2 Sheets—Sheet 1.

H. F. PARSONS.

STAGE-SCENERY AND OPERATING MECHANISM.

No. 193,457. Patented July 24, 1877.

Fig: 1.

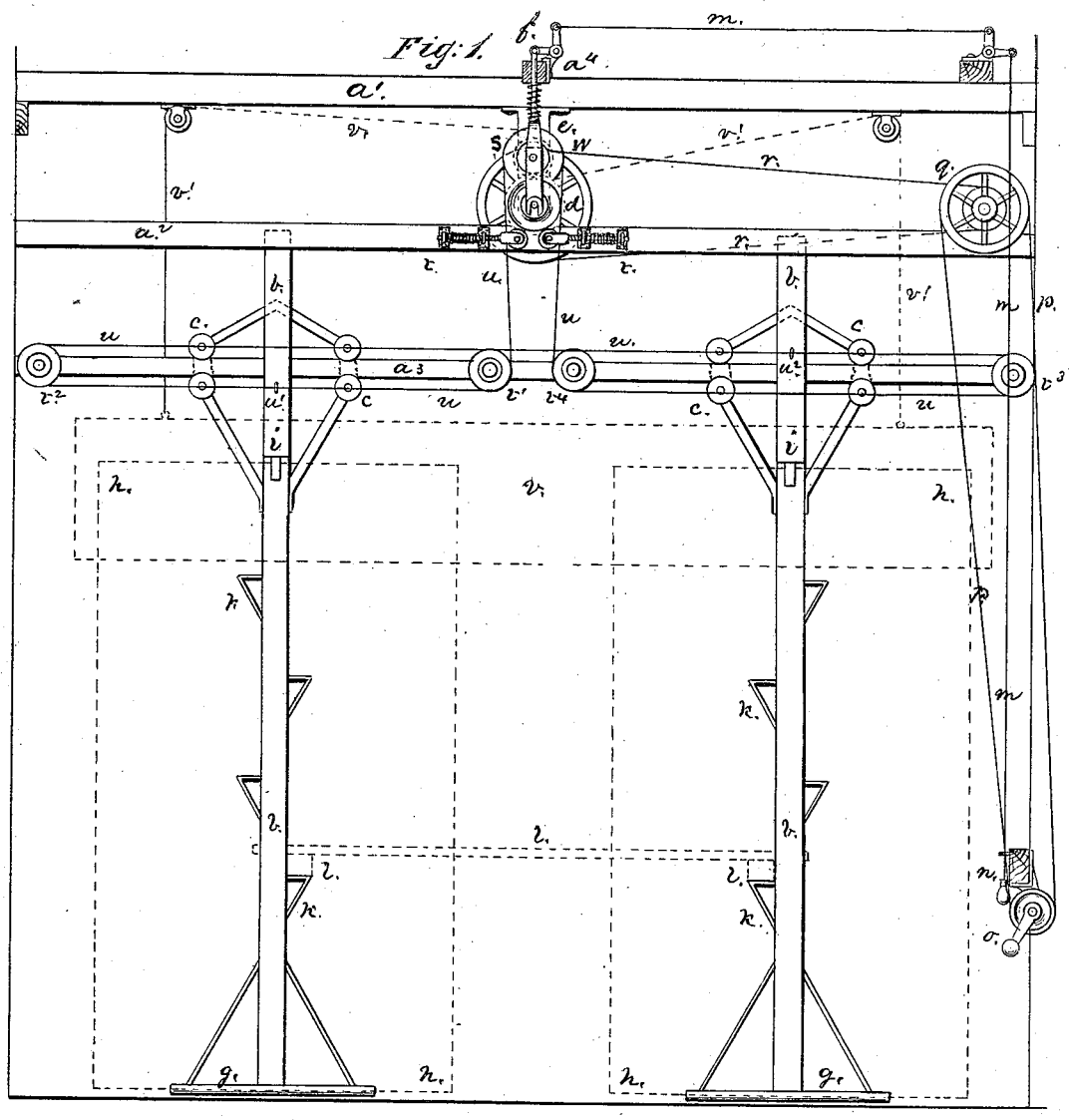
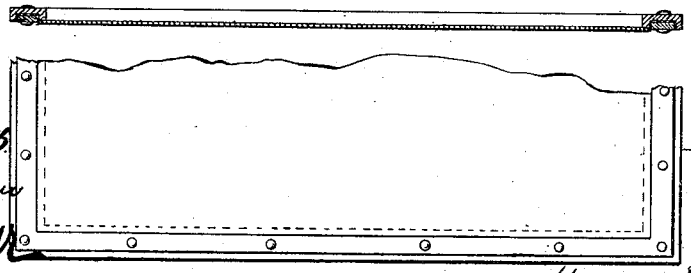


Fig: 4.



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2 Sheets—Sheet 2.

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STAGE-SCENERY AND OPERATING MECHANISM.

No. 193.457. Patented July 24, 1877.

Fig:3.

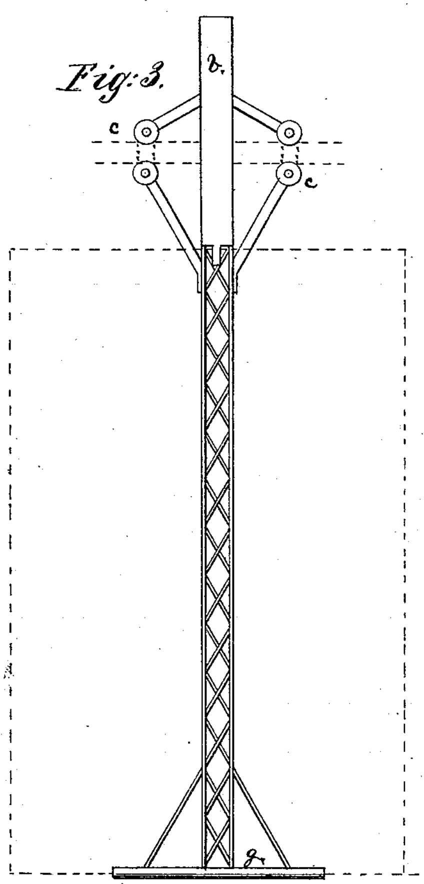
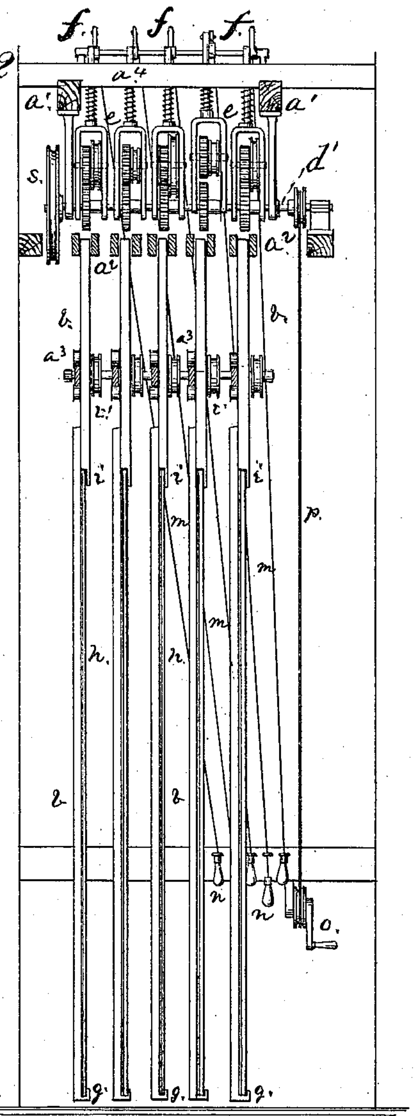


Fig:2



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UNITED STATES PATENT OFFICE.

HENRY F. PARSONS, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO DAVID R. MORSE, OF NEW YORK, N. Y.

IMPROVEMENT IN STAGE-SCENERY AND OPERATING MECHANISMS.

Specification forming part of Letters Patent No. **193,457**, dated July 24, 1877; application filed December 9, 1876.

To all whom it may concern:

Be it known that I, HENRY F. PARSONS, of the town of Los Angeles, county of Los Angeles, and State of California, have invented certain new and useful Improvements in Devices and Machinery for Constructing and Operating Theatrical Scenery, as is fully set forth and described in the following specification, reference being had to the accompanying drawings.

The objects of my invention are to improve the construction, multiply the adaptabilities, condense the space occupied, and simplify the operations in working theatrical machinery to dispense with a great part of the labor usually employed about such performances, which advantages I propose to effect by the following: First, improved methods in construction of detailed parts of scenic apparatus, and in combining and mounting the same, with advantages of simplicity and compactness, in greater facility for setting up and dismounting, greater range of effect and in adaptation, great saving in space when in use, as also when stored away, increasing the area of valuable room, always too circumscribed in the conditions implied; second, in operating all the changes in flats, wings, flies, bars, &c., simultaneously or separately, at will, from one and the same standpoint by one operator; third, in its adaptability to the present system usually employed with wooden frame-work, and to any theatrical scenery in actual use, but preferable if specially constructed and set up, the separate parts being of iron, and combined as described, thereby affording all the benefits set forth, together with great gain in wear and tear, and most particularly so when used with wire-gauze scenery described in my patent No. 151,671, June, 1874, for improvement in stage-scenery.

My improvements consist in constructing, sustaining, and actuating stage and other imitative scenery, to greatly improve the effect by a great saving in cost of construction, and in working the scenes.

In the drawing, a^1 shows a fixed beam across the stage, near the ceiling, and below this another cross-piece, a^2, (shown in Fig. 2,) to be double, with an intermediate space, to take, guide, and support the upper end of vertical, traversing, perpendicular bars b, that are suspended and kept in position upon and between double pairs of friction-rollers c, united by vertical straps, (shown by dotted lines,) and fixed near the ends of lateral arms or braces secured to the bar, and suspending it by the rollers upon a third and compound cross-piece, a^3, which constitutes a rail for working this laterally-shifting scenery right or left, as required.

d shows the actuating machinery in two parts, consisting of e—a flat, forked, shanked carrier, the shank passing loosely through, and being sustained and suspended from, a cross-timber, a^4, resting upon and traversing the timber a^1, where it is held by a screw-nut or other proper detaining contrivance. A bell-crank, f, secured to the timber by an iron lug, takes hold of the end of the shank, while below the timber is prolonged several inches, and enveloped by a helix-spring, bearing against the timber at one end and the forked arms at the lower end.

Between the forked plates, and rotating in a journal-bearing therein, are a grooved pulley and toothed wheel, secured together, and below this fixture is a second similar pulley and wheel united, but rotating upon a prolonged shaft bearing upon the transverse timbers a^2. By depressing the upright leg of the bell-crank f the carrier-fork e, with its attachment, will be raised, and, when released, will fall by its own gravity, aided by the spring, and forced into gear with the lower group of wheels. This is insured by guide-forks cut in the ends of the fork-plates and fitting over the lower shaft.

At the lower end of the bar b, and just clearing the stage-floor, a braced transverse carrier-plate or rest-ledge, g, is secured, the ends projecting a foot or more from each side of the bar, and provided with an outer ridge or border to form a recess to take the lower edge of the scene-frame h of the wing, which, resting against the bar, is locked and held at the top by the small recess-bracket i, and all so arranged that, in setting the scene, the upper edge of the wing-frame is lifted under the bracket i, and the lower edge rested in the recess of the rest g, and the work is done.

In like manner in its removal the wing is simply lifted from the bottom rest, then dropped from the bracket above, and it is free for removal.

k are lateral projections or brackets secured to each side or edge of the bars *b*, forming ledges for scaffolding or steps by which to ascend to the upper part of the scenery. In constructing scaffolding, bars or cross-pieces *l*, in dotted lines, are laid upon the ledges to form a base for the work. This scaffolding is made behind the scenes in use, so the suspended bars may be moved near to or remote from each other, and several series may be employed for the work. At Fig. 3 a wing-bar is shown, of iron lattice-work, in which case the bracket-steps are dispensed with, the scaffolding-bars being placed in the insterstices as supports.

I construct the frame-work for the scenery as light as possible, from wood or iron. If from wood, I make a rectangular-shaped groove around, near the outside edge of one side or both sides the frame, and provide strips of wood of corresponding size as wedges. The cloth is laid across the frame, drawn close, and secured by driving it into the grooves with the wedges or lock-strips, drawing it tightly and firmly. An iron tack-nail at intervals will provide against the dislodging of the wedges. By this plan a cloth may be readily removed, rolled up, and packed away in a close, safe, and transportable condition. I prefer, however, to make the frames of iron bars rolled to shape, as shown in Fig. 4, in which case they are about three-fourths of an inch wide and three-eighths thick, with grooves one-fourth of an inch wide and deep—employing wire-gauze, for the scene surface, and iron hold-fast strips, with occasional rivets or screws for holding wedges.

A cord, *m*, is secured to the upper leg of the bell-crank *f*, and trained by properly arranged and adjusted cranks and fixtures to an operating key or handle, *n*, with hold-fast catch and indicator-board on the stage, so that, a change being necessary, the attendant selects, by the indicator, the proper key among the variety before him, and loosing the cord lowers the wheel-train *e* into gear with the lower group; he then turns the winch *o*, and the scenes shift as desired.

By these means all the wings and flies are actuated. When the scene is set, all are supposed to be out of gear, so that when the crank *o* is turned the scenes remain at rest. Now, for action, the proper trains are connected by releasing the key-handle *n*, the operator *e* drops into its seat, and it is ready for the crank *o* to complete the operation by turning to the right or left, as required, which is effected through the following operations:

A pulley upon the shaft of the crank *o* takes an endless actuating-cord, *p*, also upon another grooved pulley, *q*, which has on its shaft a third grooved pulley, taking a second endless cord, *r*, that rotates a fourth grooved pulley, *s*, upon the end of the main or train shaft *d'*, supposed to rotate whenever the crank *o* is turned.

An endless cord, *u*, fastened to the upper grooved pulley *w* upon the train *e* by several turns thereon, and, (seen at *t*, Fig. 1,) passing under tension friction-rollers, shows this scene-shifting cord, which, passing downward and under a friction-roller, t^1, secured to the rail a^3, thence along to and over a friction-roller, t^2, where its direction is reversed, whence it passes across the entire length of the rail to another friction-roller, t^3, then under the rail to a fourth roller, t^4, thence up to the pulley *w* secured to it other end.

The left-hand suspended bar *b* is fastened to the lower strand of the cord *u* by a lug at u^1, and the right-hand bar similarly secured to its upper strand at u^2. It follows that when the crank *o* is turned the wings will simultaneously move from or toward each other, as desired. The flies *v* are suspended by cords v^1, that take pulleys upon the train *e*, and are raised and lowered by the same process.

It will be seen that each set of wings and of flies requires a distinct and separate train of actuating machinery, hence must extend the necessary depth of the stage therefor.

To facilitate working the machinery, the regulating-cords, key-handles, and stops are provided with separate and distinct numbers, corresponding with the scenes to be shifted.

What I claim, and desire to secure by Letters Patent for my improvement, is—

1. The suspended shifting-bar *b*, combined with its carrying-rest *g*, clamp *i*, braced extension friction and confining rollers *c*, and side brackets *k*, when made in the manner and for the purpose described.

2. The gearing machinery, consisting of the forks, with their grooved and toothed wheels, combined with actuating-cord, for changing the scenes, as described.

3. The described arrangement of the cord *u* for operating and shifting the scenes simultaneously, as shown and set forth.

4. The method of attaching woven-wire material to the frames of scenery by means of grooves and strips, as described.

5. The supports for the scaffolding employed in threatrical scenery, consisting essentially of fixed brackets applied to the suspended shifting-bars, as described.

6. The cord *m*, extending from the elevated mechanism, for moving the scenery to the side of the stage, and down to the frame supporting the operating-crank, whereby a single attendant can govern, control, and operate said mechanism at will, substantially as set forth.

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