



A.D. 1863, 5th FEBRUARY. N° 326.

S P E C I F I C A T I O N

OF

HENRY DIRCKS & JOHN HENRY PEPPER.

APPARATUS FOR EXHIBITING DRAMATIC
AND OTHER PERFORMANCES.

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Apparatus for Exhibiting Dramatic and other Performances.

LETTERS PATENT to Henry Dircks, of Blackheath, in the County of Kent, Civil Engineer, and John Henry Pepper, of No. 309, Regent Street, in the County of Middlesex, Professor of Chemistry, and Honorary Director of the Polytechnic Institution, for the Invention of "**IMPROVEMENTS IN APPARATUS TO BE USED IN THE EXHIBITION OF DRAMATIC AND OTHER LIKE PERFORMANCES.**"

Sealed the 25th September 1863, in pursuance of an Order of the Lord Chancellor, and dated the 5th February 1863.

PROVISIONAL SPECIFICATION left by the said Henry Dircks and John Henry Pepper at the Office of the Commissioners of Patents, with their Petition, on the 5th February 1863.

We, HENRY DIRCKS, of Blackheath, in the County of Kent, Civil Engineer, and JOHN HENRY PEPPER, of No. 309, Regent Street, in the County of Middlesex, Professor of Chemistry, and Honorary Director of the Polytechnic Institution, do hereby declare the nature of the Invention for "**IMPROVEMENTS IN APPARATUS TO BE USED IN THE EXHIBITION OF DRAMATIC AND OTHER LIKE PERFORMANCES,**" to be as follows:—

The object of our said Invention is by a peculiar arrangement of apparatus to associate on the same stage a phantom or phantoms with a living actor or

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actors, so that the two may act in concert, but which is only an optical illusion as respects the one or more phantoms so introduced.

The arrangement of the theatre requires in addition to the ordinary stage a second stage at a lower level than the ordinary one, hidden from the audience as far as direct vision is concerned; this hidden stage is to be strongly illuminated by artificial light, and is capable of being rendered dark instantaneously whilst the ordinary stage and the theatre remains illuminated by ordinary lighting. A large glass screen is placed on the ordinary stage and in front of the hidden one.

The spectators will not observe the glass screen but will see the actors on the ordinary stage through it as if it were not there; nevertheless the glass will serve to reflect to them an image of the actors on the hidden stage when these are illuminated, but this image will be made immediately to disappear by darkening the hidden stage. The glass screen is set in a frame so that it can readily be moved to the place required, and it is to be set at an inclination to enable the spectators, whether in the pit, boxes, or gallery, to see the reflected image.

The glass is adjustable and it is readily adjusted to the proper inclination, by having a person in the pit and another in the gallery to inform the party who is adjusting the glass when they see the image correctly.

SPECIFICATION filed in pursuance of the conditions of the Letters Patent, and of an Order of the Lord Chancellor, by the said Henry Dircks and John Henry Pepper in the Great Seal Patent Office on the 31st October 1863.

TO ALL TO WHOM THESE PRESENTS SHALL COME, we, HENRY DIRCKS, of Blackheath, in the County of Kent, Civil Engineer, and JOHN HENRY PEPPER, of No. 309, Regent Street, in the County of Middlesex, Professor of Chemistry, and Honorary Director of the Polytechnic Institution, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Fifth day of February, in the year of our Lord One thousand eight hundred and sixty-three, in the twenty-sixth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto us, the said Henry Dircks and John Henry Pepper, Her special licence that we, the said Henry Dircks and John Henry Pepper, our executors, administrators, and assigns, or such others as we, the said Henry Dircks and John Henry Pepper, our executors, administrators, and assigns, should at any time agree with,

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and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN APPARATUS TO BE
5 USED IN THE EXHIBITION OF DRAMATIC AND OTHER LIKE PERFORMANCES," upon the condition (amongst others) that we, the said Henry Dircks and John Henry Pepper, our executors or administrators, by an instrument in writing under our or their hands and seals, or under the hand and seal of one of us or them, should particularly describe and ascertain the nature of the said Invention,
10 and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office on or before the Third day of November, in the year of our Lord One thousand eight hundred and sixty-three.

NOW KNOW YE, that I, the said John Henry Pepper, on behalf of myself and the said Henry Dircks, do hereby declare the nature of the said Invention,
15 and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, that is to say:—

The nature and object of our said Invention is by a peculiar arrangement of apparatus to associate on the same stage a phantom or phantoms with a living actor or actors, so that the two may act in concert, but which is only an
20 optical illusion as respects the one or more phantoms so introduced.

The arrangement of the theatre requires in addition to the ordinary stage a second stage at a lower level than the ordinary one, hidden from the audience as far as direct vision is concerned; this hidden stage is to be strongly illuminated by artificial light, and is capable of being rendered dark instan-
25 taneously whilst the ordinary stage and the theatre remain illuminated by ordinary lighting. A large glass screen is placed on the ordinary stage and in front of the hidden one. The spectators will not observe the glass screen, but will see the actors on the ordinary stage through it, as if it were not there; nevertheless the glass will serve to reflect to them an image of the actors on
30 the hidden stage when these are illuminated, but this image will be made immediately to disappear by darkening the hidden stage. The glass screen is set in a frame so that it can readily be moved to the place required, and it is to be set at an inclination to enable the spectators whether in the pit, boxes, or gallery, to see the reflected image. The glass is adjustable and it is readily
35 adjusted to the proper inclination by having a person in the pit, and another in the gallery, to inform the party who is adjusting the glass when they see the image correctly.

Having thus stated the nature of our Invention, we will proceed more fully to describe the manner of performing the same.

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DESCRIPTION OF THE DRAWINGS.

Figure 1 of the annexed Drawings illustrates the arrangement of a theatre for carrying our Invention into effect; the Figure shows a section taken through the stage, the orchestra, the pit, and gallery.

a, a, is an opening which is formed in the ordinary stage. In the front part of the stage, but at a lower level, is the hidden stage *b*. The opening *a* is capable of being closed at the top by trap doors, a plan of which is shewn at Figure 2. When the trap doors are closed, actors on the ordinary or visible stage can pass freely to and fro above the lower or hidden stage. The ordinary stage and trap doors are covered with green baize or other dark material, so that when the trap doors are opened, the audience, even those in the gallery, will not readily be able to perceive the opening. The actors or objects corresponding with the phantom images, which it is desired to represent to the audience, are on the lower or hidden stage *b*, and are strongly illuminated by the lime light or the electric light, or other powerful illuminating means may be employed. This light must accompany the actor in any movement he has to make. The hidden stage *b*, and the lanterns *c*, may be mounted on a carriage on rails (a plan of which is shewn at Figure 3), so that when it is necessary for the phantom actor or object on the lower stage to be moved, the lanterns may be caused to move also, or the lanterns may remain stationary whilst the actor moves, provided the whole space through which he moves is sufficiently illuminated. The lanterns are to be provided with means for instantaneously extinguishing or masking the light, and for reproducing it so that the phantom may be made to disappear and reappear at pleasure, whilst the audience and the ordinary stage will be more or less lighted in the ordinary manner according to the effects desired to be obtained. For this purpose a board *b¹* is employed, which is capable of being raised into the position shewn by dotted lines so as entirely to cut off the light from the hidden stage when desired, or an ordinary opaque shade attached to each lantern may be used for the purpose, or when using the lime light the desired effects are caused by gradually or instantaneously (as the case may require) cutting off the supply of gases, and the phantom image may by any of these means be caused gradually or instantaneously to fade away. When the trap doors over the hidden stage are open, the part *d* thereof assists in hiding the lanterns and the opening from the audience. The part *e* is raised into the position shown in the Drawing and acts (together with the part *d*) to screen the lanterns from the audience, and also to insure that any actor or object on the hidden stage shall not accidentally appear above the level of the visible stage.

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The phantom actor, when standing on the stage *b*, leans against the screen *k*, which is inclined so as to be parallel with the glass screen, and is covered with black velvet or other dark material, as is also the stage *b*, in order that no image of either the screen *k* or the stage *b* may be seen in the reflection. *f* (the glass screen) is a large sheet of plate glass on the ordinary stage of sufficient size to reflect the full length of the actors or objects on the hidden stage to the audience in the pit, boxes, and galleries of the theatre. The hidden stage is between the glass and the audience. The glass may be mounted in a swing frame so that it may be adjusted to the angle required, or it may readily be done by screws or ropes and pulleys, or otherwise. The glass screen is to be set at such an inclination as to bring the reflected image to the level of the visible or ordinary stage. This will enable the spectators, whether in pit, boxes, or gallery, to see the reflected image without any obstruction to the view above the foot lights, and it will be visible from all parts of the house except those extreme positions which cannot command a view through the glass of that part of the stage where the image is reflected.

The proper angle of inclination of the glass is ascertained experimentally by having persons in the different parts of the house to say when the image is shewn to them correctly. The scenery is so disposed as to conceal the frame of the glass, and we prefer that the glass should be able to descend into an opening or box *g* beneath the stage, in which case we counterbalance the glass and frame so that they may easily be raised into the position desired by means of a rope *h*, by which, aided by the bolts *i*, the glass is supported in the required position. The glass may either be adjusted when screened from the audience, and remain in position during the scene or (the proper angle of inclination having been previously ascertained by experiment) the glass may be raised on to the ordinary or visible stage, and placed in position whilst the scene is before the eyes of the the audience under a subdued light without the movement being observed, for which latter purpose the top bar of the frame of the glass should be made very light or be omitted altogether. This arrangement admits of an actor on the visible stage passing across the space, which the glass is to occupy, and this he can do just before the appearance of the phantom and then immediately the glass is run up, the trap doors are opened the actor or image on the hidden stage is illuminated and the phantom appears. This arrangement will render it less likely that the audience should imagine that there is anything interposed between them and the actors than if the glass plate remained permanently in position during the scene. The hidden or lower stage may be provided with a well or hole up which an actor can rise ;

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he will then appear as a spectre rising out of the visible stage. The lanterns may be provided with colored glasses in order to heighten the effect. As the actors on the visible stage do not themselves see the spectral images, marks should be placed on the stage or other indications made in order that they may know the position which the spectres appearing to the audience are to occupy. In order to appear upright upon the visible stage the actor or object on the hidden stage should be inclined so as to be as nearly as practicable parallel with the surface of the glass screen. In effecting this assistance is afforded by the screen *k* of the hidden stage. Several sheets of glass may be similarly employed at the same time if one is not of sufficient width to cover the different parts of the stage, at which it is desired that the spectre should appear, the interval or junction being concealed by the introduction of a tree or column or some other piece of scenery.

Having thus described the nature of our Invention and the manner of performing the same, we would have it understood that we make no claim to any of the parts separately, but what we claim is the combined arrangement as herein described of a glass inclined forwards towards the audience, and two stages, one the ordinary visible stage, and the other a hidden stage at a lower level than the ordinary visible stage and illuminated with a much stronger light than either the ordinary visible stage or the body of the house, which light is capable of being instantaneously, or, if so required, gradually withdrawn and restored.

In witness whereof, I, the said John Henry Pepper, have hereunto set my hand and seal, this Thirty-first day of October, in the year of our Lord One thousand eight hundred and sixty-three.

J. H. PEPPER. (L.S.)

LONDON :

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