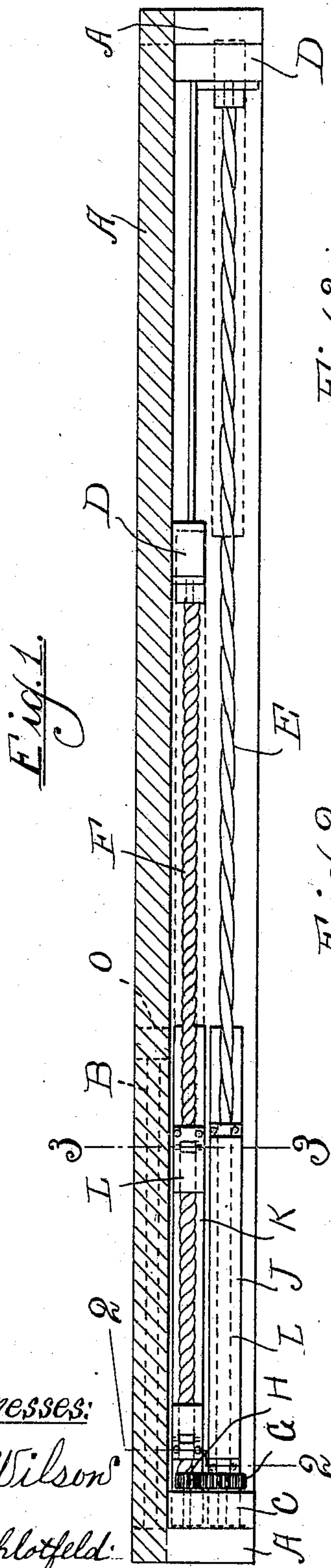


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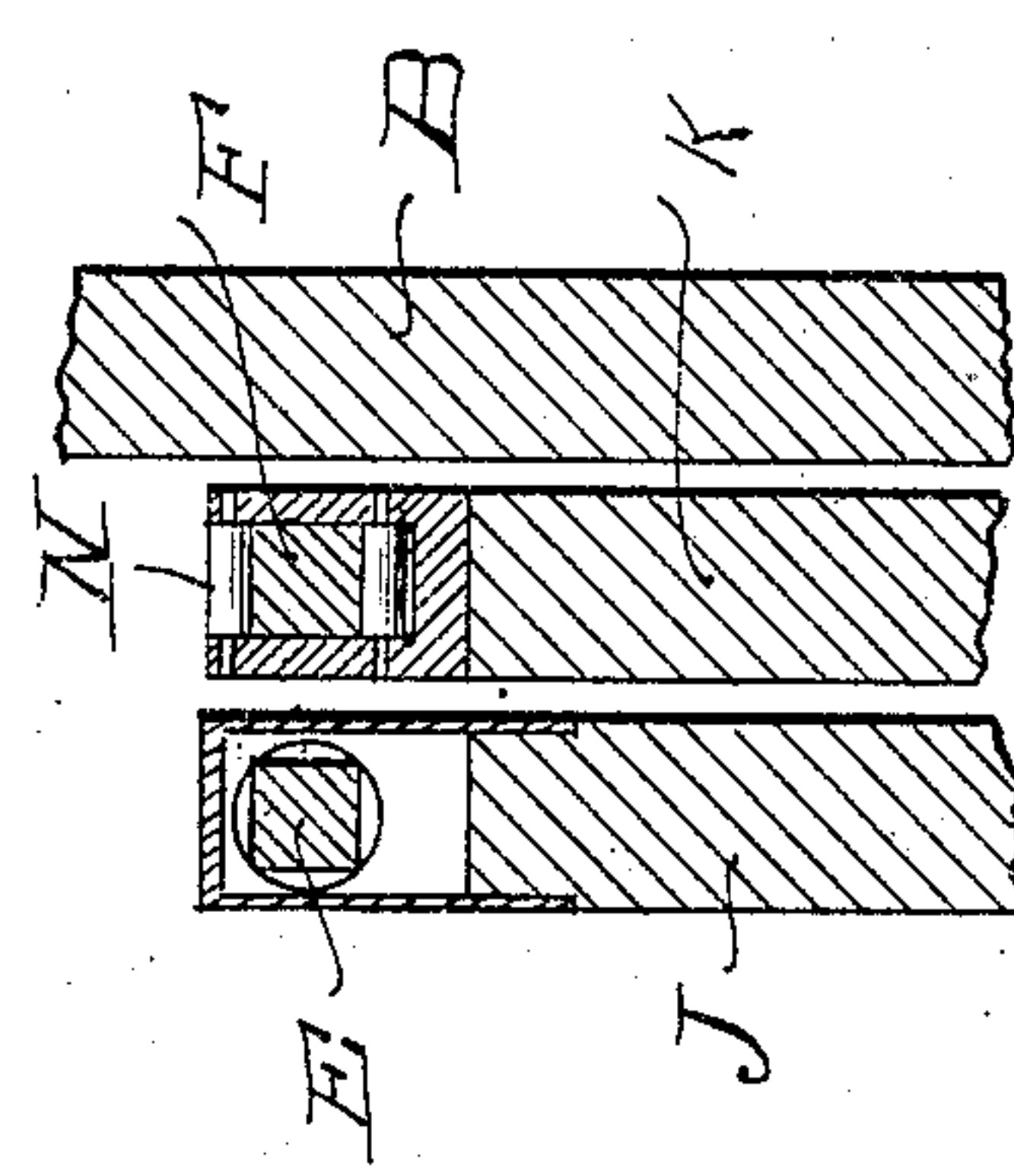
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GATE FOR ELEVATOR SHAFTS.

APPLICATION FILED JULY 5, 1904.

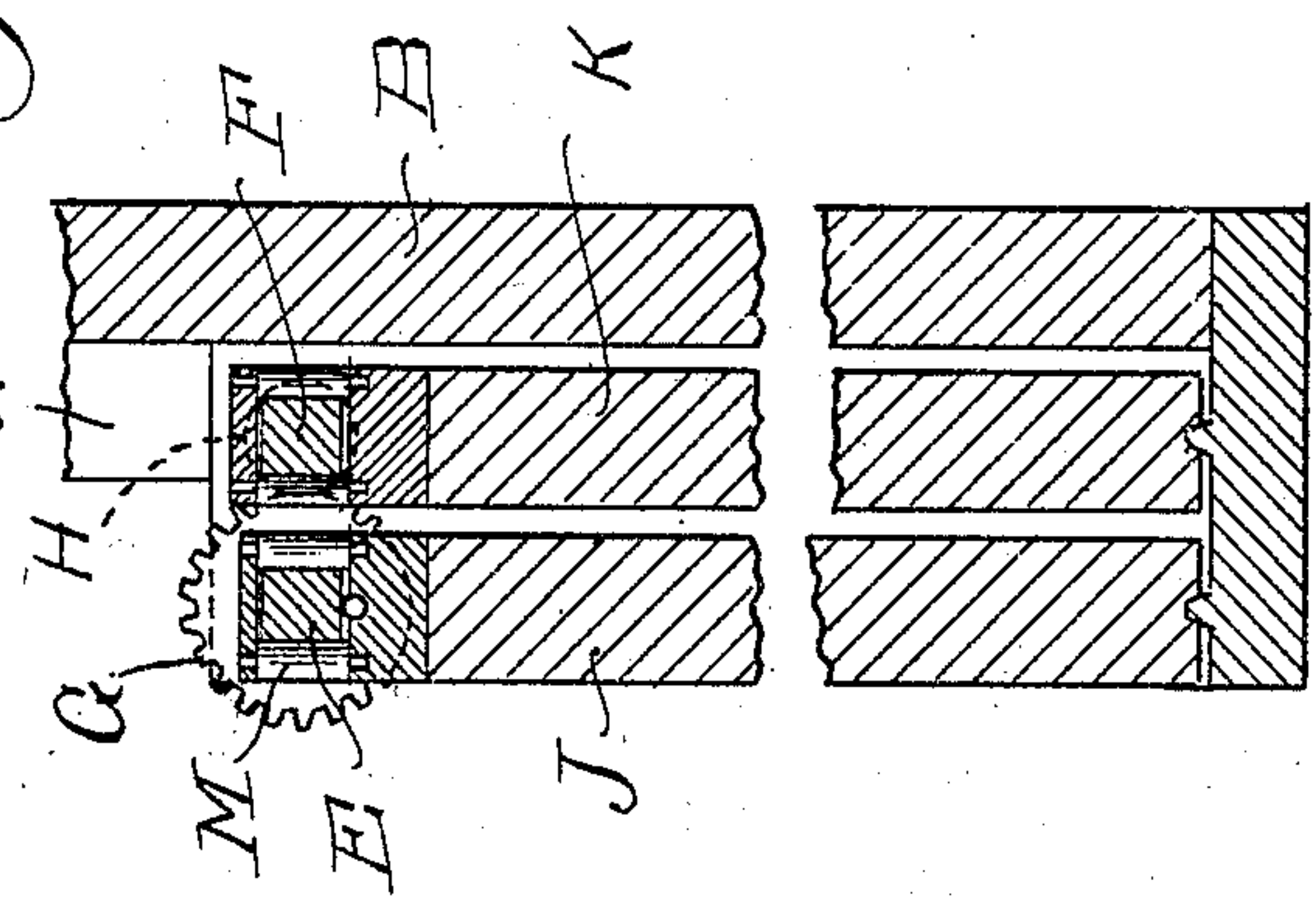


*Fig. 1.*

*Fig. 3.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

WILLIAM H. PAETH AND CHARLES PHERSICH, OF CHICAGO, ILLINOIS.

## GATE FOR ELEVATOR-SHAFTS.

SPECIFICATION forming part of Letters Patent No. 785,517, dated March 21, 1905.

Application filed July 5, 1904. Serial No. 215,370.

*To all whom it may concern:*

Be it known that we, WILLIAM H. PAETH and CHARLES PHERSICH, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gates for Elevator-Shafts; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to a novel construction in a gate for elevator-shafts, the object being to provide a gate which will afford an opening of maximum width and which is cheap, durable, and efficient; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating our invention, Figure 1 is a top plan view of an elevator-gate constructed in accordance with our invention. Figs. 2 and 3 are vertical transverse sections of same, on an enlarged scale, on the lines 2 2 and 3 3, respectively, of Fig. 1.

Wherever elevators are used it is desirable that the openings for the entrance and egress of passengers and freight should be as large as possible in order to expedite handling, and to this end various forms of doors or gates have been employed, which consist of a plurality of members which are geared together to move in unison and so arranged that they move at relatively different speeds to close an opening equal in width to two-thirds or more of the width of the shaft and when closed to "fold together," so to speak, behind the permanent grating or wall inclosing the passage side of the elevator-shaft. Such doors or gates are usually hung on door-hangers traveling on rails disposed above the opening and have proved very inefficient, as a rule, by reason of the fact that the hangers sometimes leave the rails or the gearing is out of order. Such doors or gates are also generally very expensive by reason of the fact that a separate set of patterns is necessary for every slight variation in the width of the opening, so that each set of doors or gates must be

made to order in every case where same is applied.

The object of our present invention is to provide simple but positive gearing between the several members constituting the door or gate, to obviate the use of hangers or other devices which are not thoroughly reliable, and to provide gearing which can be very readily varied without trouble to suit any variations in the widths of openings.

To these and other ends our said device comprises the frame A, in which is mounted a grating or similar inclosing wall B, which covers substantially one-third of said frame, the latter being adapted to be disposed to form one wall of the elevator-shaft. Mounted in suitable bearings C and D in the upper end of said frame A on the elevator-shaft side are two parallel horizontal screw-shafts E and F, which are geared together by means of the intermeshing spur-gears G and H. The said shaft E extends across the entire width of said frame A and consists, preferably, of a square rod which is twisted between its ends to form a spiral having, for example, four turns to each foot of length. The said shaft F may likewise consist of a square rod preferably twisted in the opposite direction and having a larger number of turns to each foot of length—as, for example, twelve turns or threads to each foot of length. The proportion between the spur-gear G on the shaft E and the spur-gear H on the shaft F is such that the latter will be revolved six times for each four revolutions of said shaft E. Hung on said shafts E and F are the doors or gates J and K, each carrying at its upper end a sleeve L, provided internally with antifriction devices, such as the vertically-disposed rollers M and horizontally-disposed rollers N, which closely engage the shafts E and F. Each of said doors or gates J and K is adapted to close one-half of the opening O in the frame A. By moving the door or gate J in either direction the shaft E will be revolved four times for each foot of movement of said gate. Such revolution of the shaft E is transmitted to the shaft F, which is thus revolved six revolutions for each four revolutions of the shaft E and in the opposite direction, and having twelve threads to the



foot will cause the gate K to be moved one foot for each two feet of movement of the gate J in the same direction. When open, the said gates J and K are side by side behind the grating B, and in closing the gate J must obviously move a distance equal substantially to twice its width and the gate K must move a distance substantially equal to once its width, and said gates are geared accordingly. At their lower ends said gates move in suitable guides to hold them against swinging. Each of said gates J and K may be provided with two sleeves having devices for engaging the shafts E and F; but it may be preferable that one of said sleeves on each gate be devoid of said devices and act only as a hanger and guide for the gate.

Our invention may obviously be varied to suit any desired number of said doors or gates; but we have omitted further illustration to avoid confusion.

The screw-shafts may be made in great lengths and cut off to suit any width of frame and opening, the gearing remaining the same at all times. The said screw-shafts E and F may be threaded in the same direction and an idler interposed in the gearing to cause said shafts to revolve in the same direction, as will be obvious.

Our device is very simple and efficient.

We claim as our invention—

1. A gate for elevator-shafts comprising a plurality of members having a combined width substantially equal to the width of the passage to be controlled thereby, a plurality of differential horizontally-disposed parallel screw-shafts geared together and adapted to support said members, and a sleeve on each of said members provided internally with devices for engaging the threads of the shaft supporting said member, said screw-shaft being actuated by the movements of one of the members supported thereby.

2. A gate for elevator-shafts comprising a plurality of gate members, the combined

width of which is substantially equal to the width of the opening controlled thereby, said gate members being disposed parallel with each other, a pair of sleeves mounted on the upper ends of said gate members, a horizontally-disposed revoluble screw-shaft passing through the sleeve of each member and supported at its ends in bearings in the gate-frame, gearing between said screw-shafts for transmitting motion from one to the remainder of the same, and devices in the sleeve of each gate member for engaging the threads of the screw-shafts, said screw-shafts having relatively differential threads and being actuated by the movements of one of said gate members to impart movement at different speed to the remainder thereof.

3. The combination with a gate-frame for elevator-shafts having an opening greater than half its width, of two parallel sliding gate members having a combined width substantially equal to the width of said opening and adapted to control the same, sleeves mounted upon the upper ends of said gate members, parallel horizontally-disposed screw-shafts passing through said sleeves and journaled at their ends in bearings in the said gate-frame, devices in said sleeves of each gate member engaging the threads of said screw-shafts for gearing said gates thereto, and gearing between said screw-shafts, said shafts and said gearing being relatively so arranged that when one of said shafts is actuated by the movements of one of said gate members, the other of said shafts will transmit the motion to the other gate member at a different speed.

In testimony whereof we have signed our names in presence of two subscribing witnesses.

WILLIAM H. PAETH.  
CHARLES PHERSICH.

Witnesses:

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