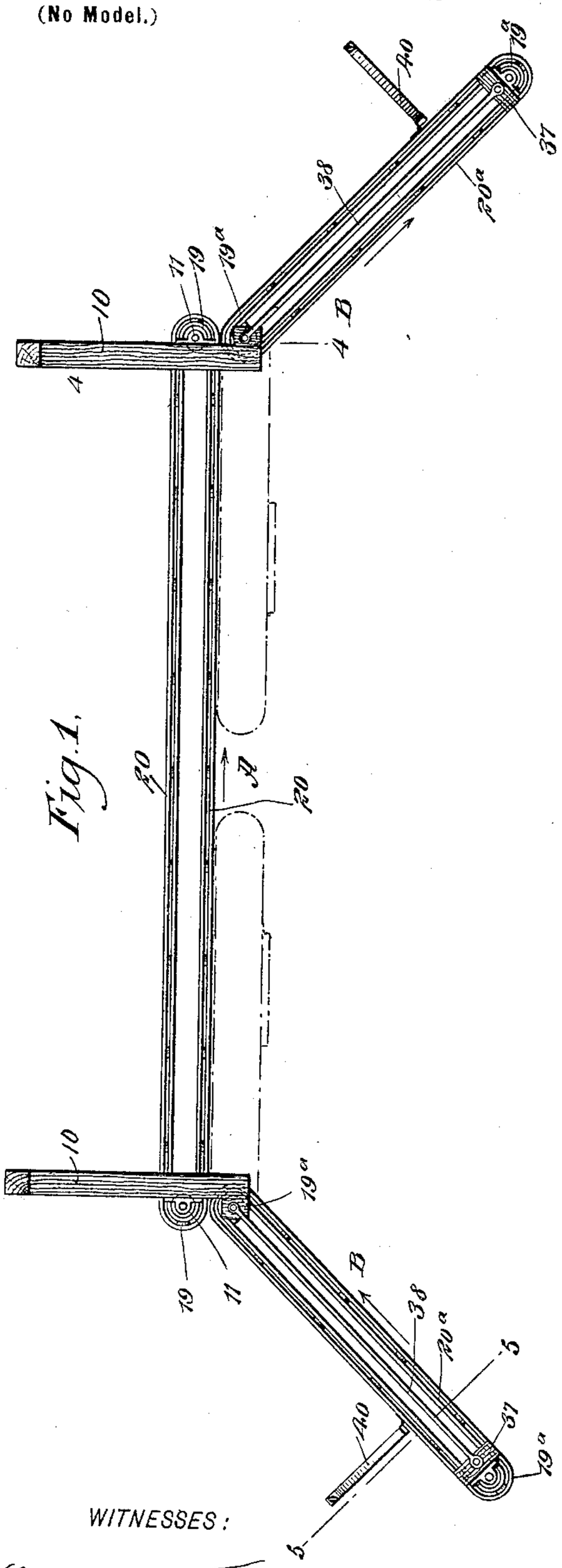
No. 656,969. Patented Aug. 28, 1900.

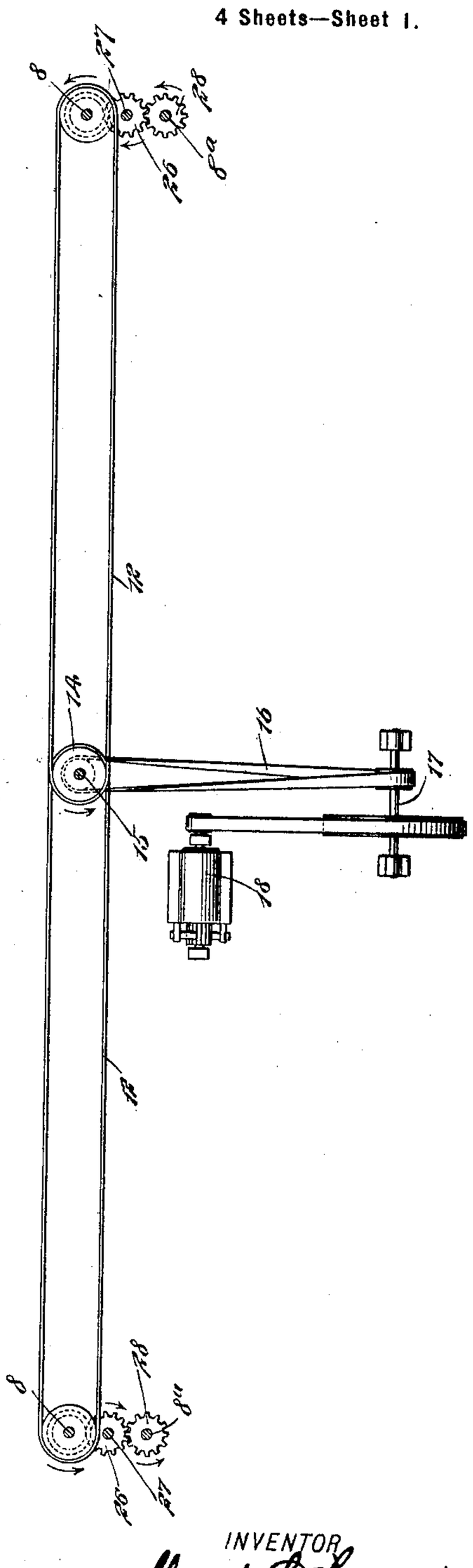
C. L. HAGEN.

STAGE MACHINERY.

(Application filed Jan. 31, 1900.)

(No Model.) 4 Sheets—Sheet 1.





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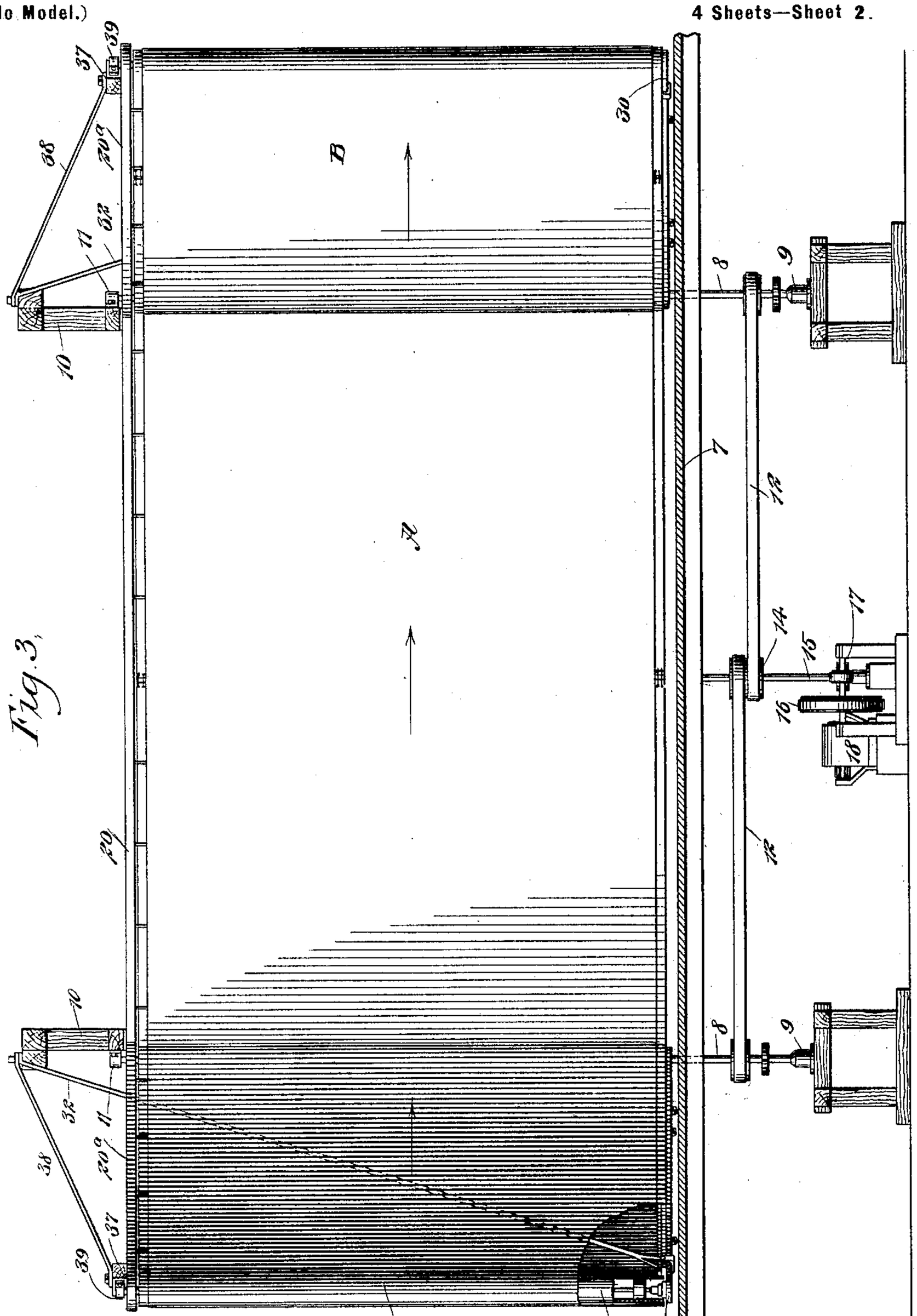

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(No Model.) 4 Sheets—Sheet 3.

Fig. 4.

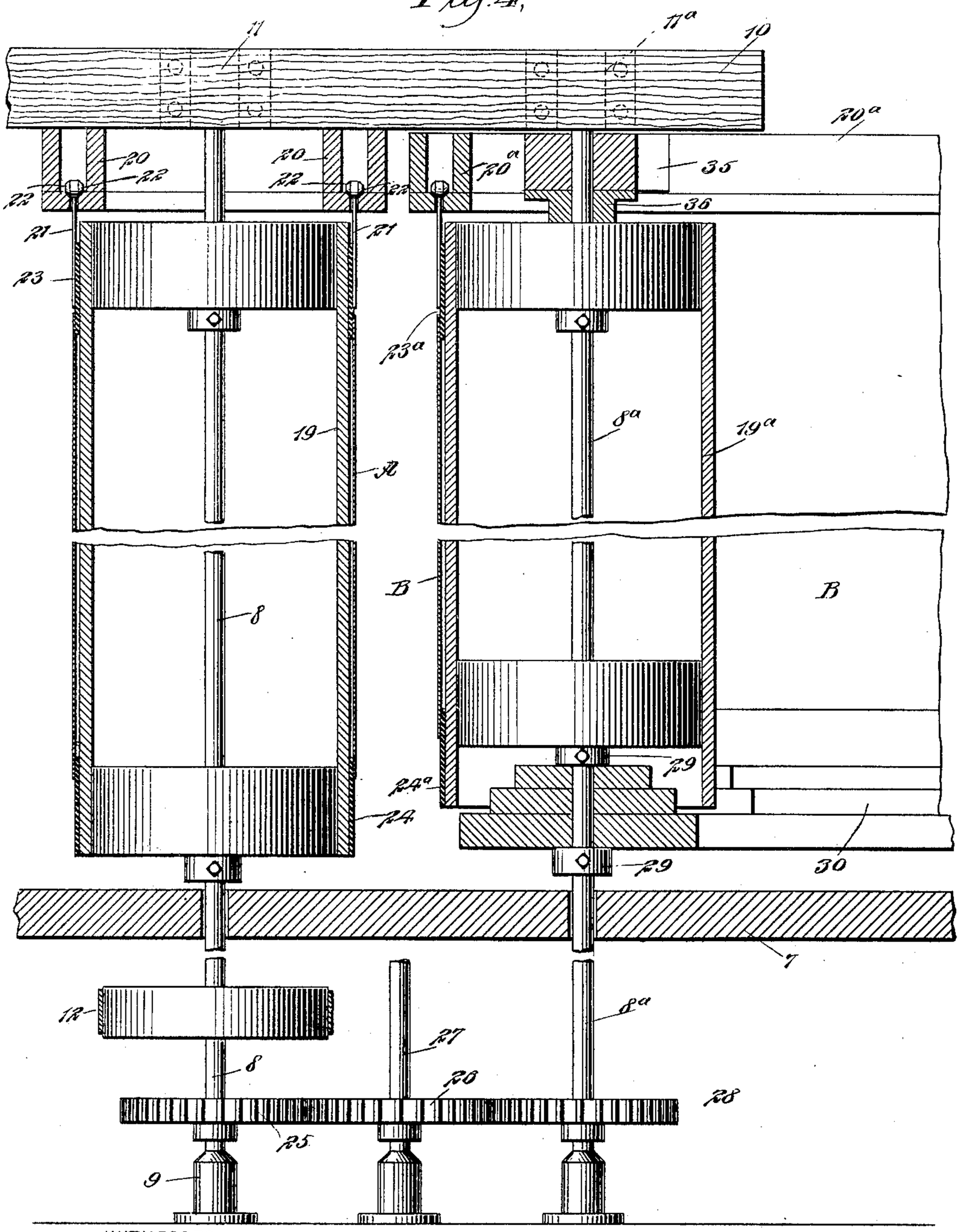

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Fig. 6.

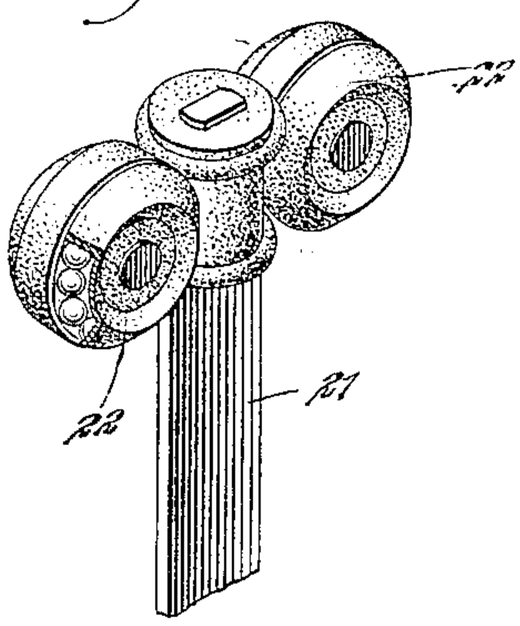
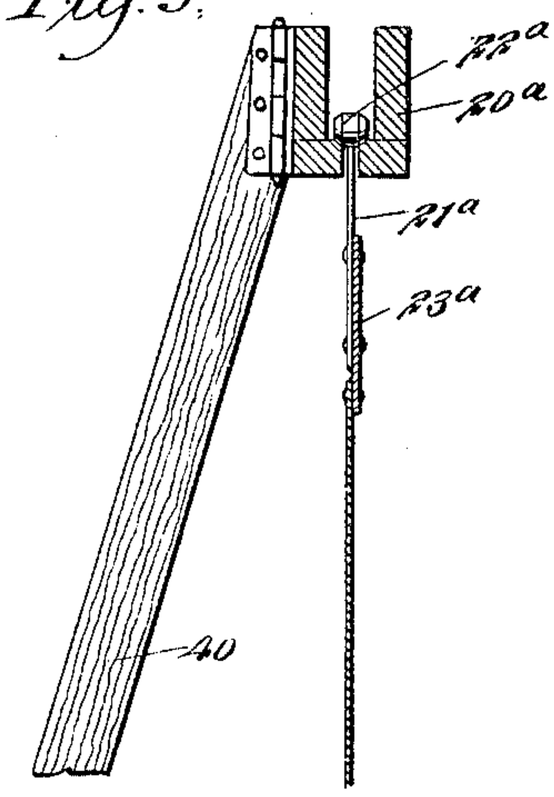
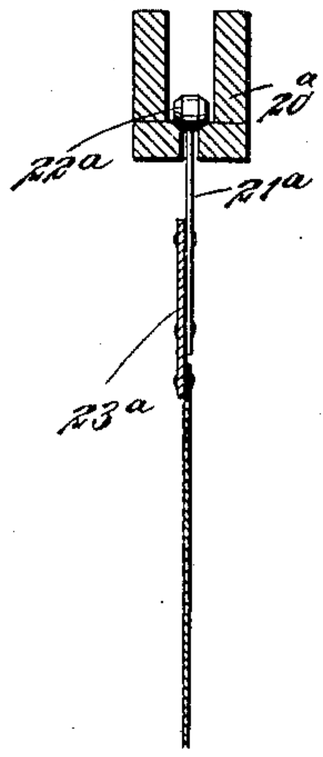
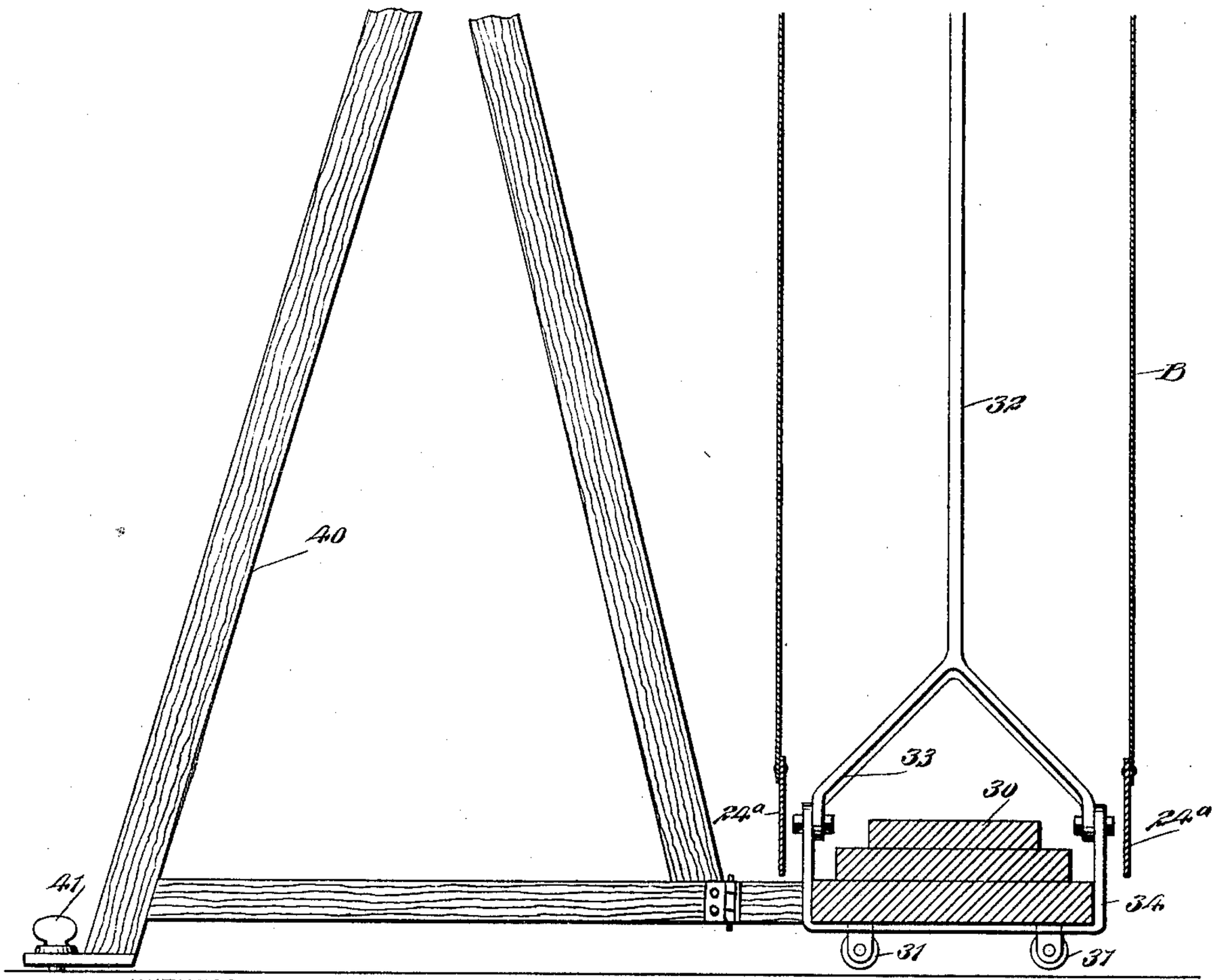


Fig. 5.







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UNITED STATES PATENT OFFICE.

CLAUDE L. HAGEN, OF NEW YORK, N. Y.

STAGE MACHINERY.

SPECIFICATION forming part of Letters Patent No. 656,969, dated August 28, 1900.

Application filed January 31, 1900. Serial No. 3,454. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE L. HAGEN, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented new and useful Improvements in Stage Machinery, of which the following is a full, clear, and exact description.

This invention relates to an apparatus for use in connection with the reproduction of horse, chariot, and other races on the stage; and it embodies means for mounting and driving one or more traveling aprons at the rear of the stage, so as to represent the background of the scene, which gives the audience the impression of changing, as in the illusion the eye of the spectator follows the racing horses.

This specification is the disclosure of one form of the invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the preferred form of the invention. Fig. 2 is an enlarged plan view of the driving-gear. Fig. 3 is an enlarged front view of the invention. Fig. 4 is an enlarged fragmentary section on the line 4 4 of Fig. 1. Fig. 5 is a similar view on the line 5 5 of Fig. 1, and Fig. 6 is a detail perspective view of one of the hangers which travel and support the apron or aprons in the proper position.

As here illustrated, I employ a main or middle endless apron A, flanked on each side by smaller endless aprons B. When in operation, the aprons B are adjusted to stand, as shown in Figs. 1 and 3, thus representing approximately one longitudinal half of the oval around which in the illusion produced the horses seem to run. On these aprons A and B are painted representations of the background of the scene.

I will now describe the means for carrying the main or middle apron A. Mounted at the rear of the stage, the floor of which is represented at 7 in Figs. 3 and 4, are two vertical shafts 8, which are stepped below the stage on bearings 9 and which extend up to outrigger structures 10, mounted rigidly a suitable height above the stage, in which structures 10 the upper ends of the shafts 8 are mounted in boxes 11, respectively fixed to the outrigger structures, as shown. The shafts 8 are driven revolubly in the same direction as indicated by the arrows in Fig. 2. I prefer to attain this end by belts 12, which pass around pulleys on the shafts 8 and extend toward each other to a point intermediate the shafts, where they are passed around a double-faced pulley 14, carried on a shaft 15, mounted below the floor of the stage and driven revolubly by a quarter-twist belt 16 from a horizontal counter-shaft 17, which may be driven by a motor 18 of any suitable sort.

As best illustrated in Fig. 4, the shafts 8 each carry rigidly a cylindrical drum 19. Over these drums 19 the apron A is passed, so that the drums 19, turning with the shafts 8, each in the same direction, will cause the apron to travel continuously, as indicated by the arrow in Fig. 1. Mounted rigidly on and extending between the outrigger structures 10 is an endless track 20, which is located just above the upper ends of the drums 19 and which has hangers 21, the wheels or rollers 22 of which are mounted to run on the tracks. These hangers 21 are attached to a belt 23, which runs around the upper portions of the drums 19 and to which the apron or cloth A is fastened. By these means the apron is suspended in the proper position, and it is caused to run true around the drums without crinkling or being subjected to other distortion. It should be understood that the hangers 21 travel freely on the tracks 20, so as to sustain the apron, as described. The lower edge of the apron is provided with a belt 24, similar to the belt 23, which serves to keep the bottom edge of the apron in the proper place, and these belts 23 and 24 also serve to receive the power applied by the drums 19 and to transmit it to the apron, which arrangement avoids straining the apron, as would be the case were the apron engaged directly with the drums, as shown. In Fig. 6 the hangers 21 are illustrated in detail. These hangers may be of any desired form, it being preferable to provide the form shown, in which the rollers 22 are shaped as frustums of cones and mounted by ball-bearings on the spindles which carry them.

I will now describe the means for carrying

and driving the aprons B, which are driven in the same direction as the apron A, as indicated by the arrows in Fig. 1, so that to the spectator the three aprons appear to be a continuous unbroken scene. Each apron B, as illustrated best in Figs. 4 and 5, has belts 23^a and 24^a fastened, respectively, to its upper and lower edges to engage cylindrical drums 19^a, similar to the drums 19, by which drums 19^a the aprons B are carried. The drums 19^a at the inner end of the aprons B—that is to say, at the ends adjacent to the apron A—are mounted, respectively, on shafts 8^a, similar to the shafts 8, the lower ends being stepped below the floor 7 of the stage and the upper ends being carried in boxes 11^a on the outrigger structures 10. These inner drums 19^a are driven in the same direction as the drums 19 from the respective shafts 8^a by means of a gear 25, attached to each shaft 8 and meshing, respectively, with gears 26, mounted on stub-shafts 27 and transmitting their movement to gears 28, fastened, respectively, to the shafts 8^a. The outer drums 19^a are driven outwardly, as will be understood, and serve simply to carry the outer portions of the aprons B.

The aprons B are mounted so that they may be extended to the operative position (shown by full lines in Fig. 1) or folded inward to the inoperative position, (indicated by dotted lines in such view,) it being understood that considering the place at which it is designed to use the invention the economy of space is of the greatest importance. I attain this end by providing each shaft 8^a with a swinging arm 30, located just above the floor 7 of the stage and respectively mounted to turn around the shafts 8^a, collars 29 being fastened to the shafts and located one above and the other below each arm 30, so as to hold the arms in place. The outer ends of the arms 30 are provided with rollers 31 on their under sides, which may travel on the floor of the stage. The arms 30 are capable of swinging freely on the shafts 8^a, so as to place the aprons B in active or inactive positions. The outer portions of the arms 30 are sustained at the proper elevation by means of rods 32, (see Fig. 5,) the lower portions of which are formed with forks 33, which are fastened to slings 34, embracing the arms, as shown. The upper ends of the rods 32 are mounted to swing on the upper portions of the respective outrigger structures 10. It will readily be seen that when the arms 30 are moved to adjust the aprons B the rods 32 will swing with them on the outrigger structures 10. On the outer ends of these arms 30 are respectively mounted the outer drums 19^a, the drums being carried by the arms and being out of engagement with the floor of the stage, as will be understood.

For carrying the upper edges of the aprons B and also for carrying the upper ends of the drums 19^a I provide for each apron an endless track 20^a, similar to the tracks 20, before described. The inner portion of each track 20^a is provided with a cross-bar 35, which bars are mounted loosely on the corresponding shafts 8^a and bear against bosses 36, carried on the respective inner drums 19^a. (See Fig. 4.) The outer portion of each track 20^a has a cross-brace 37 fastened rigidly thereto. The cross-braces 37 are respectively attached to supporting-rods 38, which extend inward to the upper portions of the respective outrigger structures 10 and are connected therewith so as to swing around the same, as are the rods 32, mentioned above. These rods 38 support the outer portions of the tracks 20^a. The cross-bars 37 are respectively provided with bearings 39, in which the journals at the upper ends of the outer drums 19^a are mounted, and the tracks 20^a are fitted with hangers 21^a, having rollers 22^a running on the tracks, the hangers 21^a being connected with the belts 23^a of the respective aprons to operate as the parts 20, 21, and 22 before described. It will thus be seen that I have provided frames for carrying the aprons B, which frames are capable of swinging toward and from the main belt A to properly dispose the aprons B. For steadying these frames which support the aprons B, I provide braces 40, which are hingedly mounted on the respective tracks 20^a, and the arms 30 are provided with suitable devices 41 for removably fastening them to the floor of the stage.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a support, of a vertically-revoluble drum, an arm mounted to swing around the axis of said drum, a rod attached to the outer portion of the arm and having connection with the support to swing on the same with the arm, whereby to suspend the arm, a drum carried by the outer portion of the arm, the two drums serving to carry an endless apron, an endless track mounted to swing around the axis of the first-named drum and situated at the upper end of the same, a rod connected with the outer portion of the endless track and with the support to swing on the support with the track, the upper portion of the second-named drum being mounted in the outer portion of the track, and hangers adapted to run on the track and to carry the outer edge of the endless apron.

2. In a stage appliance, a scenic panorama, comprising the combination of means serving to carry in vertical position a main or middle endless scenic apron, an additional means located at each end of the first-named means and serving each to carry in vertical position a side or flanking scenic apron, such additional means being capable of swinging toward and from the main apron to adjust the said side or flanking aprons, means for driving the main or middle apron, and gearing at each end of the main or middle apron respec-

tively for driving the side or flanking aprons uniformly and in the same direction of the movement of the main or middle apron.

3. In a stage appliance, a scenic panorama, comprising a vertically-disposed revolubly-driven drum, a support for the upper end thereof, a frame mounted to turn around the axis of the drum, a drum carried in and moving with the outer portion of the frame, a scenic apron carried by and moving over the drums, and supporting-rods mounted to swing on the said support for the upper end of the first-named drum and coincident with the axis thereof, the supporting-rods respectively extending to and being fastened at the upper and lower portions of the frames adjacent to the second-named drum.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLAUDE L. HAGEN.

Witnesses:

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JNO. M. RITTER.