



Module 106 Slides

William Fisher

WilmerHale Professor of Intellectual Property Law

Harvard Law School

2023



The following images appear in the background of the lecture on “Infringement” in the PatentX lecture series. A recording of the lecture itself is available at <https://ipxcourses.org/lectures-2/>. Removed from their original context, the images will not make much sense. The function of this collection of images is to enable persons who have already watched the lecture to review the material it contains.

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Part A: Forbidden Conduct



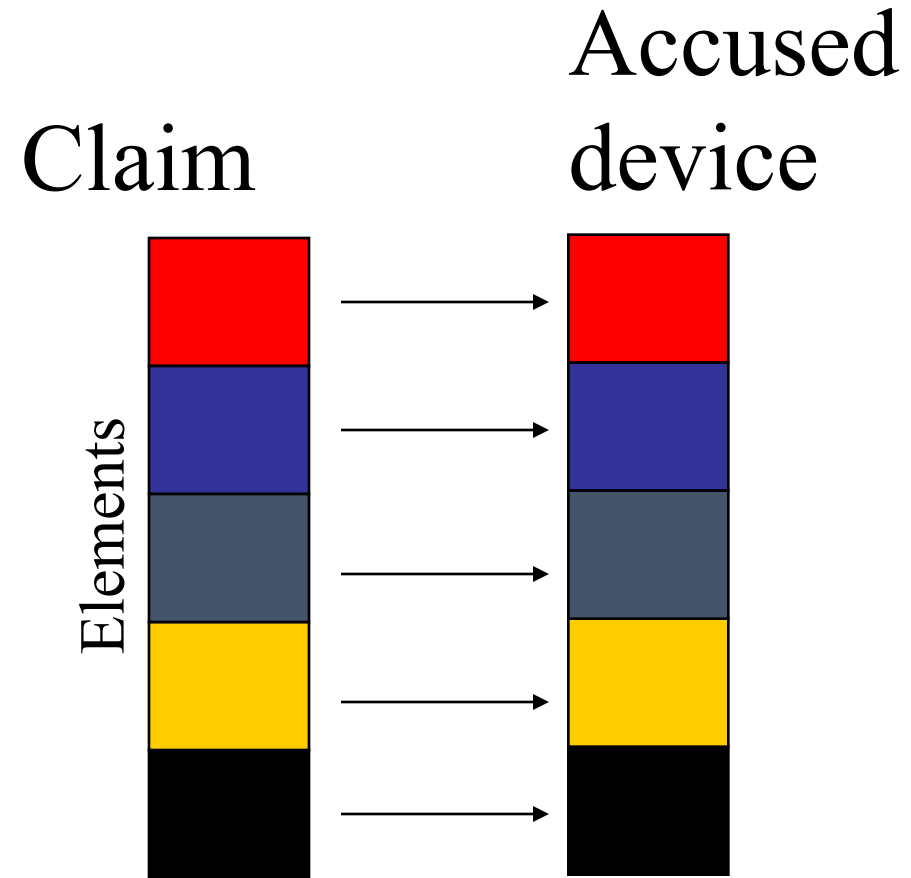
Statutory Provisions

United States: 35 U.S.C 271(a)

“... Whoever, without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.”



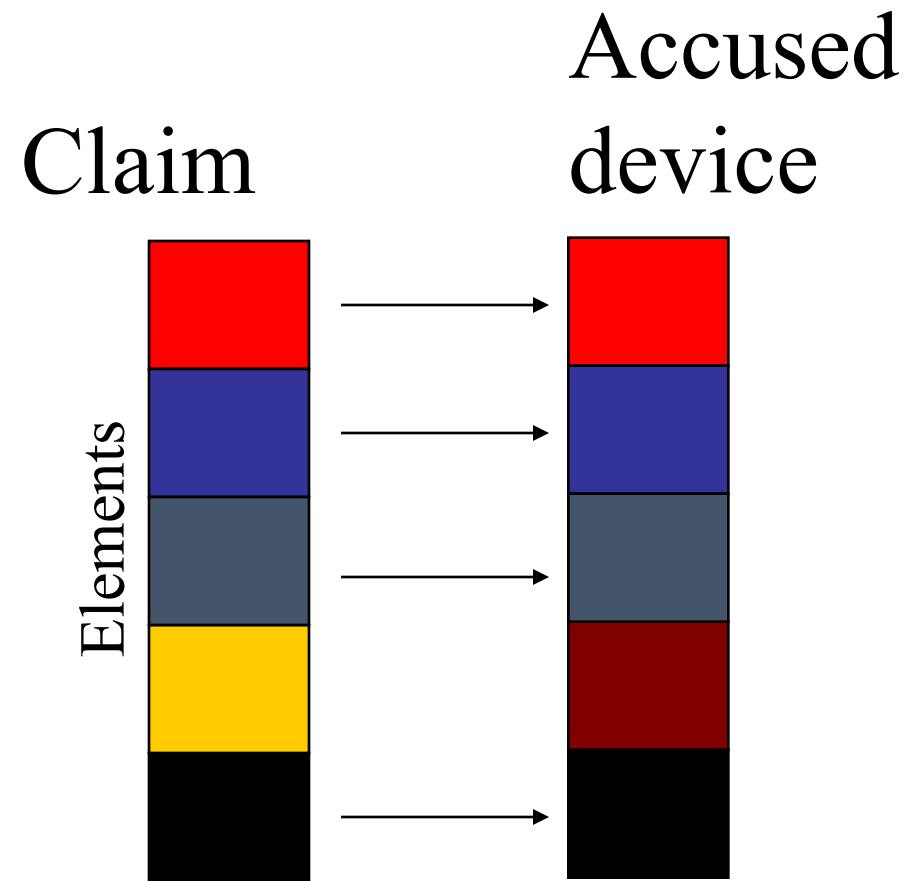
All-Elements Rule



infringement



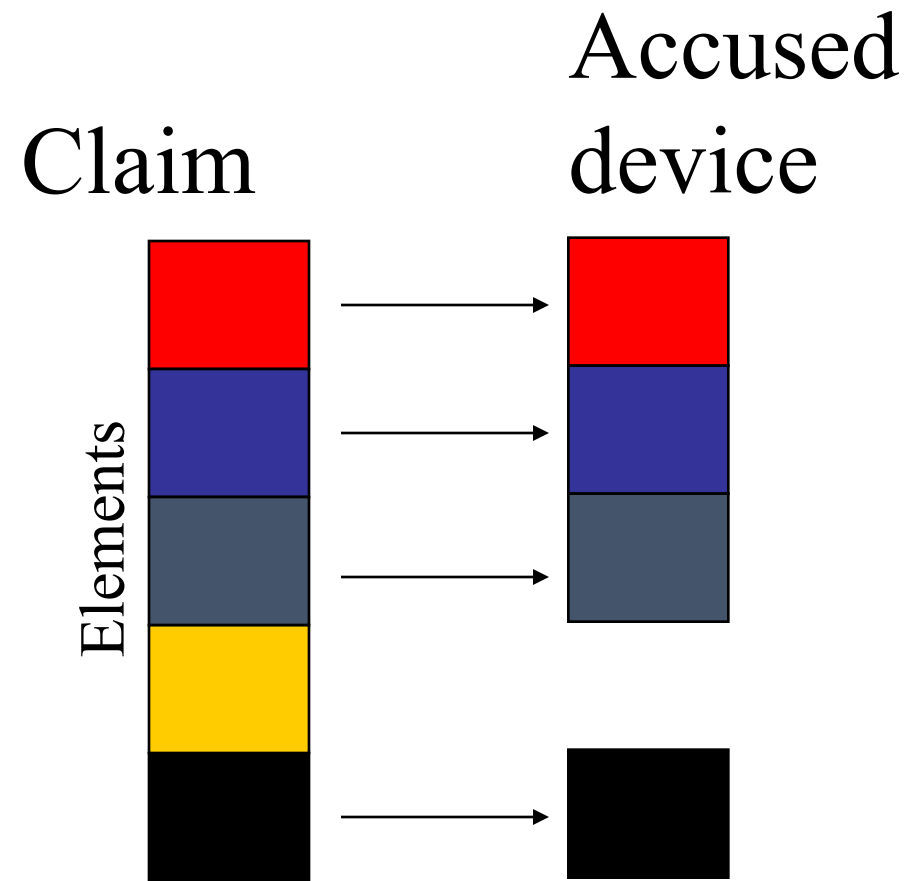
All-Elements Rule



No (literal) infringement



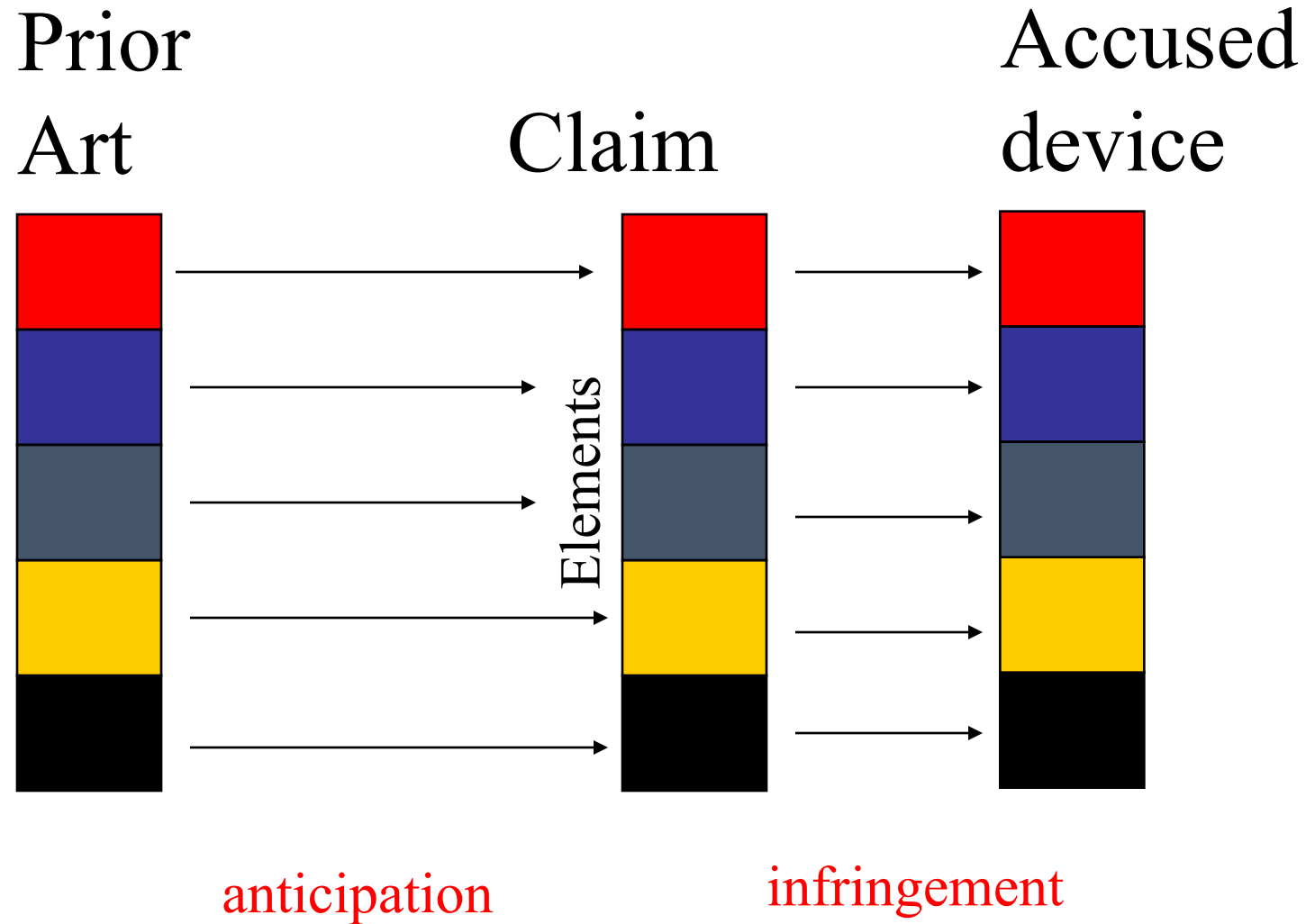
All-Elements Rule



No (literal) infringement



All-Elements Rule





Suppose that D manufactures and sells an otherwise identical mousetrap that incorporates a screen instead of a window

FIG. 1

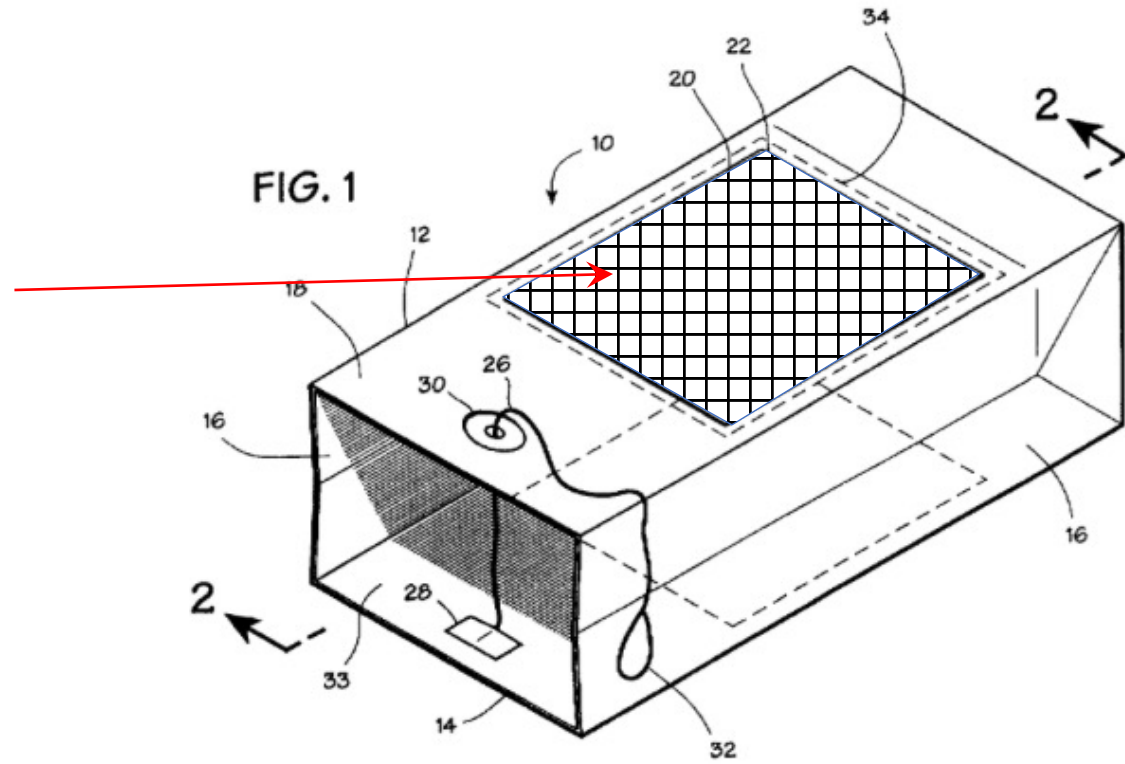
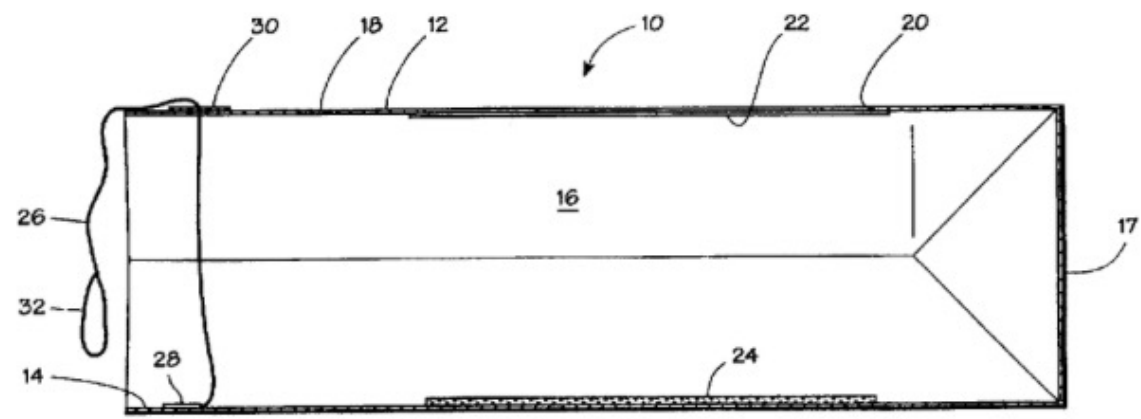


FIG. 2

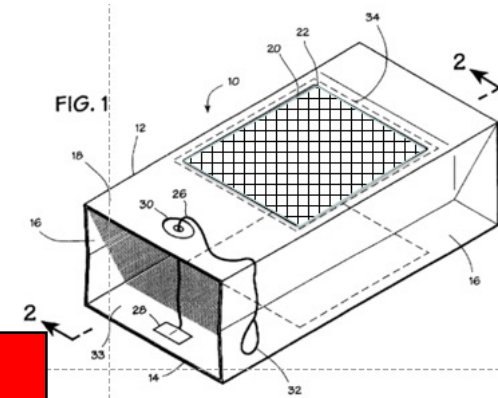
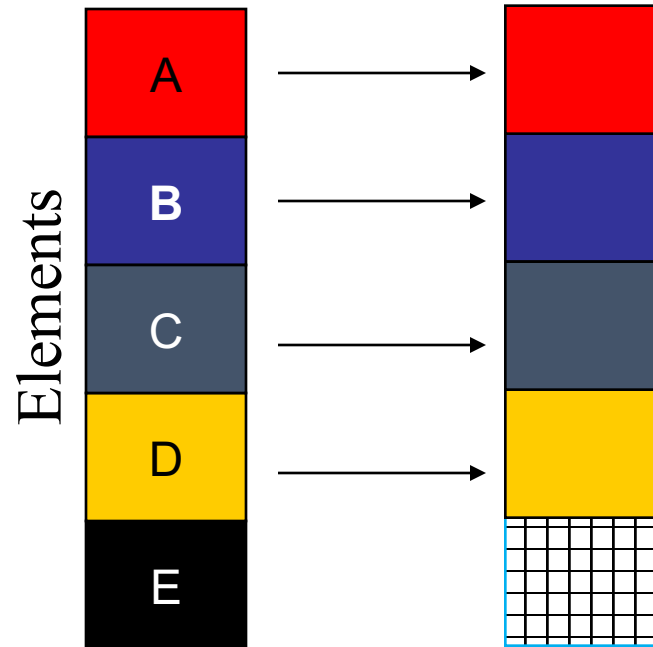




All-Elements Rule

I claim:1. A disposable rodent trapping device, comprising: [A] a substantially lightweight and flexible housing having a bottom face, a top face, an entrance opening in said housing for said rodent, and an aperture in said top face located near said entrance opening; [B] a trapping means situated on said bottom face; [C] a handle attached to said bottom face and passing through said aperture, wherein operation of said handle closes said entrance opening; [D] a viewing opening in said top face; and [E] a translucent window adhesively attached to the periphery of said viewing opening in said top face....

Claim



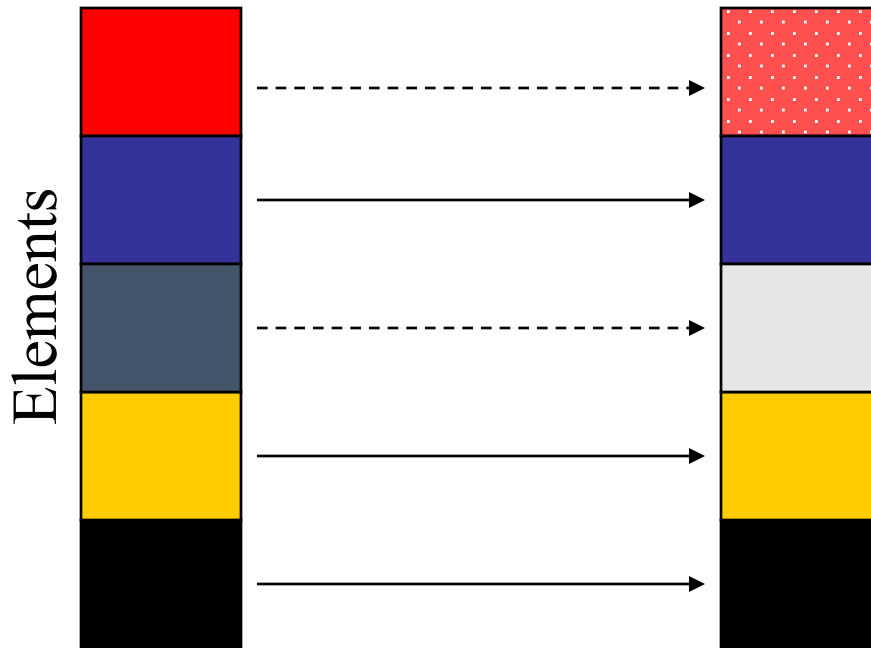
No (literal) infringement



Equivalents – Element by Element

Claim

Accused device



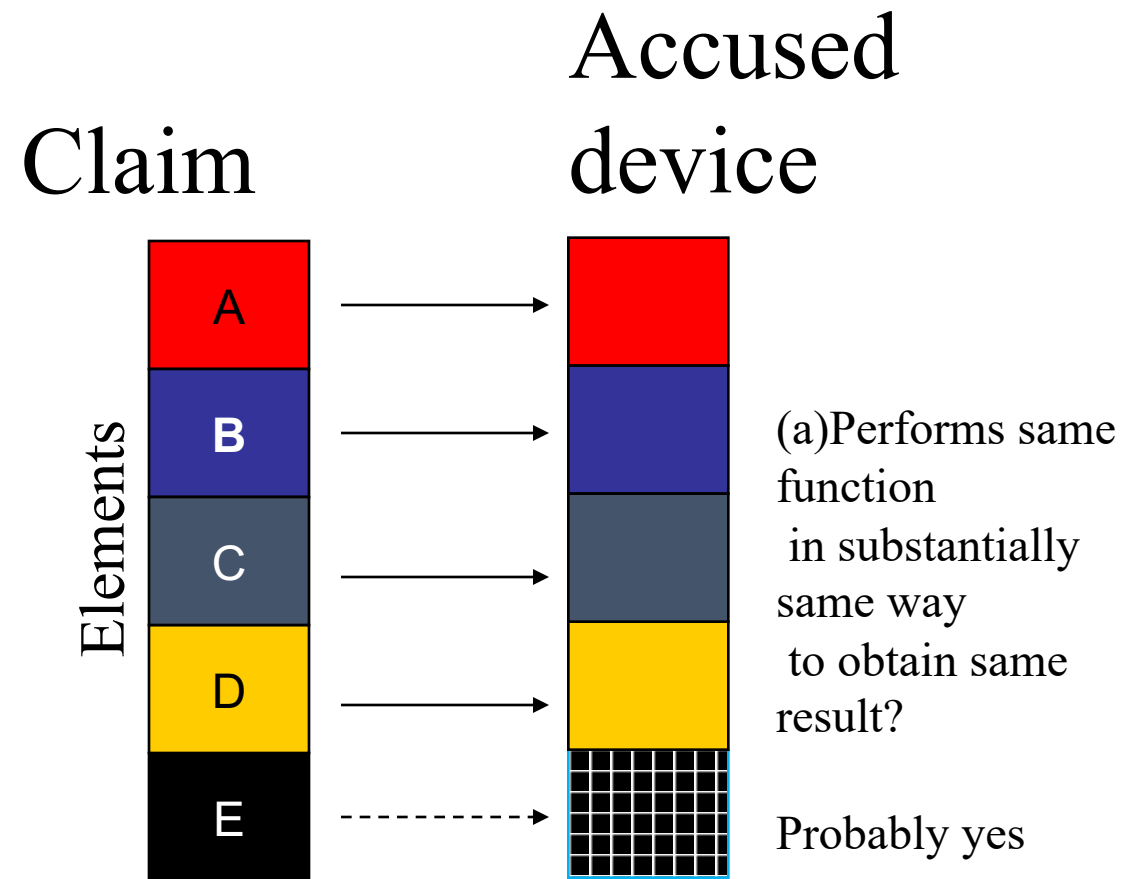
Tests:

- (a) Performs same function in substantially same way to obtain same result;
- (b) Differences are “insubstantial”



All-Elements Rule

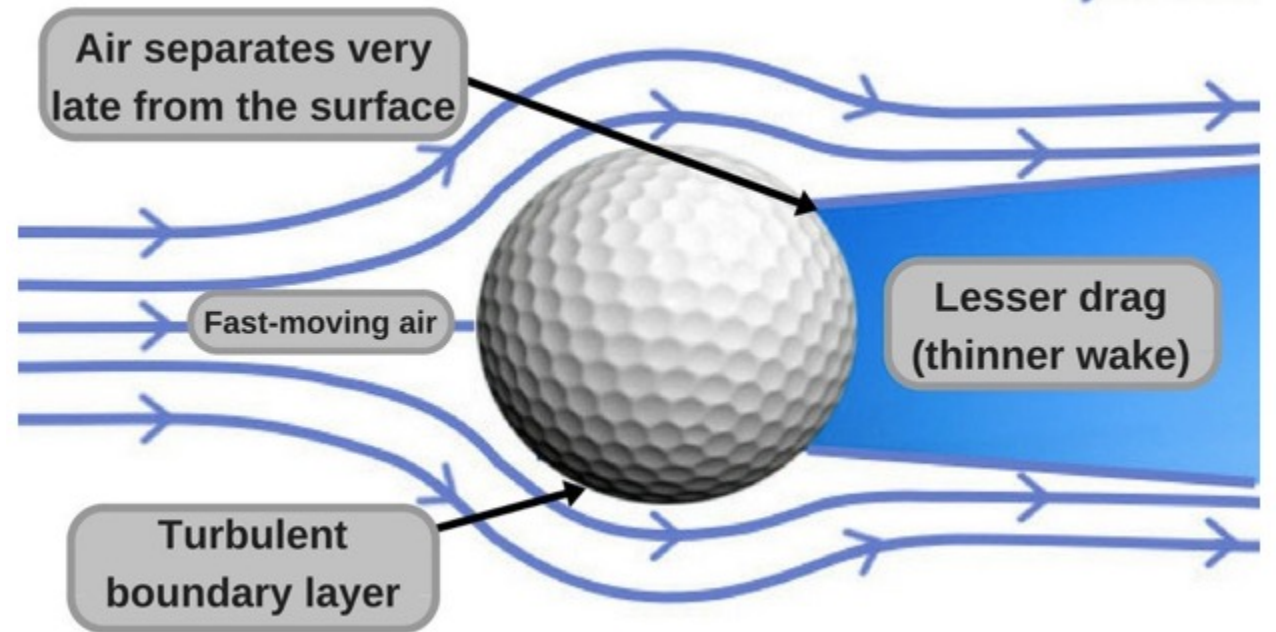
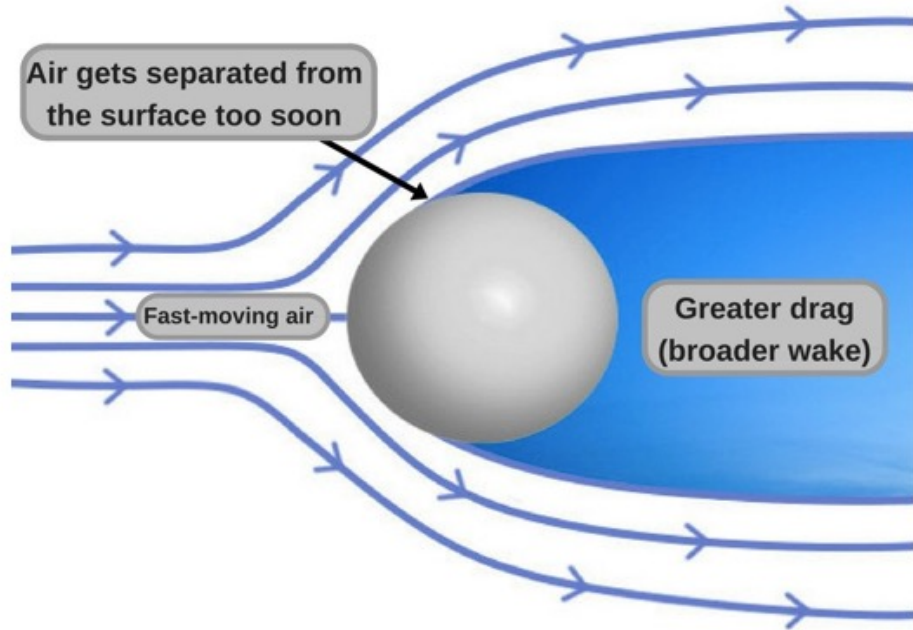
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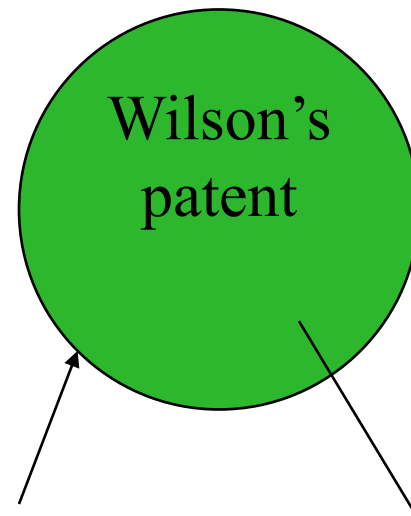


Infringement through equivalents

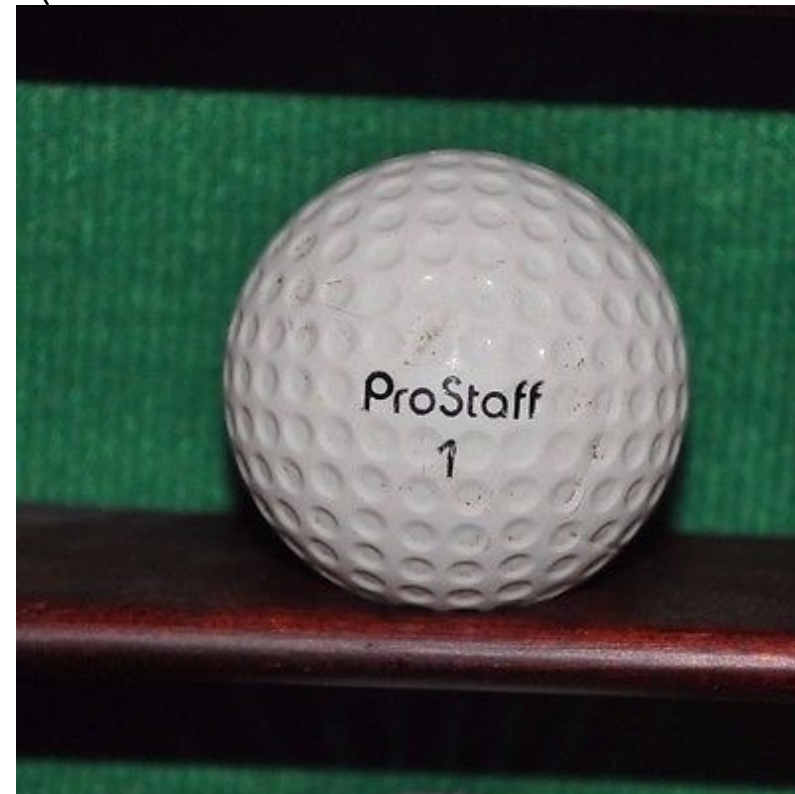


USGA Explanatory video:
<https://www.youtube.com/watch?v=fcjaxC-e8oY>





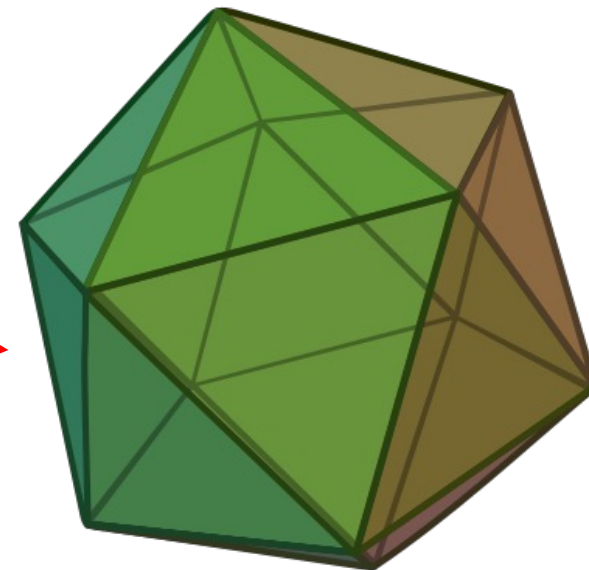
1. A golf ball having a spherical surface with a plurality of dimples formed therein and six great circle paths which do not intersect any dimples, the dimples being arranged by dividing the spherical surface into twenty spherical triangles corresponding to the faces of a regular icosahedron, each of the twenty triangles being subdivided into four smaller triangles consisting of a central triangle and three apical triangles by connecting the midpoints of each of said twenty triangles along great circle paths, said dimples being arranged so that the dimples do not intersect the sides of any of the central triangles.





Wilson's
patent

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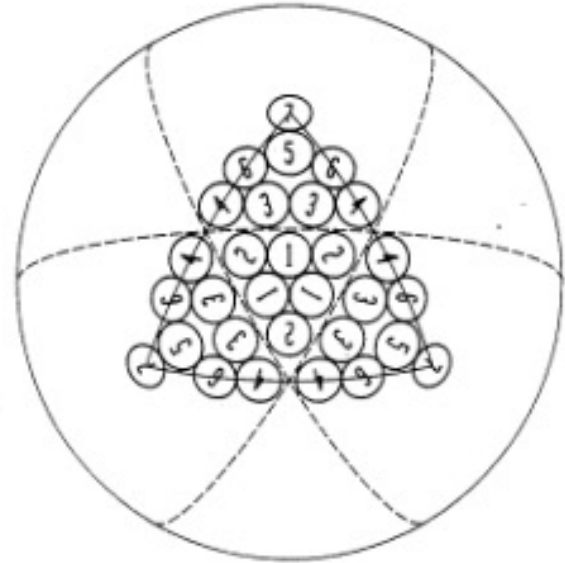
Polyhedron with 20 faces

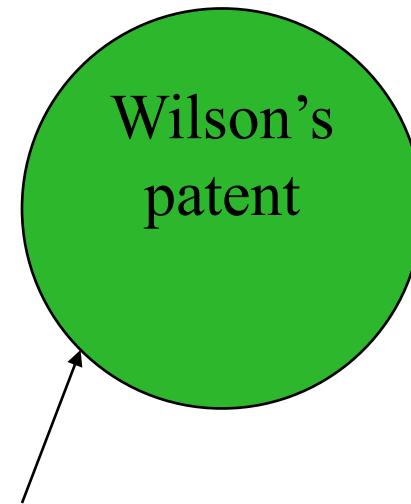


Wilson's patent

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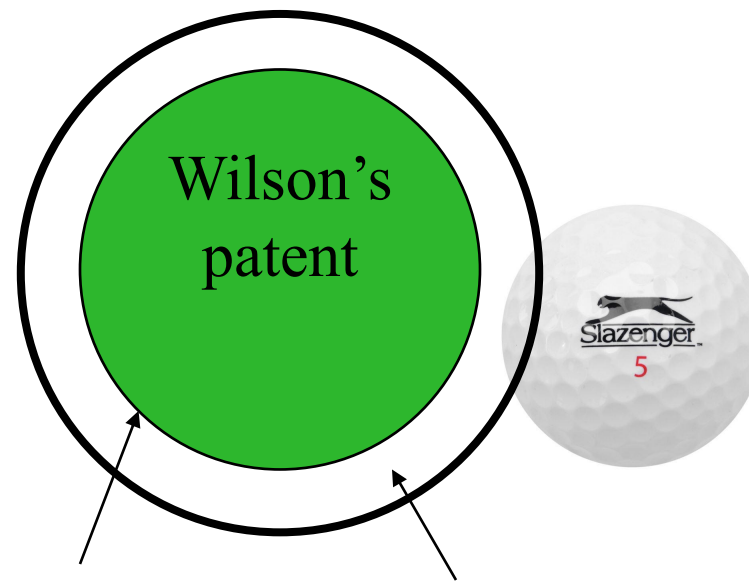
FIG. 8B





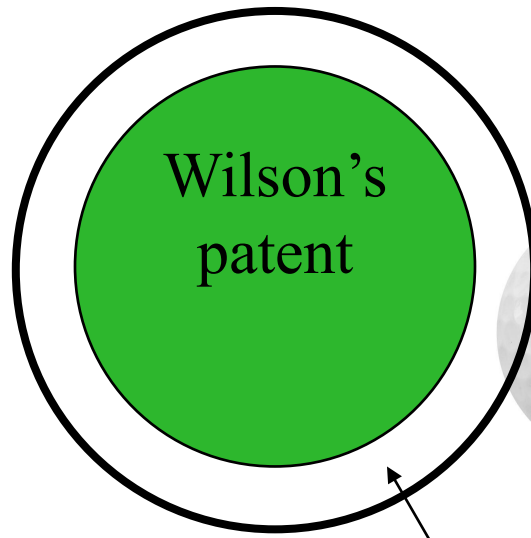
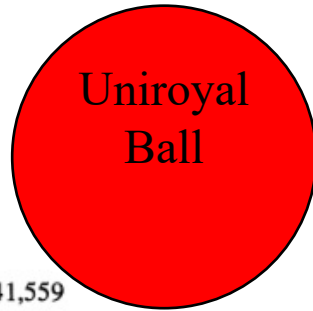
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“Dunlop's balls are icosahedral balls with six great circles, five of which are intersected by dimples. The balls contain 432 to 480 dimples, 60 of which intersect great circles in amounts from 4 to 9 thousandths of an inch.”

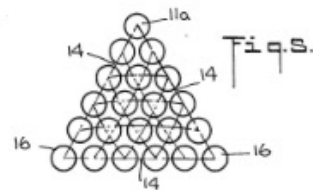
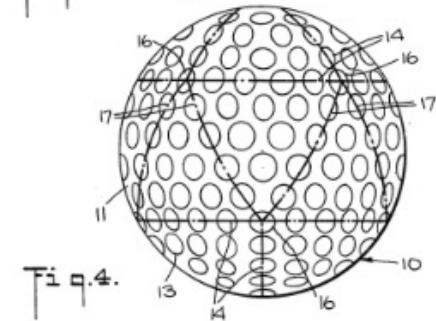
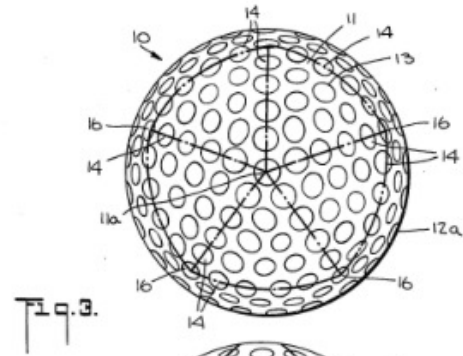


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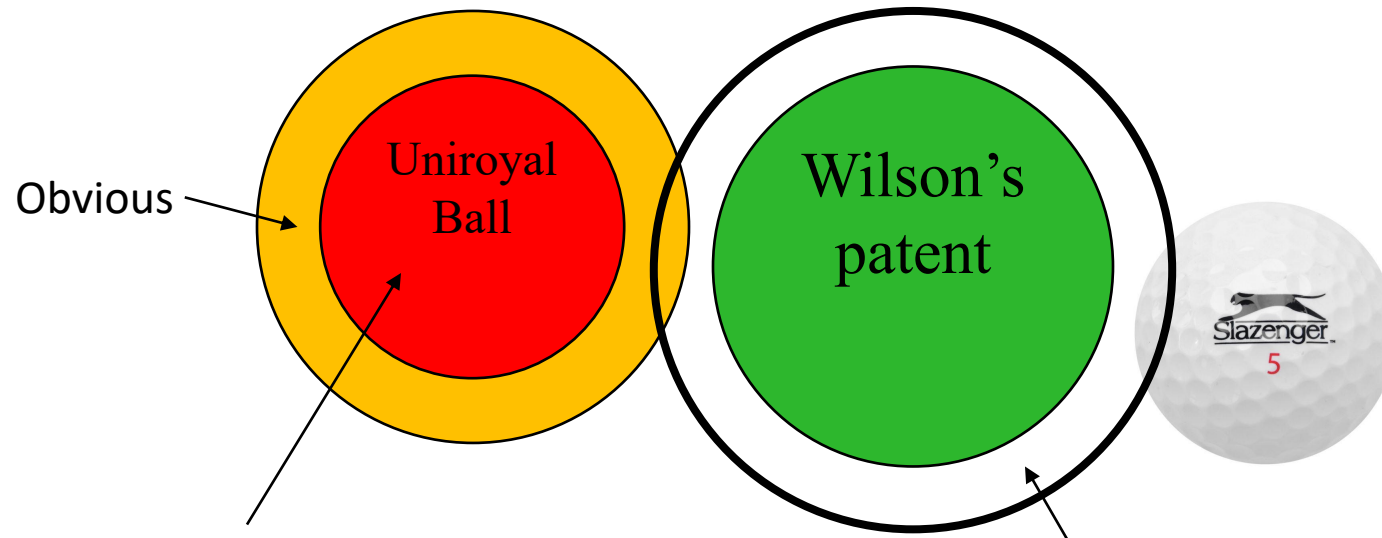
“[A] hypothetical claim directed to an icosahedral ball having six great circles intersected by 60 dimples in amounts up to 9 thousandths of an inch.... Stated as a percentage of dimple radius, the intersection permitted in the hypothetical claim is 13% or less”



U.S. Patent Feb. 27, 1979 Sheet 2 of 2 4,141,559



"[A] hypothetical claim directed to an icosahedral ball having six great circles intersected by 60 dimples in amounts up to 9 thousandths of an inch.... Stated as a percentage of dimple radius, the intersection permitted in the hypothetical claim is 13% or less"



Obvious

Uniroyal
Ball

Wilson's
patent

Slazenger

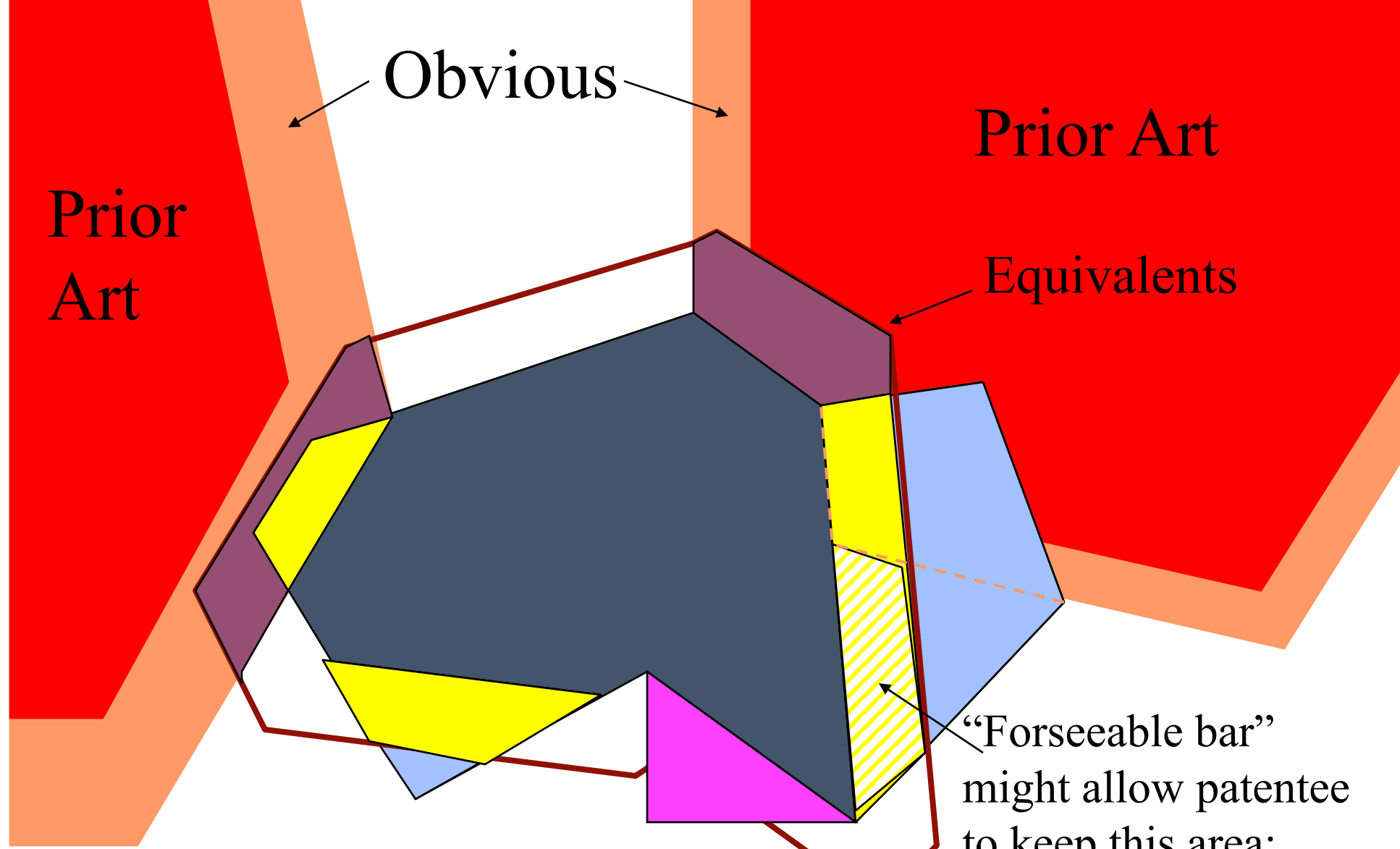
5

"[T]he dimples on the Uniroyal ball intersect by 17% to 21%"

"[A] hypothetical claim directed to an icosahedral ball having six great circles intersected by 60 dimples in amounts up to 9 thousandths of an inch.... Stated as a percentage of dimple radius, the intersection permitted in the hypothetical claim is 13% or less"

"We hold that these differences are so slight and relatively minor that the hypothetical claim--which permits twice as many intersecting dimples, but with slightly smaller intersections--viewed as a whole would have been obvious in view of the Uniroyal ball."

Net result: No infringement



Obvious

Prior Art

Prior Art

Equivalents

“Forseeable bar”
might allow patentee
to keep this area;
“complete bar”
approach doesn’t



Part B: Defenses



Westinghouse's first air brake (1869)

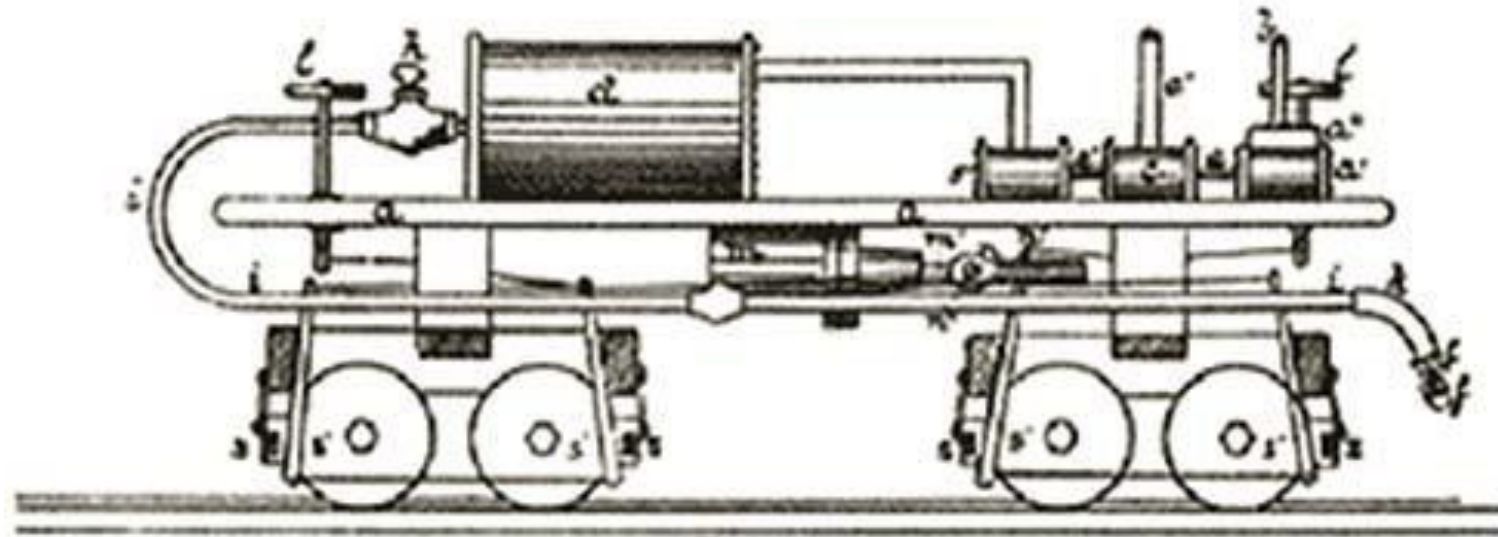


Fig. 1.

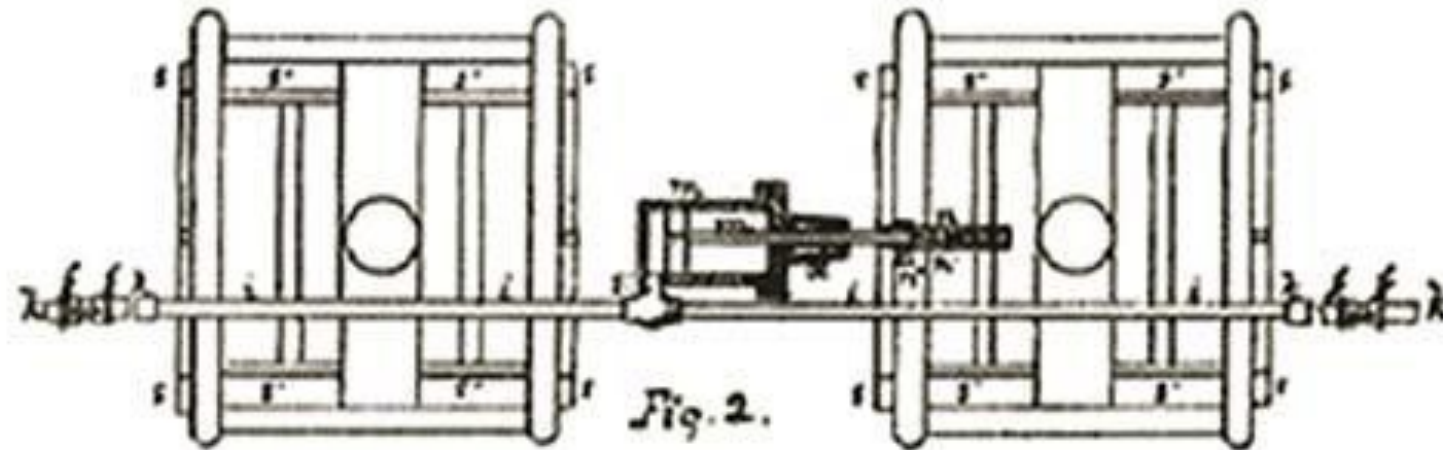
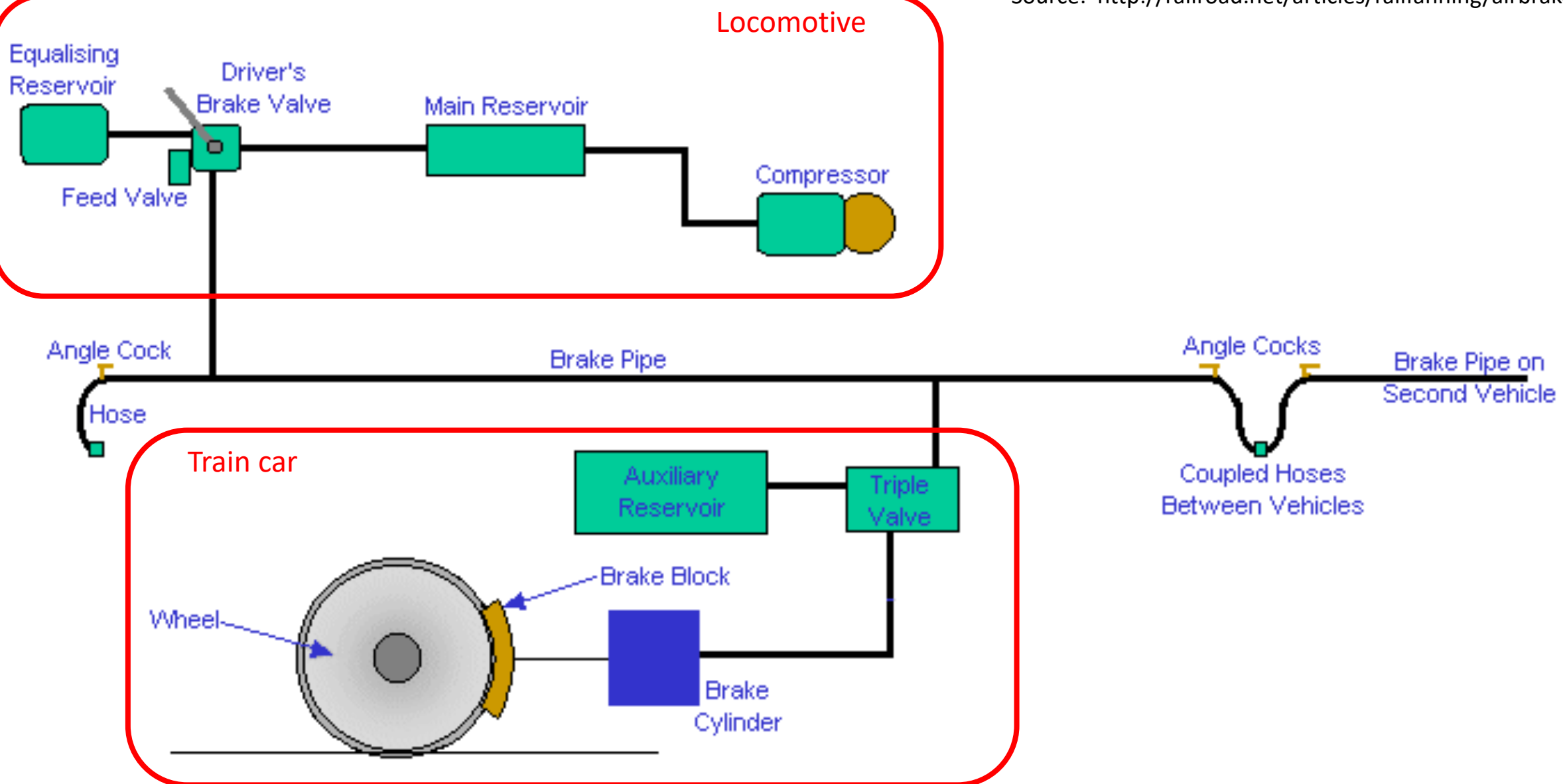


Fig. 2.

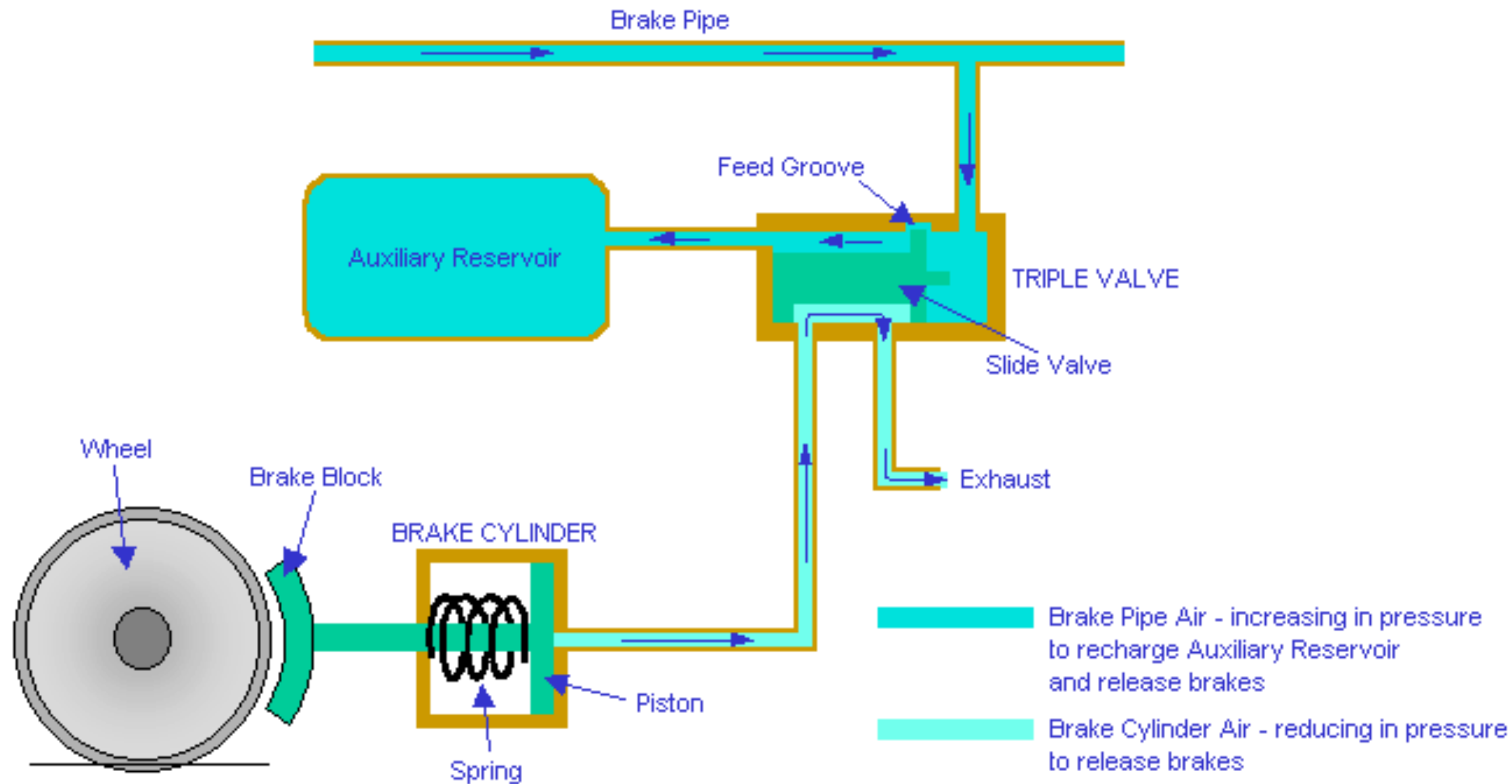


Imperfections

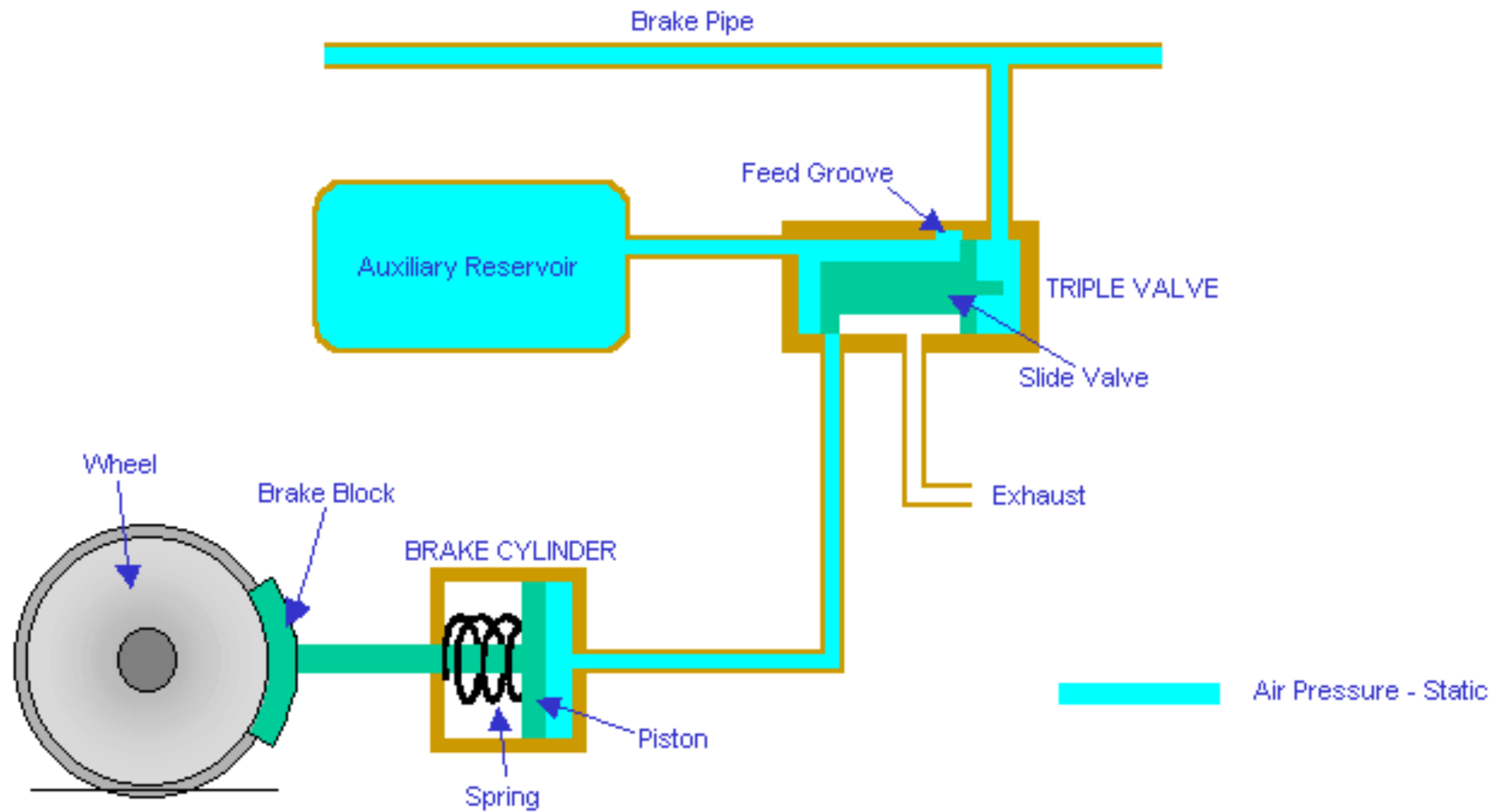
- Slow transfer of air pressure to the rearward cars in long trains substantially increased the time necessary to stop the trains and exerted pressure on the engine and forward cars
- A break in the chain of couplings between the cars would make it impossible to set the brakes on any of the cars



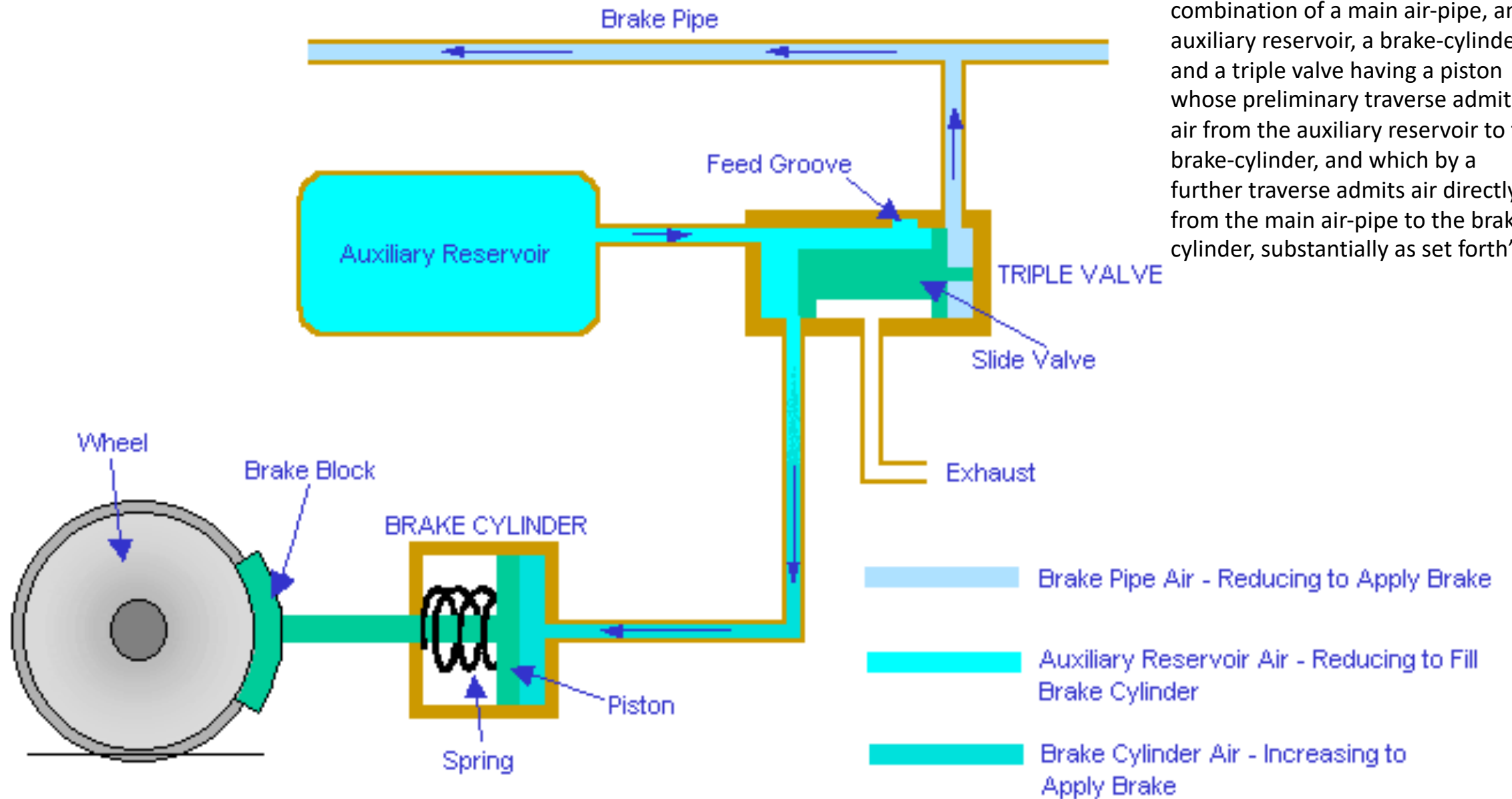
Block Diagram of Basic Air Brake Equipment



Schematic Diagram of Air Brake System on Vehicle in Release Position



Schematic Diagram of Air Brake System on Vehicle in Lap Position



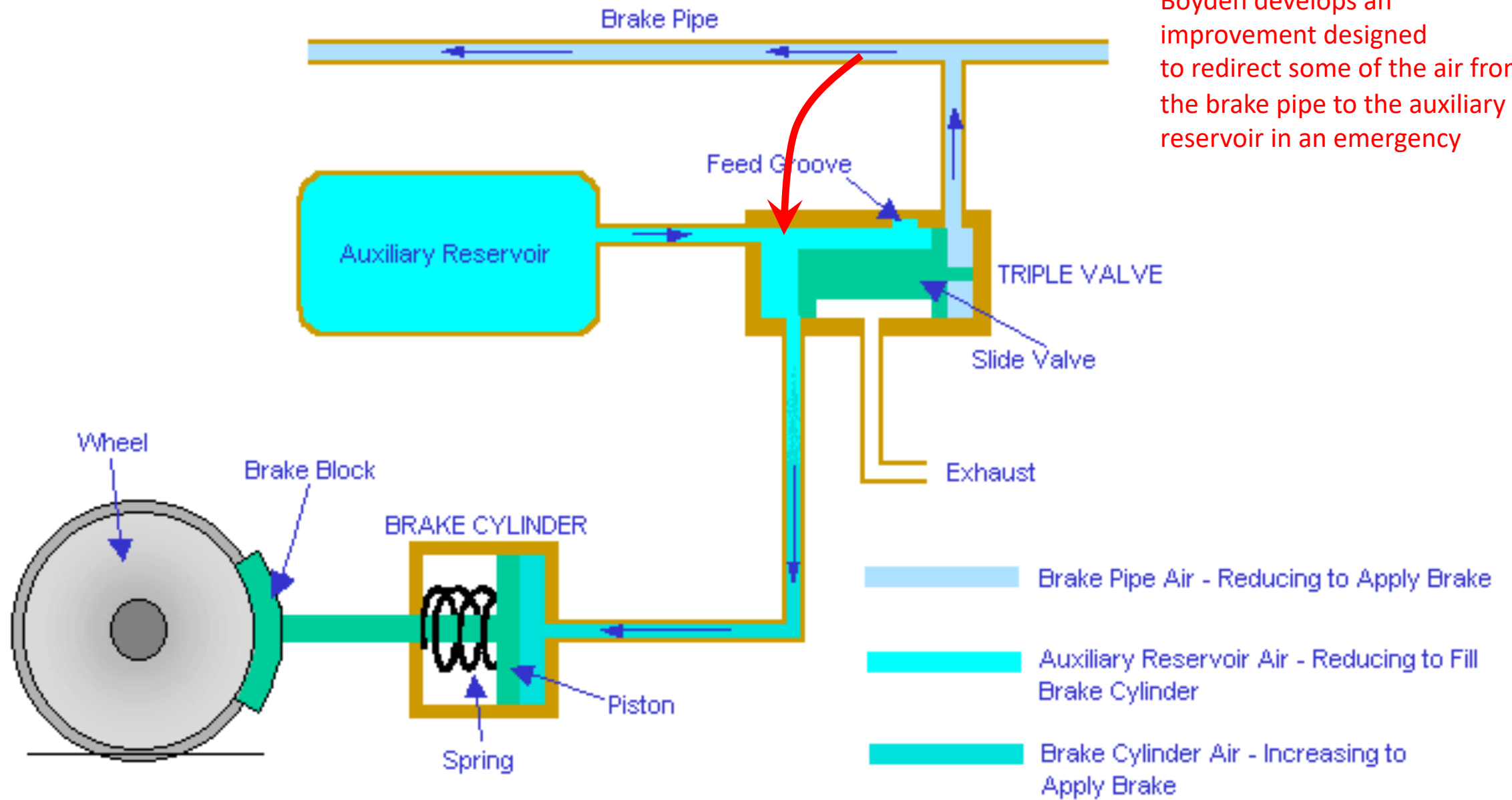
Claim: "In a brake mechanism, the combination of a main air-pipe, an auxiliary reservoir, a brake-cylinder, and a triple valve having a piston whose preliminary traverse admits air from the auxiliary reservoir to the brake-cylinder, and which by a further traverse admits air directly from the main air-pipe to the brake-cylinder, substantially as set forth"

Schematic Diagram of Air Brake System on Vehicle in Application Position



Dissemination of the Technology

- Problem:
<https://www.google.com/search?q=westinghouse+air+brake&source=lmns&tbm=vid&bih=712&biw=1071&client=safari&hl=en&sa=X&ved=2ahUKEwjftumCnbT9AhV6MlkFHcMLC6cQ0pQJKAR6BAgBEAo#fpstate=ive&vld=cid:9986559f,vid:k6nXOd7b7fw>
- Initial Solution:
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=video&cd=&ved=2ahUKEwjNooyGnbT9AhUPFlkFHafiC7AQtwJ6BAgBEAI&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D1a9-pc07KKc&usg=AOvVaw17RAPQEGXQNUMMP1FZmo-v>
- Adoption of the triple valve:
https://www.youtube.com/watch?v=l3KqBZxzQTY&embeds_euri=https%3A%2F%2Fwww.google.com%2F&source_ve_path=MTM5MTE3LDM2ODQy&feature=emb_rel_end
- Fruits:
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=video&cd=&ved=2ahUKEwjX-YnMobT9AhUUD1kFHQ_BCM8Qz40FegQIBhAI&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DI3KqBZxzQTY&usg=AOvVaw2GsDTnyMaJtcsXBTOWUvT9

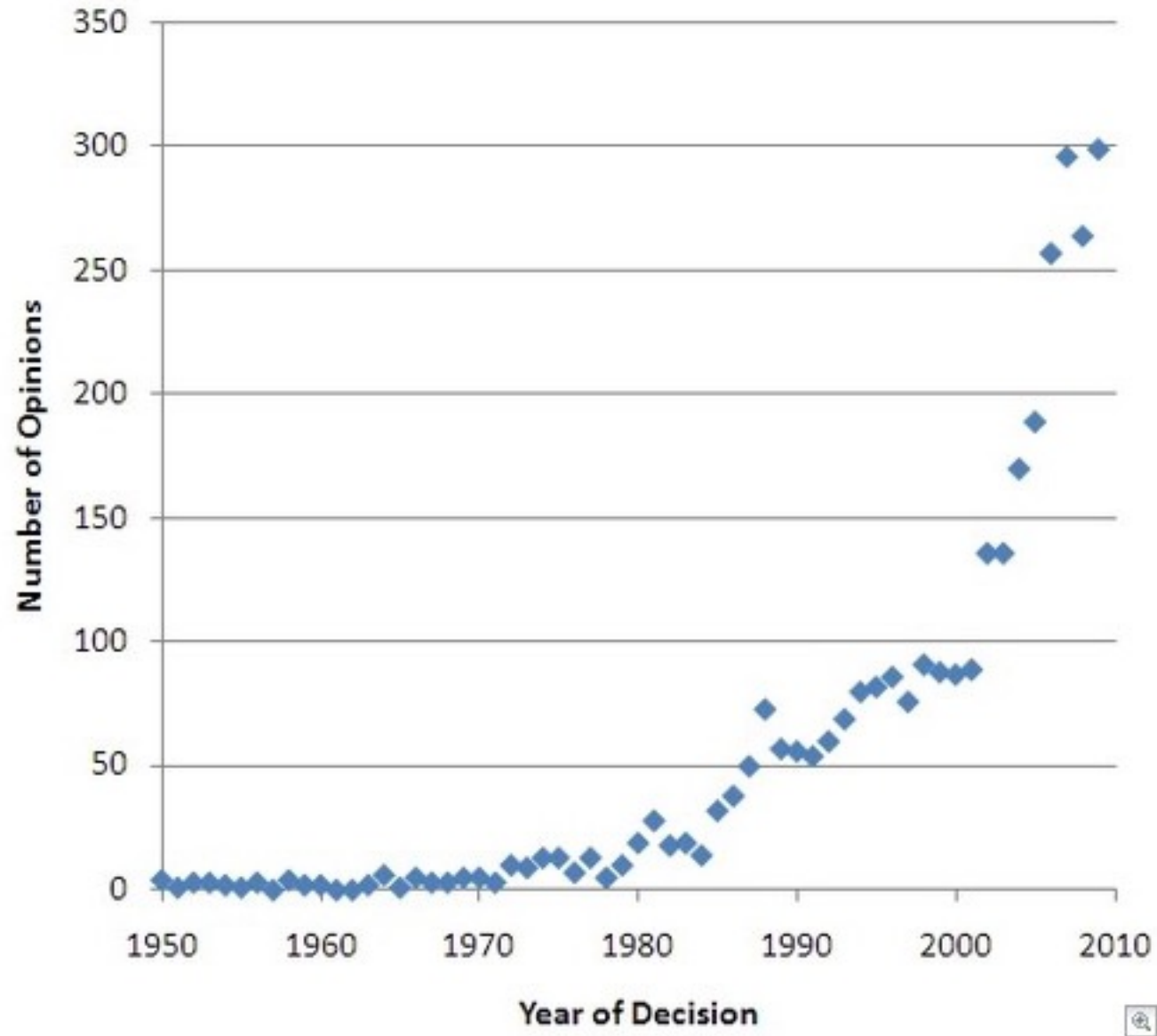


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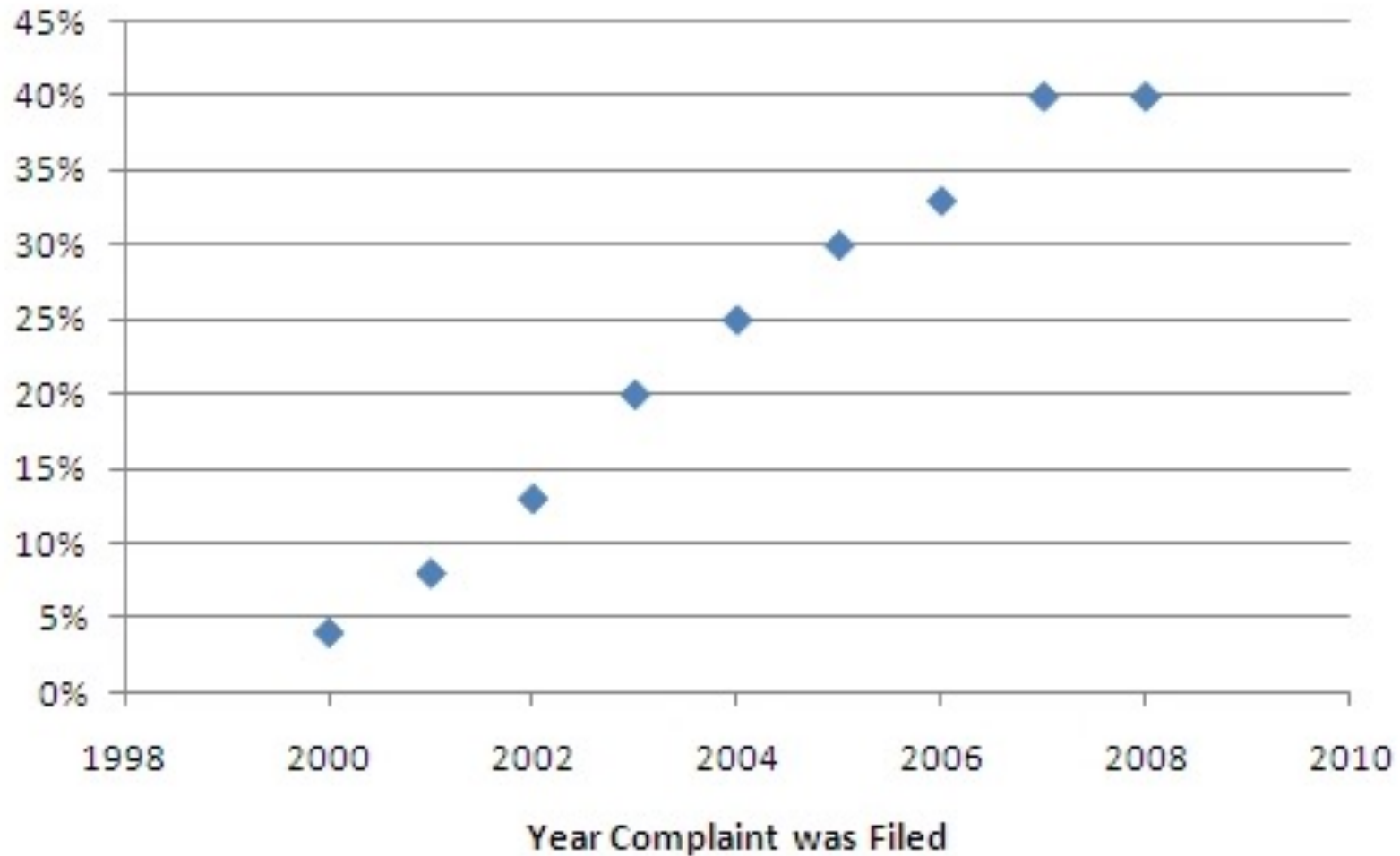
Source: <https://patentlyo.com/patent/2010/06/measuring-the-plague-of-inequitable-conduct.html>

Number of District Court Patent Law Decisions Mentioning "Inequitable Conduct"





Percent of Patent Lawsuits Where Inequitable Conduct is Pled



Source: <https://patentlyo.com/patent/2010/06/measuring-the-plague-of-inequitable-conduct.html>

TABLE 2⁸

Cases with Answers and Answers Containing "Inequitable Conduct"

Source:
Rantanen & Petheridge
(2016)

Year	Baseline cases with searchable answers	Cases with an answer Containing "inequitable conduct"	Percentage of cases with answers containing "inequitable conduct"
2000	236	61	26%
2001	436	138	32%
2002	744	218	29%
2003	1022	324	32%
2004	1445	463	32%
2005	1592	547	34%
2006	1814	605	33%
2007	1957	773	39%
2008	2162	869	40%
2009	2062	748	36%
2010	2162	769	36%
2011	2514	708	28%
2012	3507	740	21%
2013	3947	863	22%
2014	3404	761	22%
2015 (through 5/1/2015)	1008	203	20%



Swanson, “Therasense Effect” Stanford L. Rev. 2014

TABLE 4¹¹
Proving Inequitable Conduct in the District Court

	<i>Pre-Exergen</i>	<i>Post-Exergen Pre-Therasense</i>	<i>Post- Therasense</i>
Total Cases	56	65	64
Number of Cases with Inequitable Conduct Finding			
Yes	13 (23%)	8 (12%)	6 (9%)
No	43 (77%)	57 (88%)	58 (91%)
Reasons for Not Finding Inequitable Conduct*			
Intent	37 (90%)	49 (86%)	46 (87%)
Materiality	21 (51%)	30 (53%)	30 (57%)

*Percentages exclude cases for which no opinion was available. Some cases failed to find either intent or materiality.



Swanson, “Therasense Effect” Stanford L. Rev. 2014

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Evolution of the Scope of the Defenses

For each defense, the 3 columns represent 1980/2000/2019

