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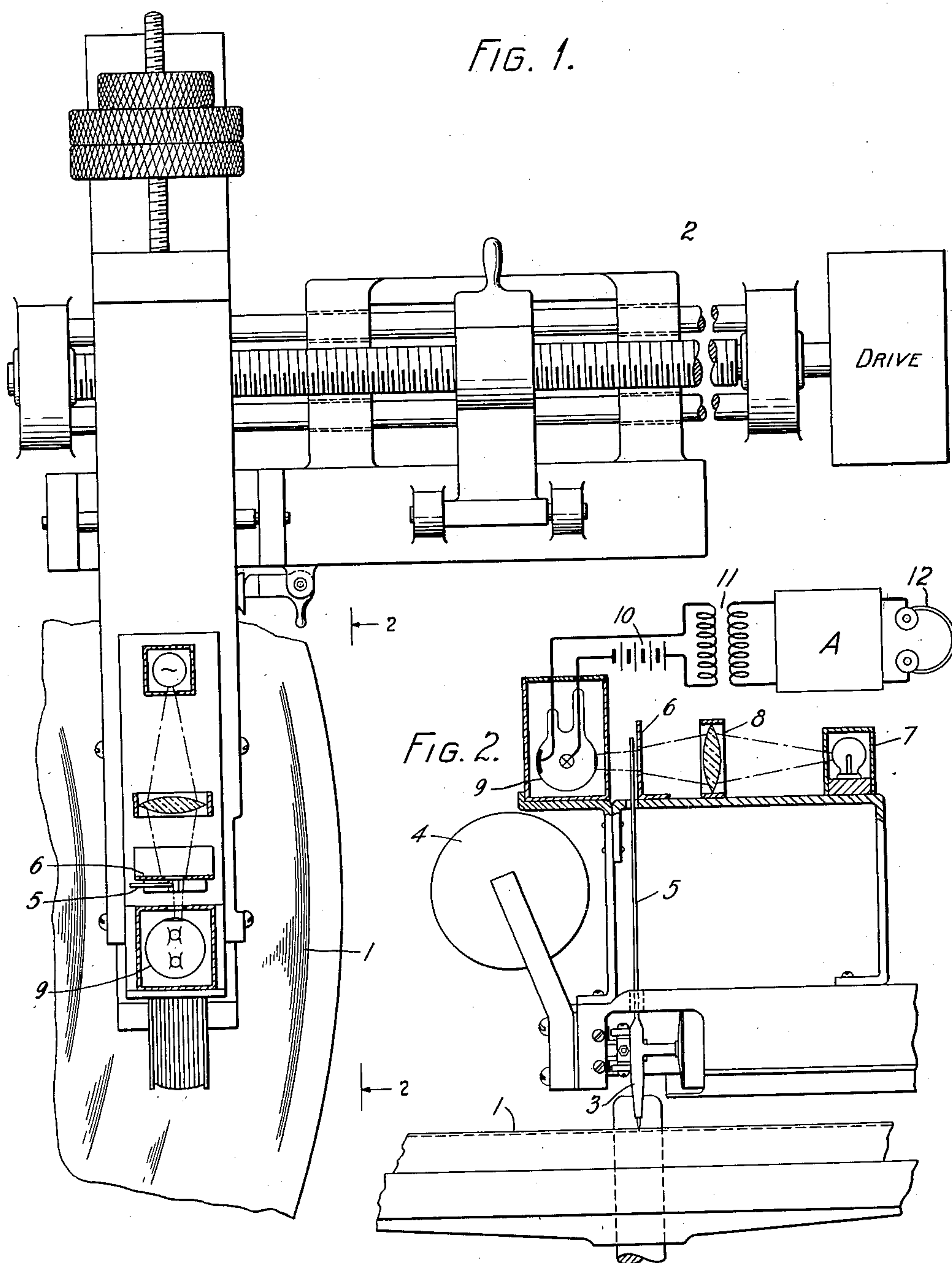
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SOUND RECORDING

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FIG. 1.



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SOUND RECORDING

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This invention relates to sound recording and more particularly to monitoring the process of sound recording.

Heretofore, there has been no method of monitoring the sound which was actually being recorded at the time of recording. To detect faulty cuts it was necessary to play back the completed record and then, if necessary, recall the artist for retakes which involved considerable expense and loss of time.

The object of this invention is the immediate detection of faulty cuts in sound recording at the time the sound is being recorded.

In accordance with the general features of this invention, the movement of cutting tool is made to control the amount of light reaching a photoelectric cell and the changes of resistance in the light cell corresponding to the movements of the stylus are reproduced in a receiver.

Referring to the drawing, Fig. 1 shows a partial plan view of the sound recording equipment and indicates one arrangement of the monitoring apparatus. Fig. 2 is an elevation of the above and also shows a schematic auditory circuit.

In this illustrated embodiment of the invention the master record is rotated by the driving mechanism 2, and cut in accordance with the sound to be recorded by the stylus 3, which is vibrated by an electromagnet 4. A light-weight shutter 5 in the form of a reed is attached to the recording stylus and vibrates it. As indicated in Fig. 1, the shutter, when at rest, covers one-half the opening in the mask 6. This permits a beam of light from a light source 7, which has been properly focused by lens 8, to actuate a photoelectric cell 9.

As the shutter moves toward the center of the record more light from the source 7 reaches the photoelectric cell and as it moves away from the center of the record less light is permitted to pass. These variations in the amount of light passed, which correspond to the sound being recorded, vary the resistance of the photoelectric cell which in turn causes battery 10 to force a varying

current through the primary of transformer 11. The amplifier A receives the sound currents from the transformer secondary and delivers them at proper intensity to the auditory device 12.

Thus, it is evident that when music, speech, etc., are being recorded, they are simultaneously being reproduced in the monitoring circuit. In this way, the operator has a constant check on the nature of the sound being recorded. Whenever any fault develops in the system which would impair the value of the completed record the sound peculiar to such a fault will advise him of its occurrence. For instance, if the recording stylus should cut over into an adjoining groove, its faulty movement would be accompanied by a corresponding extraneous sound. An additional warning would be given by a modification of this sound at a corresponding point of the next revolution.

Although the invention has been described in connection with a particular structure, it is, of course, obvious that many other adaptations of it may be made without parting from the spirit and scope of the present invention.

What is claimed is:

1. In a sound recording device, a source of light, means to direct a beam of light, an auditory circuit and a light sensitive element therein to receive said light beam, an engraving tool, and means intercepting only a portion of the light beam actuated in accordance with the movements of said tool.

2. In a sound recording device, means to direct a beam of light, a light sensitive element to receive said beam, an engraving tool, and means controlled by the movements of said tool to vary said beam, and means to produce sounds from the resultant electrical effects in said element.

3. In a sound recording device, means to direct a beam of light, a light sensitive element to receive said beam, an engraving tool, a member having an aperture to pass said beam, a shutter placed in front of said aperture and controlled by the movements of said tool to vary said beam, and means to

produce sounds from the resultant effects in said element.

4. In a sound recording device, means to direct a beam of light, a light sensitive element to receive said beam, an engraving tool, a member having an aperture to pass said beam, a shutter placed in front of and covering a portion of said aperture and controlled by the movements of said tool to vary the amount of said covered portion, and an amplifying and detecting circuit to produce sound effects proportional to the movements of said shutter.

5. A monitoring system for sound recorders having a member moving in accordance with sounds to be recorded, comprising a source of light to direct a beam of light, a monitoring receiver and means carried by the member for intercepting only a portion of the beam to effect the operation of the receiver in accordance with the movements of the member.

In witness whereof, I hereunto subscribe my name this 12th day of August, A. D. 1927.

ROY V. TERRY.