TITLE: GAZE TRACKING THROUGH EYEWEAR
APPLICANT: MICROSOFT CORPORATION
IPC CLASSIFICATION: G06K9/00, G06F3/01
EXAMINER: Hermes, Lothar
CONSULTED DATABASES: NPL

CLASSIFICATION SYMBOLS DEFINING EXTENT OF THE SEARCH:
IPC:

FI/F-TERMS:

KEYWORDS OR OTHER ELEMENTS FEATURING THE INVENTION:
*PROB: video based gaze tracking that works reliably even if a user is wearing glasses (unaffected by specular reflections at the lenses). *SOL: the tracking system has an IR (infrared) or NIR (near infrared) light source, mounted close to the optical axis of the eye (on-axis illumination, e.g. an LED ring around the camera aperture) for bright pupil imaging (reflection at the retina, like a red-eye effect) and/or remote from the optical axis (off-axis illumination, for dark pupil imaging and for creating specular glints at the cornea). Unlike glints on the cornea, reflections on the glasses (i.e. glare) causes pixels to have high brightness levels close to the saturation limit even if the illumination level is low. Thus, the system takes two images in sequence (30ms-60ms delay) with low and high illumination powers, respectively. Pixels with high luminance values in both images are likely to represent glare. Pixels whose brightness varies strongly actually show reflections at the eye.