

J. GAYNOR.
 DISPLAY APPARATUS.
 APPLICATION FILED JUNE 5, 1909.

938,571.

Patented Nov. 2, 1909.

3 SHEETS—SHEET 1.

Fig. 1.

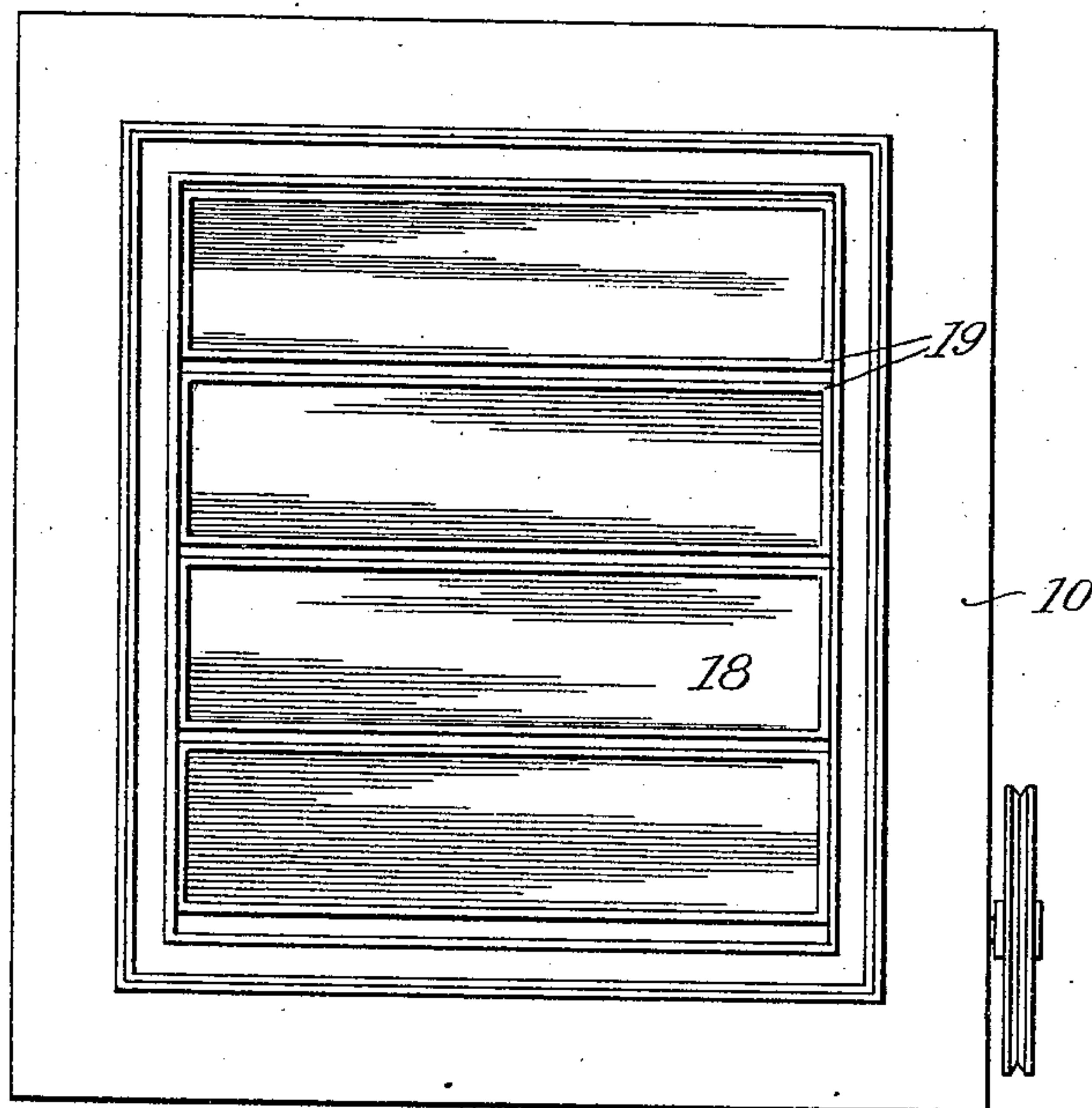


Fig. 5.

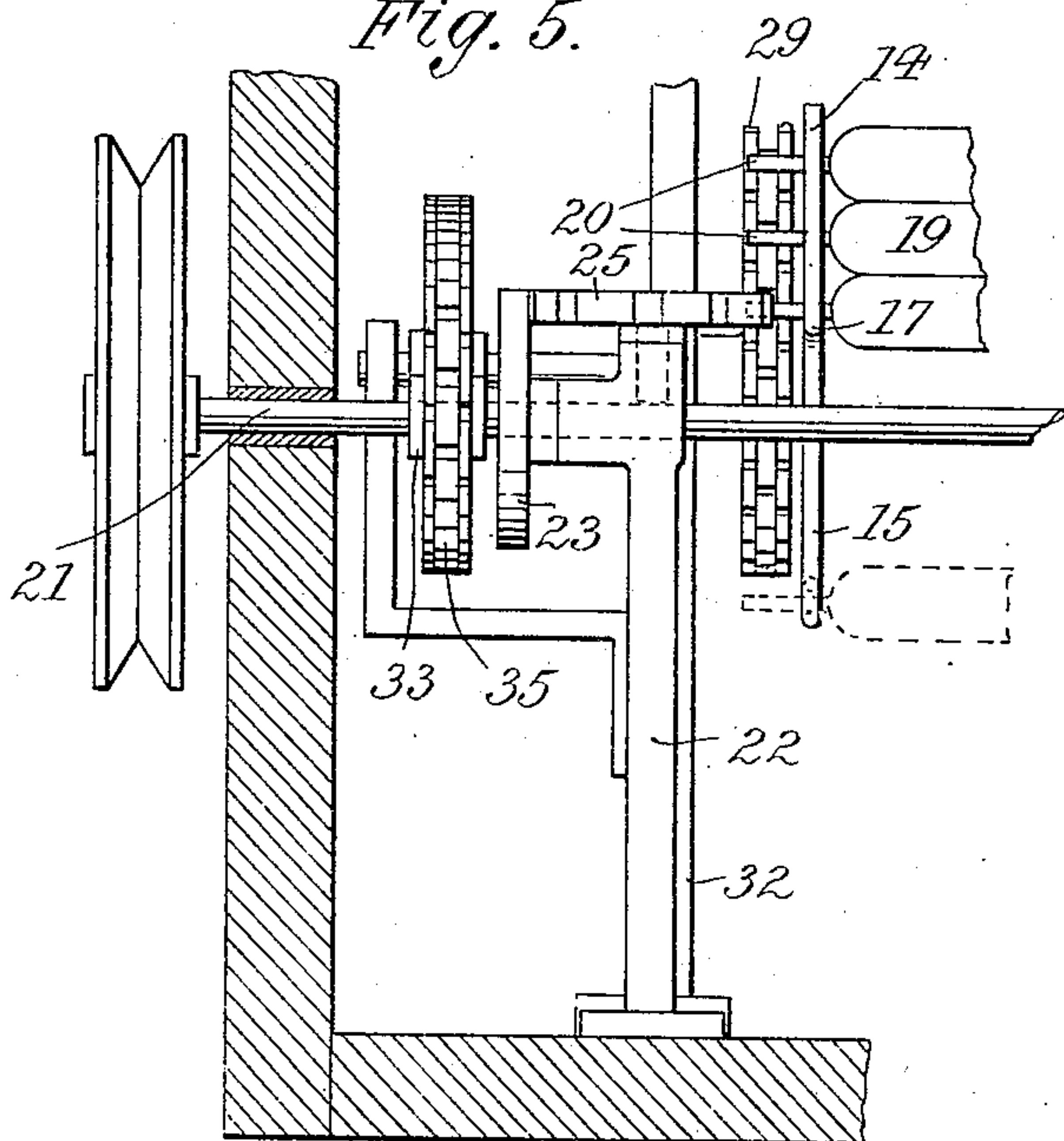


Fig. 6.

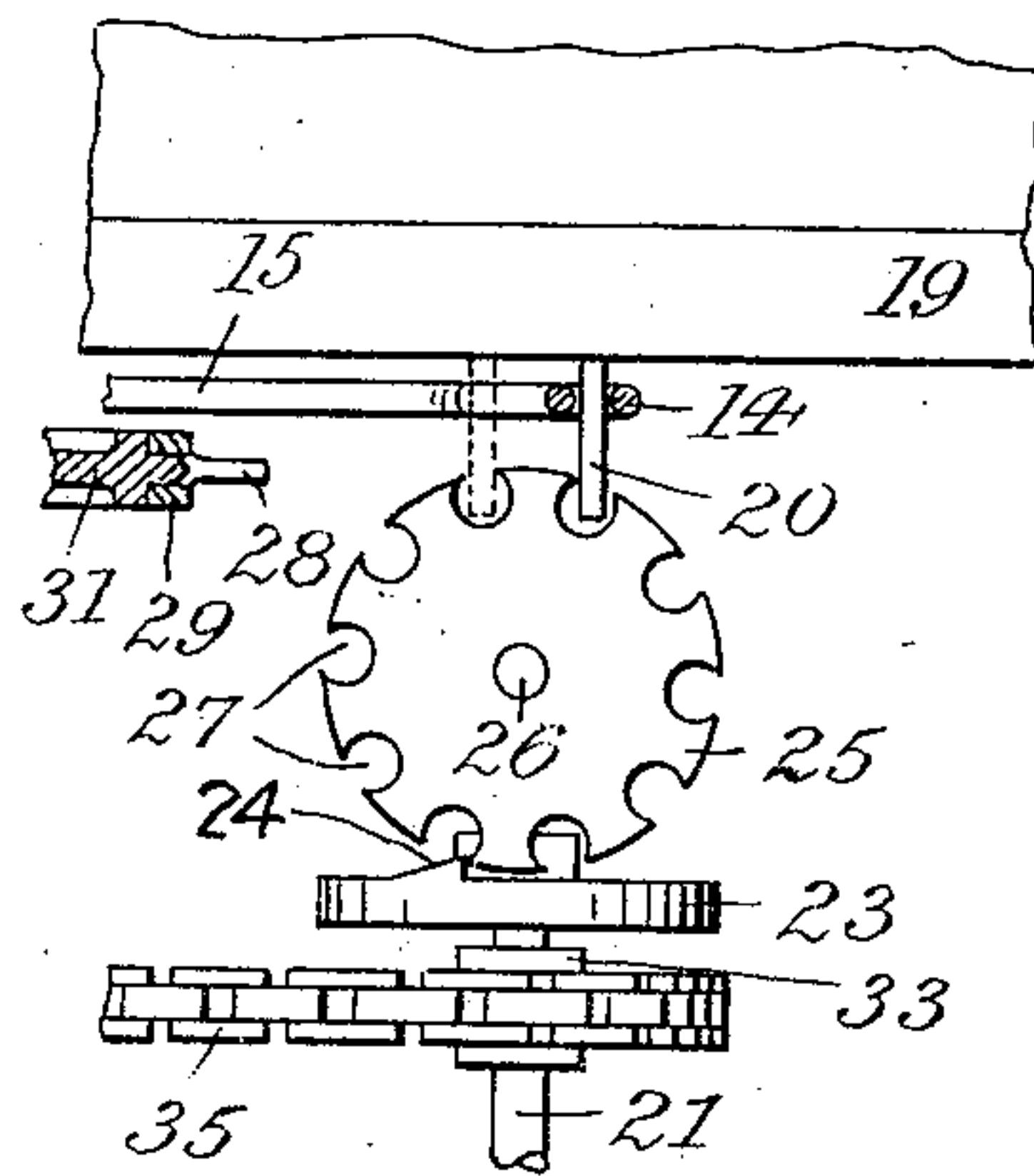
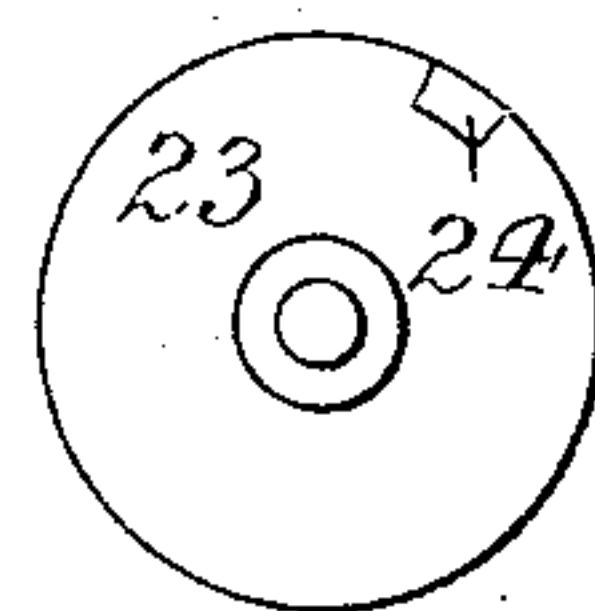


Fig. 7.



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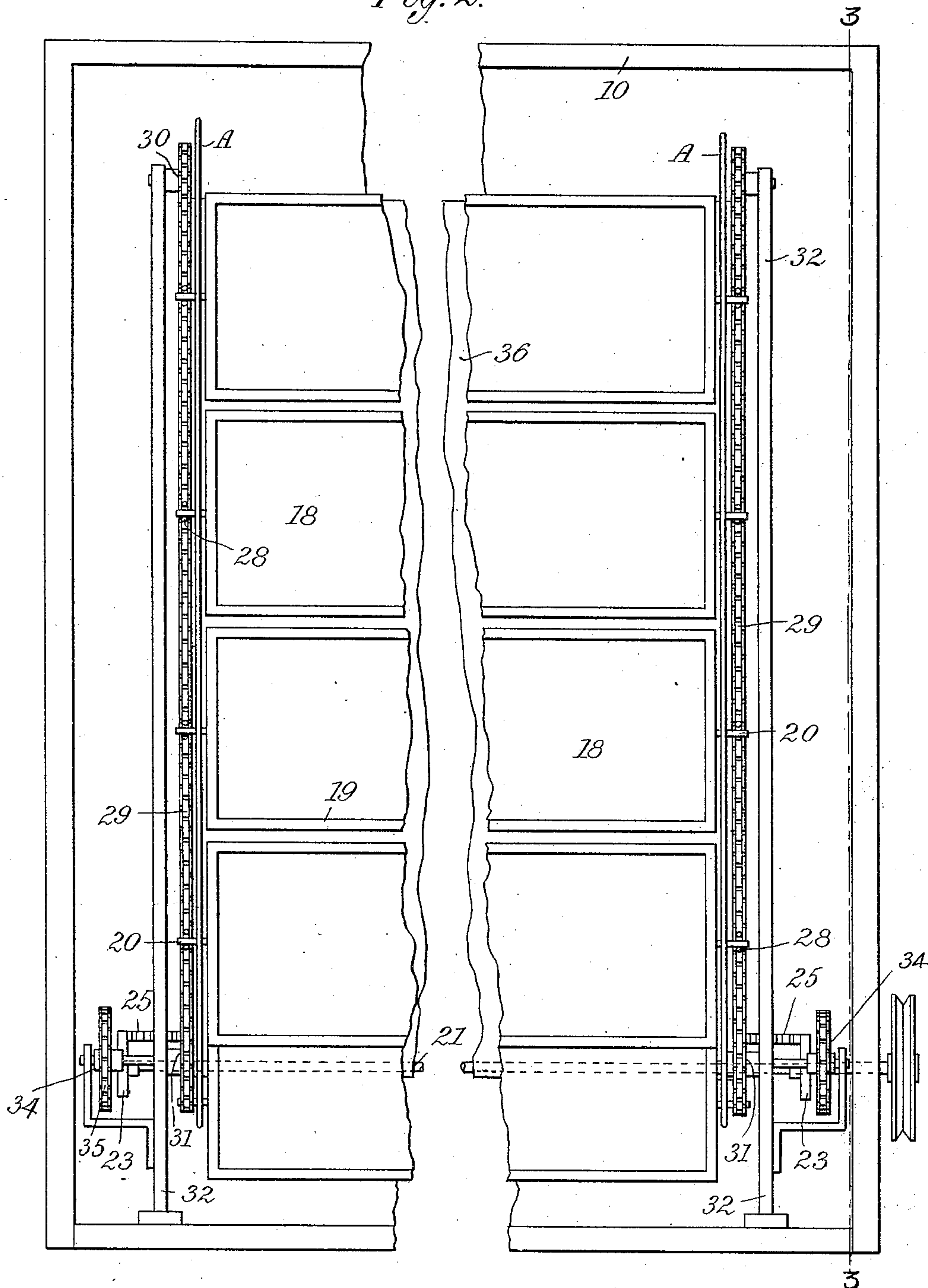
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3 SHEETS—SHEET 2.

Fig. 2.



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 3 SHEETS—SHEET 3.

Fig. 3.

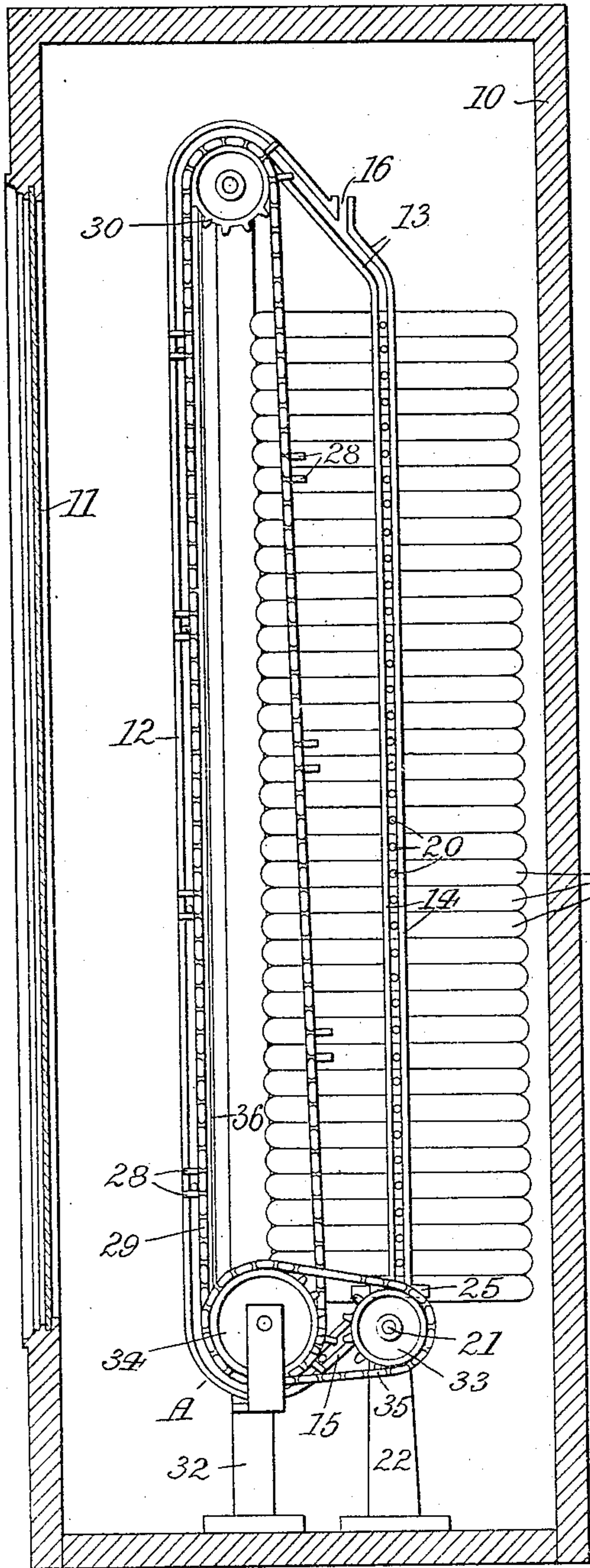


Fig. 4.

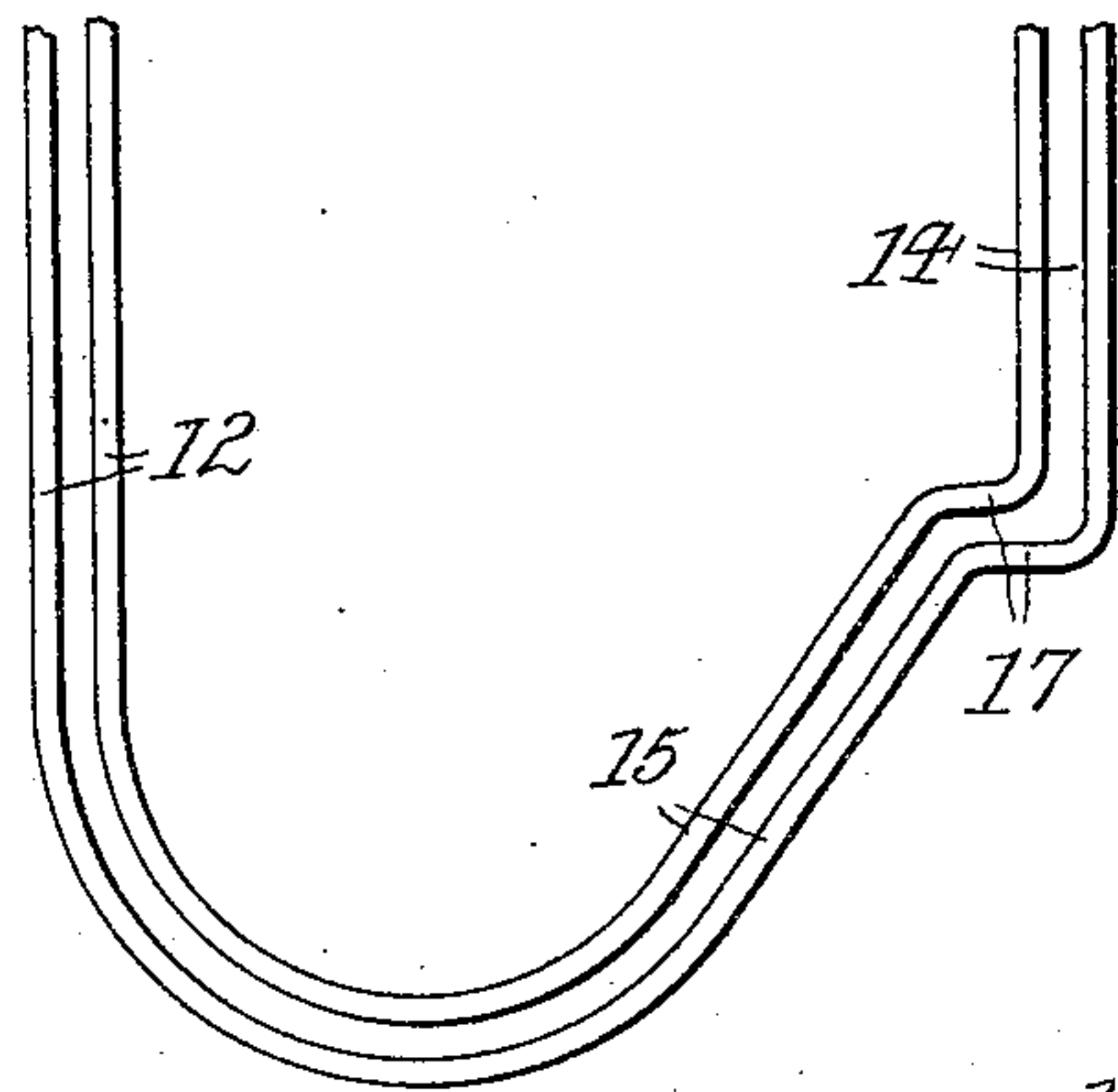


Fig. 8.

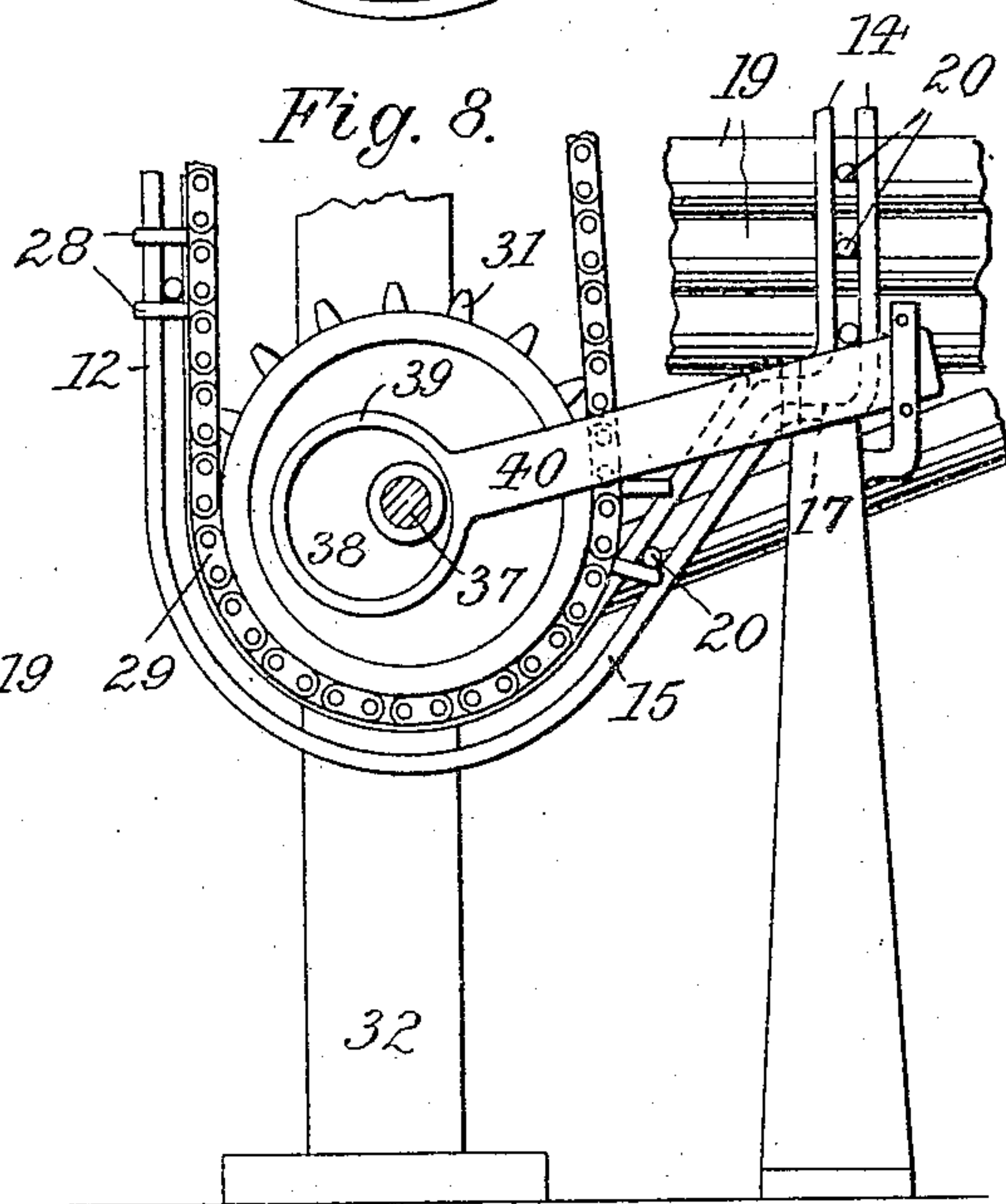


Fig. 9.

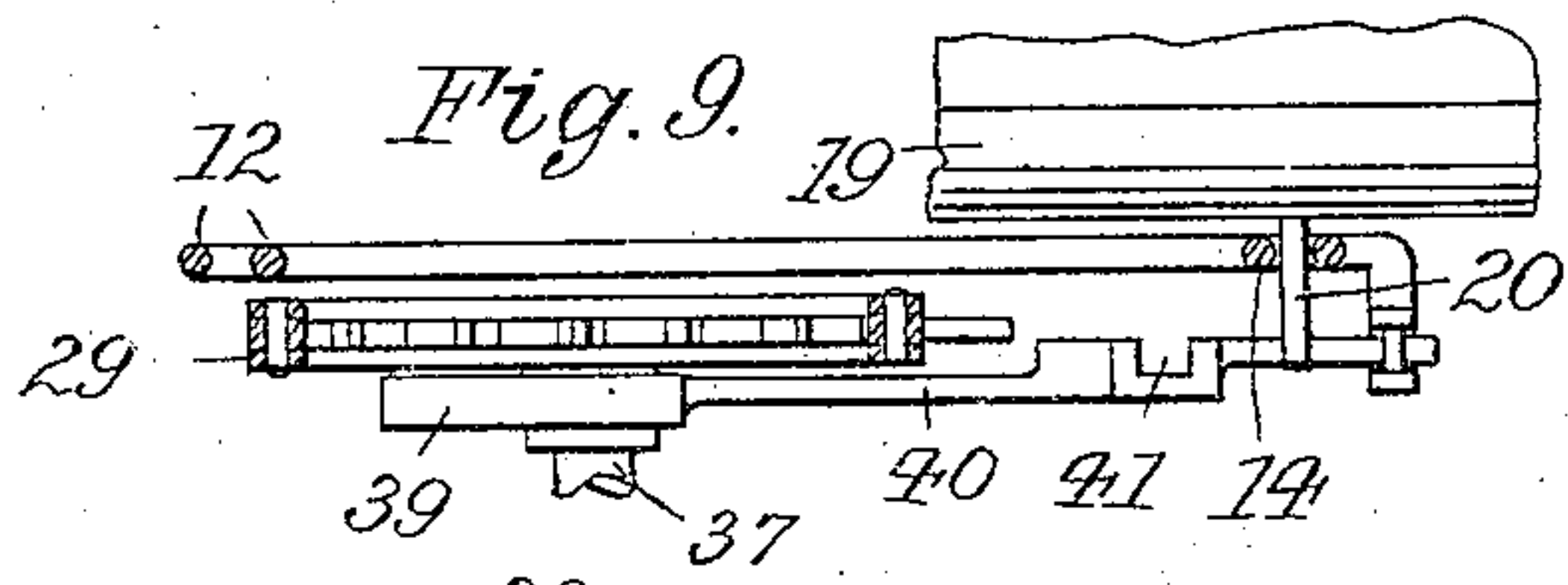
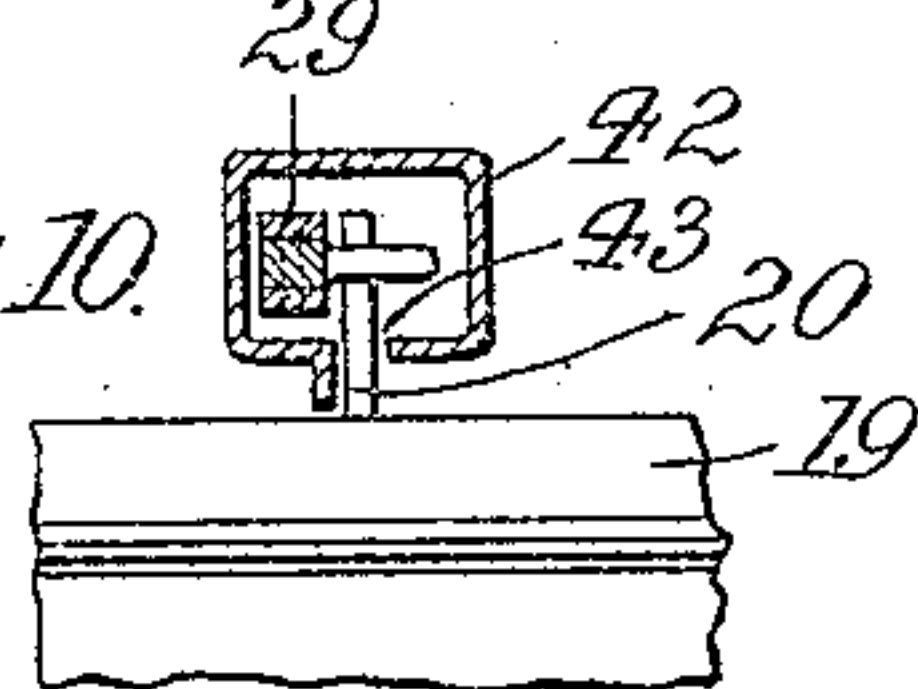


Fig. 10.



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UNITED STATES PATENT OFFICE.

JOSEPH GAYNOR, OF NEW YORK, N. Y.

DISPLAY APPARATUS.

938,571.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, JOSEPH GAYNOR, a citizen of the United States, residing at New York city, Brooklyn, county of Kings, State of New York, have invented new and useful Improvements in Display Apparatus, of which the following is a specification.

This invention relates to an apparatus for displaying in an endless series a number of cards bearing advertisements, pictures or similar matter. The construction is such that single cards are successively picked up and rotated in a cycle in such a way that the cards are righted while exposed to view and stacked up when out of view. In this way compactness is insured while the cards may be readily withdrawn and replaced by others bearing different display matter.

In the accompanying drawings: Figure 1 is a front view of my improved display apparatus; Fig. 2 a similar view on an enlarged scale, with the front plate omitted; Fig. 3 a cross section on line 3—3, Fig. 2; Fig. 4 a detail of the lower part of the track; Fig. 5 a rear view of the driving mechanism; Fig. 6 a plan of part thereof; Fig. 7 a top view of the face wheel; Fig. 8 a side view of a modification of the driving mechanism; Fig. 9 a plan thereof, and Fig. 10 a cross section through a modification of the guide rail.

Within a casing 10, having a window 11, is fitted an endless track composed of a pair of parallel slotted guide rails A. Each of these rails comprises a vertical front section 12, a rearwardly inclined top section or upper gravity run 13, a vertical rear section 14, and a forwardly inclined bottom section or lower gravity run 15. Upper inclined section 13 is provided with a charging orifice 16, while a horizontal step 17 is formed at the junction of rear section 14 with lower run 15.

Rails A, constitute guides for the cards 18 bearing the advertisements, pictures or other matter to be displayed. Each card is mounted in a separate frame 19 having gudgeons 20 which may be brought into engagement with the rails through charge orifices 16. Means are provided for carrying the frames in a continuous cycle along the track by pushing the bottom frame from step 17 into lower gravity run 15, lifting it along front rail-section 12, and depositing it through upper gravity run 13 upon the top of the stack of frames superposed on steps 17.

The means for pushing the bottom frame

off step 17 and into lower run 15, are as follows: Upon a power shaft 21, journaled in standards 22 are fitted a pair of face wheels 23, each having a single tooth 24 adapted to impart intermittent rotary movement to a notched disk 25 turning on a vertical axis 26. Notches 27 of this disk are adapted to successively engage the gudgeons 20 of the bottom frame 19 and push the same off step 17 into run 15, where the frame descends by gravity. Within run 15, gudgeons 20 are grasped by lifters 28 projecting from a pair of endless feed chains 29. The lifters are so spaced as to correspond to the height of frames 19 and are preferably arranged in pairs, so as to straddle the gudgeons, as shown. Feed chains 29 engage upper sprocket wheels 30 and lower sprocket wheels 31 which are journaled in standards 32 and are so located that the forward runs of the chains flank the front rail-sections 12. Motion is imparted to lower sprocket wheels 31 from shaft 21 by a suitable transmission, such as chain wheels 33, 34 and chains 35. A shield 36 extending directly back of the front chain run serves to right frames 19 during their upward travel.

It will be seen that when a frame has been pushed into gravity run 15, its gudgeons 20 will become engaged by lifters 28 which will carry the frame beneath wheels 31 along front rail-sections 12 and over wheels 30, to be thence released from lifters 28 and descend along upper gravity run 13. Thus the frame is deposited upon the top of the stack supported on steps 17. While the frames ascend successively in the manner described along the front of the apparatus, they will, by shield 36, be turned into an upright position, so that the matter displayed thereon is fully exposed to view through window 11. During its travel each frame will be reversed from the time it is withdrawn from the bottom of the stack until it is deposited upon the top thereof, as it is compelled to make a turn through 180°. In this way, opposite views of each card will be exposed to view upon alternate trips, so that the quantity of display matter may be duplicated without necessitating a corresponding increase in the size of the apparatus.

Figs. 8 and 9, illustrate a modification of the mechanism for pushing the frames off steps 17 and into gravity run 15. Here there is mounted in standards 32, a power

shaft 37, carrying lower sprocket wheels 31, and in addition thereto a pair of eccentrics 38. The straps 39 of the latter are provided with integral arms 40, notched as at 41 for engaging the gudgeons 20 of the bottom frame 19. It will be seen that eccentrics 38 will impart reciprocative movement to arms 40, so that the latter will draw successive frames into the gravity run.

10 In Fig. 10, the guide rail is made in the form of a tube 42 slitted as at 43 for the admission of gudgeons 20. The chain 29 is located within tube 42, so that its lifters will grasp the gudgeons in the manner already
15 described.

I claim:

1. A display apparatus comprising an endless track having connected front and rear sections, reversible frames having gudgeons
20 engaging the track and adapted to be stacked along the rear track-section, an endless feed chain having lifters adapted to engage the gudgeons, and a shield back of the front run of said chain and adapted to be engaged by the frames.
25

2. A display apparatus comprising an endless track composed of a front upright section, an upper inclined section, a rear up-

right section, a step at the bottom thereof, and a lower inclined section, frames having
30 gudgeons engaging the track and adapted to be supported by the step, means for forcing the gudgeons from the step into the lower inclined track-section, a feed chain having lifters adapted to engage the gud-
35 geons, and a shield back of the front run of said chain and adapted to be engaged by the frames.

3. A display apparatus comprising an endless track having front and rear sections
40 connected by an upper gravity run and a lower gravity run, reversible frames having gudgeons engaging the track and adapted to be stacked along the rear track-section, means for conveying the frames from the
45 rear track-section to the lower gravity run, means for righting the frames, and means for propelling the righted frames along the front track-section and conveying them to the upper gravity run.
50

Signed by me at New York city, (Manhattan,) N. Y., this 4th day of June, 1909.
JOSEPH GAYNOR.

Witnesses:

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