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2,862,331

APPARATUS FOR OPERATING MARIONETTES AND THE LIKE

Filed May 15, 1954

3 Sheets-Sheet 1

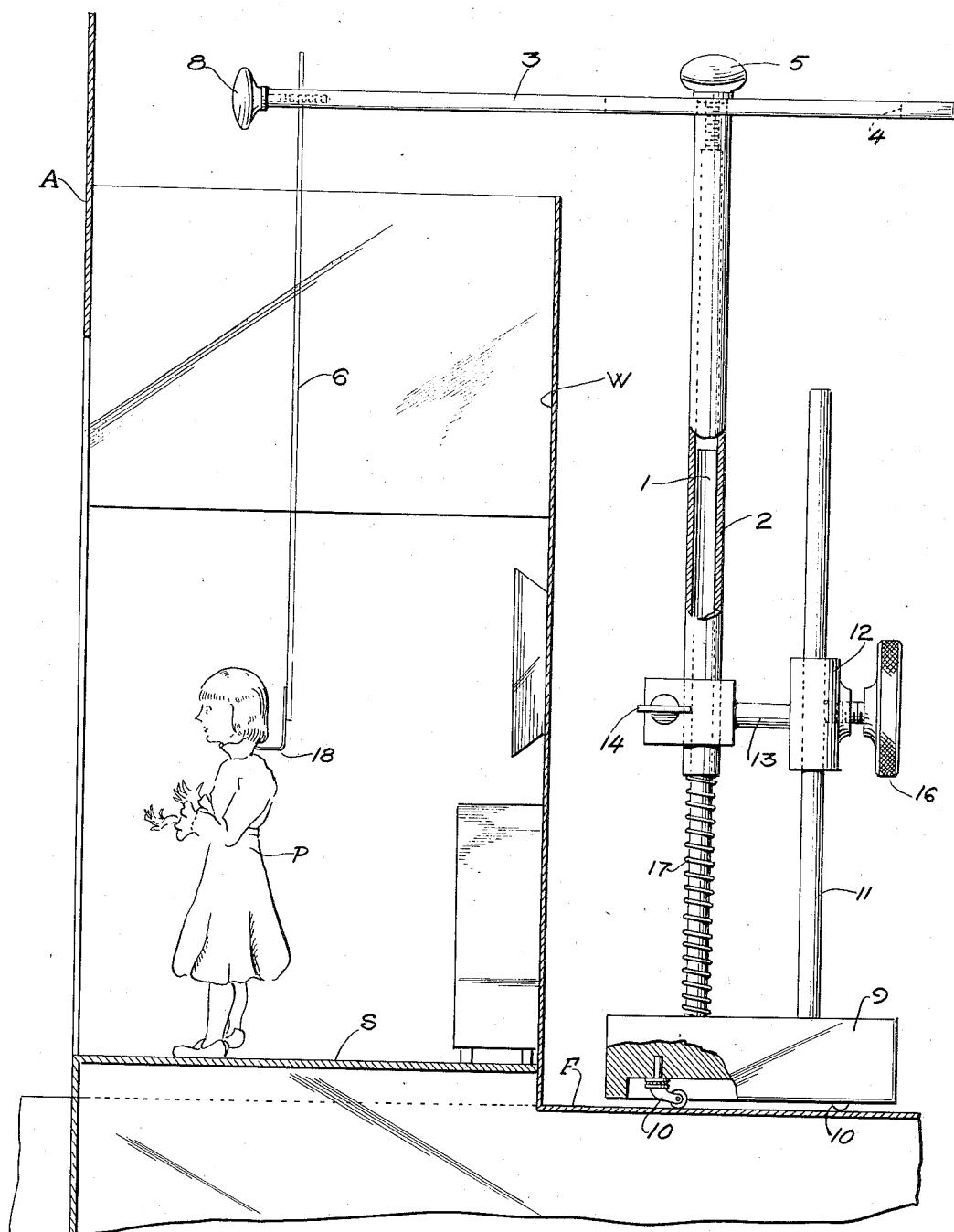


Fig. 1

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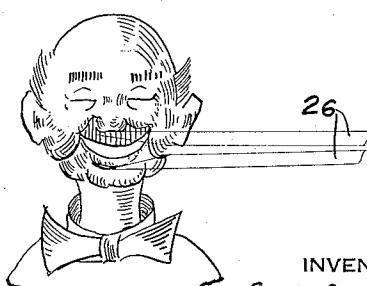
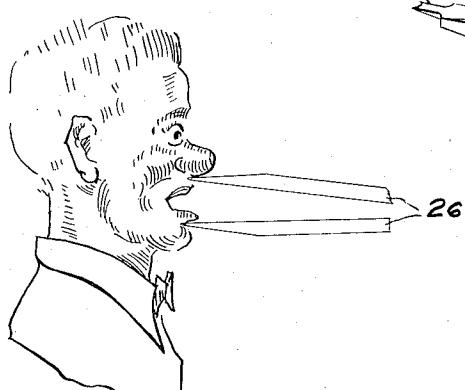
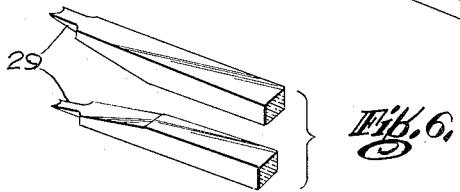
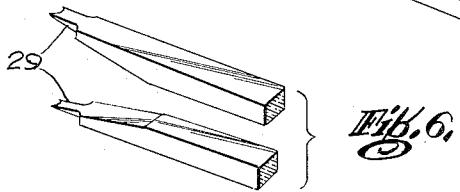
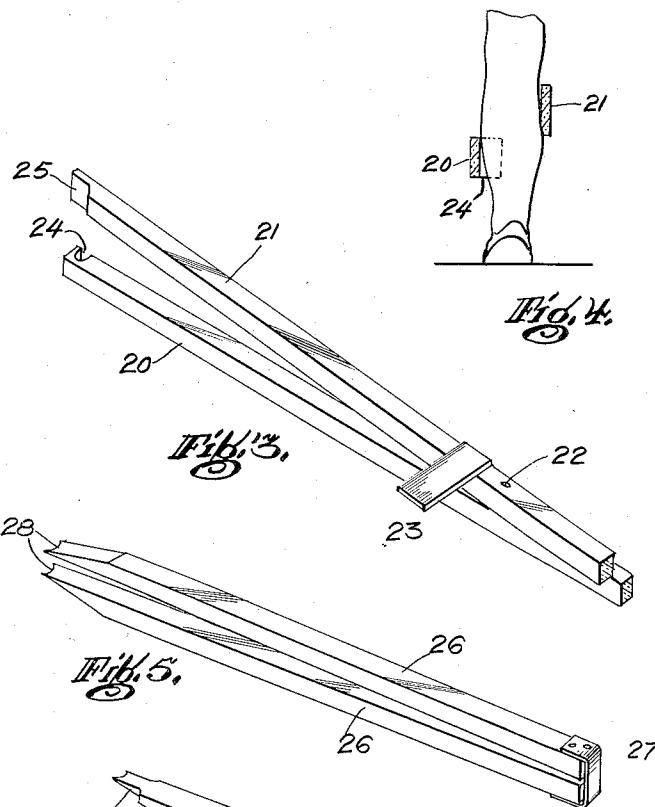
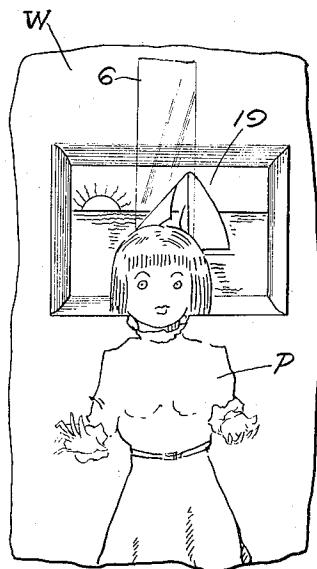
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APPARATUS FOR OPERATING MARIONETTES AND THE LIKE

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3 Sheets-Sheet 2



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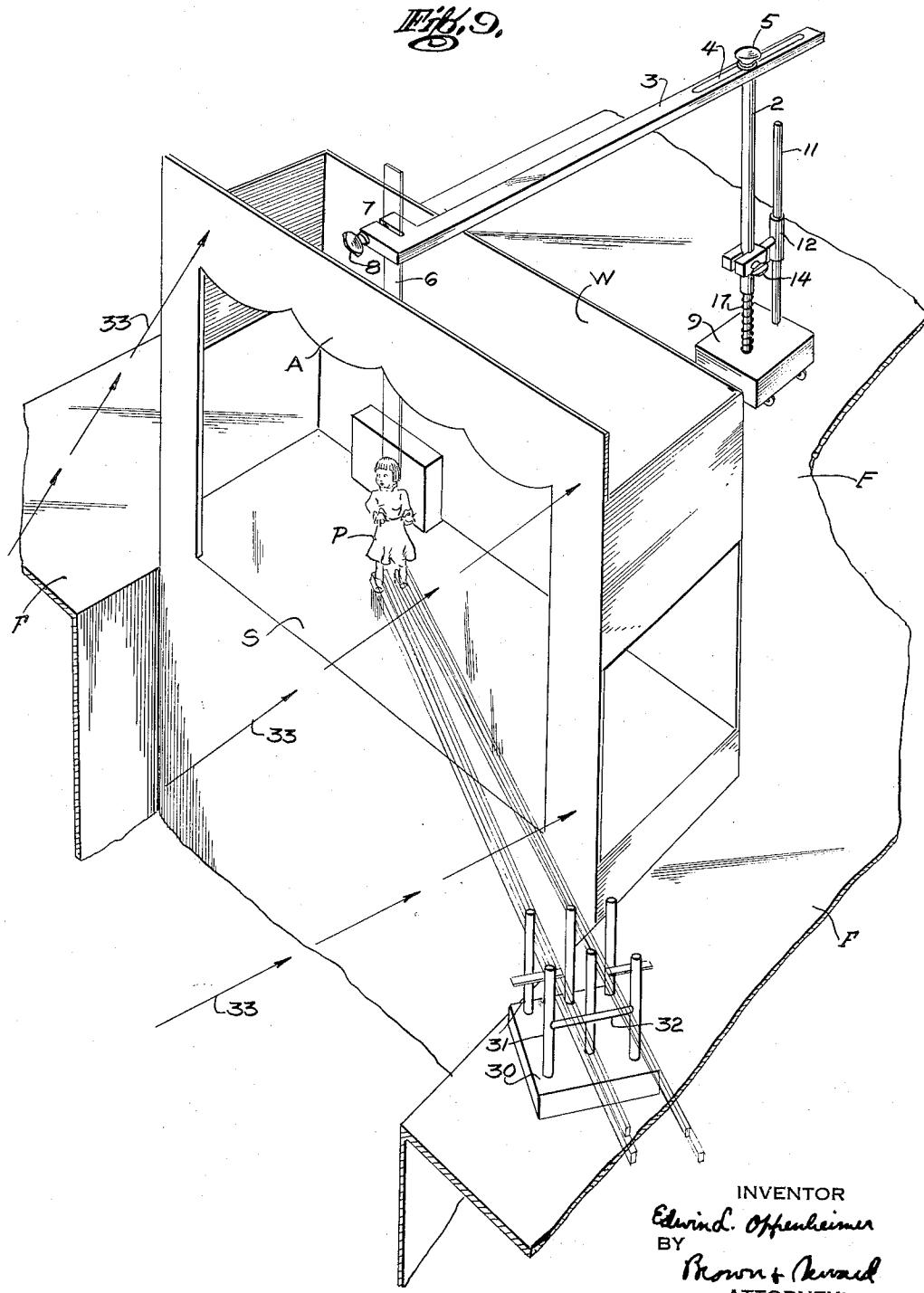
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APPARATUS FOR OPERATING MARIONETTES AND THE LIKE

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3 Sheets-Sheet 3



United States Patent Office

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2,862,331

APPARATUS FOR OPERATING MARIONETTES AND THE LIKE

Edwin L. Oppenheimer, New York, N. Y.

Application March 15, 1954, Serial No. 416,021

5 Claims. (Cl. 46—126)

This invention relates to an apparatus for operating marionettes and the like, including particularly the animation of puppets and marionettes in connection with the preparation or presentation of motion pictures and for "live" television and stage presentations.

An object of the invention is to replace known supporting and manipulating devices, which are more or less clearly visible to observers, by devices capable of performing substantially the same functions and which are invisible, or nearly so.

Another object is to provide a greatly simplified system of puppet animation giving better, more accurate, more lifelike and more versatile results with greater ease and at less cost, as compared to systems heretofore known.

A further object is to provide certain improvements in the form, construction, arrangement and materials of the apparatus, whereby the above-named and other objects may effectively be attained.

A practical embodiment of the apparatus is shown in the accompanying drawings, in which:

Fig. 1 represents a side elevation, partly in vertical section, of the puppet-supporting apparatus in operative association with a stage and a puppet;

Fig. 2 represents a detail front elevation showing parts of the puppet, support and scenery, as viewed from the left of Fig. 1;

Fig. 3 is a perspective view of one form of manipulating tongs;

Fig. 4 is a detail vertical section showing the tongs of Fig. 3 in use;

Fig. 5 is a perspective view of an alternative form of manipulating tongs;

Fig. 6 is a detail view showing the ends of another form of tongs;

Fig. 7 represents a side elevation of the head of a puppet, being operated on by means of the tongs of Fig. 5;

Fig. 8 represents a full face view of the head of a puppet, being operated on by means of the tongs of Fig. 6; and

Fig. 9 represents a perspective view of a stage, puppet support, and puppet manipulating devices, all in suitable position for use.

Referring to the drawings, particularly Figs. 1 and 9, a puppet P is shown on the stage S of a puppet "theater" having a proscenium arch A, back wall W and off-stage floor F.

The puppet supporting mechanism comprises a vertical post 1, tubular sleeve 2 slidable and rotatable on said post, a horizontal "crane arm" 3 which may be slotted as shown at 4 and secured to the top of sleeve 2 by means of a set-screw 5, and a strip 6 having its upper end clamped in the slit 7 (near one end of arm 3) by means of a set-screw 8. The post 1 is preferably mounted on a dolly 9 which may, if desired, be provided with casters 10. Also mounted on the dolly is vertical guide post 11, adapted to receive the sleeve

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portion 12 of a guide link 13, the other end of which is split and arranged to grip releasably the lower part of sleeve 2; such gripping and releasing is controlled by adjustment of the thumb-screw 14, and the vertical position of the guide link 13 on the post 11 can be fixed by means of the screw 16 threaded in the sleeve portion 12. When the screw 16 is released, the weight of the sleeve 2, arm 3, link 13, and all elements carried thereby, is approximately balanced by the force of a spring 17 surrounding the post 1 and resting between the top of the dolly 9 and bottom of sleeve 2.

It is important to note that the strip 6 is made of a transparent synthetic plastic material, having considerable stiffness and preferably being so shaped and treated as to be practically invisible from the direction of the viewer. That is, reflection and refraction should be minimized in any way which may be appropriate for the material used. The strip 6 has secured to its lower end a hook 18 which engages the body of the puppet P, preferably inside of the neck, so that at least the head is freely adjustable. So long as the puppet is faced generally in the direction of the viewer, the hook 18 will remain concealed (Fig. 2) while the strip 6, being transparent, approaches a state of invisibility so that objects 19 behind it can be readily seen.

A puppet supported in standing position can be moved about the stage either by moving the dolly 9, or by loosening the screw 5 so that the arm 3 can be moved relative to the dolly, or by loosening the screw 14 so that the sleeve 2 can be rotated around the post 1. Vertical motion of the puppet (standing to sitting, etc.) is most simply effected by loosening the screw 16 and adjusting the height of the whole puppet-supporting assembly, or the puppet and strip 6 can alone be moved 35 by adjustment of the screw 8.

When this apparatus is being used, for instance, in making a motion picture film of the "animated cartoon" type (i. e., a series of progressively varying "stills" as distinguished from non-stop photography of a "live," continuous performance), the camera is stopped after each frame and the puppet is moved as desired, corresponding to the motion which would be expected in the time interval between frames at projection speed. Thus for a projection of 16 frames per second, the adjustment of the puppet between exposures is in the direction and to the extent corresponding to $\frac{1}{16}$ second of motion.

In Fig. 3 is shown a pair of tongs formed of straight rods 20, 21, pivoted together at 22 and provided with a finger grip 23. The rod 20 is recessed near its outer end as shown at 24 to constitute a hook, while the outer end of rod 21 is shown as being beveled at 25 opposite the recess 24. With such tongs a skilled operator can grasp a leg of the puppet, as shown in Fig. 4, and can move the leg through any desired small or large adjustment to a new position, such that a series of adjustments, photographed slowly and projected at normal speed, may show the puppet walking or dancing, for instance. The same tongs of Fig. 3 can as well be used for moving the puppet's arms or body.

When it is desired to change the facial expression of a puppet, such as one made of a deformable soft plastic material, tongs of the type shown in Fig. 5 may be used. Such tongs comprise a pair of rods 26 hinged together at their back ends by means of a spring 27, the resiliency of which tends to separate the ends 28. Said "operating" ends 28 are beveled to a relatively sharp edge, which may desirably be formed with a slight reverse curve as shown. An alternative shape for the ends is shown in Fig. 6, where they are not only beveled and reverse curved, but also narrowed as indicated at 29. The tongs of Fig. 5 are shown as being beveled from above and below toward the median plane of the closed tongs, whereas the tongs

of Fig. 6 are beveled from such a median plane outward toward the upper and lower surfaces of the tongs. The form of tongs according to Fig. 5 is suitable, for instance, for opening or closing the lips of a puppet's face (Fig. 7) while the tongs of Fig. 6 may be used to move a puppet's jaw in relation to its nose (Fig. 8). By the proper manipulation of such implements, pliable puppets can be given an infinite variety of facial expressions and body attitudes.

In Fig. 9 is shown a general perspective view of a stage and its surroundings. In addition to the parts previously described, there is illustrated also a tong rack comprising a flat base block 30 on which are mounted guide posts 31, two of which are connected by a horizontal tong rest 32. Two pairs of leg-moving tongs (Fig. 3) are shown in use, the rack serving to steady the operator's hand and to support and guide the tongs. Although this operation is shown as being performed through the front opening of the stage, it is evident that the tongs can be introduced equally well from the wings of the stage and that they will be so introduced, in some instances.

For simplicity only a single puppet is shown "on stage" in Fig. 9, but additional figures can be added and their movements about the stage can be made almost independent of each other merely by adjusting the supporting assembly of one figure to a level such that it can clear, over or under, the support assembly of each other figure. The off-stage floor F is of such an extent that there is ample room for all necessary supports, as well as for a plurality of tong racks if needed.

It is assumed that the performance on the stage of Fig. 9 is being "observed" by a motion picture or television camera having a rectangular field of view defined by the lines of arrows 33. If a "live" show is being produced on either medium, it is obviously necessary that the tongs or other manipulating instruments be substantially as invisible as the supporting strip 6, described above. To this end it is provided that such devices should be made of transparent synthetic plastic material of a character such that they will be as inconspicuous as possible. Against a suitable background, clear or even slightly colored transparent plastic tongs can be so nearly invisible that their use will not be impressed upon the viewer's consciousness. Additionally, where the action is recorded on film, it is a simple matter to retouch any parts of the film where the tongs or the like are too much in evidence. In the case of television, such small details are almost completely lost in the course of pickup, transmission, reception and reproduction.

In the frame-by-frame or "animated cartoon" type of filming, referred to briefly above, the invisibility of the manipulating instruments is not so important, since they can be removed from the scene before the next frame is exposed; however, much time can be saved and greater accuracy achieved by using transparent tongs (particularly for leg moving) which can remain constantly and invisibly in position on the member to be moved.

Although the puppet is shown herein as supported from above, it is evident that a transparent plastic connecting means similar to that shown and described could, under certain circumstances, be arranged to project more or less horizontally from a suitable off-stage support to a puppet thus supported within the field of view. Such an arrangement might be desirable, for instance, where the center of the stage is used by a relatively active figure supported from above, and it is desired to introduce another figure or figures whose activity does not require motion outside of an area near the wings.

Since puppets and the like are operated solely for the purpose of being seen, either directly or following recordation of some sort (as by a motion picture camera and film, or by electronic means of the television type) the existence of a viewer or observer is assumed, and the field of view of the observer may be either the opening defined, for instance, by the proscenium arch of a puppet theater or the area encompassed by the lens of a motion picture or television camera. The word "puppet" is used herein to include marionettes and other figures of that general type, designed to represent living creatures either known or imaginary.

It will be understood that various changes may be made in the details of the apparatus shown and described without departing from the spirit and scope of the invention.

What I claim is:

1. Apparatus for the operation of puppets comprising, a horizontally movable base, at least one vertical post thereon, a horizontal crane arm supported on said post and vertically adjustable with respect to said base, said base and post and arm being adapted to be located out of the field of view of an observer, and an inherently substantially rigid transparent strip of synthetic plastic material adjustably connected to said arm, extending into said field of view and providing support for a puppet by connecting the puppet to said support.

2. Apparatus according to claim 1 which includes means separate from said post for fixing the said arm at a desired vertical level and means associated with said post for approximately counterbalancing said arm and any load carried thereby when said fixing means is released.

3. A puppet supporting device comprising, a horizontally movable dolly, a pair of spaced vertical posts extending upward from said dolly, a tube vertically slidable on one of said posts, a guide link vertically adjustable on the other of said posts and releasably engaging said tube, a horizontal arm secured to the top of said tube and having one end projecting over an area in which a puppet is to be displayed, a clamp adjacent said end, and a connecting means of substantially rigid transparent plastic material held in said clamp and adapted to be secured to a puppet in order to support said puppet.

4. In an apparatus for the operation of a puppet in the field of view of an observer, operating means in the form of tongs having ends shaped for engagement with parts of a puppet extending from a point outside said field of view to a point closely adjacent the puppet, at least the visible portion of said means being of an inherently substantially rigid transparent plastic material and said means being adapted for manipulation to move a part of a puppet relative to another part thereof.

5. An apparatus according to claim 4 which includes, in the combination with said operating means, a tong guiding and supporting rack located outside the field of view.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,862,331

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Edwin L. Oppenheimer

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

In the heading to the drawings, Sheets 1, 2 and 3, line 3, for "Filed May 15, 1954" read -- Filed March 15, 1954 --.

Signed and sealed this 14th day of April 1959.

(SEAL)

Attest:

KARL H. AXLINE

Attesting Officer

ROBERT C. WATSON
Commissioner of Patents

UNITED STATES PATENT OFFICE
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