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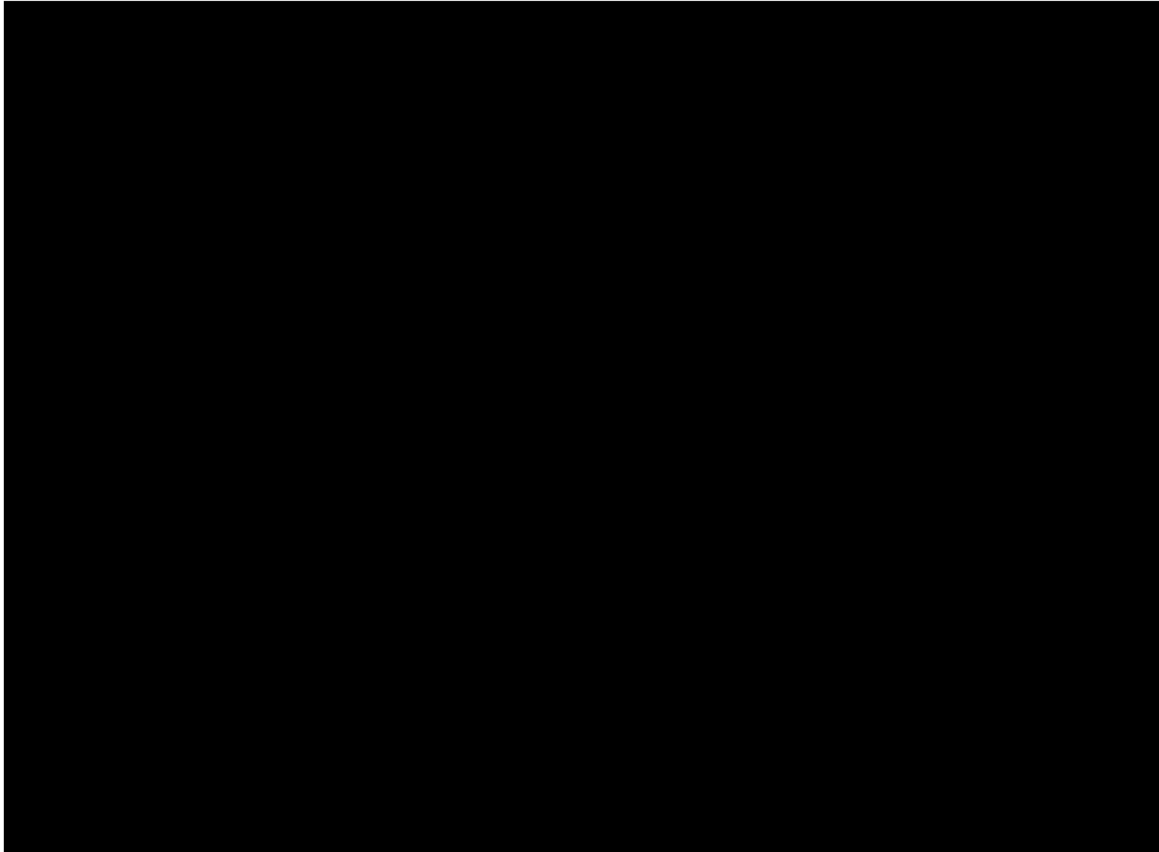
**Before The Honorable Charles E. Bullock  
Chief Administrative Law Judge**

**In the Matter of**

**CERTAIN WIPER BLADES**

**Investigation No. 337-TA-816**

**SUPPLEMENTAL INITIAL EXPERT REPORT OF GREGORY DAVIS  
REGARDING U.S. PATENT NOS. 6,675,434, 6,836,926 AND 6,973,698**



For example, the '770 Patent discloses:

U.S. Pat. No. 3,192,551, issued July 6, 1965, discloses a windshield wiper blade assembly having a one-piece resilient backbone member or superstructure fabricated of a suitable resilient, metallic material and designed such that uniform wiping pressure is exerted along the entire length of an associated wiper blade by means of a wiper arm acting at a central point along the superstructure. The uniform wiping pressure is achieved by forming the wiper superstructure in a curvilinear manner with a radius of curvature less than that of the windshield to be traversed thereby, together with varying the width and/or thickness of the superstructure member from a maximum through the central arm attachment point to a minimum at the opposite ends thereof, with the width and/or thickness and degree of curvature being proportioned or correlated with the modulus of elasticity, load and length of the blade, so as to assure for the desired uniform wiping pressure.

('770 Patent, Column 1, lines 6-24.)

[T]he superstructure 16 is formed in a generally arcuate or curvilinear shape, as best seen in FIG. 1, whereby to provide a substantially uniform wiping pressure of

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the wiper blade 18 against the associated windshield. As described in U.S. Pat. No. 3,192,551, which patent is incorporated by reference in the descriptive portion of this specification, the aforesaid uniform pressure may be accomplished by forming the superstructure 16 such that it assumes a generally arcuate configuration of a predetermined radius in a free form or state so that as the superstructure 16 is moved normally toward the windshield surface, the opposite ends of the associated blade would make initial contact, with progressive contact being made by the blade with the windshield from the ends thereof toward the center as increasing pressure is applied at the center. The particular radius of curvature is, of course, dependent upon the length, thickness, width and modulus of elasticity of the material from which the superstructure 16 is fabricated, and for a given modulus of elasticity, relatively thinner or narrower sections will require relatively greater deflection. In addition to forming the superstructure in the aforesaid arcuate configuration, it is contemplated that the width of the body 22 thereof may be tapered from a maximum width at the center thereof to a minimum width at the opposite ends thereof.

(<sup>c</sup>770 Patent, Column 3, lines 14-66.)

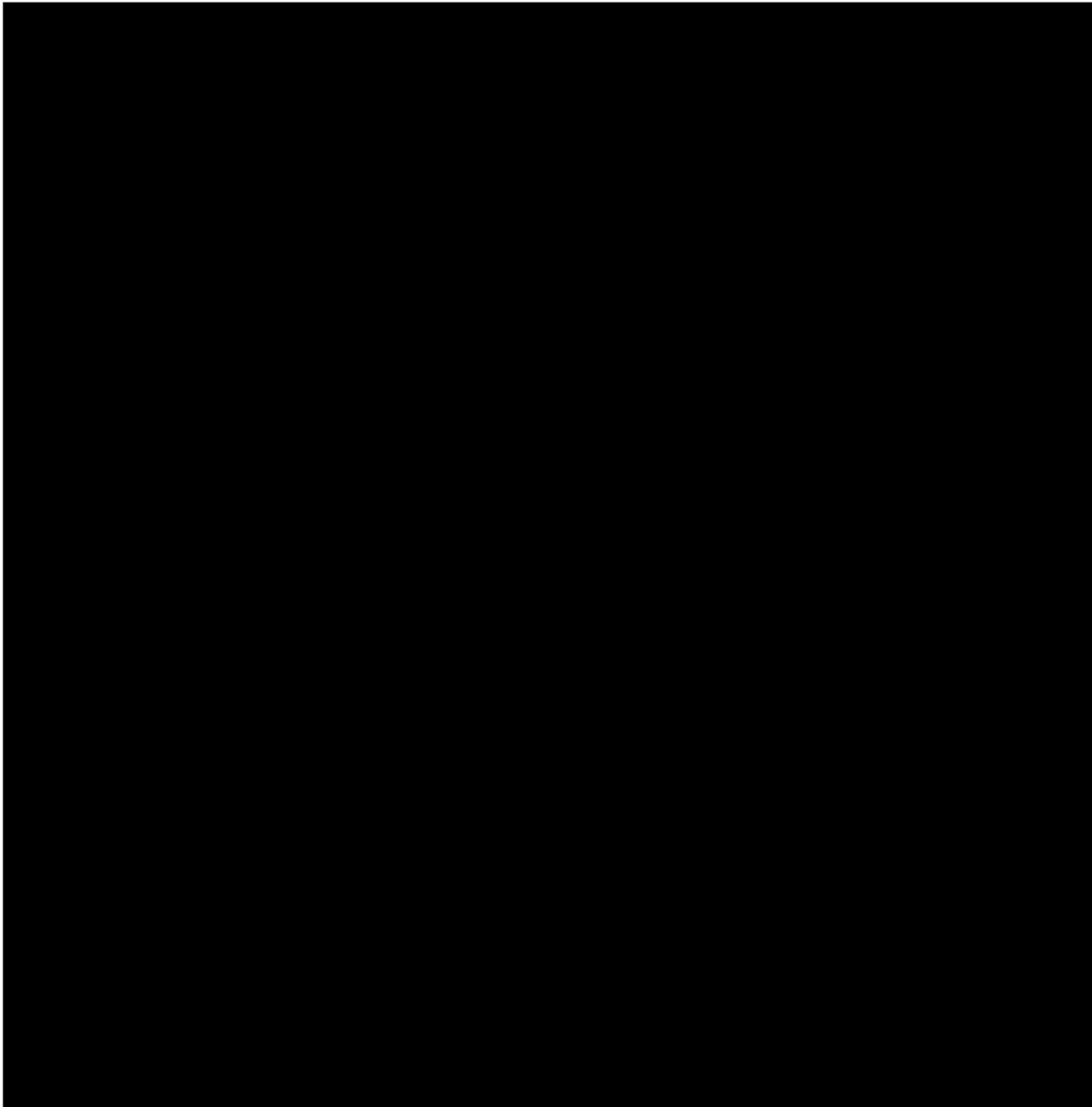
A single spring support element is provided as a backbone to which is mounted a conventional flexible rubber wiping blade. Which together operate to distribute a centrally applied actuating arm pressure load relatively uniformly along the length of the wiper blade throughout variations in windshield contours traversed by the wiper. Preferably the resilient backbone member is adapted for actuating arm attachment at or near the center and is constructed of spring metal or other resilient material bowed with a free contour surface having a radius of curvature less than that of the windshield traversed by the wiper assembly...

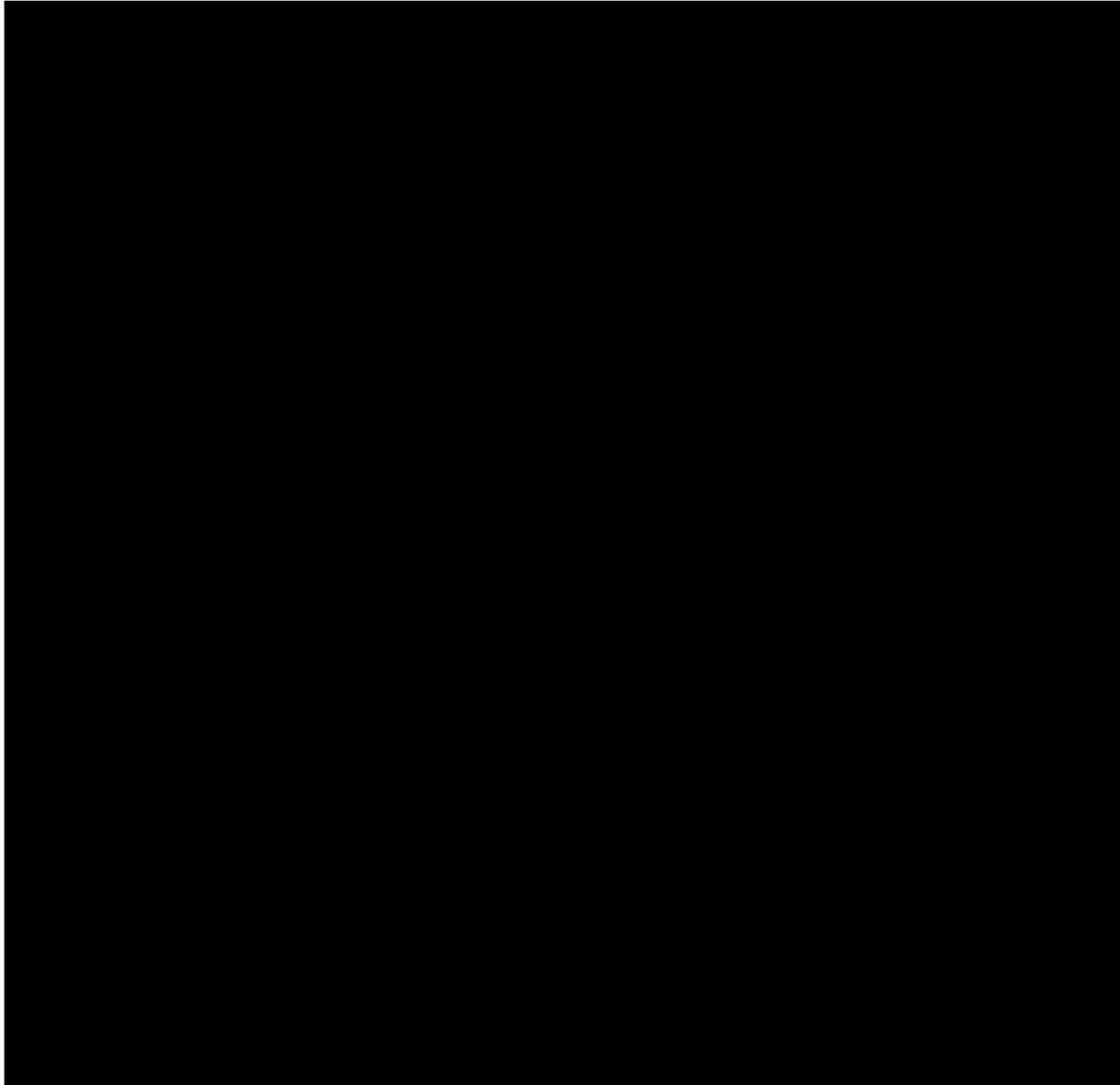
With reference to FIGS. 4-6 a spring backbone element 36 of the type illustrated in FIGS. 2a-2c may be adapted to carry a conventional rubber wiping blade 37 by providing a slot 38 extending almost throughout the length and terminating just short of the end 39 for accommodating a flanged rib 40 of the rubber blade projecting there through. The sides of the backbone may be sprung apart to facilitate attachment of the rubber blade 70 before actuating arm attachment clip 41 is secured thereto by rivets 42 providing a permanent assembly for retaining the rubber blade 37 in position. As shown in FIG. 5 the backbone 36a and rubber blade 37a have a free form circular arc curvature modified at the ends with somewhat less curvature, adapted to provide uniform contact pressure along the length of contact with a flat windshield 43 when fully depressed by the actuating arm (not shown). The reduced curvature at the ends departing from a true circular arc may be required where, as in this embodiment, the parabolic sides terminate at each end with a finite width rather than a point. The theoretically proper curvature at such ends would be intermediate the parabolic curvature shown in FIG. 1 incident to a spring cross section of uniform width and thickness and the circular

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curvature shown in FIG. 2 incident to parabolic sides meeting at a point at either end; however, as a practical compromise the provision of a circular curvature terminating somewhat short of straight end portions has been found satisfactory due to the ability of the rubber wiper blade to compensate for a limited degree of nonuniform spring load.

(U.S. Patent No. 3,192,551, Column 1, line 23-34; Column 3, line 63 through Column 4, line 17.)





The '551 Patent also discloses having a curvature greater in the center than at the ends.

As shown in FIG. 5 the backbone 36a and rubber blade 37a have a free form circular arc curvature modified at the ends with somewhat less curvature, adapted to provide uniform contact pressure along the length of contact with a flat windshield 43 when fully depressed by the actuating arm (not shown). The reduced curvature at the ends departing from a true circular arc may be required where, as in this embodiment, the parabolic sides terminate at each end with a finite width rather than a point.

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