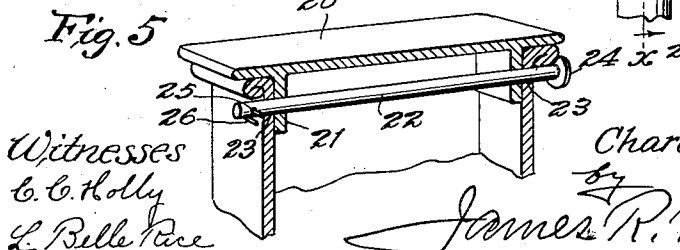
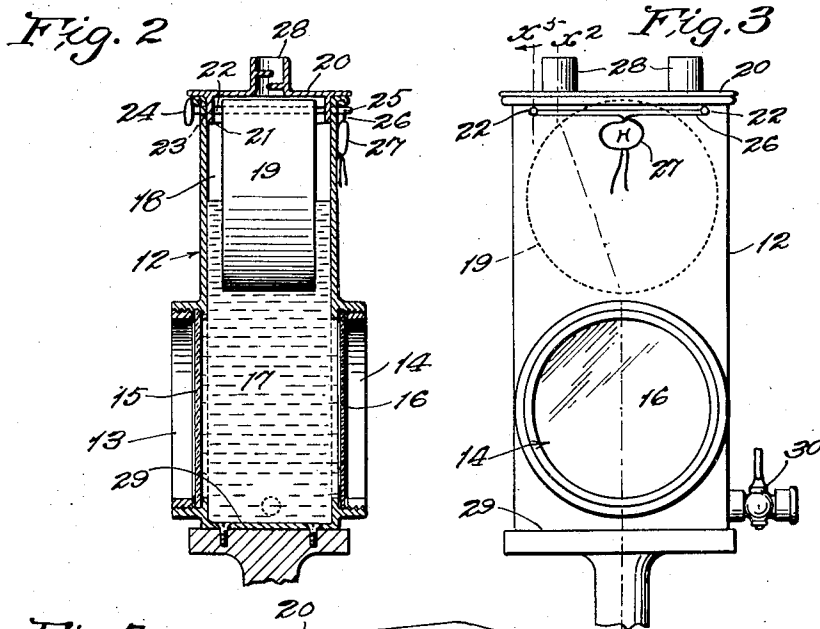
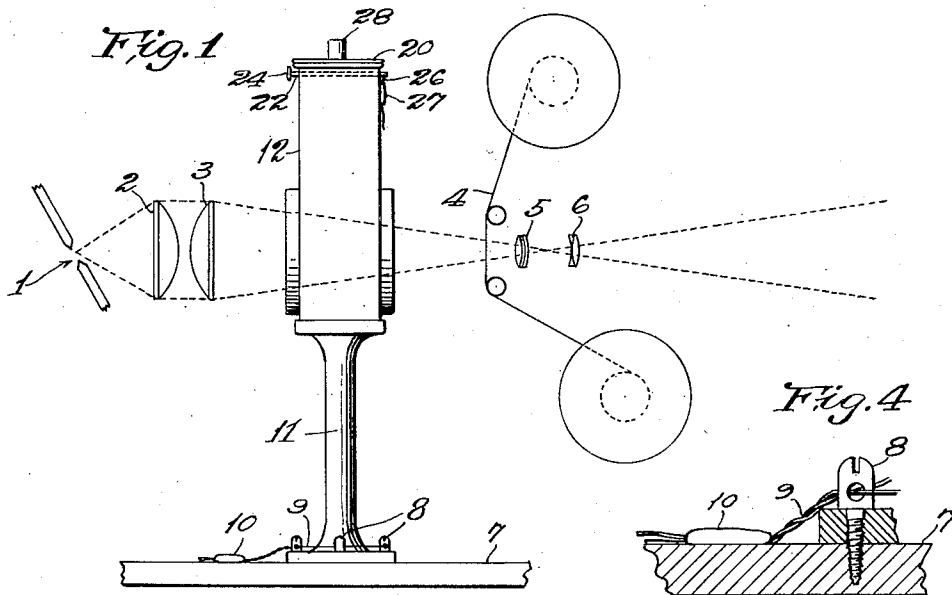


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SAFETY CELL FOR MOTION PICTURE PROJECTING MACHINES.
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1,057,059.

Patented Mar. 25, 1913.



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UNITED STATES PATENT OFFICE.

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SAFETY-CELL FOR MOTION-PICTURE-PROJECTING MACHINES.

1,057,059.

Specification of Letters Patent. Patented Mar. 25, 1913.

Application filed March 28, 1912. Serial No. 686,963.

To all whom it may concern:

Be it known that I, CHARLES P. HULBURN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Safety-Cell for Motion-Picture-Projecting Machines, of which the following is a specification.

This invention relates to an appliance to be used in connection with motion picture machines in which the projecting light is produced by a heat-emitting arc or other element liable to cause ignition of the motion picture film.

The picture films for motion picture machines are highly inflammable and great danger arises from the susceptibility of such films to become ignited by heat from the light projecting element whenever from any cause such film is allowed to come to a standstill while the light is focused thereon, and considerable loss of life and property has resulted from such ignition, while fire insurance rates on buildings in which or near which motion picture machines are installed, are usually increased over those ruling for buildings of like character that are not subjected to such danger.

An object of this invention is to provide means whereby the danger from fire attending the operation of a motion picture machine may be eliminated so as to make picture shows safe, and to reduce the insurance rates upon buildings in which and near which motion pictures are installed.

An object is to provide means whereby it will be practical to enforce ordinances against operating motion picture machines without a heat-intercepting device.

In order to carry out this invention provision is made whereby an alum solution heat screen, or the like, will be invariably interposed between the light emitting element and the motion picture film whenever it is possible to operate the machine, and to provide against tampering with the machine in violation of official authority. That is to say, I have provided a heat screen for a motion picture machine which must always be in commission, in order to allow the machine to be operated; and which cannot, without detection be removed from heat intercepting position or made ineffective for intercepting heat.

The invention includes the novel cell

adapted to automatically shut off the light when the heat-intercepting screen is deficient or wanting; and also includes the combination with a motion picture machine of the safety cell and sealing means whereby certainty against dangerous use of the machine can be detected.

The accompanying drawings illustrate the invention.

Figure 1 is a fragmental elevation partly diagrammatic illustrating the embodiment of this invention in a motion picture machine. Fig. 2 is a sectional elevation of the safety screen on irregular line x^2-x^2 , Fig. 3. Fig. 3 is an elevation of the safety screen viewed from the right of Figs. 1 and 2. Fig. 4 is an enlarged fragmental sectional detail illustrating the seal between the screen pedestal and the base of the machine. Fig. 5 is a fragmental perspective illustrating the top sealing device.

1 is the light arc, 2, 3 the condensing lenses, 4 the motion picture film, 5, 6 the projecting lenses and 7 the base-board of a motion picture projecting machine as ordinarily installed. Upon the base-board 7 there is fixed by means of a sealing device comprising screws having elongated perforated heads 8, a flexible connector 9 strung through the heads and seal 10 uniting the ends of the connector, a pedestal 11 which is fixed to and supports the safety cell proper which comprises a container 12 having a light passage therethrough; being provided at its front and rear with light orifices 13, 14 having parallel oppositely-arranged panes 15, 16 through and between which the light passage is formed, and between which the light transmitting heat intercepting liquid body or screen 17 composed of alum solution or the like is held. Said container extends above the light passage a distance practically corresponding to the diameter of the light passage, to form a float chamber 18 capable of accommodating a float 19 of sufficient size to effectually cut off the light passage and prevent transmission of rays from the arc 1 through the screen whenever the heat screen body 17 is wanting so that the float is not thereby held out of the way. The container 12 is normally filled sufficiently to lift the float 19 above the path of the rays between the condensing and the projecting lenses. The container 12 is provided with a removable top 20 having a

flange 21 extending down into the chamber to receive fastening pins 22 passed through holes 23 in the walls of the container 12 and provided at one end with heads 24 and at the other end with perforations 25 through which is passed a wire or other flexible connection 26, having its ends brought together and sealed by a seal 27, thus to prevent tampering with the float. One or more pipes 28 extend up from the float chamber to allow the chamber to be replenished. The floor 29 of the container 12 is just below the level of the light passage so that when there is no liquid in the container, the floor will form means to support the float in position to close the light passage. The container is provided with a faucet 30 through which the liquid heat screen body may be drawn off. As the liquid is drawn off the float descends and shuts the light passage, thus preventing the heat rays from reaching the picture film. As liquid is poured into the chamber through either of the pipes 28, the float is lifted out of the light passage. Losses by evaporation may be thus supplied from time to time.

The official inspector, by sealing the appliance can insure detection of any use of the motion picture machine in which the heat screen has been dispensed with. In this way the proprietor may also insure against failure of an employee, through carelessness or wilful disobedience, to use the screen as directed.

To install the safety cell in a motion picture machine, the pedestal will be fastened to the base by screws having the perforated heads 8 and the connection 9 will be threaded therethrough and drawn taut and the ends thereof will be brought together and sealed so that the pedestal and its cell cannot be removed without breaking the connection or the seal. The opaque float 19 will be inserted into the container 12, the top 20 of which will then be put in place and secured and sealed by the pins 22, connection 26 and seal 27.

When the machine is equipped with a cell thus installed and sealed the machine can only be operated by filling the container sufficiently with a liquid to lift the float out of the way and any such liquid will serve as a heat screen.

I claim:—

1. The combination with a motion picture machine having a base, a light emitting element, light condensing lenses and a motion picture film; of a container provided with transparent panes, a light passage between said panes, and a float chamber above the light passage; means to seal the container to the base; a transparent liquid heat-intercepting body in the container between the

panes; a float in the container adapted to be held by the liquid above such light passage and adapted to obstruct the light passage when the liquid is wanting; a top for the container; and means to seal said top in place.

2. A heat intercepting cell for motion picture machines comprising a container having oppositely-arranged transparent panes and a light passage through the container between the panes; a transparent liquid heat-intercepting body in the container, and a float in the container adapted to be supported by said liquid body and adapted to obstruct the light passage when the liquid is removed from the container.

3. A heat-intercepting cell for motion picture machines comprising a container having oppositely-arranged transparent panes and a light passage through the container between the panes; a transparent liquid heat-intercepting body in the container; a float in the container adapted to be supported by the liquid and to obstruct the light passage when the liquid is wanting, and sealed means to prevent tampering with the float.

4. A safety cell for motion picture machines, comprising a container having a light passage therethrough; a heat-intercepting transparent liquid body in the container, and automatic means to cut off such light passage when the liquid body is wanting.

5. A safety cell for motion picture machines, comprising a container having a light passage and a float chamber above the light passage; means to seal the float chamber; a float adapted to close the light passage; and a transparent liquid heat-intercepting medium in the container to intercept heat rays in the light passage, and to hold the float out of such passage.

6. A safety cell for motion picture machines, comprising a container having a light passage; means to automatically cut off such passage; and a heat-intercepting light transmitting liquid body in said passage, operating to hold the cut-off means inactive.

7. A safety cell for motion picture machines, comprising a container having a light passage therethrough, means to cut off the passage, and a liquid heat screening body to hold said means out of such passage.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 23d day of March, 1912.

CHARLES P. HULBURD.

In presence of—

JAMES R. TOWNSEND,
CHAS. EYTON.