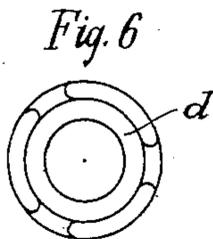
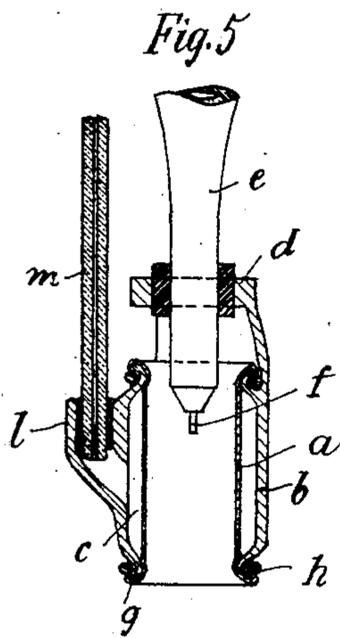
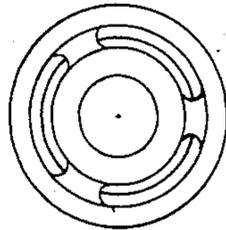
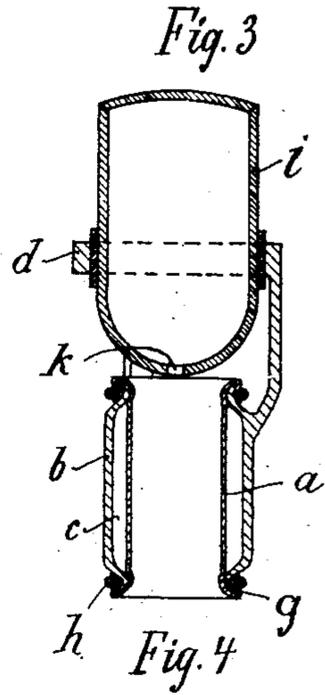
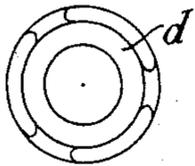
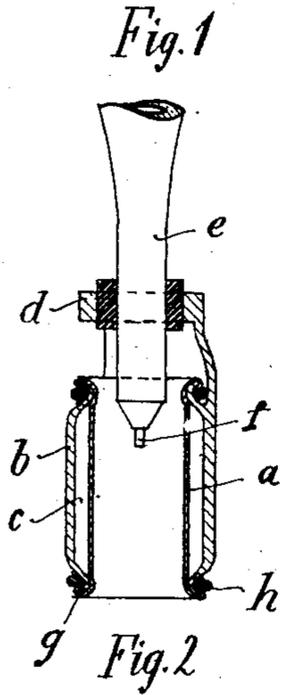


E. RENZ.
 SOUND DAMPER.
 APPLICATION FILED OCT. 23, 1908.

914,879.

Patented Mar. 9, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDMUND RENZ, OF ERLANGEN, GERMANY, ASSIGNOR TO REINIGER, GEBBERT & SCHALL AKTIENGESELLSCHAFT, OF ERLANGEN, GERMANY.

SOUND-DAMPER.

No. 914,879.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed October 23, 1908. Serial No. 459,166.

To all whom it may concern:

Be it known that I, EDMUND RENZ, a subject of the Emperor of Germany, residing at 7 Marquardsenstrasse, Erlangen, Bavaria, Germany, have invented certain new and useful Improvements in Sound-Dampers, of which the following is a specification.

This invention relates to a sound damper for deadening sounds in liquids which originate in small spaces situated in the liquid.

The new device can be employed for several purposes, for example for reducing the sound resulting from the introduction of steam under pressure into liquids.

The sound damper appears to be also suitable for use in discharging sea mines so as to prevent the detonation being noticed by the enemy.

The sound damper is particularly suitable for deadening the sounds that are caused in using circuit breakers acting electrolytically or mechanically for working inductors and the like, and which sounds have considerable disturbing effect for example when invalids are treated by means of the Röntgen rays.

In the drawing various forms of the new sound damper in combination with a circuit breaker are illustrated.

Figure 1 is a longitudinal section of one of these forms, Fig. 2 a plan according to Fig. 1 the anode of the circuit breaker being removed, Fig. 3 is a longitudinal section of a modified form. Fig. 4 a plan according to Fig. 3 the anode of the circuit breaker being removed, Fig. 5 is another form of the modification according to Figs. 1 and 2 in longitudinal section, Fig. 6 is a plan according to Fig. 5 the anode of the circuit breaker being removed.

In the form illustrated in Figs. 1 and 2 which is specially suitable for Wehnelt circuit breakers, a sound deadening cushion is formed by a hose pipe *a* made of flexible material india rubber for example, which is stretched on the inside of a bulging hollow body *b* consisting of porcelain or other suitable material and shuts off a space *c* which can be filled with air or with saw dust or other suitable sound deadening material. The anode *e* of the circuit breaker is arranged in the support ring *d* of the casing *b* in such a manner that the platinum pin *f* situated on the anode extends into the pipe *a*. The outer edges of the pipe *a* are laid around ex-

tensions *g* of the pipe and are attached there- to by rings *h*.

Figs. 3 and 4 show the sound damper in combination with a Simon circuit breaker the anode *i* of which is arranged so that its opening *k* where the breaking of the circuit is effected, lies on a level with the upper opening of the pipe *a*.

The action of the above described sound damper is as follows: The sound waves produced by the vibrations that arise in the platinum pin *f* or at the opening *k* of the circuit breaker when the circuit is broken strike against the resilient sides *a* and are damped or taken up by the air pad or the cushion formed of saw dust or the like situated behind the sides.

In the form of the invention shown in Figs. 5 and 6 the hollow body *b* is furnished with a junction piece *l* into which a pipe *m* opens that runs into the open air. If in the working of the circuit breaker the air in the chamber *c* becomes heated, the excess of air can escape through the pipe *m* and a narrowing of the space between the resilient sides *a* and the current breaker *f* is prevented so that the gas bubbles generated on the latter can ascend without hindrance. This arrangement is advantageous because in consequence of the bulging of the resilient sides *a* the ascent of the gas bubbles which form when the circuit is broken may be delayed and the regular succession of current interruptions be suspended whereby particularly when the circuit breaker is employed for the working of inductors for Röntgen apparatus a "fluttering" of the Röntgen tubes may arise. This disadvantage is obviated by the arrangement shown in Figs. 5 and 6. This arrangement may also be adopted in the form of the invention shown in Figs. 3 and 4.

What I claim and desire to secure by Letters Patent is:—

1. In a sound damper, the combination of a hollow body with a flexible diaphragm forming a sound deadening space between the body and the diaphragm.

2. In a sound damper, the combination with a tubular body made of insulating material and formed with a bulged center, a flexible member, and means for holding the flexible member under tension on the inside of and separated from the tubular body so as to form an air space therebetween.

3. In a sound damper, the combination with a tubular body having a bulged center, a pipe made of flexible material stretched over the inside of the tubular body, said pipe
5 forming with the tubular body an air space, and means for fixing the anode of an electrolytic circuit breaker on the hollow body, the place where the breaking is effected being adjacent the air space.
- 10 4. In a sound damper, the combination of a tubular body made of insulating material and formed with a bulged center, a pipe made of flexible material stretched over the

inside of the bulged center, means for arranging the anode of an electrolytic circuit breaker 15 on the hollow body, a junction arranged on the body, and means for enabling excessive pressures in the air space between the pipe and the body to escape from the junction into the open air. 20

In testimony whereof I have affixed my signature, in presence of two witnesses.

EDMUND RENZ.

Witnesses:

GEORGE F. GRAN,
OSCAR BOCK.