

Dec. 19, 1939.

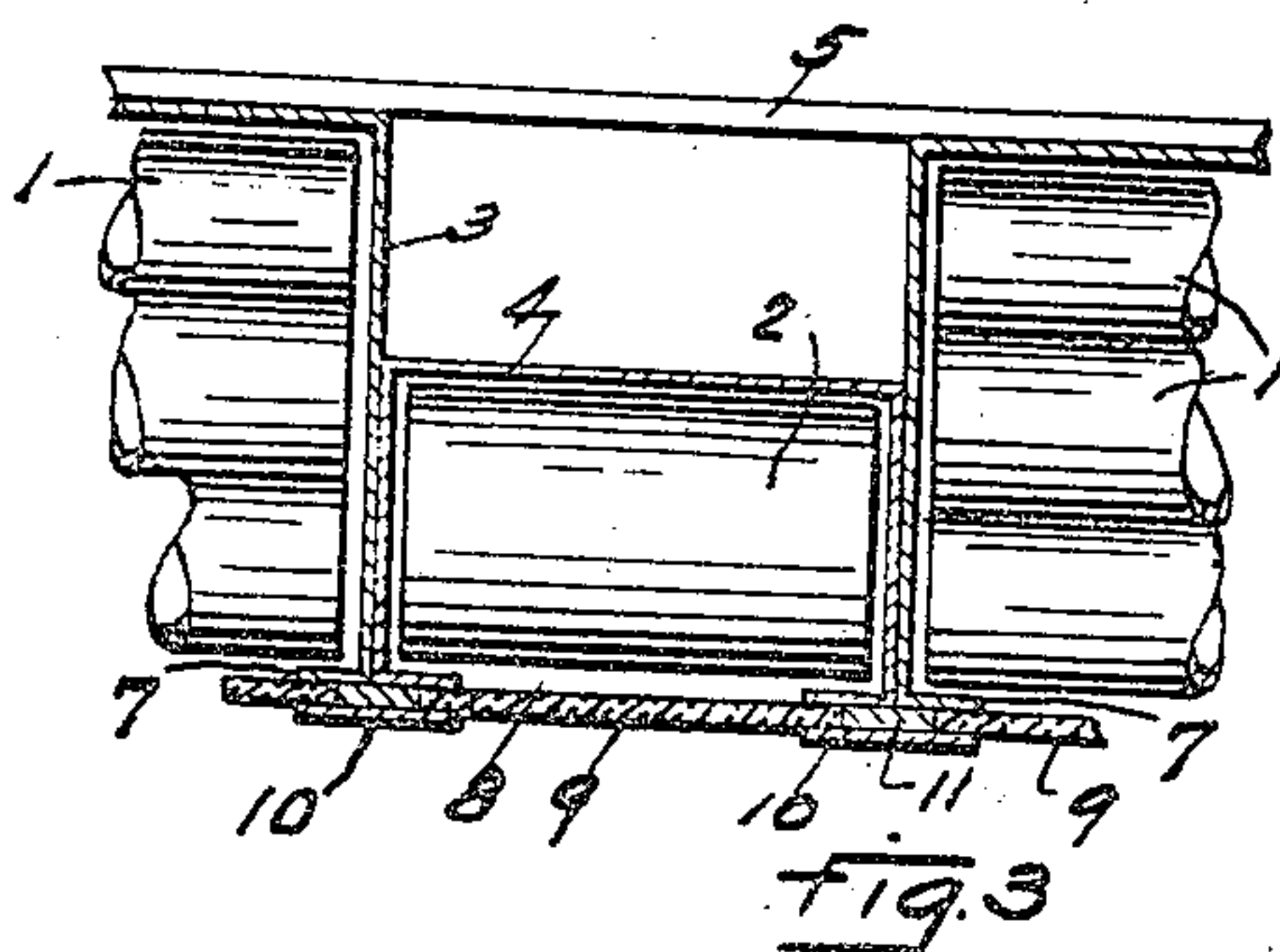
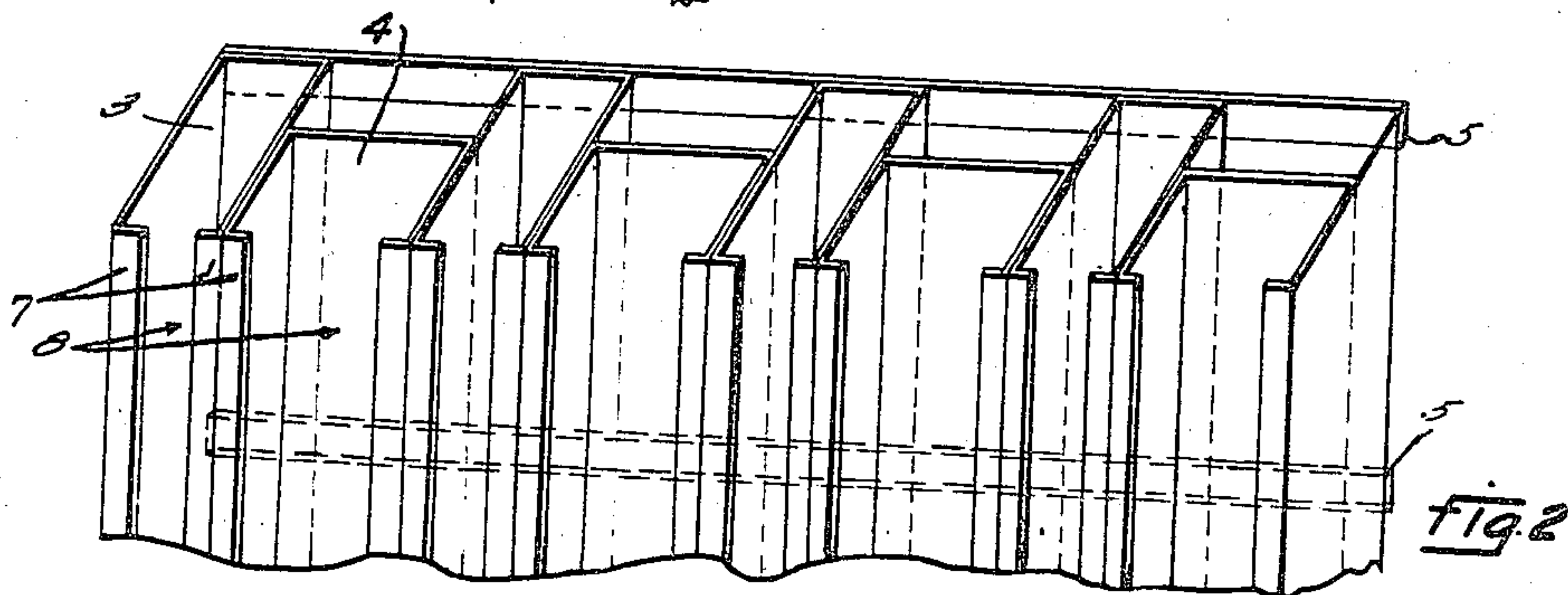
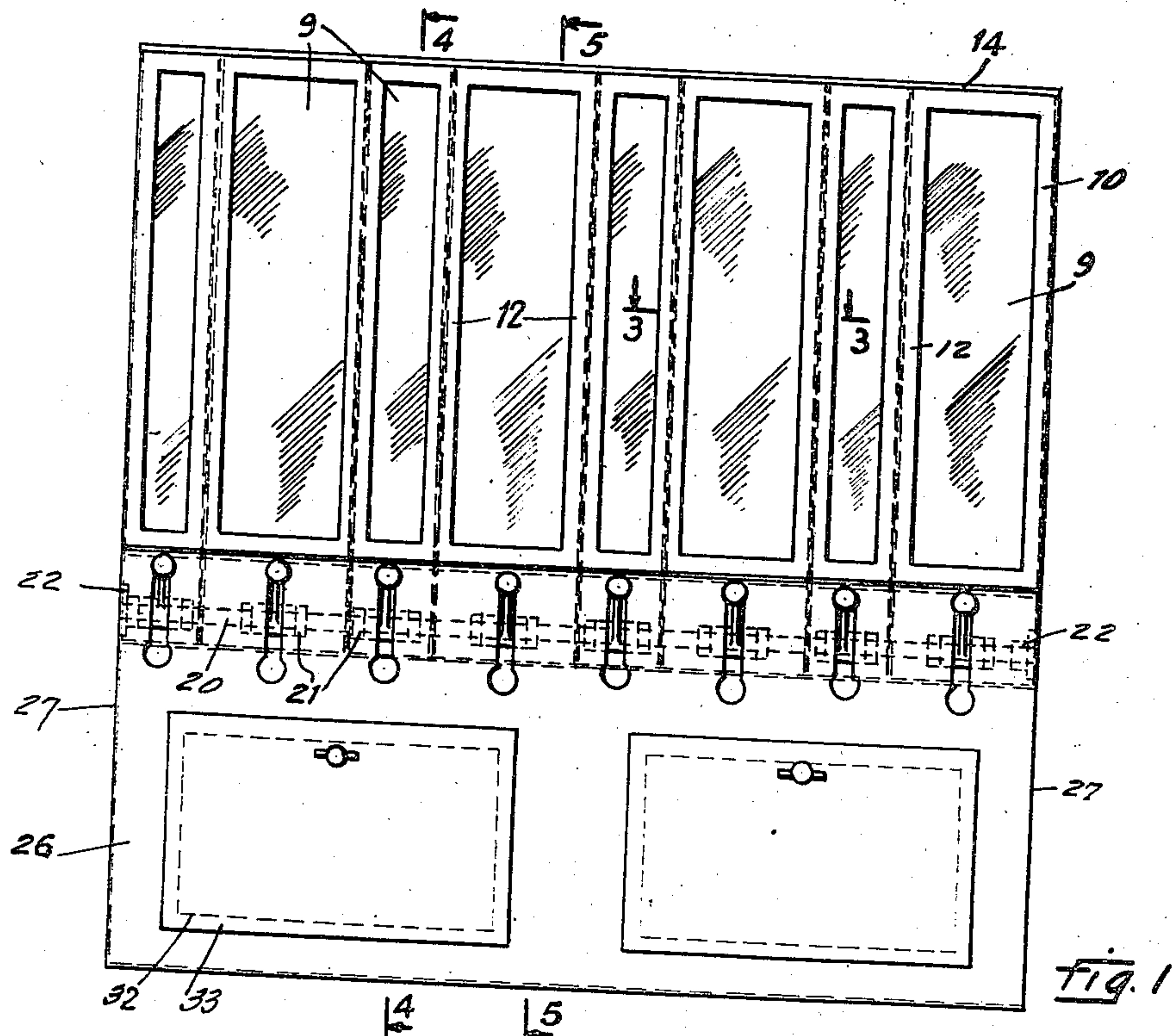
W. A. GENTRY

2,183,808

VENDING MACHINE

Filed May 27, 1937

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

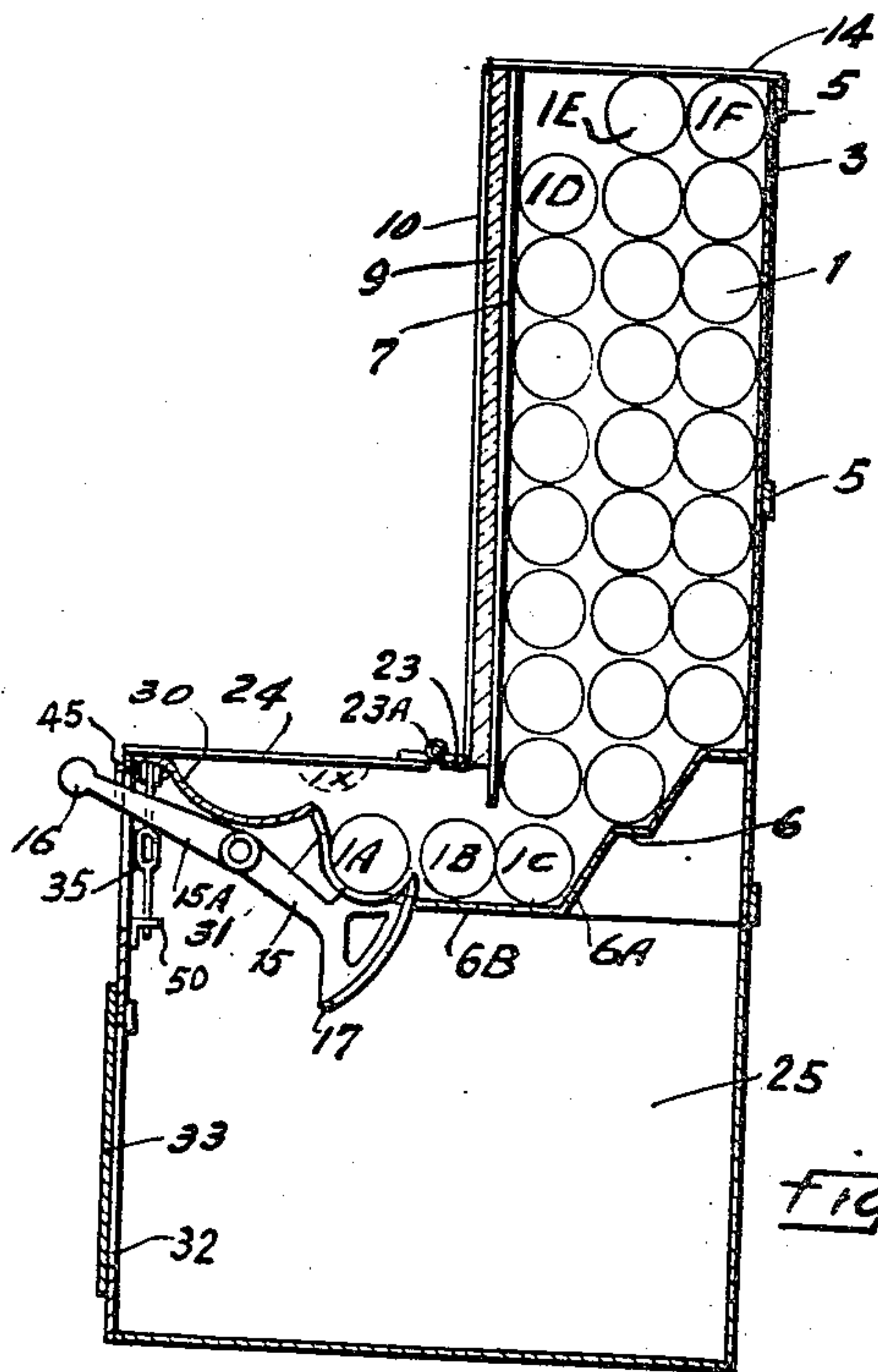


Fig. 4.

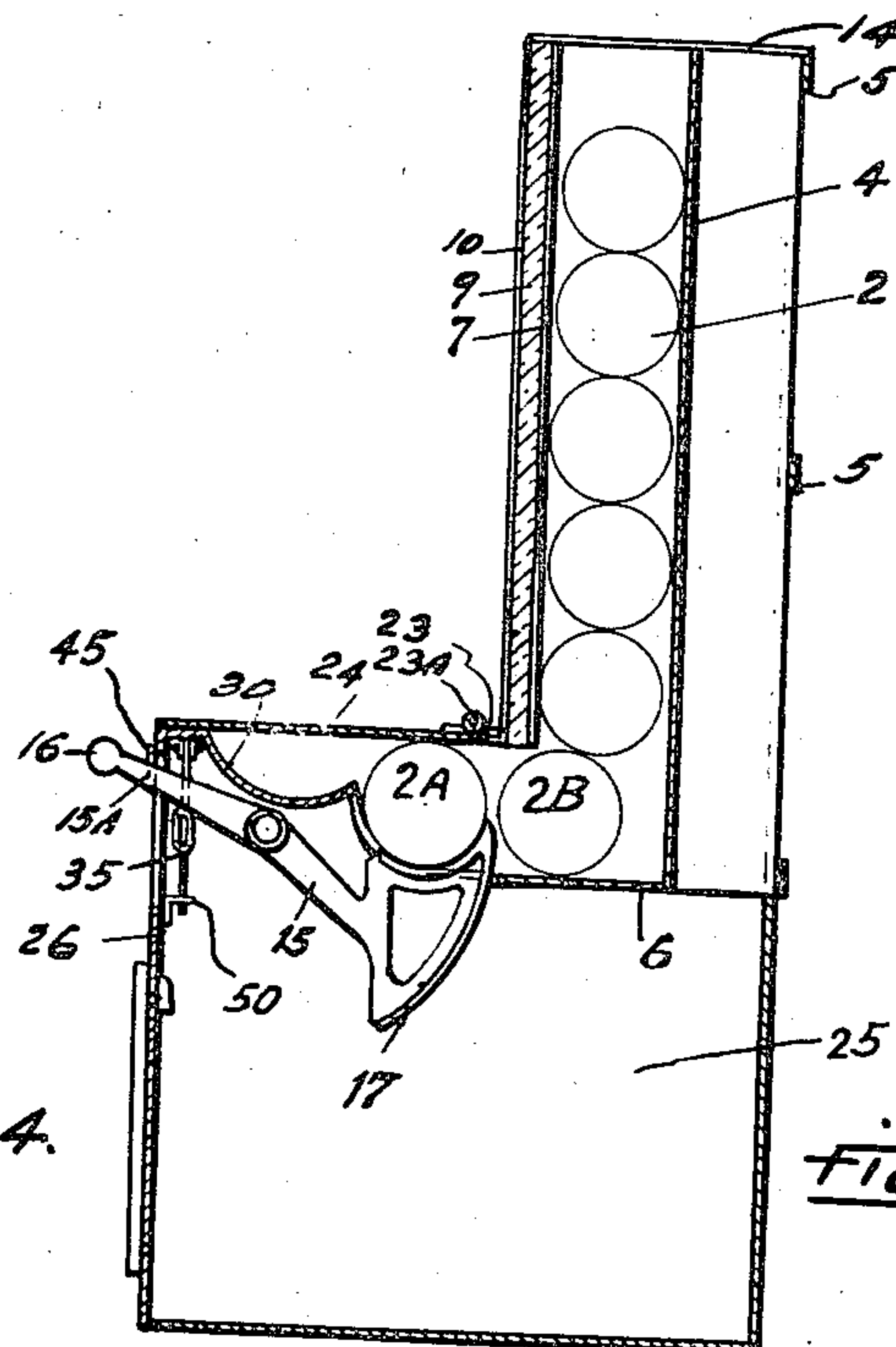


Fig. 5.

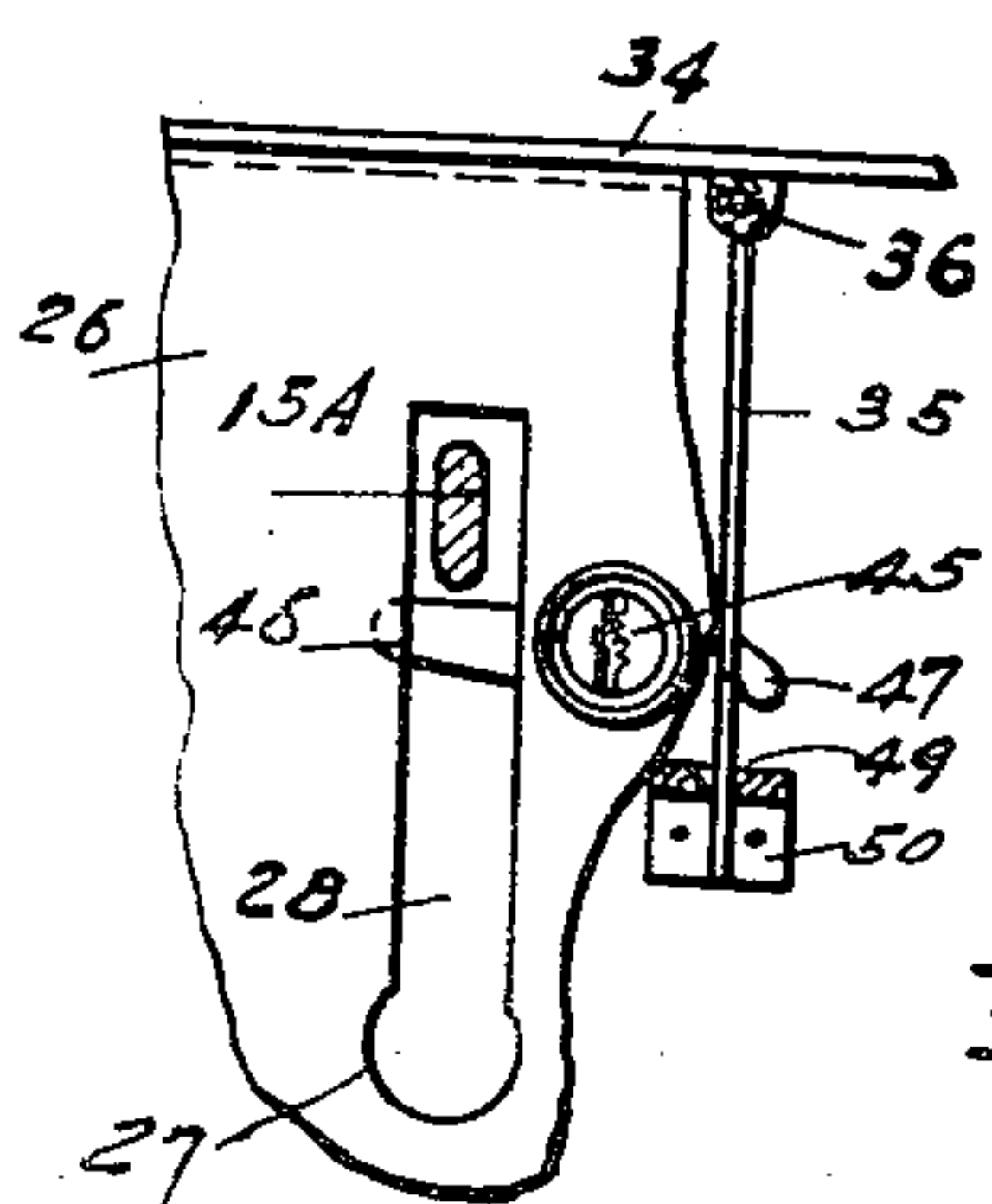


Fig. 6.

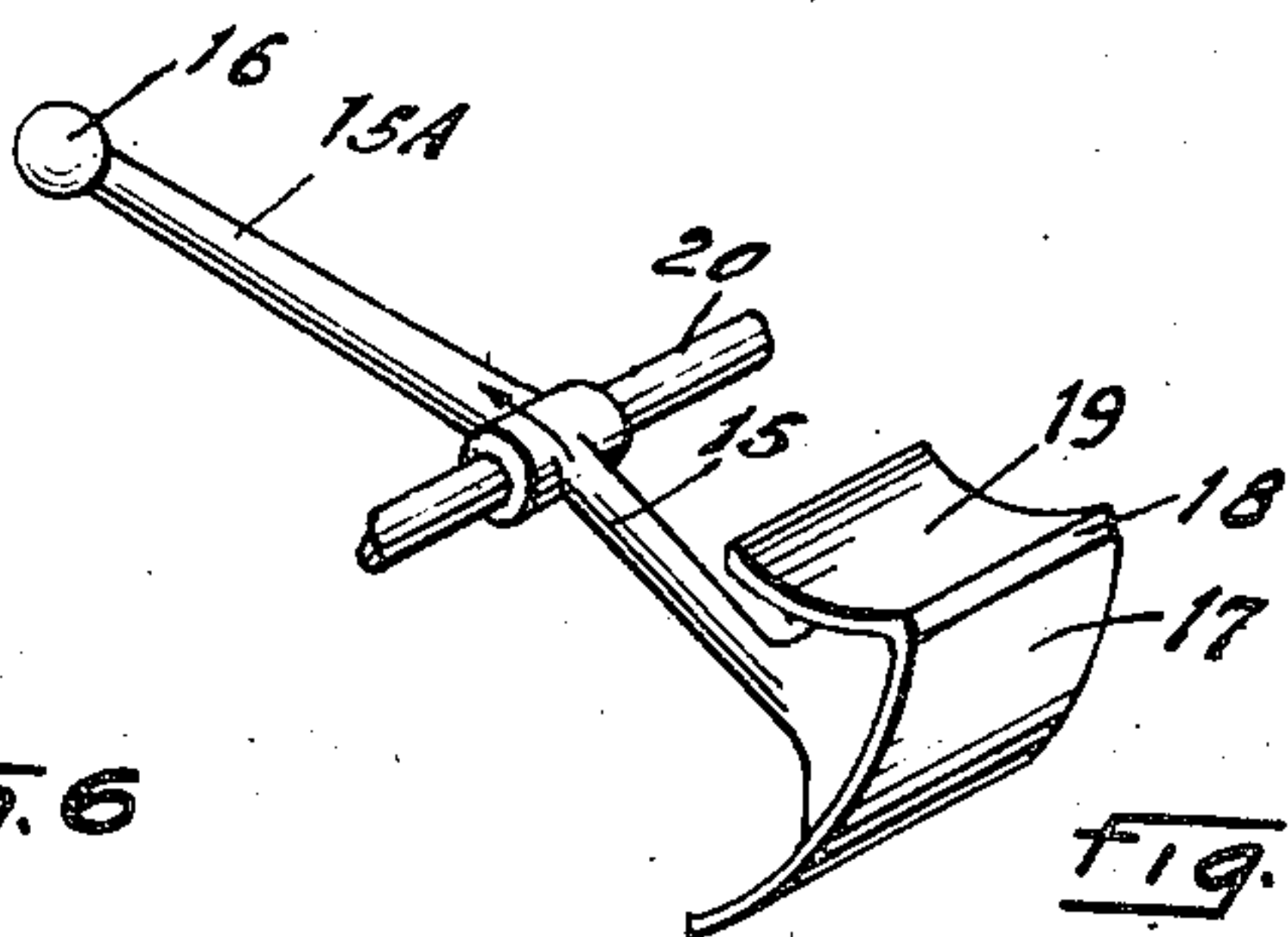


Fig. 7.

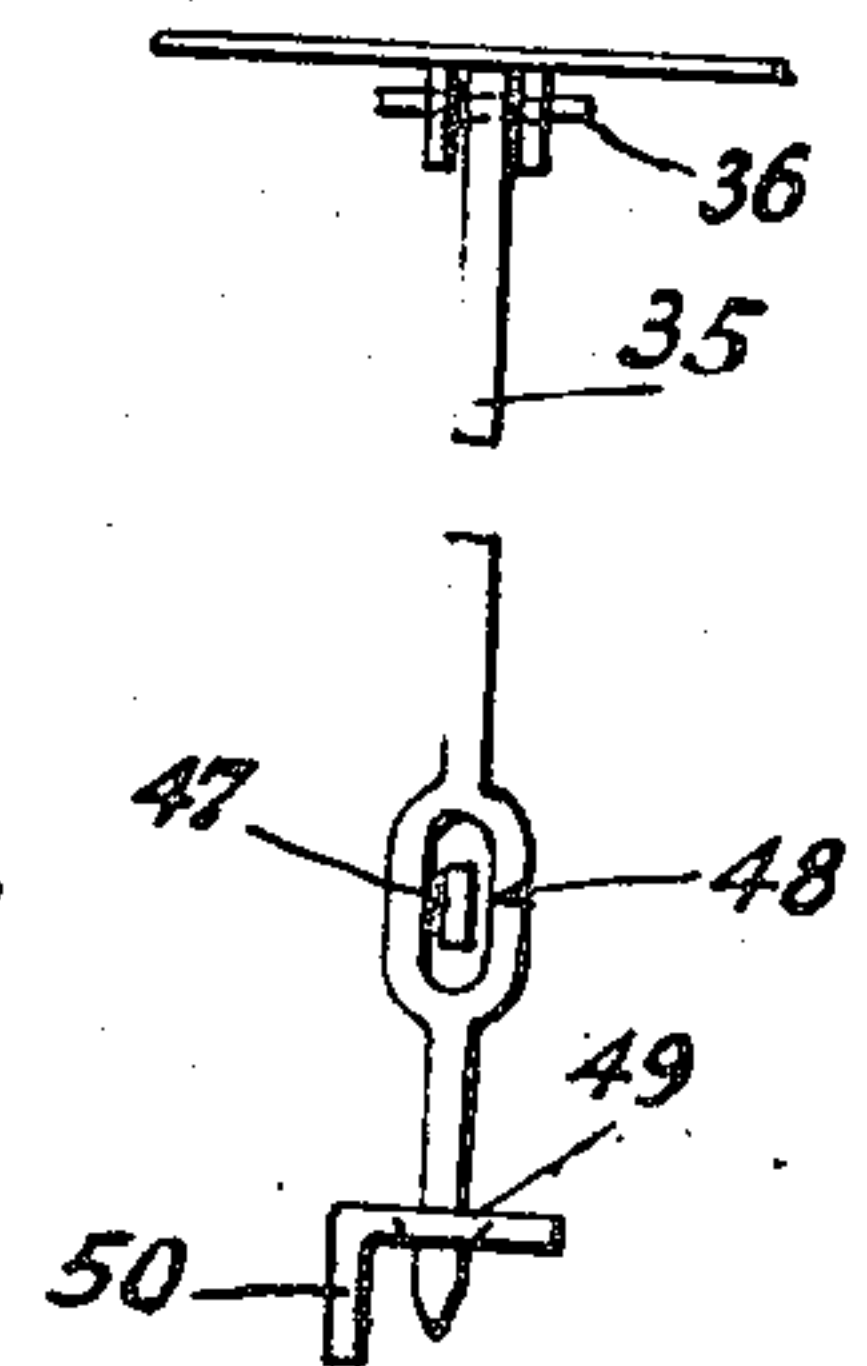


Fig. 9.

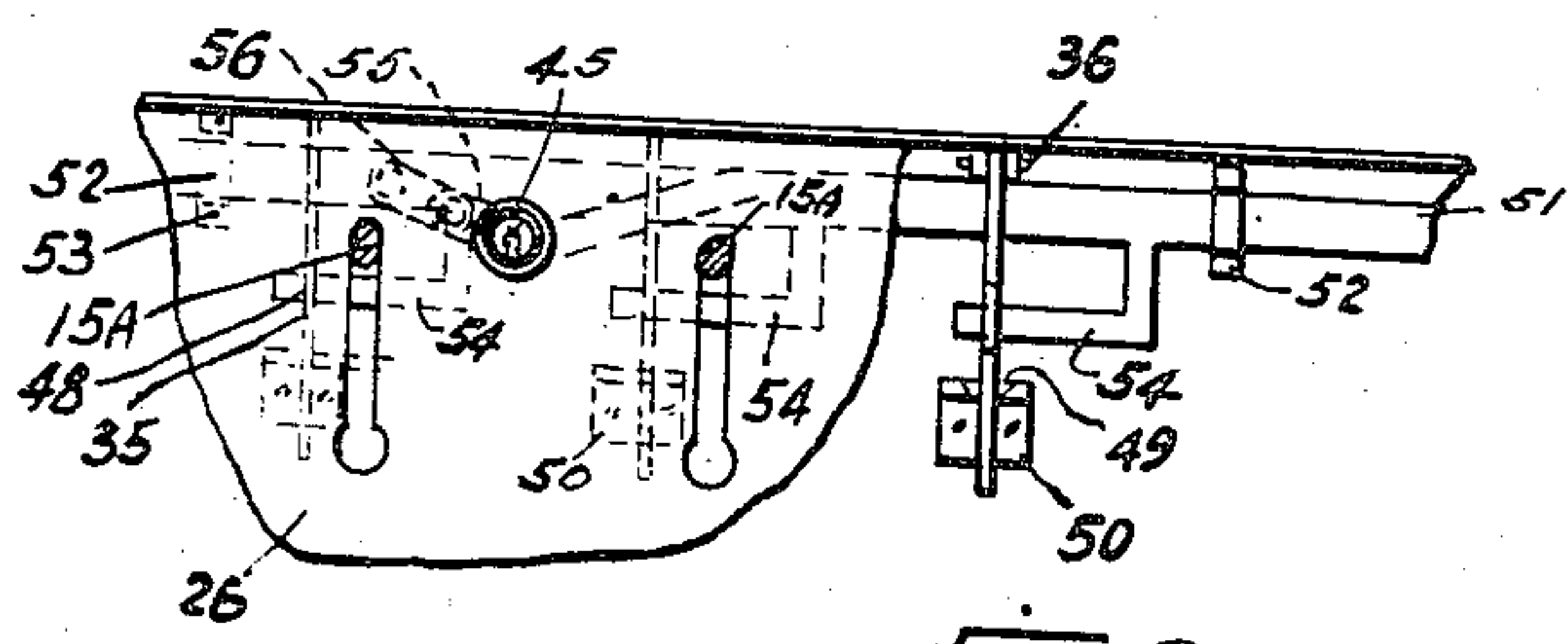


Fig. 8.

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UNITED STATES PATENT OFFICE

2,183,808

VENDING MACHINE

Walter Alexander Gentry, San Antonio, Tex., assignor of five-twelfths to R. B. Shoop and one-sixth to Henry Meckel, both of San Antonio, Tex.

Application May 27, 1937, Serial No. 144,999

1 Claim. (Cl. 312—63)

My invention relates to an improvement in a means for vending or dispensing containers preferably of cylindrical form, and relating particularly to the vending of lubricating oil but not confined to that type or shape, from chutes or compartments, locked and protected from pilfering.

The object of this invention is to provide a series of containers, or vertically arranged chutes, for sealed cans having a delivery means manually operable whereby a single can is delivered at one time, and an inter-operable retaining means for the cans in storage and a locking means to said storage to prevent pilfering.

The further object of this invention is to provide a means whereby cans of various sizes and contents placed in storage in their proper compartments or chutes and locked therein against pilfering and means for unlocking and a means for delivering a can individually from said chutes and registering the number of cans delivered.

The unwarranted use of empty, marked barrels or containers of high grade lubricating oil, by producers of an inferior oil, has led the producers of the higher grade lubricants to provide cans for their product, sealed at the refinery, and plainly marked with the quality and grade of the lubricant.

There are at the present time in general use, four grades of lubricating oil based on the viscosity qualifications, as applicable to the different engine requirements. These four grades follow specifications of the Society of Automotive Engineers and are known as Nos. 20, 30, 40, and 50 with the prefix S. A. E. and for convenience in retailing are marketed in one quart and five quart sizes, and generally packed in cartons of twenty four and four cans respectively.

I have provided in my invention a retaining means, in which a full carton or better may be stored, and a selective means whereby a can of any grade or size may be withdrawn from said storage, together with a visible means of checking the stored stock.

The following, together with two drawings, describe and illustrate this invention, and similar characters indicate similar parts in the various views:

Fig. 1 is a front elevation.

Fig. 2 is an isometric projection of a portion of the chutes.

Fig. 3 is a section on line 3—3 in Fig. 1, showing an arrangement of the cans in their respective chutes.

Fig. 4 is a section on line 4—4 in Fig. 1.

Fig. 5 is a section on line 5—5 in Fig. 1.

Fig. 6 is a partial exterior view showing a locking means.

Fig. 7 is an isometric view of the holding and delivery lever.

Fig. 8 is a partial view of a modification of the locking means.

Fig. 9 is an enlarged view of a lock rod and associated mechanism.

A number of small sealed cans 1 and large sealed cans 2, which in the practical application of my invention is preferably over the number contained in the carton, are placed respectively in chutes 3 and 4, which are shown of metal construction, but which may be of any other suitable material.

As there are several grades or qualities of oil which are in use in various automotive vehicles, it is preferable to keep these various qualities in separate chutes and these may be arranged according to the grades as shown, or according to the size of the cans 1 and 2. While I have shown two sizes of cans, other sizes may be added to the group as necessary or desired or the assembly may be made of one size, or any combination of sizes, as preferred.

In Fig. 3 I have shown a horizontal section with small cans 1, arranged in a series of vertical rows in chute 3 and large cans 2 in chute 4; chute 4 may have one or more vertical rows. Chutes 3 and 4 are located laterally and lend themselves to a spot welding operation in which the fore and aft adjacent portions are welded together, which with the laterally disposed brace bars 5, or equivalent back, form a rigid structure. A bottom 6, which is stepped in the case of a number of vertical rows, is rigidly fastened in the bottom of chutes 3 and 4. On the foreward side of chutes 3 and 4 an inwardly projecting bead 7 completes a hollow rectangle of said chutes 3 and 4, leaving a center opening 8 in the front of said chutes 3 and 4.

An observation glass window 9 is placed adjacent to the inwardly projecting bead 7 and held in place by an exterior frame 10. The observation glass window 9 may be of one full piece covering the entire front of the chute assembly or this may be made in sections as shown in Fig. 3 with the spacer 11 separating the various sections of observation glass window 9. For appearance and for the purpose of clearly dividing the various chutes, vertical mullions 12 are placed in exterior frame 10 as shown in Fig. 1. The chute bottoms 6 and the exterior frame 10 together with the construction of chutes 3 and 4 and the

brace bars 5 give the assembly the necessary rigidity.

The cans 1 and 2 are placed, preferably from the top in their respective chutes 3 and 4, which have a running clearance between the exterior of the cans and the interior of the chutes. As the small sealed can 1A is withdrawn from the chute the pressure of the cans above carry can 1B to the position 1A. The successive removals of the cans in the lower row impelled forward by contact with the angular surface 6A lowers the front vertical row above 1C and as 1D is dropped one diameter 1E drops forward and assumes the position of 1D. The can 1F then rolls forward to the position of 1E. This operation is continued upon the withdrawal of cans 1A until the chute 3 has a reduced stock, which may be observed through the observation glass window 9. The same unloading procedure occurs in chute 4.

Figs. 7 and 4 and 5 illustrate the form and use of a combined holding and discharge lever 15 having on its forward end a handle 16 and on its rearward end an arcuately shaped pad 17 having a tapered upper portion 18 for entering between two adjacent cans and a concave shaped pad 19 mounted on a shaft 20 and held in place by collars 21 rigidly attached to shaft 20 which is held in bearings 22.

Chutes 3 and 4 combined in a unit as shown in Fig. 2 are mounted in a supporting base 25 which consists of a rectangular housing having a face 26 and ends 27. The face 26 has on its upper portion a series of slots 28 through which the forward end 15A of lever 15 projects and operates in an arcuate manner about the axes of shaft 20. It is desired to have a slight clearance between the lever end 15A and the edges of slot 28, and an enlarged opening 29 permits the passage of end 16 to the exterior of the housing 25.

The slot 28 is of sufficient length to allow the concave pad 19 to elevate, in an upwardly and forwardly arcuate movement, the can 1A to a position 1X in which the center of gravity of the can 1A overturns the elevated can 1A from the concave pad 19 into a receiving trough 30.

During this upwardly and forwardly arcuate movement of the concave pad 19 about the axis of shaft 20 the arcuately formed pad 17 contacts can 1B and retains said can 1B in its normal position until the upper edge of the tapered portion 18 is depressed below the bottom 6B of the bottom plate 6. It is desired that the space between the inclined portion 6A of the bottom 6, and the strip retainer 31 shall be slightly greater than the sum of the diameters of the cans retained therein, to allow the arcuate face 17 to contact the next can without binding, and if desired the portion 6B of the bottom 6 may have a forward slope to accentuate the forward rolling motion of the can 1.

At the time the can 1B passes to position 1A, against the strip retainer 31 in which position it is ready for the downward movement of handle 16 which will elevate the said can 1A to the position 1X and into trough 30.

A series of hinged covers 24, attached to a forwardly extending projection 23 by hinges 23A, close the top of the receiving trough 30, except when raised by an outcoming can 1 or 2, or to take said can from the receiving trough 30. These hinged covers 24 are of sufficient width to allow a can 1 or 2 to be withdrawn through the opening made by the opened hinged cover 24, and operate individually and independently. A lock

rod 35 is hingedly attached to the forward edge of hinged cover 34 by pin 36 for a locking means as hereinafter described.

A locking means for the individual levers and the individual locked hinged covers is shown in Fig. 6. A lock 45, preferably of the cylindrical type, is set in face 26 of the base 25, adjacent to slot 28, and on the internal cylinder is placed a double end lever having a lever locking pawl 46 and a hooked pawl 47. This double end lever may be rigidly fastened to the inner cylinder of the lock 45, or may have a slot and pin construction, to allow the key to be turned 360° for a turn of approximately 90° of the double end lever. Upon turning the key in lock 45, the lever locking pawl 46 is turned under the end 15A of lever 15 and the hooked pawl 47 is turned into an eye 48, in the hinged locking rod 35, which is attached to the cover 24. On closing the cover 24, the lower end of the hinged locking rod enters the tapered hole 49 in the bracket 50, thus insuring the entrance of the hooked pawl 47 into the eye 48. In the above I have described a double locking means, which may be used as described, or singly.

A modification of the locking means above described, in which the delivery means of each individual series of cans 1 and 2 is separately locked is shown in Fig. 8, in which a locking means for more than one or for all the delivery means is locked. A lock bar 51, operable in sliding bearings 52 held to the face 26, of base 25, by rivets or bolts 53, has on its under side projections 54 which pass under the lever end 15A of lever 15 and into the loop 48 of locking rod 35. A cylindrical or other lock 45, located at any convenient point, has on the rearward end of said cylinder a lever 55 connected to lock bar 51 by link 56, with a recessed hub and driving pin connection, as above described, for allowing a turn of 360° of the key, to allow withdrawal of said key, for a lever movement of approximately 180°.

The hinged cover 14 is locked by a lock 13 of the cylindrical type, a hasp and padlock or any other desirable locking means. By the use of these locking means the contents of the chutes are locked against pilfering of cans 1 and 2.

I have shown the chutes 3 and 4 in a vertical position, but I do not confine myself to a strictly vertical chute, but to consider a vertically disposed chute as one in which the upper end is raised above the lower or discharge end. In my experimental work I have found that there is no clogging or stoppage of the downward flow of cans, but I reserve the right to add a guiding strip to the side of chutes 3 and 4 to hold each vertical line of cans in position with delivery of the cans at the bottom of the chute from the second and succeeding rows into a position for delivery, when the forwardly disposed spares are empty.

A supporting base, with front 26 and sides 27, with delivery trough 30 attached thereto, contains the operating mechanism and supports the can holding structure. The front 26 has a series of openings 32, with doors 33 for ingress into the interior 25 of the supporting base. This interior 25 may be used for the storage of cartons or for any other purpose.

I have shown a locking means, including a lock 45, lock bar 46, and lock hook 47. I include in my invention a coin unlocking means in which the lock 45, is replaced by a conventional form of coin operated mechanism, for functioning for use in isolated locations.

In the above description and as shown on the 75

accompanying drawings, I have described a vending machine for the storage, display and vending of a series of cans of various sizes and containing a varying quality of material. While it is my intention to utilize this vending machine for lubricating oil, I do not confine my use to this particular commodity and it is to be understood that I do not limit myself to the exact details of construction and arrangement of the different mechanical parts, as shown and described, since these may be varied, modified and rearranged in the further development or application of my invention to suit the specific requirements that may arise in such development and that such changes may be readily made without departing from the spirit of my invention, within the scope of the appended claim.

I claim:

In a dispensing cabinet having an article chute, an ejector for the chute and an open top trough for receiving the ejected articles; closure means for the trough comprising a hinged cover having a dependent rod with an aperture therein, operating means for the ejector comprising an oscillating lever pivoted in the cabinet below the trough and having a handle extending through a slot in the cabinet, locking means for the cover and lever comprising a lockable member movably carried by the cabinet, having projections adapted to simultaneously enter the aperture in the rod and to engage the edge of the lever and hold it against the end of the slot, whereby the cover is held closed and the lever is held against movement.

WALTER ALEXANDER GENTRY.