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LIGHT VALVE HAVING ELECTRICAL CONTROL MEANS

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Fig. 1

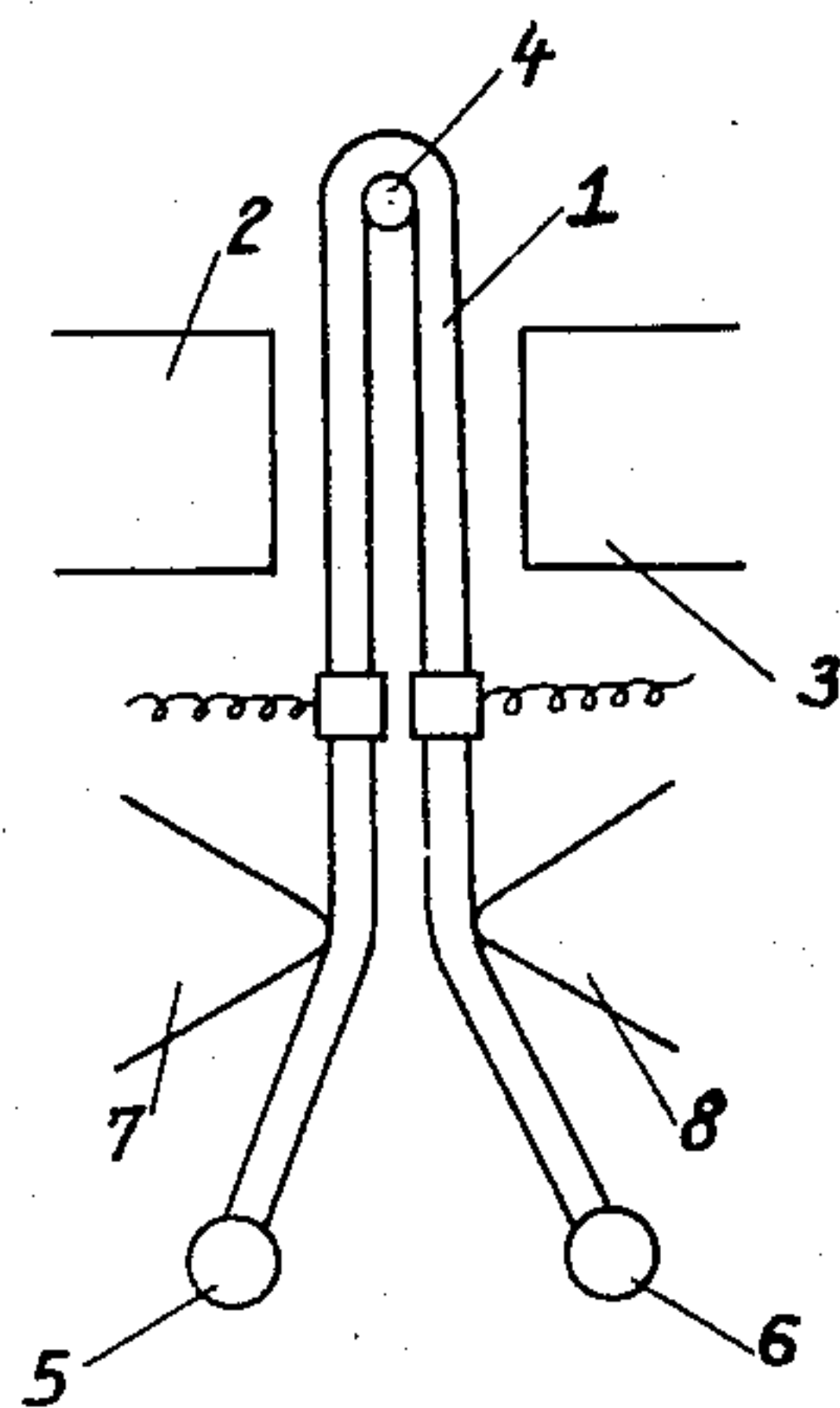


Fig. 2

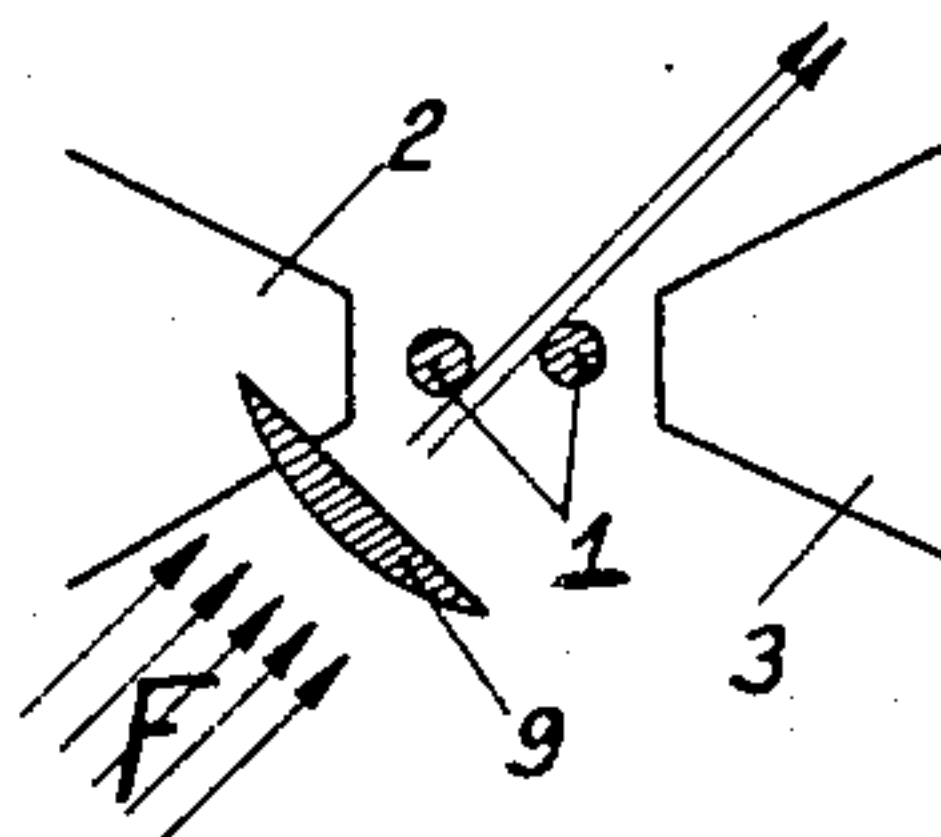
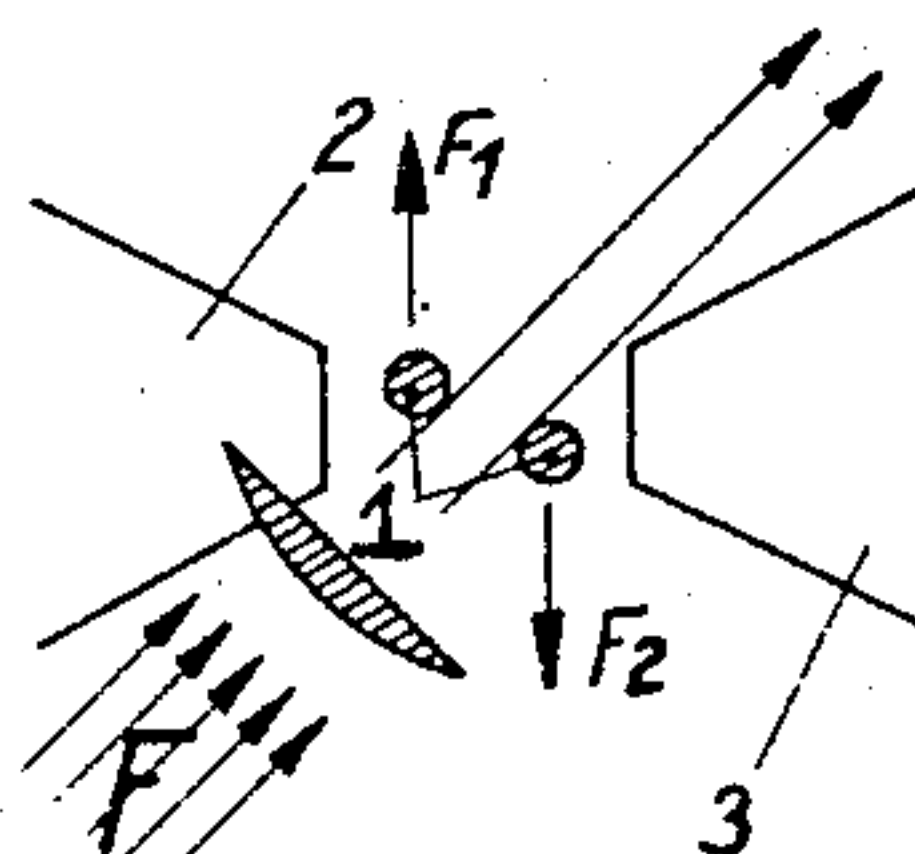


Fig. 3



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LIGHT VALVE HAVING ELECTRICAL
CONTROL MEANS

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The present invention relates to an oscillo-
graph intended for sound recording.

Two systems of sound recording on films are
known to exist.

1. With fixed density.

2. With variable density.

The recording with fixed density is made by
means of an oscillograph with mirror on which
a light-ray is given out by a fixed pinhole source
of light.

The mirror, pivoting according to the fre-
quencies sent in the loop of the oscillograph,
throws a light on the film which imparts a black
surface on said film the contour of which takes
the shape of a broken line, after the development
of the said film.

The invention consists essentially in doing
away with the mirror of the oscillograph hav-
ing the usual mirror and to only use the two
wires of the loop of the oscillograph, making
them play the parts of diaphragm or of masks to
modulate the pencil of rays emitted by the fixed
pinhole source of light with said pencil rays be-
ing turned obliquely in relation to the plane of
the loop and passing through the oscillograph.

According to a first method of embodiment,
the pencil of light rays passes between the wires
of the loop and is modulated as a result of the
vibrations of the wire loop which has a modu-
lated current passing through it.

According to a second method of embodi-
ment, the pencil of light rays is modulated be-
tween one of the silvered poles of the oscillo-
graph and one of the arms of the loop.

On the accompanying drawing to which ref-
erence is made by way of example and relative
to the first method of embodiment:

Fig. 1 shows diagrammatically, on a large
scale and in elevation, an oscillograph laid down
according to the invention;

Fig. 2 is a plan view showing the normal rela-
tive position of the members;

Fig. 3 is a view corresponding to Fig. 2 but
showing the increase in width of the pencil of
light going through the loop when its wire is
moved out of shape under the action of the cur-
rent going through it.

According to the first method of embodiment,
the pencil of light is stepped down between the
two wires of a loop 1 whose plane is placed in
the direction of the lines of force connecting
poles 2 and 3 of the armature.

The wire constituting the loop 1 is of round
section in the drawing, but may have a flat sec-
tion so as to help in the aim sought for.

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Loop 1 is stretched between the fixed isolated
supports 4—5 and 6 and the portions of wire
placed between the poles 2 and 3 are made par-
allel by the isolating blades 7 and 8.

9 is a field lens having for its object to merge
the pencil of light F emitted by a pinhole source
of light (not shown) onto the loop.

When the loop 1 has a modulated current
passed through it, its arms are moved out of
shape in the direction of the arrows F₁ and F₂
and as the pencil of light is thrown between
these wires according to a sloped plane in rela-
tion to a normal vertical plane to the plane of
these wires, it will be understood that these con-
stitute the masks allowing more or less light to
pass. This is why the flat section is recom-
mended.

On the output side of the loop, the pencil of
rays is taken up by an objective and then used
in the usual manner.

It should be noted that the displacement of the
wires is made in the parallel planes between
them and perpendicular to the normal plane of
the loop. It is therefore impossible for the wires
to touch whatever may be the amount of their
movement contrary to the usual valves, light
modulators and the like used for recording with
variable density.

According to the second method of embodi-
ment, the pencil of light rays is directed between
one of the silvered poles of the oscillograph and
one of the arms of said loop.

Having thus described my invention, what I
claim is:

1. A light valve comprising an armature hav-
ing a pair of poles whose ends extend opposite
to one another and in alignment, an open end
wire loop having a pair of spaced arms forming
a light emitting opening therebetween, means
normally retaining said arms parallel to one an-
other and with both arms in a plane parallel to
the magnetic lines of force produced by said
poles, means for supplying a modulated electric
current to said arms for vibrating each arm per-
pendicular to said magnetic lines of force, means
for supplying an electric current to said arma-
ture, and means for directing a pencil of light
between and through said light emitting open-
ing on a slant to said magnetic lines of force.

2. A light valve comprising an armature hav-
ing a pair of aligned poles, means for supplying
an electric current to said armature, an open
end wire loop having parallel spaced arms form-
ing a light emitting opening therebetween and
positioned between said poles with said arms

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normally extending in a plane parallel to the lines of force of the magnetic field produced by said poles, means for supporting the open end portion of said loop and maintaining said loop in position, means for supplying a modulated electric current to said loop for causing each of said arms to vibrate perpendicular to said normal plane thereof, and means for directing a pencil of light at an acute angle to said plane and through said light emitting opening of said arms. 10

3. A light valve comprising an armature having a pair of poles whose ends extend opposite to one another and in alignment, means for supplying an electric current to said armature, a wire having a loop and a pair of arms extending 15 from said loop, fixed means for supporting said loop and the ends of each of said arms with said arms normally positioned between said pole ends in a plane parallel to the lines of force produced by said poles, a pair of blades pressing on said 20 arms for positioning the same parallel to each other in their length between said poles for

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forming a light emitting opening, means for supplying a modulated electrical current to said arms, and means for directing a pencil of said light through said light emitting opening on a slant to said normal plane of said arms.

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