

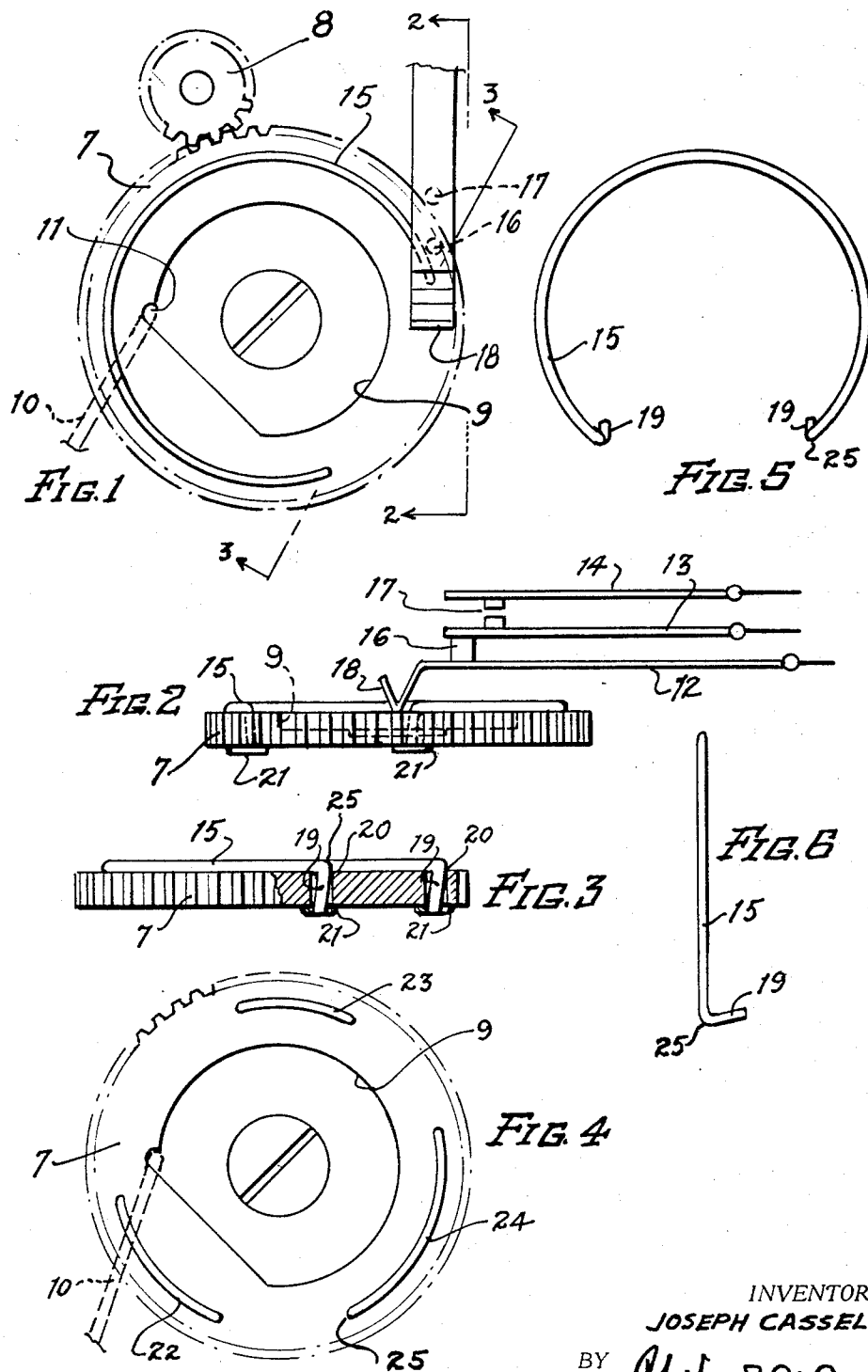
March 18, 1969

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3,433,090

CAM CONSTRUCTION

Filed April 6, 1967



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CAM CONSTRUCTION

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Filed Apr. 6, 1967, Ser. No. 628,961

U.S. Cl. 74-567

6 Claims

Int. Cl. F16h 53/02

ABSTRACT OF THE DISCLOSURE

Cam for the control of fire alarm signals or for other purposes comprising a length of wire of predetermined circular extent on a rotatable support, for effecting actuation of a switch lever or the like in desired timed relation according to the length and position of the wire on the rotatable support.

FIG. 1 in the accompanying drawing illustrating practical embodiments of the invention, is a top plan view of one of the cams designed for and employed in a fire alarm signal transmitter.

FIG. 2 is an edge view of the cam and switch mechanism actuated thereby; this view taken on substantially the plane of line 2—2 of FIG. 1.

FIG. 3 is a broken sectional detail view illustrating one method of mounting and securing the cam forming wire in the body of the rotatable support.

FIG. 4 is a plan view illustrating a form of the invention for effecting separate intermittent actuation of switch levers or other devices.

FIGS. 5 and 6 are plan and edge views respectively of one of the cam forming wires.

In the plan view, FIG. 1, the invention is shown applied to the control cam of an automatic fire signal transmitter, which cam controls the recycling of the fire alarm signals sent out by the transmitter.

This cam, as illustrated, usually takes the form of a flat gear wheel 7, driven from the gear 8 of a clock escapement, and having on its face a cam groove 9, engaged by a start and stop lever 10, cooperable with the shoulder 11 at the end of the cam groove.

In the present instance, the timing control cam 7 is utilized for the purpose of controlling an additional circuit or circuits governed by the spring switch arms 12, 13, 14, FIG. 2.

This is accomplished by means of a length of spring wire 15, of circular formation, mounted on the face of the gear, in position to engage and lift the lowermost spring arm 12 sufficiently to cause "lifter" 16 on that spring to raise spring arm 13 and close the upper, normally open circuit contacts at 17 and to hold these contacts in such relation for a single revolution of the cam.

FIG. 1 illustrates the rest position of the parts with the V-shaped follower 18 of the lower switch spring resting on the face of the gear adjoining the starting end of the cam forming wire so that immediately on starting the gear the switch spring will be lifted by the cam wire and held in that relation for the full circular extent of the wire.

The cam forming wire may be of different materials, but preferably is of some stiff spring material, such as Phosphor bronze.

Different methods of fastening it in place may be employed.

In the present illustration, it is secured by having the ends of the same bent at an acute angle as shown at 19, FIG. 3 and passed through openings 20 in the gear and fixed in this relation by solder rings 21.

The bending of the ends of the wire at an acute angle

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tensions the overlying circular portion of the wire firmly against the flat supporting surface of the gear.

If the gear disk or other rotatable support on which it is mounted is non-metallic, the bent ends of the wire may simply be bent over, riveted or otherwise secured in place.

Where intermittent action is desired, a number of the wire segments, possibly of the same or different lengths may be employed, as illustrated at 22, 23, 24, FIG. 4.

The rounded corners at the bent ends of the arcuate, circular portion of the wire provide desired approach inclines 25, for lifting and lowering the switch spring, lever or other part engaged by the wire.

The wire may be of circular or other cross-section and of a diameter to impart the desired lift to the switch lever or other actuated device.

The rotatable support may be in the form of a flat disc arranged to support the cam forming portion of the wire in a single flat plane or it may be contoured to other shape and the wire may be bent into depressions or raised portions according to desired action of the cam.

The invention thus provides for the manufacture of cams to effect practically any desired mechanical or electrical operation and this at simple low cost construction.

While readily shaped to different cam formations, the stiff spring wire will hold the shape given it under adverse working conditions.

Furthermore, it may be readily removed and be replaced by a freshly formed wire or the old wire may be modified or changed in shape and be used in the new form as required to meet different conditions.

The wire thus constitutes a strand of cam forming material readily adaptable to meet various cam requirements.

The rotatable support on which the wire is mounted, provides, at the ends of the wire, the low or rest portions of the complete cam structure, and which rest portion may be flat as shown or given any special shape for cooperation with the cam follower which may for example, be in the form of a cam roll.

What is claimed is:

1. A cam construction comprising the combination of a rotatable support and

a wire of cam forming material suitable for engagement by a cam follower secured in fixed position on said support,

said wire having an exposed cam face forming surface disposed in the direction of rotation of said rotatable support.

2. The invention according to claim 1, which said support having openings therein spaced to locate the ends of the cam forming wire and said wire having angularly bent ends secured in said openings in the support.

3. The invention according to claim 2, with said openings extending through said support and the ends of the wire being bent at acute angles and extending entirely through the support and fastening elements at the terminal ends of the wire.

4. The invention according to claim 1, with said wire extending in circular formation and having angularly bent ends with rounded corners leading to the ends of the circular portion of the wire.

5. The invention according to claim 1, with said cam being of stiff spring material and having acutely angled bent ends and, said support having openings in which said acutely angled ends of the wire and engaged.

6. A cam construction comprising the combination of a rotatable disk-like support forming the body of said cam construction, said support having openings therein spaced circum-

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ferentially the length of the cam surface to be provided,
 a length of cam surface forming wire extending over the surface of said support between said openings therein and terminating in angularly bent ends extending through said openings and fixedly secured therein,
 said cam forming wire having rounded leads at the junction of said angularly bent ends with the intermediate length of the wire for engagement by a cam follower and the intermediate portion of the wire between said angularly bent ends being shaped to form the active cam surface and held fast against

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the face of said support by said angularly bent ends embedded as described in said support.

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U.S. Cl. X.R.

338—2; 73—88.5