

July 27, 1926.

C. H. MOORES
STORAGE BUILDING

1,593,665

Filed August 18, 1923

3 Sheets-Sheet 1

Fig. 1.

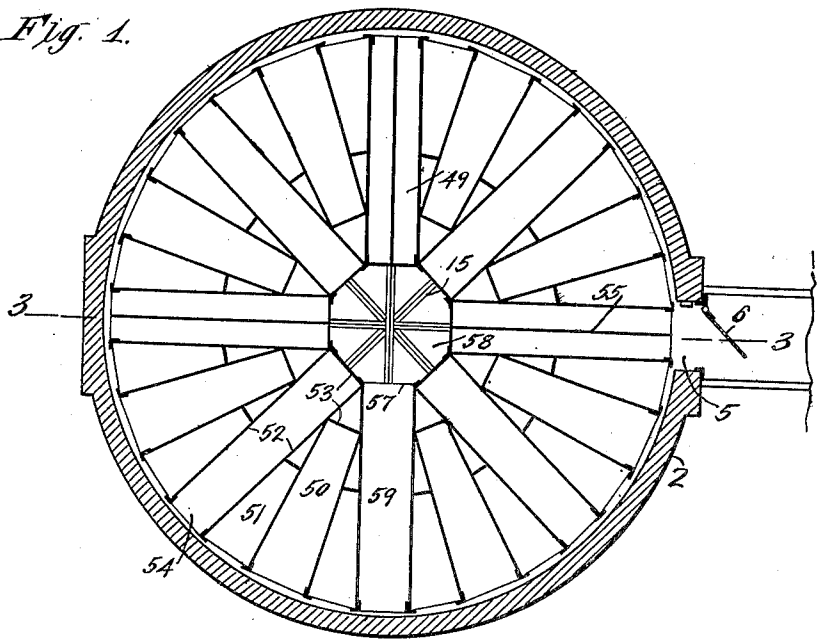
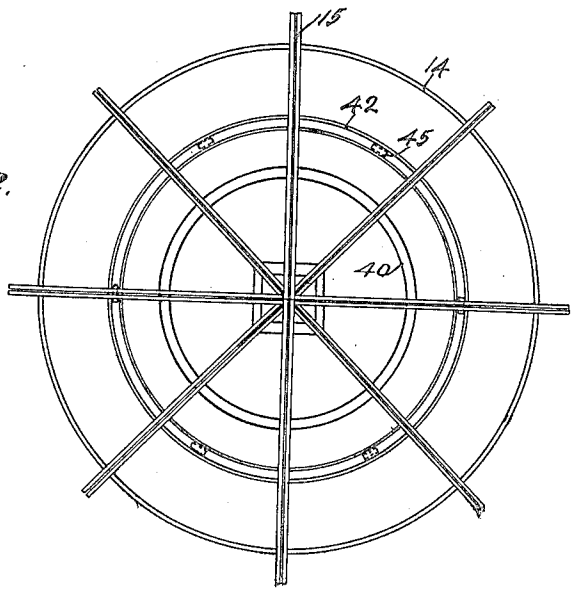


Fig. 2.



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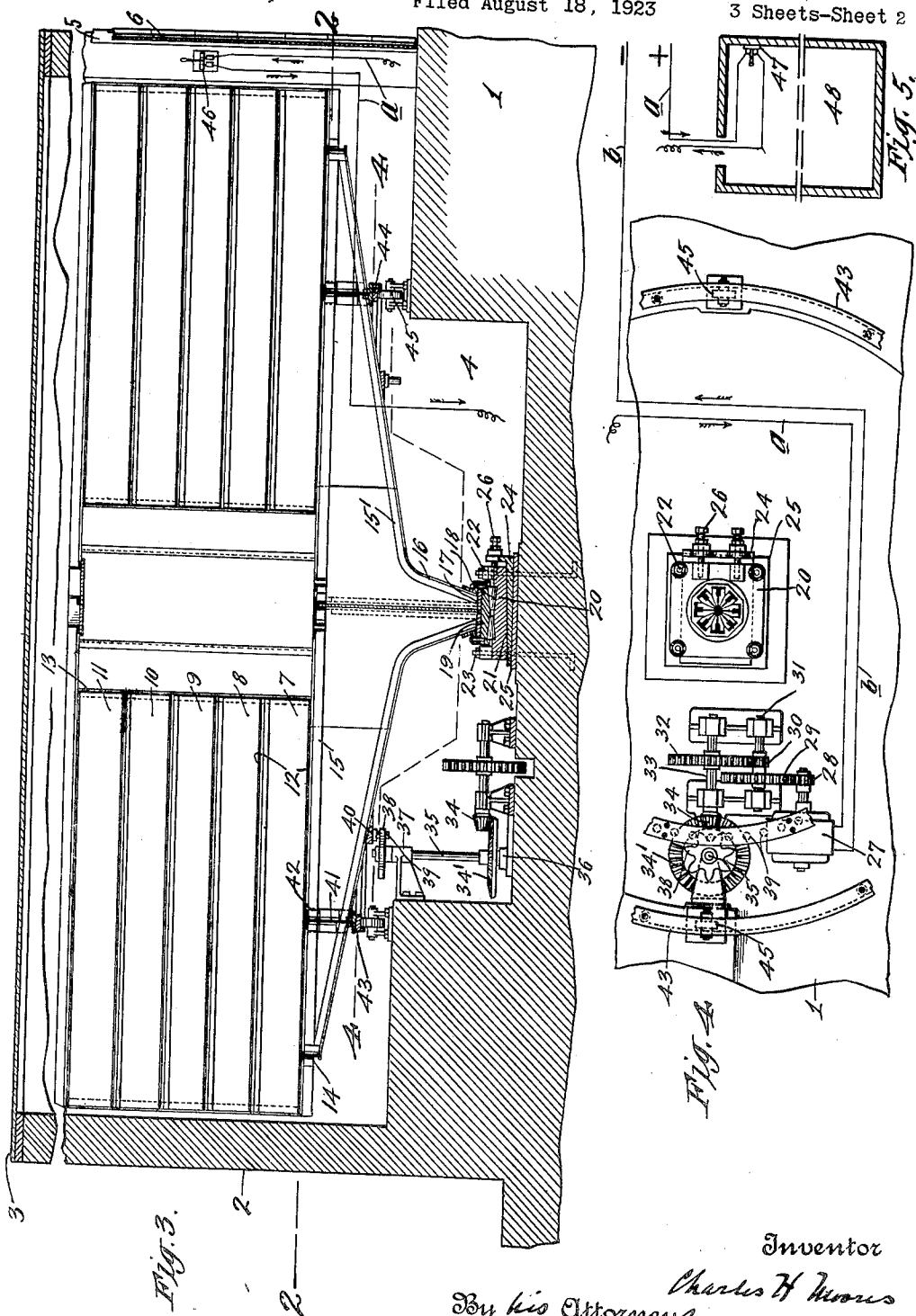
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3 Sheets-Sheet 2



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Fig. 6.

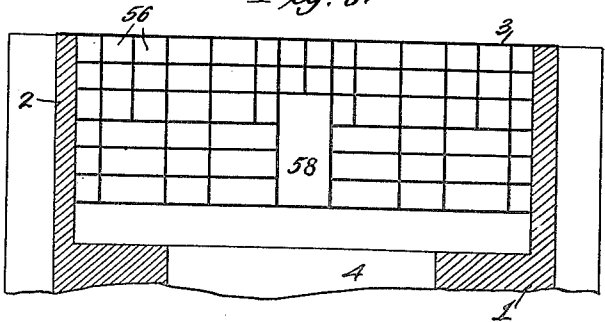
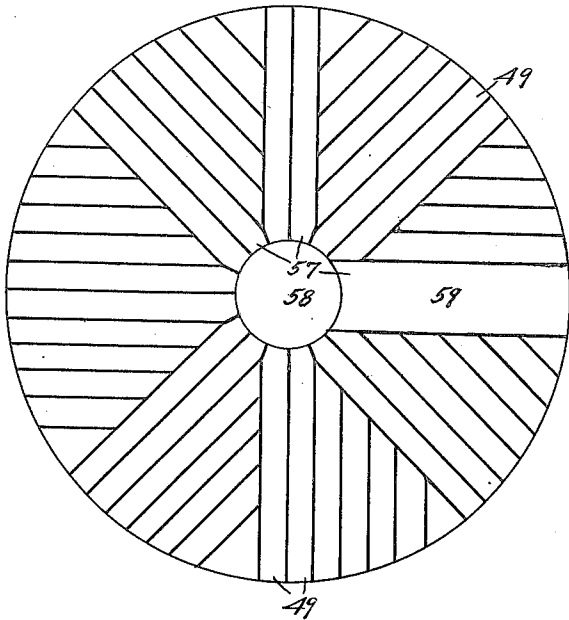


Fig. 7.



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UNITED STATES PATENT OFFICE.

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STORAGE BUILDING.

Application filed August 18, 1923. Serial No. 658,030.

This invention relates to certain improvements in buildings of that type generally known as storage warehouses.

These storage warehouses are used for the storage of various classes of goods, one such use being the storage of household furniture, rugs, and the like. In the usual constructions adopted for this kind of a storage warehouse, the warehouse is cut up into a number of rooms or vaults, and the goods are placed in these vaults, being usually piled in in such a manner as to utilize all the space of the room or vault, this space, of course, being valuable. Where rugs, silver, and other small articles are thus stored difficulty has been experienced in getting at any particular article that may be wanted, due to the way in which the articles are piled into the rooms.

It is a particular object of the present invention to provide an improved storage construction for comparatively small articles in which a large number of articles may be stored in a minimum space, but in which the articles are so stored that any particular article desired may be easily and quickly located for withdrawal.

It is a further object of the invention to provide a rotary storage chamber or vault having an entrance and in which means are provided for rotating the chamber to bring any particular compartment to the entrance, access being had to the vault only through this one entrance so that liability of illegal entrance to the vault is reduced to a minimum.

It is a further object of the invention to provide a driving mechanism for operating the vault which can be thrown into action only by the control of a master switch located in the office of the vault superintendent, so that even if illegal entry was had to the vault the vault could not be manipulated to effect a general delivery of its contents.

With these and other objects not specifically referred to, the invention consists in certain novel parts, constructions and arrangements which will be described in connection with the accompanying drawings, and the novel features thereafter pointed out in the claims hereunto annexed.

In these drawings—

Figure 1 is a plan view, partly in section, of the improved storage warehouse showing one arrangement of the storage chamber.

Figure 2 is a bottom plan view taken on line 2—2 of Fig. 3.

Figure 3 is a vertical cross sectional view showing the improved construction the section being taken on line 3—3 of Fig. 1.

Figure 4 is a detail plan view showing the driving connections for rotating the storage chamber and the line circuit to the motor, on line 4—4 Fig. 3.

Figure 5 is a detail sectional view showing the master switch which may be located at any desired place for controlling the line circuit.

Figures 6 and 7 are a sectional elevation and plan respectively showing a modified arrangement of the storage compartments which may be used if desired.

Referring now to the drawings, the improved storage vault may be a building by itself, or it may be a part of the general warehouse structure. The structure will include a vault having a base 1 of concrete or other suitable material and walls 2 of a strength and material designed to prevent illegal entry therethrough, and a top or roof 3, similarly constructed.

The base 1 of the vault is provided with a pit 4, for purposes hereinafter referred to, and the vault is provided at one side with an entrance 5, closed by a burglar proof door 6, which may be provided with any standard time lock or other locking mechanism, not shown.

Located within the vault is a storage chamber which is provided with compartments, these compartments being of any desired size or shape. Where the storage vault is used for rugs, silver, and like small articles, the chamber will be divided preferably into a number of compartments of different widths and lengths, so as to accommodate articles of different dimensions. Referring first to Figs. 1 to 5, the storage chamber is a rotary chamber, and the storage compartments are arranged in tiers extending as high as desired up to the dimensions of the vault, five tiers marked 7, 8, 9, 10 and 11 being shown. These tiers or

compartments are provided with bottoms 12 superposed above each other in suitable framing 13, and the compartments are carried on a turn table consisting of circular frame members 14 and cross frames 15 making a rigid structure. Extending downwardly from the frames 14 are frames 15' having downwardly turned ends 16, which are secured in a plate 17 mounted on ball bearings 18, these ball bearings being carried in a cage comprising an upper member 19 and a lower member 20, this lower member having a wedge face indicated at 21 in Fig. 3, these parts being secured together by bolts 22, the shanks of which are set in the concrete of the base 1 and which are provided with clamping nuts 23 by which these parts may be adjustably clamped together. The parts just referred to are located in the pit 4 of the base 1, the turn table turning on the ball bearings, this construction providing a rigid support and yet one permitting the easy rotation of the structure. In the best constructions means are provided for taking up wear in the parts. In the particular construction illustrated there is provided a wedge plate 24 arranged to be moved in and out under the plate 21, this wedge plate resting on a thrust plate 25 secured in the bottom of the pit by the bolts 22, before referred to. This wedge plate is moved for adjustment by means of set screws 26.

This turn table is or may be rotated in any suitable manner so as to bring the desired compartment opposite the entrance 6 of the vault. In the best constructions this turn table will be electrically driven and the drive will include preferably a reduction gearing so that a slight rotary movement may be given the turn table, thus providing a quick stop of the table so that the table will not rotate the required compartment past the entrance. The driving connections, furthermore, will preferably include a switch for controlling the line circuits of the motor, which may be located in the superintendent's office, or any other part of the building, so that until this switch is manipulated the turn table cannot be moved thus reducing the liability of illegal entry to the chamber.

While various drives and controls may be provided for effecting this, in the particular construction illustrated, the storage chamber is rotated from an electric motor 27 to which current is supplied over a line *a b* from any suitable source of electric energy, not illustrated. The shaft of this electric motor is provided with a driving pinion 28. A reducing train of gears is provided for this gearing including a gear 29 which meshes with a pinion 30 on a short shaft 31, this pinion in turn meshing with a large gear 32 on a second shaft 33. This

second shaft is provided with a miter 34 in mesh with a miter gear 34' on a vertical shaft 35, this shaft taking bearings in a standard 36 secured to the floor of the pit and a bracket 37 secured to one side of the pit wall. This vertical shaft 35 has at its top a star wheel 38 which engages with pins 39 depending from a circular frame bar 40 carried on the under side of the table supporting bars 15', before referred to. This gearing is proportioned to give the desired slow turning movement to the table, and with this construction the table may be stopped by shutting off the motor, the weight of the table acting to stop the chamber at the desired compartment.

In the best constructions additional supporting means will be provided for supporting the table. While these means may be varied there are provided hangers 41 depending from a frame 42, secured to the cross frames 15, before referred to, these hangers supporting a frame 43 having a flange 44, this flange running on antifriction rollers 45 suitably mounted on the base 1.

The motor is or may be controlled from a switch 46 located inside the door 6, before referred to. In the best constructions a second switch or master switch is provided which is tapped into the line outside the switch 46 such switch being indicated at 47 in Fig. 5, this switch being located in a box 48 which may be located about the warehouse where only authorized persons have access thereto. With this construction the motor cannot be operated from the vault unless the switch 47 is in, so that even if the vault was broken into through the entrance door access could only be had to the compartment which happened to be opposite the door at the time of such entrance.

The compartments may be arranged in the storage chamber in various ways. Referring first to the construction shown in Figure 1, there are illustrated compartments of three sizes, the longest marked 49, the next longest 50, and the next longest 51. These compartments all have side walls 52 and end walls 53 and are open at the front end, as indicated at 54. If desired certain of the compartments, as for instance the longer compartments, may be divided by a partition 55. With this construction rugs or curtains or like articles of different lengths may be accommodated, and each article may be readily withdrawn from its particular compartment as desired, and each compartment is readily accessible by the rotation of the chamber. If desired an arrangement such as shown in Figs. 6 and 7 may be provided. In this modification the storage chamber or certain of the compartments thereof may be still further subdivided into small compartments 56, and the compartments of each tier of the chamber

may be arranged as shown in Fig. 7. In this figure all the long compartments 49 are open at their inner ends as shown at 57 to a central opening 58 to which access may be had from the passageway 59. An attendant entering the passageway may, therefore, remove the goods from a plurality of the compartments without necessitating the rotation of the turn table.

10 In the construction shown in Figs. 1 and 7 access to the pit may be had through passageway 59, thus obviating the necessity of a door under the storage chamber for this purpose.

15 While the invention has been shown and described in what is believed to be its best form, it will be understood that wide variations may be made in the construction and arrangement of the storage chamber, and that the invention is not to be restricted to the constructions shown and described. It will be further understood that the storage structure may be used alone, or may be located in any other suitable or desired building.

What I claim is:

1. In a storage structure of the character described, a walled and roofed chamber having an entrance, a rotary storage structure within the chamber and substantially co-extensive therewith, said storage structure including storage compartments arranged in tiers and accessible from the entrance, a motor for rotating the structure past the entrance, a circuit for the motor, a control switch therefor at the chamber, and a master switch in the circuit, the control switch being operable only when the master switch is closed.

2. In a storage structure of the character described, a walled chamber having an entrance, a rotary storage structure substantially co-extensive with the chamber having storage compartments of different lengths

accessible from the entrance, and a motor and a circuit therefor for rotating the storage structure.

3. In a storage structure of the character described, a walled chamber having an entrance, a rotary storage structure substantially co-extensive with the chamber having storage compartments of different lengths arranged in tiers and accessible from the entrance, and a motor and a circuit therefor for rotating the storage structure.

4. In a storage structure of the character described, a walled chamber having an entrance, a rotary storage structure substantially co-extensive with the chamber having open ended compartments of different lengths arranged in tiers and all accessible from the entrance, and a motor and a circuit therefor for rotating the storage structure.

5. In a storage structure of the character described, a walled chamber having an entrance, a rotary storage structure substantially co-extensive with the chamber having long compartments and short compartments on each side of the long compartments and arranged at an angle thereto and accessible from the entrance, a motor, and a circuit therefor for rotating the storage structure past the entrance.

6. In a storage structure of the character described, a walled chamber having an entrance, a rotary storage structure having long compartments and short compartments on each side of the long ones and arranged at an angle thereto, an interior space inside the compartments, certain of the compartments being enterable from the interior space and all of the compartments accessible from the entrance, a motor, and a circuit therefor for rotating the storage structure.

In testimony whereof, I have hereunto set my hand.

CHARLES H. MOORES.