

No. 756,157.

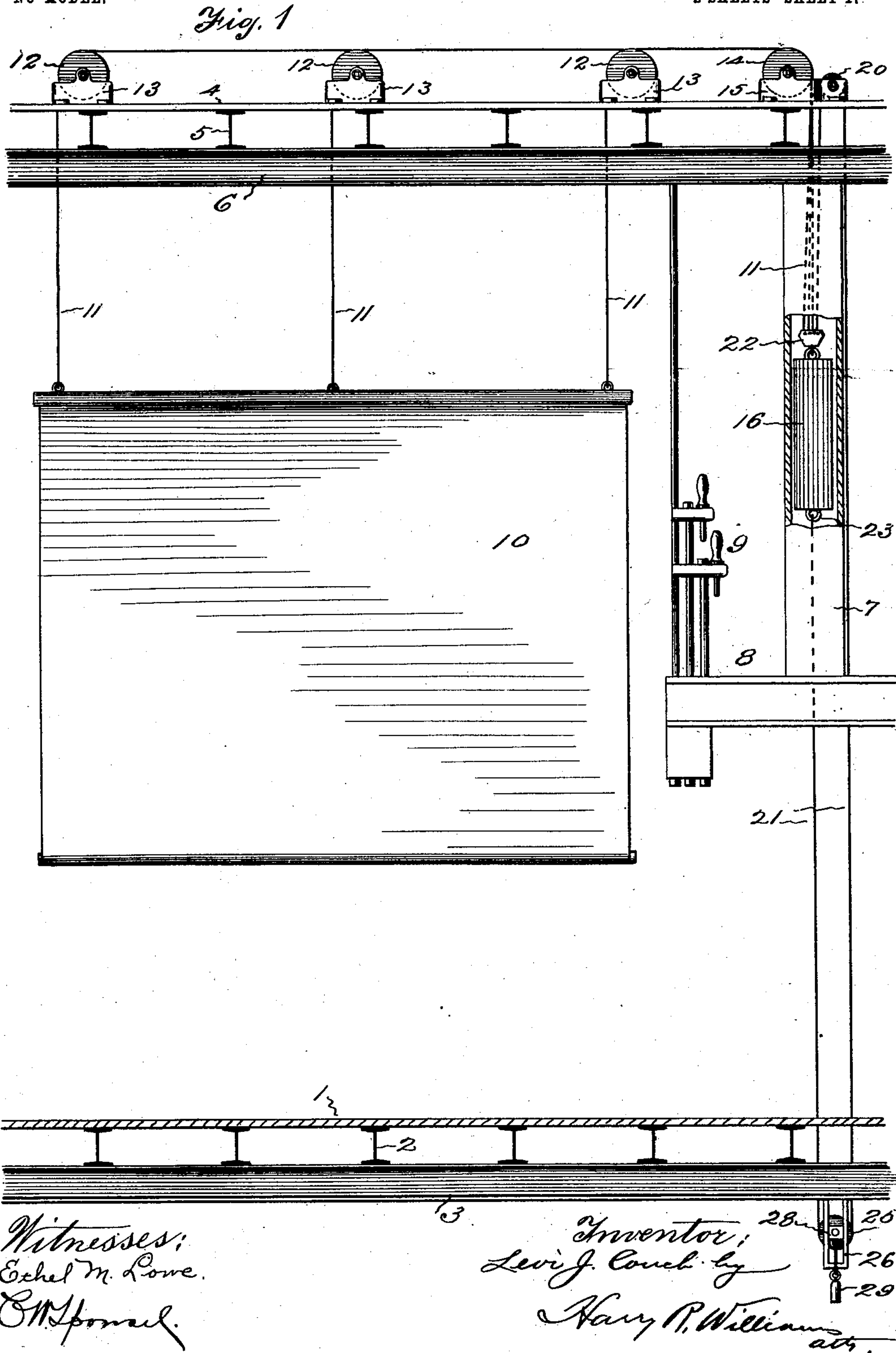
PATENTED MAR. 29, 1904.

L. J. COUCH.  
DROP CURTAIN BLOCK.

APPLICATION FILED JULY 7, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



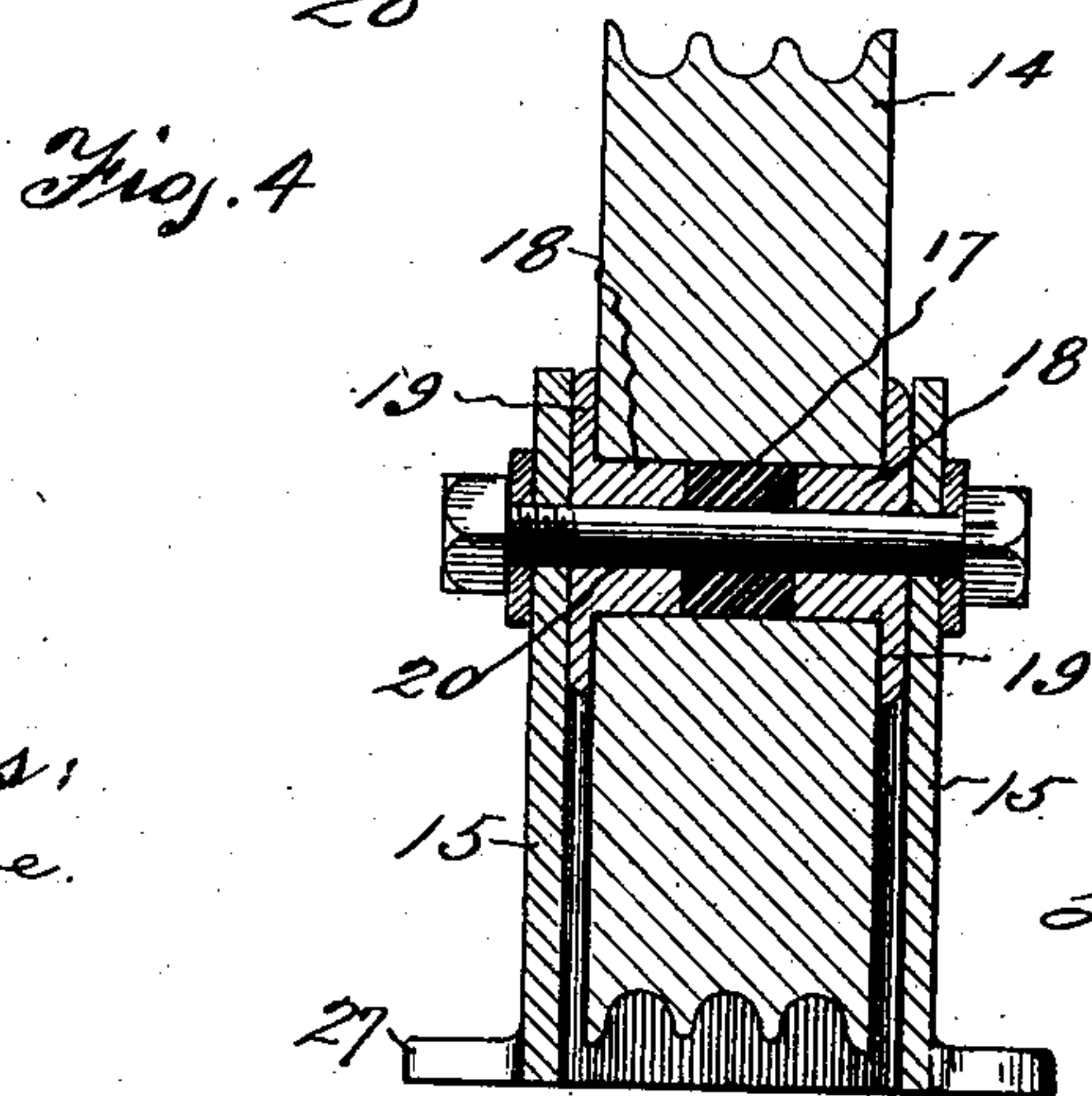
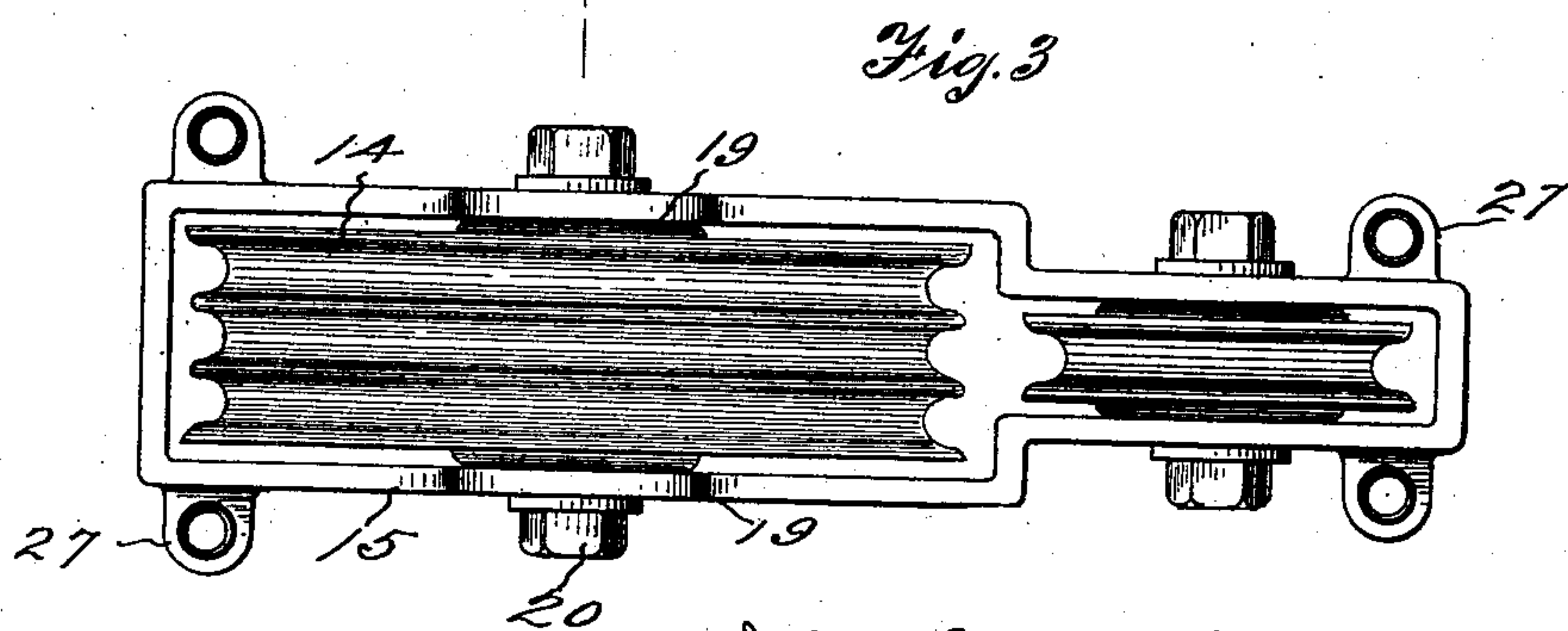
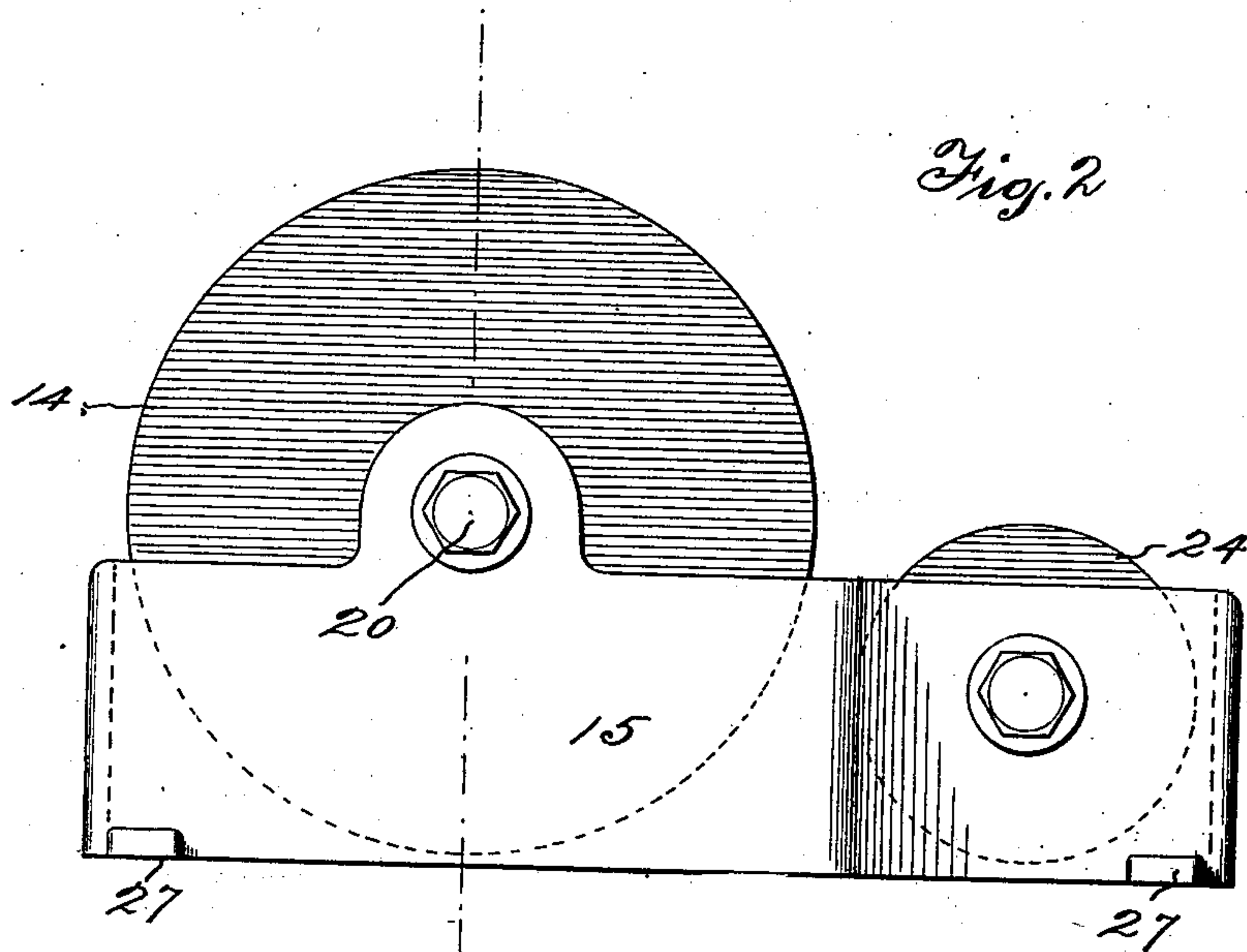
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DROP CURTAIN BLOCK.  
APPLICATION FILED JULY 7, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:  
Echel M. Lowe.  
C. W. Hornum.

Inventor:  
Levi J. Couch by  
Harry R. Williams  
Att'y



# UNITED STATES PATENT OFFICE.

• LEVI J. COUCH, OF SPRINGFIELD, MASSACHUSETTS.

## DROP-CURTAIN BLOCK.

SPECIFICATION forming part of Letters Patent No. 756,157, dated March 29, 1904.

Application filed July 7, 1903. Serial No. 164,550. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI J. COUCH, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Theatrical-Drop-Curtain Blocks, of which the following is a specification.

A theater drop-curtain is supported by ropes or cables that pass from the top bar of the curtain tip and over sheaves in the lead and head blocks, that are fastened to the gridiron-floor, which is located in the loft under the roof high above the stage, and then pass down to a counterweight. The operating rope or cable leads from the counterweight upwardly over a sheave in a head-block and down around an adjustable sheave in a block beneath the stage and then back to the counterweight. The counterweight balances the curtain, and one or the other sections of the operating-rope is pulled to move the counterweight up or down, and thus lower or raise the curtain. The lead and head blocks are of necessity located in inaccessible places close beneath the roof on a comparatively frail structure.

This invention relates to the construction of the blocks and sheaves which are located in the loft under the roof on the gridiron-floor for carrying the lead and operating ropes of a drop-curtain.

The object of this invention is to simplify the construction and arrangement of such blocks and provide for their lubrication and quiet running, whereby friction will be reduced and the curtain can be operated very easily and rapidly without noise.

To this end the invention resides in such an arrangement and construction that the number of blocks are reduced and the sheaves are provided with internal permanent lubricating material, as more particularly hereinafter described, and pointed out in the claims.

Figure 1 of the accompanying drawings represents a portion of a stage having a drop-curtain hung by ropes and blocks constructed and arranged according to this invention. Fig. 2 shows a side elevation of the head-block. Fig. 3 shows a plan of the head-block, and Fig.

4 shows a vertical section of the head-block through the large sheave.

The stage-floor 1 is represented in the drawings as laid upon girders 2, that rest upon a girder 3. The gridiron-floor 4 is represented as laid upon girders 5, that rest upon a girder 6. The counterweight-box 7 extends from the gridiron-floor on one side of the stage to the fly-gallery 8, which has the usual pin-rails 9.

The drop-curtain 10 is shown as supported by three lead-ropes 11, each of which passes over a sheave 12, that is supported by a lead-block 13, fastened to the gridiron-floor. Each lead-rope after passing over a lead-block sheave passes over a groove in the sheave 14, that is supported by the head-block 15, and is then fastened to the counterweight 16, that is movable up and down in the counterweight-box. If there are three lead-ropes, the head-block sheave, which is desirably formed of wood, so that it will run quietly and with but little wear on the ropes, that are preferably small wire cables, has three grooves, one for each lead-rope. The center of the head-block sheave is bored out, and in the middle of the opening a cylinder of plumbago 17 is placed, and each side of this in the opening in the sheave is a bushing 18, with a flange 19, that extends on the side of the sheave. A bolt 20 is passed through the plumbago cylinder and the bushings and through the sides of the block, which may be formed of wood, but preferably is a cast-metal frame. The operating-rope 21 is fastened to a clamp 22 at the top of the counterweight and to an eye 23 at the bottom of the counterweight and passes around the sheave 24 in the head-block and the sheave 25, that is loosely supported by a frame 26 beneath the stage-floor. The operating-rope sheave in the head-block is constructed, supported, and lubricated the same as the lead-line sheave in the head-block. The head-block is provided with perforated lugs 27 for fastening it to the gridiron-floor. The spindle of the sheave beneath the stage is held by blocks 28, that are free to move vertically in the frame. The spindle-blocks of this sheave are connected with a weight 29, which tends to draw them



down and keep the operating-rope taut and yet allow for the shrinkage and swelling of the timbers and for the expansion and contraction or lengthening and shortening of the rope. The lead-block sheaves are constructed, supported, and lubricated in the lead-block boxes the same as the lead-sheave is in the head-block. The sheaves are preferably all formed of wood, so that they will not wear the ropes, which are ordinarily wire cables, and so that the ropes will run noiselessly. The bearings for the sheaves, which are usually located very close under the theater-roof high above the stage, where they are not readily accessible, are kept lubricated by the plumbago, so that they will run with but little friction and will not become dry and creak.

The construction of these blocks is simple, and they are firmly held in place. But one frame is needed for a head-block, and in that one frame is the lead-rope sheave, with a plu-

ral number of grooves, and the operating-rope sheave, with its single groove.

I claim as my invention—

1. A drop-curtain-supporting block having a frame surrounding a large sheave with a plural number of rope-grooves and a small sheave with a single rope-groove that is back of and in line with the large sheave, substantially as specified.

2. A drop-curtain-supporting block consisting of a frame, a grooved sheave with a central opening, a lubricating-cylinder located in the middle of the opening, flanged bushings located in the opening outside of the lubricating material and a pivot extending through the cylinder, the bushings and the sides of the frame, substantially as specified.

LEVI J. COUCH.

Witnesses:

H. R. WILLIAMS,  
ETHEL M. LOWE.