

**UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

COSTCO WHOLESALE CORPORATION

Petitioner

v.

ROBERT BOSCH LLC

Patent Owner

U.S. Patent 6,973,698

**DECLARATION OF DR. GREGORY W. DAVIS IN SUPPORT OF
PETITION FOR INTER PARTES REVIEW OF U.S. PATENT 6,973,698**

I. INTRODUCTION

I, Dr. Gregory W. Davis, hereby declare the following:

1. I have been asked by counsel for Petitioner Costco Wholesale Corporation (“Costco”) to review U.S. Patent 6,973,698 (“the ‘698 patent”), to describe the skill level in the art of the ‘698 patent as of April 1, 1998, as reflected in the patents and printed publications cited below, and to analyze whether, as of not later than April 1, 1998, the conception and making of the wiper blade for motor vehicle windows claimed in the ‘698 patent required more than ordinary skill in the art or involved more than the predictable use of prior art elements according to their established functions.

2. In particular, I have been asked to provide comments concerning U.S. Patent No. 3,192,551, U.S. Patent No. 4,028,770, U.S. Patent No. 4,807,326, U.S. Patent No. 5,325,564, and German Published Patent Application No. DE 2 313 939.

3. In performing my analysis I have considered the claims of the ‘698 patent, any differences between the claimed subject matter and the prior art patents and printed publications cited below, and the level of ordinary skill in the art of the ‘698 patent as of not later than April 1, 1998, which I understand is the filing date of the German application to which the ‘698 patent claims priority.



31. 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 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

('770 Patent, Column 3, lines 14-66.)

[REDACTED]

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 ...

Also for example (Column 3, line 63 through Column 4, line 17):

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

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