J. J. KALIVODA.
LOCKING DEVICE FOR FOLDING DOORS.
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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Witnesses:
Ott. Wenzel
A. J. Jones

Inventor
Josef Kalivoda
by A. Miller, Registrar

COLUMBIA FLANDERS CO., WASHINGTON, D.C.
To all whom it may concern:

Be it known that I, JOSEF J. KALIVODA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Locking Devices for Folding Doors, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to an improvement in folding doors and has as its particular object the provision of a more cheap and simple arrangement for latching said doors.

A further object is to avoid making noise in the operation of latching mechanism for such doors.

A further object resides in the particular arrangement and combination of parts hereinafter described.

Referring to the accompanying drawings, Figure 1 is an elevational view of a pair of folding doors provided with my improved latching mechanism, part being broken away; Fig. 2 is a detail of the handle used in connection with my latching mechanism, part being broken away; Fig. 3 is a side view of my improved ratchet plate used in connection with my latching mechanism; Fig. 4 is a cross section on the line 4—4 of Fig. 3.

Throughout the separate views the same part is referred to by the same reference numeral.

Referring more particularly to the drawings, 1 and 2 are the two leaves of a common form of folding door constructed and mounted to open in the middle. As shown the door is hung from rollers 3—3 traveling on a suitable track. The leaves 1 and 2 have a connecting lever mechanism which is well known in the art whereby as one leaf is pulled aside from its central position, the other leaf is also moved through the same distance. Such mechanism however, is well known in the art and is not shown or described herein.

As indicated by the broken away portion of Fig. 1, the leaves of the door as shown are provided with a cover plate beneath which the latching mechanism is mounted. Mounted on the one face of the leaf 2 is a plate 3 on which is pivoted a handle 4. The handle 4 is provided with a lug 5. The rod 6 lies beneath the plate 3 and is provided at its upper end with a lug 7 which engages the upper face of the lug 5. The rod 6 extends from the handle vertically downward and at its lower end is pivoted to a lever 8, which has at one end a lug or projection 9. The lever 8 is pivoted in turn to the leaf 2 as shown at 10. At the right hand end of the lever 8 is a projection 11 which engages a socket in a pivoted lever 12. Lever 12 at its right hand end is provided with a lug or projection 13 for engaging with a ratchet plate 14 which has a plurality of teeth. Mounted on the leaf 1 is a pivoted lever 15 which has a lug or projection 16 engaging the upper face of the lug 9. At the left end of the lever 15 is a projection 17 engaging in a lever 18 also pivoted to the leaf 1. At the left of the lever 18 is a lug or projection 19 for engaging with a stop 20. As shown in the drawing, the lugs 9 and 16 project into a groove in the floor beneath the door. The members 14 and 20 are to one side of this groove as shown, the latching lugs extending out from the face of the door. It will be obvious, however, that other relative arrangements of the levers and latch plates might be adopted.

In operating my device the person wishing to open the door pulls the handle 4 to the right, thus lifting the rod 6 by means of the engaging lugs 5 and 7. Consequently the levers 8 and 15 will be lifted at one end and depressed at the other, thus lifting the outer ends of the levers 12 and 18 and releasing the lugs 13 and 19 from their corresponding plates.

As shown more particularly in Figs. 3 and 4, the latch plate 14 is provided with a plurality of ratchet teeth 21 for the purpose of holding the lug 13. In order to prevent a disagreeable noise when the lug 13 drops into engagement between a pair of teeth, the lower face of the plate 14 is slotted and a block 22 of felt or similar material is inserted into the slot. As indicated in Fig. 3 this slot extends beyond the bottom of the teeth 21, so that the lug 13 will fall against the block 22 at 24, and so will be prevented from making a noise.

It will be noted that latch plate 14 is provided with a plurality of teeth whereas the plate 20 has only one. This is necessarily so because the lugs 9 and 16 disengage as soon as the leaves 1 and 2 have separated a short distance. The lever 15 consequently will be unsupported and the lug 19 will con-
sequently drop. If the plate 20 were provided with several teeth this would prevent the door from being further opened, since the lug 19 would catch on one of the teeth. 5 The plate 14, however, has a plurality of teeth so that the door will be latched even if it is only partially closed.

The construction shown and described herein is particularly well adapted for use in connection with elevator shaft doors but obviously has many other uses.

It will be obvious that various rearrangements and modifications of my invention may be made without departing from the spirit thereof, and I wish it understood that I contemplate all such changes and modifications as are embraced within the scope of the appended claims.

What I claim is:

1. In a folding door in combination, a pair of leaves mounted to separate on opening, a latching device carried on each of said leaves, stationary stop means mounted exteriorly of said leaves, for cooperating with said devices, and mechanism carried on one of said leaves for operating the latching devices of both leaves.

2. In a folding door in combination, a pair of leaves mounted to separate on opening, a lever provided with a latching lug carried on one of said leaves, a second lever also having a latching lug mounted on the other of said leaves, a handle mounted on the first of said leaves and means for operating both of said levers from said handle.

3. In a folding door in combination, a pair of leaves mounted to separate when opening, a lever mounted on one of said leaves provided with a lug projecting toward the other of said leaves, a handle mounted on said first mentioned leaf, a vertical rod connecting said lever and said handle, a lever mounted on said second mentioned leaf provided with a lug projecting toward said first mentioned leaf, the lugs on said levers being in engagement when the door is closed.

4. In a folding door in combination, a pair of leaves mounted to separate on opening, a lever mounted on one of said leaves, a handle mounted on the same leaf as said lever, a rod for transmitting motion from said handle to said lever, and a second lever mounted on the other of said leaves, said rod and said first mentioned lever being arranged to operate said second mentioned lever.

5. In a folding door in combination, a pair of leaves mounted to separate on opening, a lever mounted on one of said leaves provided with a lug projecting toward the other of said leaves, a handle mounted on said first mentioned leaf, a vertical rod connecting said lever and said handle, a lever mounted on said second mentioned leaf provided with a lug projecting toward said first mentioned leaf, the lugs on said leaves overlapping when the door is closed, stops mounted exteriorly of said leaves, and an additional lever mounted on each leaf for cooperating with said stops, said additional levers being operated by said previously mentioned levers.

In witness whereof, I hereunto subscribe my name this 14th day of December, A. D., 1911.

JOSEF J. KALIVO DA.

Witnesses:
A. Lyda Jones,
A. S. Dennison.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."