

What Swat

a guide to early wire brushes



by Gerry Paton

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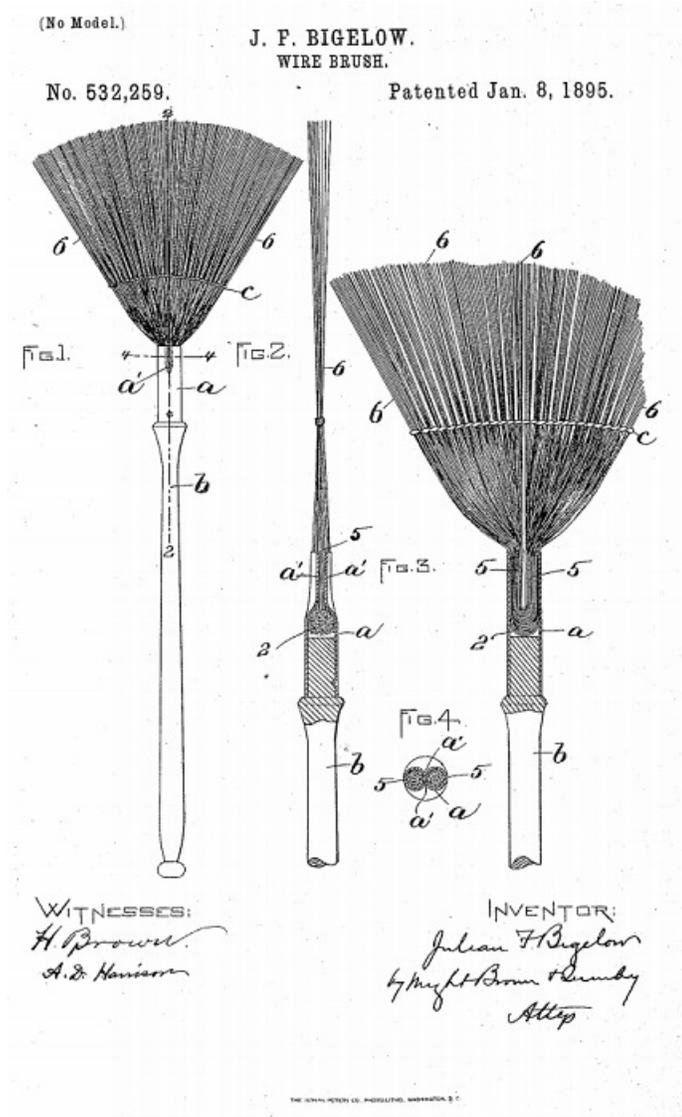
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Acknowledgements

Thanks go to David Anfuso of vintagedrumguide.com for pointing me towards the Allis & Wiens Fly-Killer patent.

In 1895 the first ever wire-brush 'fly killer' came to market. [1] It was invented and manufactured by Julian F. Bigelow of Worcester, Massachusetts and retailed at 15c. [2] What does this have to do with drumming? Well, the drum-brush as we know it evolved from this simple fly-swatter.

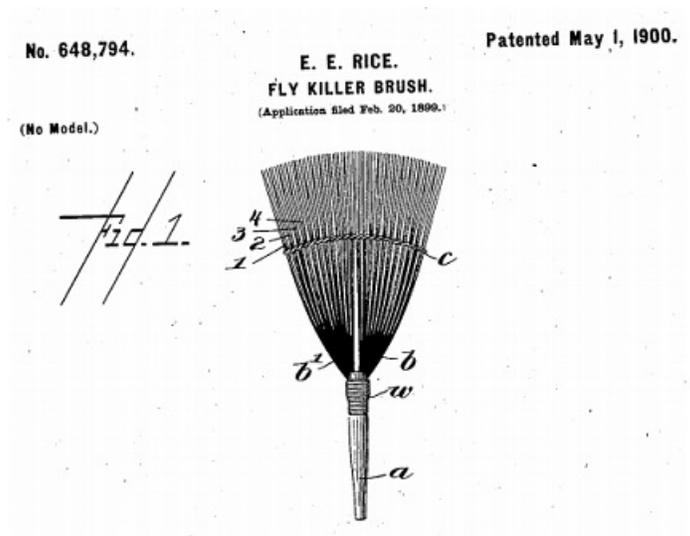


For its time, the Bigelow fly-killer was a radical departure from traditional methods of insect pest-control. Although fly-brushes and fly-brooms existed, they tended to be made of feathers and were only used to shoo-away insects. [3] The purpose of Bigelow's wire-brush however, was to kill the fly. Not only that but quickly and cleanly, which wasn't always possible when using alternative fly-killers. Fly paper for instance could be both cruel and unsightly. Also unsightly were stains from crushed insect-remains when a thwack with a rolled-up newspaper went awry. Bigelow's brush, on the other hand, killed the fly without crushing it due to the flex of its wires.

The business-end of the Bigelow swatter was made from fine plated steel wires about 5” long. [4] These were grouped into tufts and held in place by a ligature interwoven into the wires a short distance from the handle. The tufts not only helped to reinforce and spread the wires, but also allowed air to pass through the resulting gaps, preventing the insect from being fanned out-of-the-way before being hit. [5] Initially the handles were made of wood, but by the early 1900s were black enamelled metal. [6]

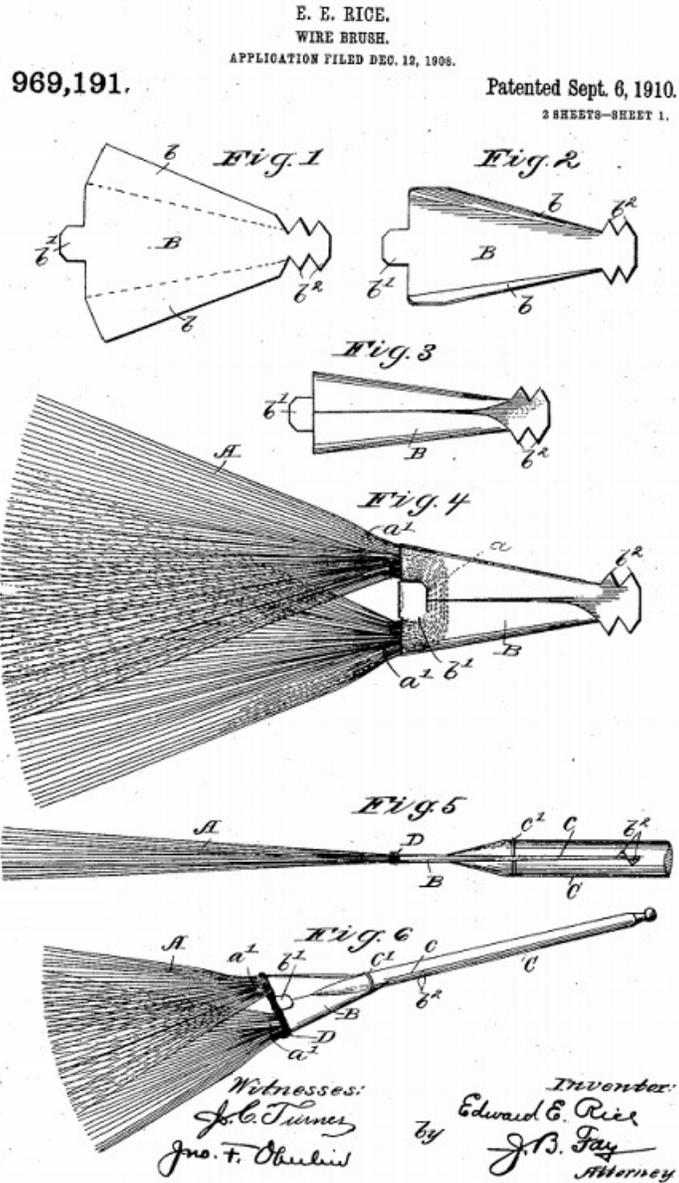


Although a sterling effort the Bigelow fly-killer had its flaws. The wires weren’t always very secure and could slip out of position or even drop out. Also, the ligature would slip with persistent use, sometimes resulting in bunched or, due to the loss of reinforcement that tufting provided, bent-out-of-shape wires. [7] So in 1899 a redesign was carried out by the manufacturer Edward E. Rice. Rice had inherited his family’s sawmill business in 1885 upon the death of his father and over time he switched production from lumber to wire brushes and hardware goods. [8] These were sold under the name, ‘The Rice Manufacturing Company’. [9] Many of the firm’s products were designed by Rice and the improvements he made to Bigelow’s brush were twofold. Firstly, he devised a better way of securing the wires, and secondly a kink was pressed into them which the ligature was then tied to, thereby keeping it in place. [10]



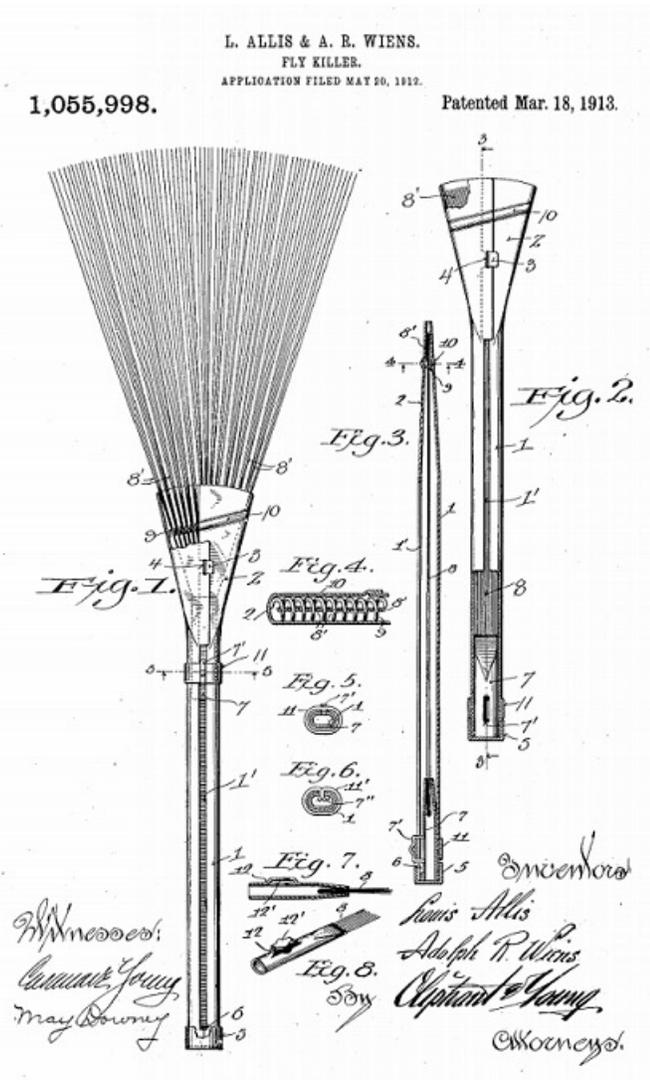
Rice’s improved fly-killer was granted a patent in 1900 and marketed in 1902 as the “Y-R Fly Killer” by The Wire Goods Company of Worcester, Massachusetts [11]—Worcester being the largest wire producing area in the world at that time. [12] Cosmetically, the Y-R brush—“Y-R” most likely being a play on the word “wire”—was almost identical to the Bigelow fly-killer except for its handle, which was offered in plain-wire or black, ‘enamelled’ wood (almost certainly a black lacquer coating). [13] What connection Rice had with The Wire Goods Company is unclear, but they continued to manufacture his design for at least nine years. [14]

In 1906 Rice consolidated his business with the Osborn Manufacturing Company of Cleveland, Ohio and became director of their 'Rice plant'. [15] Osborn were, 'makers of brushes and brooms' and Rice eventually sold his share of the business to them in 1913, [16] presumably to concentrate on his political career: Rice was elected senator for the fifth district of New Hampshire in 1908. [17] During his time with Osborn, Rice overhauled the design of the fly-swatter brush for a second time, creating some simple yet effective changes.



Dispensing with the ligament altogether, Rice instead spaced two bundles of wires a short distance apart at the handle and spread them out into overlapping fans. [18] To compensate for any loss of reinforcement that tufting usually provided it's possible that he used thicker gauge wire. This certainly seems to be borne out by advertising of the time, which described the brush as having, “springy and snappy tempered steel wires, which obviate kinking, tangling or breaking.” [19] The fly-killer brush advanced one rung up the evolutionary ladder and Edward E. Rice’s new design was manufactured by the Osborn Manufacturing Co. in 1912, retailing at 15c. [20]

On the back of the discovery that mosquitoes transmitted malaria, research was carried out into the transmission of disease by flies and, following a 1912 report by Dr. Milton J. Rosenau of Harvard Medical School, a common misconception in the early twentieth century was that they could spread the polio virus. In an attempt to prevent epidemics, regional and, eventually, national campaigns would be waged against the house-fly to bring down their number during the summer months. [21] Although misguided, this commonly-held belief about polio transmission meant that fly-swatters were never more popular and their availability during the years of the Great War can only have fuelled the trend for drummers using them as replacement sticks. Luckily for two Milwaukee inventors, Louis Allis and Adolph R. Wiens, they happened to take a further look at the fly-killer’s design just as this boom in sales was beginning. Their aim was to develop a more portable brush and they did this by making the wires retractable. [22] This brought down the brush’s overall length, which was desirable as standard fly-swatters could be quite unwieldy—Bigelow’s brush, for example, was anywhere between 16 to 18 inches long depending on year of production. [23] A further advantage of the ‘telescopic’ design was that the wires were protected when not in use.



The retractable fly-killer brush was a radical departure for Louis Allis. A qualified civil engineer, he had worked his way up through the ranks of his father’s business, the Edward

P. Allis Company, before forming the Mechanical Appliance Co (later the Louis Allis Company) with one of his cousins in 1901. Allis specialised in the design and manufacture of electric motors so had no direct connection with brush making. [24] This was not the case with Adolph Wiens, however. Wiens headed his own company, the A. R. Wiens Brush Company of Milwaukee, Wisconsin, and had already been granted a number of brush-related patents by the time he'd palled-up with Allis, so in all likelihood he produced the pair's improved fly-killer brush. [25]

The Allis-Wiens fly-killer was granted a patent in 1913 and theirs was the design that Ludwig & Ludwig copied when they brought out their rechristened "Jazz Sticks" in the early 1920s. Any differences between the two companies' products were mainly cosmetic. The wires of the Allis-Wiens brush were extended by sliding a ring along the metal tube that housed the wires, whereas Ludwig used a small button. Ludwig's only significant deviation from the original design was their omission of Allis & Wiens' fan-spreading mechanism (a metal coil that helped separate the wires as they were extended). [26]

Because Ludwig & Ludwig adopted the retractable model for their Jazz Sticks it is tempting to think that Allis & Wiens' brush had been the fly-swatter of choice among early drummers and that non-retractable designs weren't even considered. However, it seems that this was not the case. On recalling the first pair of brushes he'd ever used (sometime during the early-to-mid 1920s), New Orleans drummer Alfred Williams claimed that:

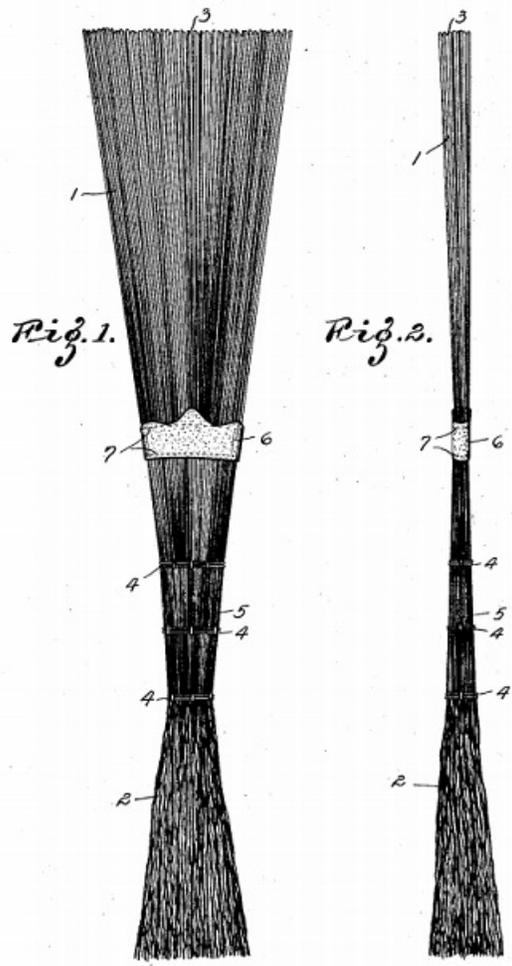
"They had wood handles, like a stick. I wouldn't use them for a whole number, just for soft passages inside a tune. You put a rubber band on them to hold them in shape." [27]

Clearly, Williams was only familiar with non-retractable brushes, despite Ludwig & Ludwig having already entered the market with their Jazz Sticks around that time. By 1928 Allis & Wiens had followed Ludwig's lead by marketing their product as a 'drum beater' (in addition to selling it as a conventional fly-swatter). [28] Perhaps their contemporaries in the brush-making business had followed suit and were also tapping this additional market—a wise move considering the seasonal nature of fly-swatter sales. It's also possible that brush makers were being commissioned by drum companies to produce versions of their fly-swatters specifically for drummers. Either way, someone was making non-retractable drum-brushes shortly after Ludwig began churning out Jazz Sticks, and because non-retractable brushes are still available today the significance of early brush-designs should not be overlooked. Incidentally, the rubber band around the tips of wires to keep them in shape is a trick still employed by some modern drummers.

Before we wind things down, one further fly-killer patent is worth mentioning. In 1921 a Missouri inventor by the name of Constance A. Riek was granted a patent for a fly-swatter brush made from 'hurl broom straw'. [29] Although a somewhat backwards step in terms of the evolution of the drum-brush, this relatively inexpensive fly-swatter would have been just the sort of thing used by spasm and jook bands. Whether Riek's brush was ever manufactured, let alone distributed nationally, is uncertain, but he may well have aided a few budding drummers in Missouri to make music if nothing else. It's also possible that his swatter gave rise to the myth that drum brushes were originally made from broom

straw. For those wishing to experiment with the sound of straw, a similar product is being manufactured today by Pro-Mark. The bands binding the straws of their 'Broomsticks' rutes can be rolled back or removed so that the sticks function more like brushes.

C. A. RIEK.
COMBINED FLY SWATTER AND BRUSH.
APPLICATION FILED MAY 2, 1921.
1,393,571. Patented Oct. 11, 1921.



Inventor:
C. A. Riek.
By John C. Hydon
Attorney.

Our short history of the drum-brush ends here. Numerous patents were filed after the invention of the Allis & Wiens Fly Killer, but the basic groundwork in brush design had been done and anyone familiar with modern brushes will immediately recognise the similarities between them and the very first fly-swatters. Virtually everything that has followed in their wake has been a subtle variation on a theme. Although Julian F. Bigelow, Edward E. Rice, Louis Allis and Adolph R. Wiens never intended for their brushes to be used as drum beaters, their involvement in the pest-control industry inadvertently changed music forever. The drum-brush still has relevance today, despite competition

from rutes and all manner of novelty sticks, and the range of available brushes has never been greater. May the legacy of those early wire-brush makers live on!

If you have enjoyed this article then please support brushbeat by buying a copy of my book, *The Richmond Assault: a short history of barber-musicians and their role in the development of brush-playing*. Either search for the title at completelynovel.com or use the following link:

<https://completelynovel.com/search?query=the+richmond+assault&commit=Go>

References

1. A 1900 magazine feature described the Bigelow Fly Killer as being, “*distinctively a new contrivance*” and one advertisement proudly stated that it was, “The original and up-to-date Fly Killer on the market”. The brush was also the first of its kind to be patented: *National Magazine*, Volume 11, 1900; Home furnishing review, Volume 23, 1903 (page 230); J. F. Bigelow Wire Brush, patent No. 532,259, Jan 8 1895.
2. Advertisement for the Bigelow Fly Killer, *National Magazine*, 1895 (page 573).
3. Fly-brooms could be made of, “*peacock’s feathers, the wing of a wild turkey, or the branch of a peach tree*”. They could also be the same size as a conventional broom, the handles being a few feet long: *Twelve years in America* by James Shaw, 1867 (page 187); *History of DeKalb County Tennessee* by Will Thomas Hale (2009 edition, page 248).
4. *Sanitary and Heating Age*, 1899 (page 29); *Elements of Correct Technique* by Samuel Howard Monell, 1900 (page 247)
5. J. F. Bigelow Wire Brush, patent No. 532,259, Jan 8 1895.
6. *Transactions of the American Electro-therapeutic Association*, 1891 (page 148); *Elements of Correct Technique* by Samuel Howard Monell, 1900 (page 247); *Home furnishing review*, Volume 23, 1903 (page 230).
7. E. E. Rice Fly-Killer Brush, patent No. 648,794, May 1, 1900.
8. *The Granite monthly*, Volume 41, 1909 (Page 84).
9. *Biennial report of the Bureau of Labor of the State of New Hampshire*, Volume 7, 1904 (page 65).
10. E. E. Rice Fly-Killer Brush, patent No. 648,794, May 1, 1900; *Sanitary and Heating Age*, June 28, 1902 (page 44).
11. *Sanitary and Heating Age*, June 28, 1902 (page 44).

12. *Historic Homes and Institutions and Genealogical and Personal Memoirs of Worcester County Massachusetts*, Vol 1, 1907 (numerous references to Worcester's wire industry).
13. *Sanitary and Heating Age*, June 28, 1902 (page 44).
14. Advertisement for 'Y. R. Fly Killer', *Chicago Tribune*, May 28, 1911.
15. *The Granite monthly*, Volume 41, 1909 (Page 84).
16. *The Epistle*, Volumes 10-11, by Rosemary E. Bachelor, 1983.
17. *The Granite monthly*, Volume 41, 1909 (Page 84).
18. E. E. Rice Wire Brush, patent no 969,191, Sept 6 1910; *Good housekeeping*, Volume 55, 1912 (page 135).
- 19 & 20. *Good housekeeping*, Volume 55, 1912 (page 135).
21. *A Manual of Infantile Paralysis, with Modern Methods of Treatment*, by Jacolyn Van Vliet Manning (page 45); *Dirt and disease: polio before FDR*, by Naomi Rogers.
22. L. Allis & A. R. Wiens Fly Killer, patent no 1,055,998, March 18, 1913.
23. *Sanitary and Heating Age*, 1899 (page 29); *Home Furnishing Review*, Volume 23, 1903; *Hardware Dealers' Magazine*, Volume 25, 1906.
24. *The story of electricity*, Volume 2, by Thomas Commerford Martin and Stephen Leidy Coles, 1919 (Page 310); 'Final Chapter for Louis Allis', *Milwaukee Journal Sentinel*, 21 Oct 1908.
25. *The Era druggists' directory*, Volume 17, 1913 (page 295); patents granted to A. R. Weins: 529823, 583559, 691032, 891314.
26. *The Federal Reporter*, Volume 24, 1928 (page 706).
27. *New Orleans Jazz: the end of the beginning*, by Barry Martyn, 1998 (page 39).
28. *The Federal Reporter*, Volume 24, 1928 (page 706).
29. C. A. Riek Combined Fly Swatter and Brush, patent no 1,393,571, Oct 11 1921.