

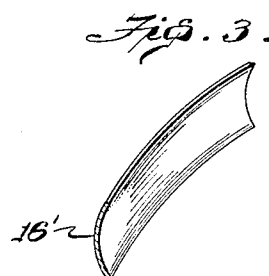
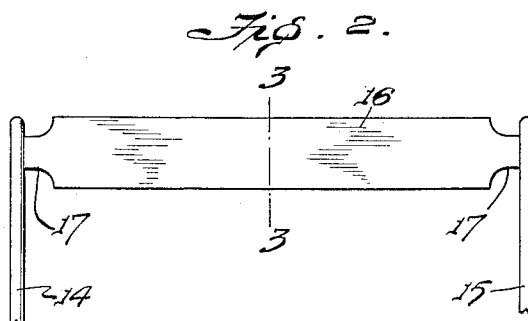
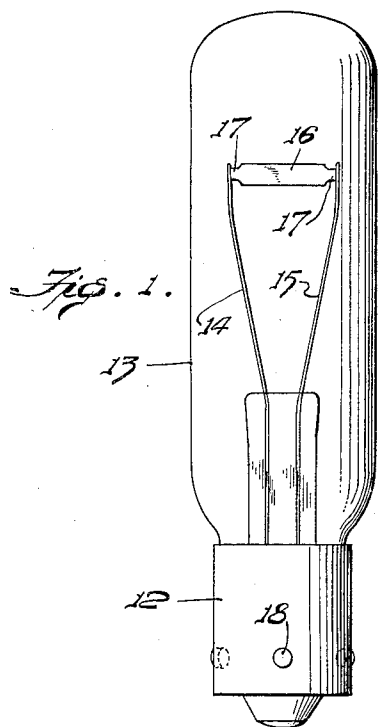
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EXCITER LAMP

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EXCITER LAMP

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This invention relates to improvements in exciter lamps; one object of the invention being the provision of an exciter lamp which will produce a better and clearer slit image than that of the present type.

For sundry reasons it is sometimes imperative that the light flux density be an invariant point function within the slit image contour. Particular reference is made to intermittent (naively called "motion") picture films with sound tracks recorded by the "variable area" method. It has been the custom to employ for this purpose an exciter lamp of the helical filament type in conjunction with the slit forming optical system. The length and diameter of the helix is determined by the optical peculiarities of the system rather than by merely the corresponding length and width of the slit image. An endeavor has been made to so apportion the pitch of the helix and the thickness of the wire forming it as to minimize the free space distance between turns. Even at best, this cannot produce the desired results—the piercing points in the plane determined by the axis of the helix and a line parallel to it have their perpendicular distances to such line alternatively one and then the other of two distinct values. A subterfuge often employed is to make the filament image focus at a slightly different point on the optic axis than the slit image. The defect (variability of flux density) is thereby somewhat remedied, but still not eradicated. It is further evident that the latter makeshift increases the light transmission (lamp to slit image) inefficiency.

In the accompanying drawing:—

Figure 1 is a view in elevation of an exciter lamp made according to and embodying the present invention.

Figure 2 is an enlarged view of the luminous filament thereof constrictions not drawn to proportionate scale.

Figure 3 is a cross section through a ribbon filament slightly curved.

Referring to the drawing and more particularly to Figures 1 and 2 thereof, the numeral 12 designates the base or plug which carries the usual inert-gas filled or evacu-

ated vessel 13 and the respective filament supports 14 and 15.

A luminous element 16 is here shown as a ribbon or strip, two ends 17 of this being reduced and attached to the respective supports 14 and 15 so that the ribbon will be aligned with the pin 18 of the base, and consequently be in parallel alignment with the mechanical slit of the optical system or the slit of the slit block in the reproducing apparatus when placed in use.

By producing the constrictions 17 on the ends of the ribbon filament 16, I compensate for the otherwise decreased luminosity due to heat transference to the terminal supports 14 and 15 when the filament is light emitting through incandescence. In any particular case, the exact nature of the stricture is determinable heuristically by harmonic analysis or empirically.

In Figure 3 of the drawing, the ribbon 16' is somewhat curved, thus permitting its use with certain types of optical systems.

With the present type of filament the advantages over the coil are readily seen as the distance for bright illumination is practically the full length of the strip, or at all times is equal to the greater area therein between the reduced terminals 17.

What is claimed is:—

An exciter lamp including a hermetically sealed vessel, a pair of conducting supports mounted therein, and a filament supported between the free ends of said support, the major portion of which is in the form of a ribbon curved transversely, the connecting ends of the same being reduced transversely.

In testimony whereof I affix my signature.

ISAAC H. BARKEY.