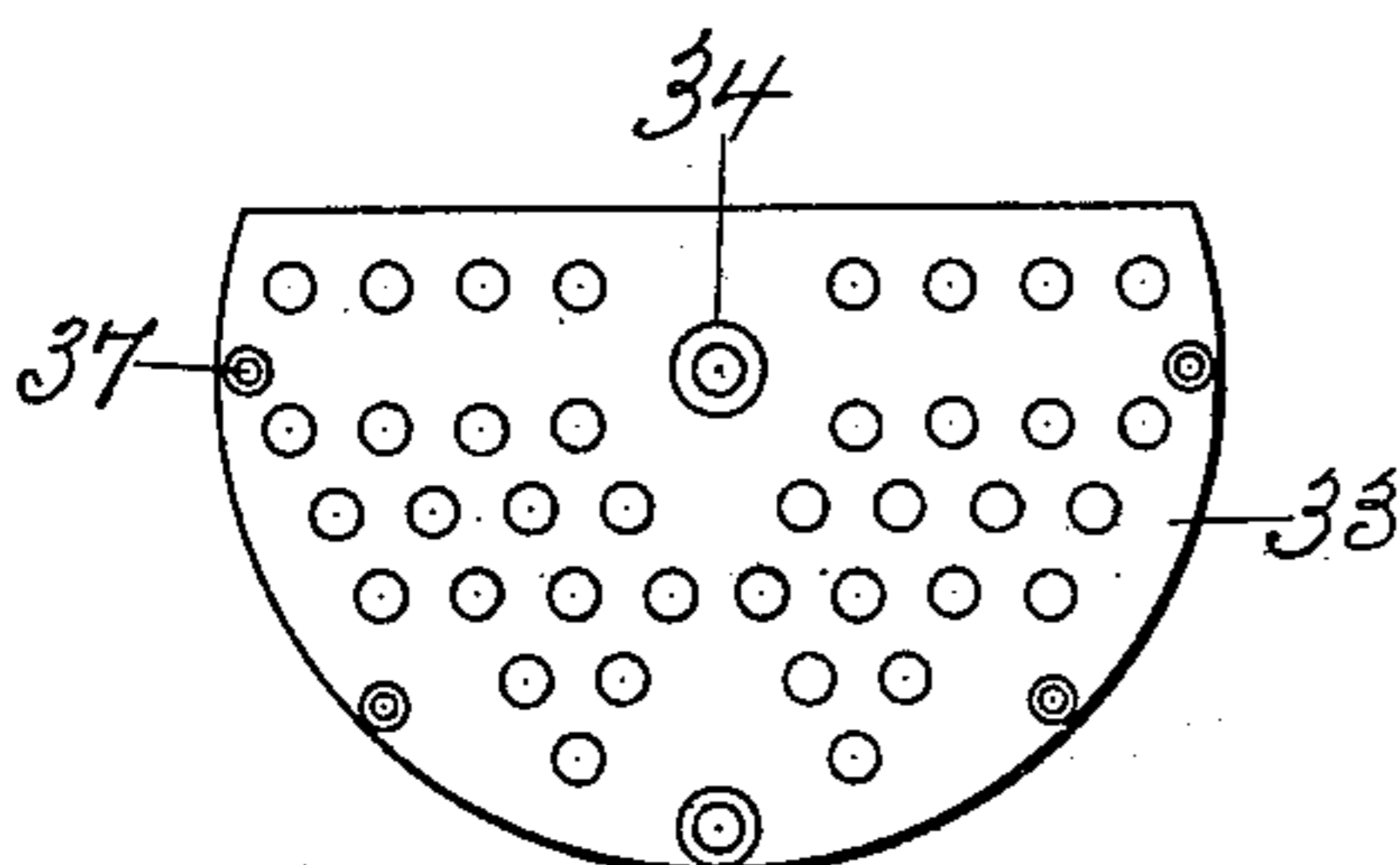


Fig. 5.

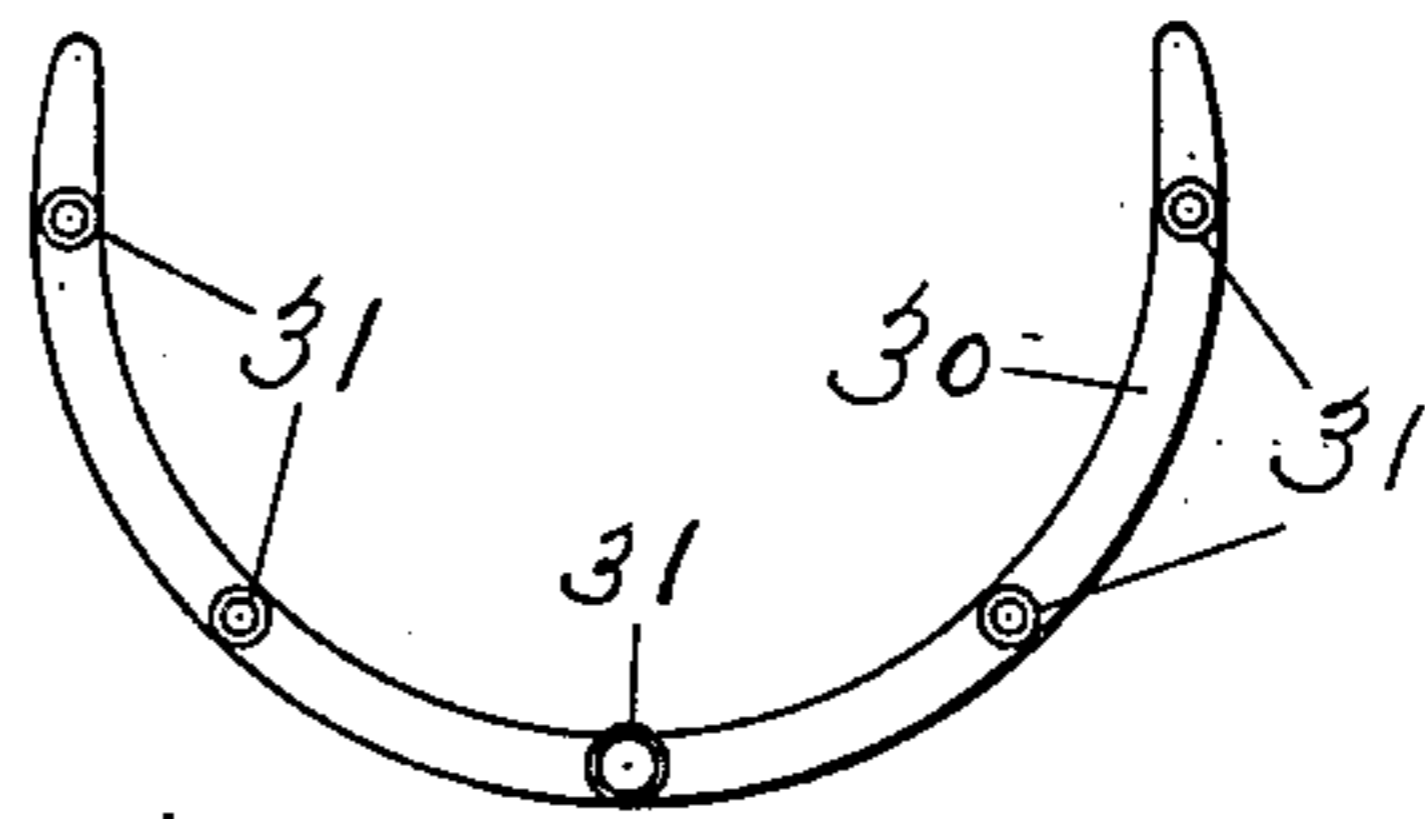


Fig. 6.

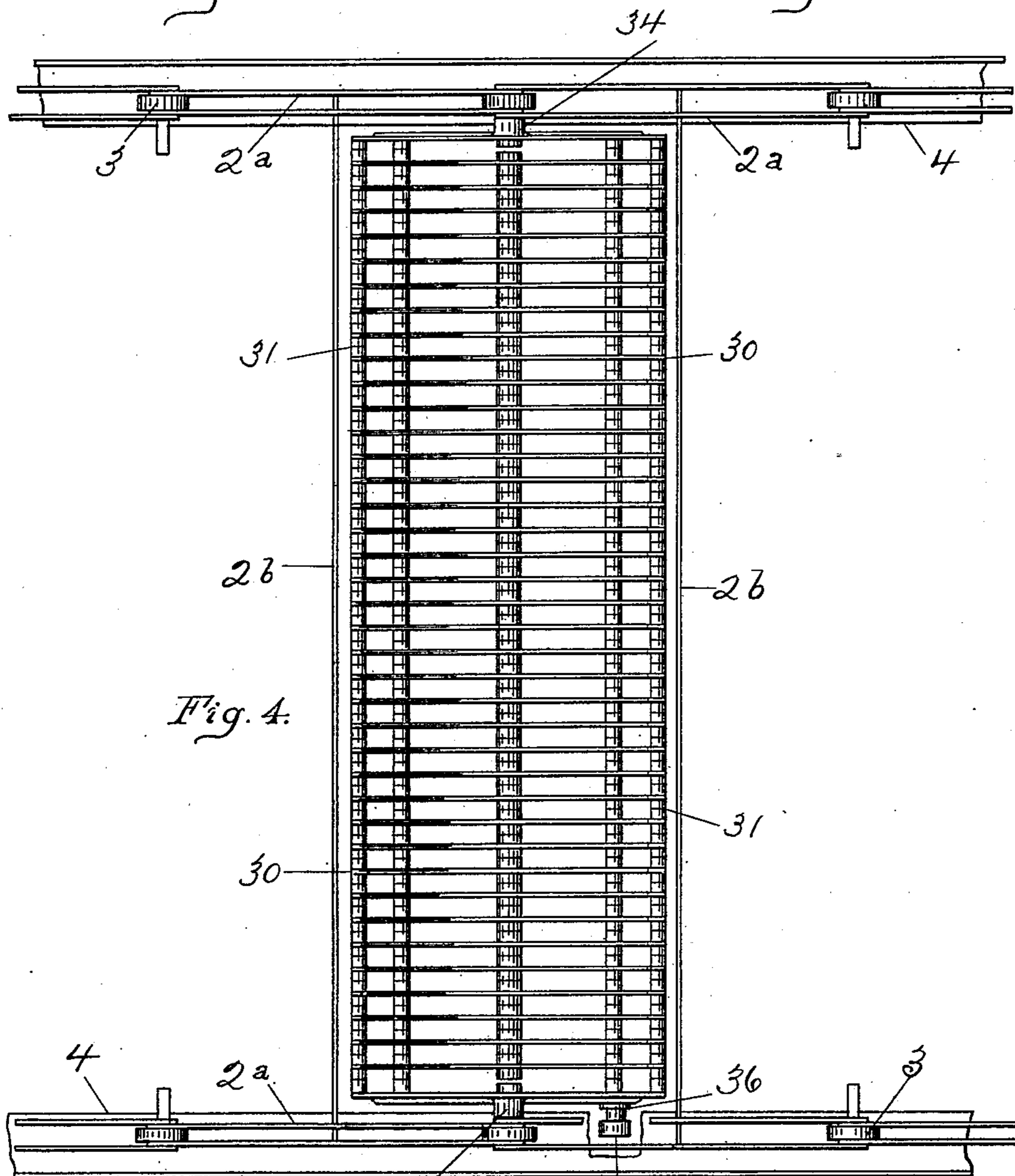


Fig. 4.

WITNESSES:

K. M. Imboden,
M. L. Lange

INVENTOR,
Frederick W. Bright.

BY HIS ATT'YS,
Higdon & Higdon.

No. 667,385.

Patented Feb. 5, 1901.

F. W. BRIGHT.
MACHINE FOR COOLING CANNED MEATS.

(Application filed Apr. 14, 1900.)

(No Model.)

3 Sheets—Sheet 3.

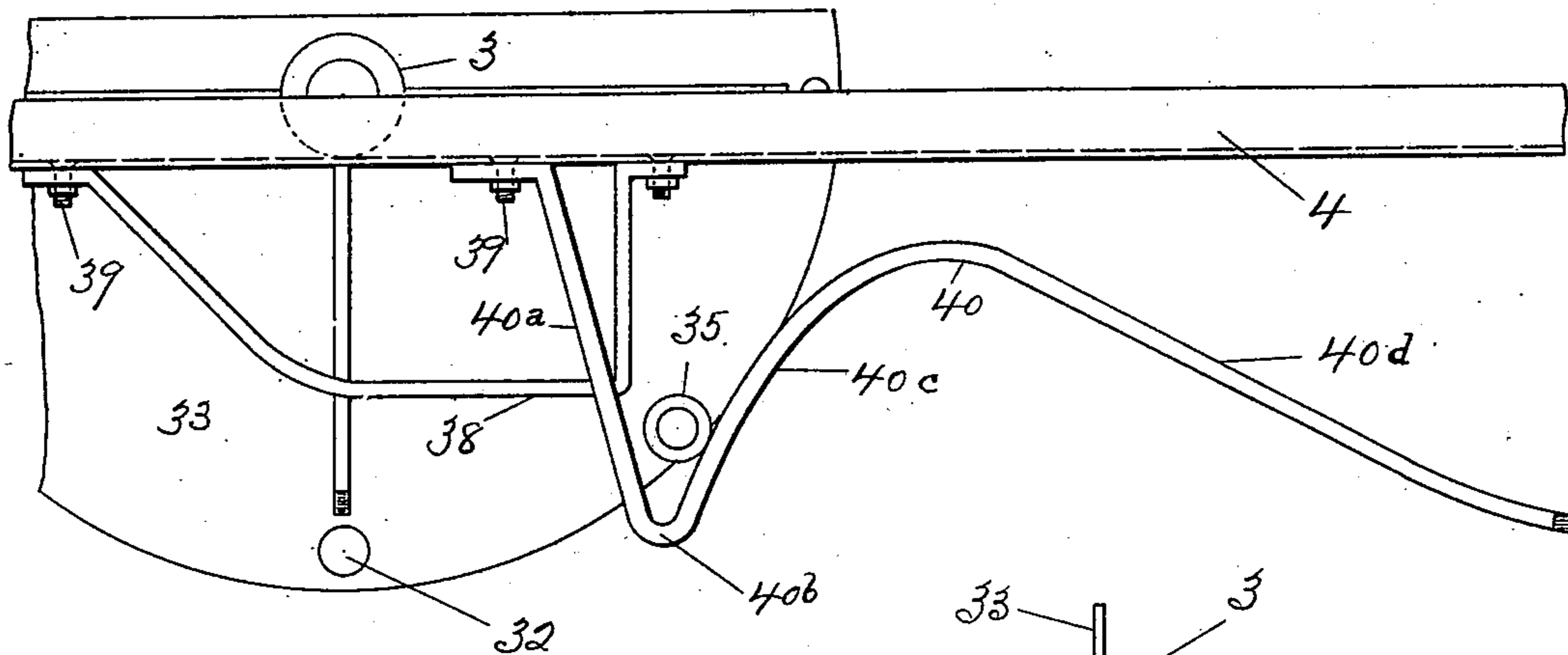


Fig. 7.

Fig. 9.

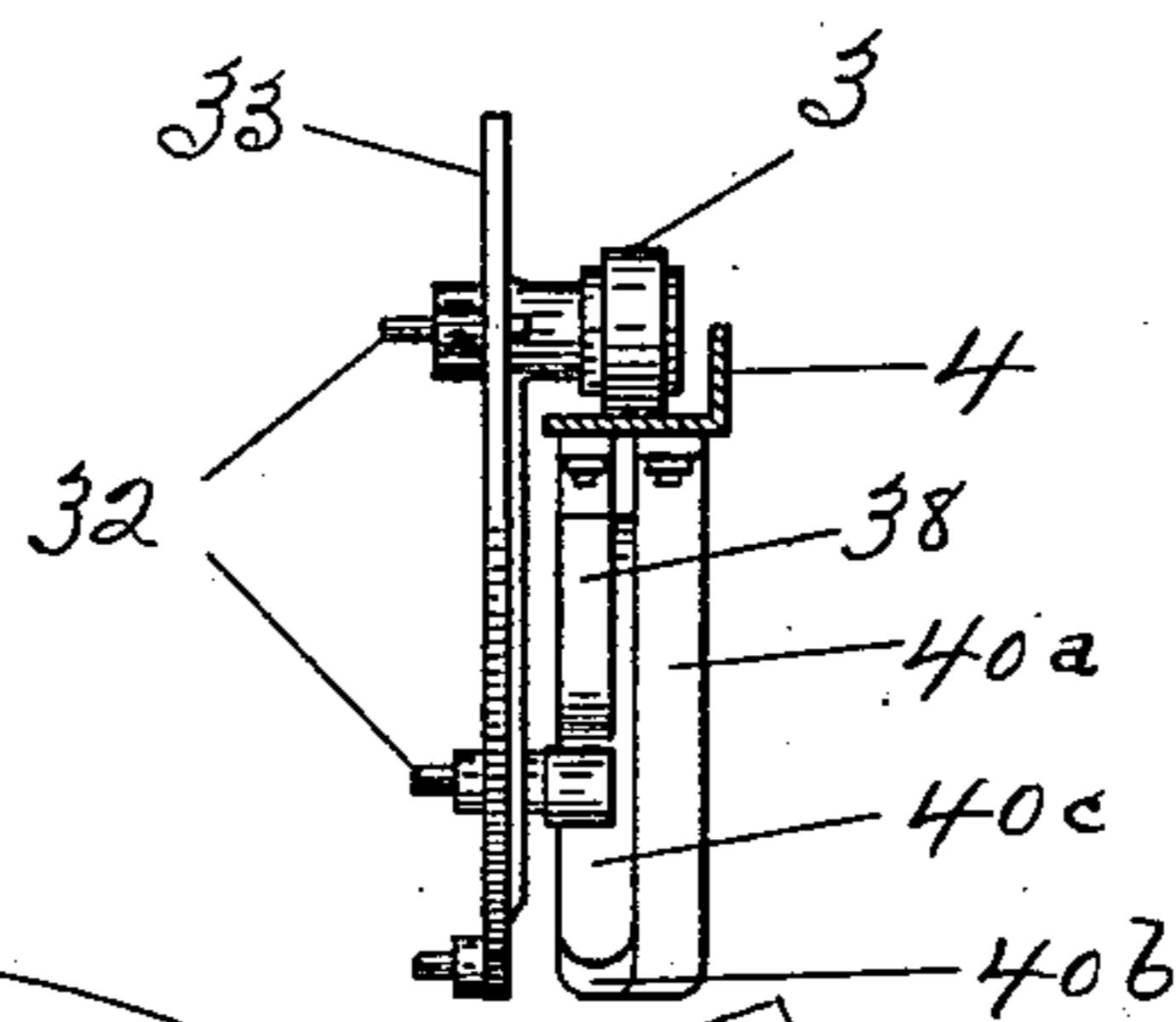
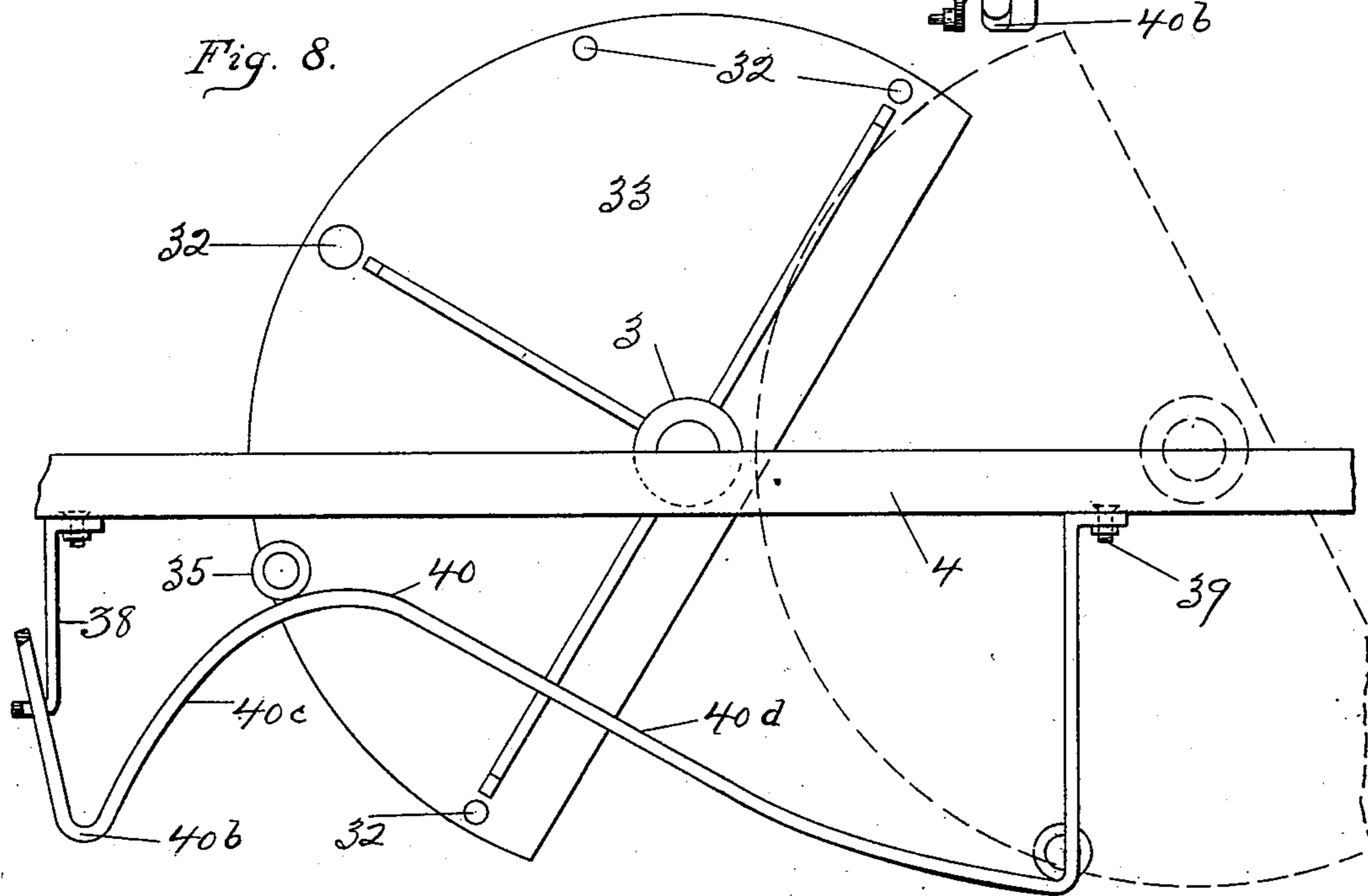


Fig. 8.



WITNESSES:

K. M. Imboden,
M. L. Lange.

INVENTOR,

Frederick W. Bright.

BY HIS ATT'YS,
Higdon & Higdon.

UNITED STATES PATENT OFFICE.

FREDERICK W. BRIGHT, OF KANSAS CITY, KANSAS, ASSIGNOR TO THE
ARMOUR PACKING COMPANY, OF SAME PLACE.

MACHINE FOR COOLING CANNED MEATS.

SPECIFICATION forming part of Letters Patent No. 667,385, dated February 5, 1901.

Application filed April 14, 1900. Serial No. 12,787. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. BRIGHT, a citizen of the United States, and a resident of Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Machines for Cooling Canned Meats, of which the following is a specification.

My invention relates to machines or apparatus for handling and cooling cans of preserved meats, &c., directly after the cooking of the contents thereof and the subsequent washing in hot alkaline solutions.

One object of my invention is to provide a machine that will rinse the exteriors and cool the contents of a large number of such cans in a short time.

Another object of my invention is to provide a machine that shall dispense with any handling of the cans by operatives from the time said cans are washed until they are cooled and delivered automatically upon a table by my invention.

My invention further provides a machine that is automatic in all of its operations and requires no attendants.

To effect the above results, my invention comprises a number of novel features, which I shall proceed to describe.

Reference is had to the accompanying drawings, in which—

Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is an end elevation of the driving end of same. Fig. 3 is a plan of the driving end of the machine with several of the conveyer-baskets omitted. Fig. 4 is a detail plan of one of the conveyer-baskets with adjacent portions of the conveyer-chain. Fig. 5 represents one of the basket end plates. Fig. 6 is an elevation of one of the ribs composing the body of the basket. Fig. 7 is an elevation of one of the conveyer-baskets and a device for partially overturning same. Fig. 8 shows the basket in another position as acted upon by said device. Fig. 9 is an elevation of the same parts in the same position as shown in Fig. 7, taken from a point ninety degrees therefrom. Fig. 10 represents the spray of water falling from the supply-pipe.

Referring first to Figs. 1, 2, and 3, 11 design-

nate a series of metallic conveyer-baskets, which will be described herein, secured to and propelled by a pair of endless sprocket-chains 2 2, provided between their links with anti-friction-rollers 3, which travel upon an upper track 4 4 and a lower track 5 5, secured to and supported by uprights 6. Said tracks and uprights, as well as most other portions of the frame of the machine, are made, preferably, of angle-iron plate.

The upper track 4 may be curved in profile, as shown in Fig. 1, or straight. The lower track 5 extends from a point below the driving sprocket-wheels 7 7 to a point below the idle sprocket-wheels 8 8 at the opposite end of the machine. Said track consists of a pair of rails 5 5, which descend at a suitable point into a water-tank 9, to the inner sides of which they are secured at a suitable distance from the top of said tank and parallel thereto. Said tank extends, preferably, to a point several feet beyond sprocket-wheels 8. It is secured to uprights 6.

Each rail of upper track 4 has a guard 10, formed of angle-iron, secured above and parallel thereto at such a distance as to prevent the chains 2 2 from rising and leaving said track during the operation of the machine. Lower rails 5 5 are provided with similar guards 11, which serve the purpose just described.

Sprocket-wheels 8 are each provided with a take-up device 12 for adjusting slack of chains 2. The driving-sprockets 7 7 are keyed to a horizontal shaft 13, which is driven, through a worm-gear 14, by a pulley 15, secured to shaft 16 of said gear. Secured to said shaft 16 is a sprocket-wheel 17, which drives a sprocket-wheel 18 by chain 19. Keyed to the shaft of driven sprocket 18 is a wide-faced pulley 20, the use of which will be stated herein. A gear-wheel 21 is also keyed to said shaft and drives a gear-wheel 22 on shaft 23, which carries a wide-faced pulley 24, the top of which is a few inches below the bottoms of conveyer-baskets 1. Mounted in bearings on the opposite side of the machine at the same height as pulley 24 is a pulley 25. A short conveyer-belt 26 is carried by said pulleys and driven by pulley 24.

The means I employ for cooling the con-

tents of conveyer-baskets 1 will now be described. Secured to uprights 6 just below the upper line of baskets 1 is a long shallow pan 27, (shown in longitudinal section in Fig. 1,) which extends from a point near sprockets 8 to a point near the driving end of the machine. Said pan may be fixed either horizontally or with a downward incline toward the rear end of the machine. The sides thereof are continuous, except at the rear end, which is left open. The sides of this pan being nearly in contact with uprights 6, its breadth is greater than the length of a conveyer-basket. Centrally above pan 27 and the upper line of baskets 1 is hung a run of water-pipe 28 of nearly the same length as pan 27. Pipe 28 is connected about midway between its ends with a pipe 29, which communicates with a suitable supply of cold water, such as a city water-main. The lower portion of horizontal pipe 28 is provided throughout its length with perforations of suitable number and arrangement for directing a spray of water downward upon baskets 1, the width of the spray being such as to extend nearly from end to end of said baskets. (See Fig. 10.) This falling water is received by the pan 27, from the lower open end of which it falls into the tank 9.

The construction of the conveyer-baskets 1 will now be described. (See Figs. 4, 5, and 6.) The body of the basket is of sufficient size to accommodate a large number of the cans therein and is formed of a number of approximately semicircular ribs 30, provided at intervals on both faces with perforated bosses 31. Said ribs are assembled upon transverse rods 32, passing through said bosses and riveted or otherwise secured at each end of the basket to end plates 33, of one of which Fig. 5 represents the inner side. Each of said end plates has in addition to the bosses which register with those of ribs 30 an upper central pivot-boss 34, in which is riveted a stud or pin which projects outwardly and forms a pivot for the chain-links 2^a. The rollers 3, already referred to, are loosely mounted on said pins between the inner pairs of links. By this arrangement each and every basket of the series is suspended from the chain 2.

Baskets 1 are hung as close to one another as possible, allowance being made for clearance at curves in the track. The links 2^a extend from each boss 34 to the corresponding bosses of the adjacent baskets. In order to drive these long links, I employ special sprocket-wheels 7 7 and 8 8, already referred to, the rims of which are polygonal in form, as shown in Fig. 1. The links lie flat upon the periphery of said wheels, and the rollers 3 are engaged by the sprocket-teeth arranged in pairs and suitably shaped thereto. (See Fig. 1.) 2^b designates cross-rods connecting the chains and secured centrally to the links thereof.

Returning to the conveyer-baskets 1, each basket carries on one end thereof a roller 35, pivoted in boss 36, set at the edge of the plate

33, about half-way between the bottom thereof and opening 37. (See Figs. 4, 5, 7, and 8.) As the baskets are drawn along by chains 2, which are omitted for clearness in Figs. 7 and 8, each of the rollers 35 successively passes beneath and in contact with a strut 38, which is secured with flat-headed bolts 39 to the under face of the rail 4 at the inner edge thereof. The upper face of said rail is shown in broken lines in Fig. 7. The engagement of rollers 35 with strut 38 prevents any swinging of the baskets when they approach the dumping-cam 40. This is a stationary cam secured to the rail 4 in the same manner as strut 38 and is formed as follows: The substantially vertical portion 40^a is secured to the extreme outer edge of rail 4, the object being to give clearance for the rollers 35 to pass it. The return-bend 40^b is made in two directions, upwardly and inwardly. The inward bend is shown in Fig. 9. This places the active parts 40^c and 40^d of the cam directly in the path of the rollers 35, which are drawn up the face 40^c of the cam, thereby tilting the baskets to which they are attached. The maximum tilting occurs at the apex of cam 40 and is sufficient to dump or empty the baskets of any cans contained by them. The portion 40^d of said cam is so formed as to prevent the baskets from returning too suddenly to their normal position. The broken lines in Fig. 8 indicate the position of one of the baskets as the roller 35 is about to be released from cam 40. At this point said cam recedes outwardly and upwardly, which outward recession permits the rollers 35 to pass it in the same way they pass the return-bend 40^b, already described. I do not confine myself to this particular device for dumping the baskets. One cam 40 is adequate for dumping the baskets; but two of said cams may be provided, oppositely secured, one on each rail of track 4.

Having described the construction of my invention, I will now describe its operation. Power is applied to the belt-pulley 15 by a belt preferably engaging some variable-speed device, such as a pair of cone-pulleys. By this means the conveyer-baskets 1 and conveyer-belt 26 are put in motion. Water is admitted to the sprayer-pipe 28, and a continuous shower plays upon the moving baskets. The cans, which have just emerged from a hot alkaline bath to remove the grease from them, are dumped or fed upon a feeder-belt 42, driven by pulley 20, which belt transfers the cans into the machine. At the point where belt 42 passes around pulley 20 the cans fall off said belt into a curved chute 43, secured to the frame of the machine just above the lower line of baskets. Said chute diverts the course of the cans at a right angle and is downwardly inclined toward the mouths of the baskets. The cans fall from chute 43 into the conveyer-baskets which are on the lower track 5 and are carried into the tank 9, which has previously been filled with

cold water. Said tank has an overflow-pipe 44 set at such a height that a water-level sufficient to cover the baskets is maintained in the tank. The cans by passing slowly through this body of water are cooled as much as desired by regulating the speed of pulley 15. At the farther end of tank 9 the cans are raised therefrom upon the sprockets 8 and return toward the dumping-cam, being meanwhile subjected to the cooling and rinsing effect of the spray from pipe 28. Said spray completes the cooling of the cans and their contents. When the baskets arrive at the dumping-cam 40, they dump their contents in succession upon the short moving belt 26, which conveys them to the upper end of a downwardly-inclined chute 45, into which they fall and are delivered upon a table or bench 46. Suitably secured to the frame of the machine, at the sides of conveyer-belts 42 and 26, are stop-plates and guards (shown in Figs. 1 and 3) which prevent the cans from falling off said belts except at the proper points.

The pan 27 is not absolutely necessary to the performance of my invention; but my reason for employing it is that it causes the cold water to enter tank 9 at the end opposite the outlet 44, and said outlet is placed at the end of the tank at which baskets 1 enter it for the reason that the water in this end of said tank is more heated by the incoming cans than the water at the other end. The warmed water thus escapes readily from the tank. It may also be stated that the tank 9 and its contents could be dispensed with, inasmuch as the spray described would cool the cans if they remained long enough in it; but a saving of time is effected by employing said tank, as described.

In a machine of the kind described, in which very large conveyer-baskets might be required, I would provide a second spraying-pipe to be located between pan 27 and the lower line of baskets.

Having fully described my invention, I claim as new and desire to secure by Letters Patent of the United States—

1. The combination of a chain-and-basket conveyer, a water-tank adapted to be traversed by said conveyer, a perforated water-pipe for spraying the cans in said conveyer with water, and a trough or pan for receiving part of said spray and conducting the water to one end of said tank, as and for the purpose set forth.

2. In a machine for cooling and rinsing cans

of cooked foods, the combination of an endless-chain and basket can-conveyer, a chute for depositing cans in the baskets thereof, a cam secured to the track of said conveyer for causing said baskets in succession to dump their contents at a suitable point, and an endless moving belt for receiving the cans so dumped and conveying them to a point outside of said machine.

3. In combination, a chain-and-basket conveyer comprising a pair of endless sprocket-chains and a series of baskets pivotally attached to said chains and being provided at said pivotal points with antifriction track-rollers, upper and lower tracks for said conveyer-chains, a perforated water-pipe located above and substantially parallel to said conveyer, for throwing a spray of water into said conveyer-baskets, and a water-tank through which said baskets are carried; one end of said tank receiving a water-supply from said spray, and having at its opposite end an overflow-outlet, as and for the purpose set forth.

4. The combination of a chain-and-basket can-conveyer, consisting of a pair of endless chains and a series of baskets hung therefrom, a pair of sprocket-wheels for driving said chains, a shaft by which said sprockets are driven, a worm-gear rotating said shaft, having secured to the worm-shaft thereof a driving sprocket-wheel, a chain and second sprocket-wheel driven by said sprocket, a belt-pulley secured to the shaft of said driven sprocket, a feeder-belt driven by said pulley, a gear-wheel secured to the shaft of said pulley, a driven gear-wheel located above and driven by said gear-wheel, an upper pulley secured to the shaft of said driven gear, and a short conveyer-belt, located below a portion of said baskets and driven by said upper pulley, substantially as described.

5. A conveyer-basket comprising, in combination, a plurality of approximately semi-annular ribs arranged so as to form a semi-cylindrical frame, a pair of end plates of approximately semicircular form, a plurality of tie-rods passing through registering perforations in said ribs and plates, and bosses on said ribs, adjacent to said perforations, for separating said ribs from one another, substantially as set forth.

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

FREDERICK W. BRIGHT.

Witnesses:

R. C. BEAN,
WM. CARGILL.