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Henry Granger Piffard, MD and his photogenic pistol cartridges

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Abstract A leading physician in New York during the last quarter of the 19th century, Henry G. Piffard, MD, was a pioneer dermatologist in New York. He had a propensity to invent, and he used that ability to advance the nascent field of instantaneous photography. The recent discovery of a few survivors of Piffard's patented "photogenic (flash) cartridges" prompted an examination of his connection to a leading photographic supply house of his time. The study provided insights into his system and revealed that Piffard had combined the use of his patent with his passion for skin diseases. As a result, Piffard's publications were among the first to document diseases of the skin photographically.

Henry G. Piffard, MD

Henry Granger Piffard (1842-1910; Figure 1) was among the leading physicians in New York during the last quarter of the 19th Century.[1–3] He was a founding member of the New York Dermatological Society (1869), the oldest such group in the world, and the American Dermatological Association (1876). Many of his papers were seminal in the emerging field, which was sometimes combined with urology. Some of his early contributions include, *A Guide to Urinary Analysis* (1873),[4] *An Elementary Treatise Upon Diseases of the Skin* (1876),[5] and *A Practical Treatise on Diseases of the Skin* (1891).[6] He recorded the books in his library related to dermatology.[7] He also wrote the volume on skin disease for the encyclopedic work, *Wood's Library of Standard Medical Authors* (1879-1886).[8] So versatile and diverse were his interests, that he was often referred to as "Brains Piffard."

A close friend of George Henry Fox (1846-1937), both Piffard and Fox advanced the design of the dermal curette for George Tiemann & Company, and these instruments continue to be offered to the dermatologic community.[9] Fox was also fascinated by photography and published the *Photographic Illustrations of Skin Diseases* in 1880.[10]

Besides working to improve medical devices in his specialty, Piffard held three patents (two involving firearms) when he took on Jacob Riis' (1849-1914) challenge in the 1880s that is described later: (1) US Patent No. 272581 (February 20,1883) for improved cartridge shells for breech loading shotguns; (2) US Patent No. 319020 (June 2,1885) for a recoil attachment for pistols; and (3) US Patent No. 331324 (December 1,1885) for a metal file to shape curved surfaces. Later he would add patents for photogenic cartridges, US Patent No. 383984 (June 5,1888), and for an improved magnesium flash lamp, US Patent No. 413547 (October 22,1889).

The firm of E. & H.T. Anthony & Company

Edward and Henry Anthony were photographic pioneers who would promote Piffard's invention.[11] After Edward

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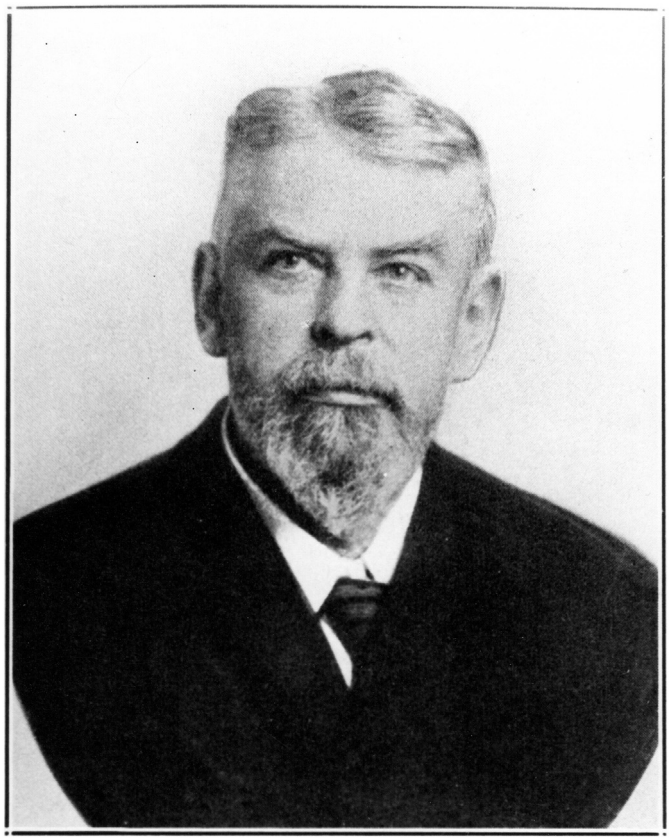


Fig. 1 Henry Granger Piffard, MD. After distinguished careers in diverse fields, Piffard died from pneumonia in 1910. Reproduced with permission from the College of Physicians of Philadelphia.

Anthony (1819-1888) had the celebrated Samuel F.B. Morse (1791-1872) teach him the techniques of the daguerreotype, he opened his own gallery in New York in 1842. Not long thereafter he began selling photographic supplies. By 1850, he became focused on the supplies rather than creating photographs. In 1852, he had his older brother, Henry T. Anthony (1814-1884), join the business. It was not until 1862, when the company was reorganized and renamed E. & H.T. Anthony & Company (Figure 2), that they became business partners. The brothers died in the 1880s, but the firm continued to pioneer new product lines, including the first consumer cameras, the "Buckeye" and the "Marlborough." Still family run, in 1902, the company merged with the Scovill & Adams Company, which became a predecessor of the Ansco and GAF companies.

Piffard's photogenic cartridges

Survivors of the Anthony distribution process recently came to the author's attention and prompted an extensive investigation that led to Piffard. Figure 3 shows a box of photogenic pistol cartridges, along with a Colt Second Model Derringer pistol. (Approximately 9,000 of these pistols were made between 1870 and 1890 in .41 caliber rimfire, for self-

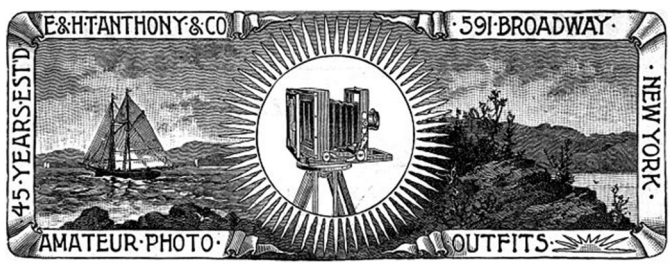


Fig. 2 An 1892 E. & H.T. Anthony & Company advertisement from their monthly magazine, *Anthony's Photographic Bulletin,* promoting products for amateur photographers. Reproduced with permission from Ross Kelbaugh.

Fig. 3 A box of "Photogenic Cartridges," distributed by E. & H.T. Anthony & Company under an arrangement with their inventor, Henry G. Piffard. The .41 caliber cartridges could be fired by the pistol shown, which is a Colt Second Model Derringer, popular late in the 19th century. Reproduced with permission from the Division of Armed Forces History, National Museum of American History, Smithsonian Institution.

defense. Colt could not have anticipated the unique adaptation that would be made of their product.) The surprising inventor of the cartridges turned out to be the same emerging dermatologist, Henry G. Piffard. The physician clearly had an inventive inclination and a familiarity with firearms, specifically pistols, when he decided to develop his own flash powder formula and a way to use it. He was issued US Patent No. 383984 for his formula and the "photogenic cartridges" on June 5, 1888 (Figure 4). As the text accompanying his patent indicates, Piffard relied on a mixture, "...in part of powdered magnesium, which will be ignited by the combination of the easily ignitable or explosive material and burned entirely at or near the mouth of the weapon, so as to produce at the place of discharge a magnesium light of great intensity, but momentary duration.[20] " Another source added that Piffard's was a magnesium mixture, but improved with "gun-cotton, gunpowder, 'woodpowder,' or any similar nitroliguine equivalent… [without] any precise proportion of ingredients, which may be varied to suit the circumstances of the case."

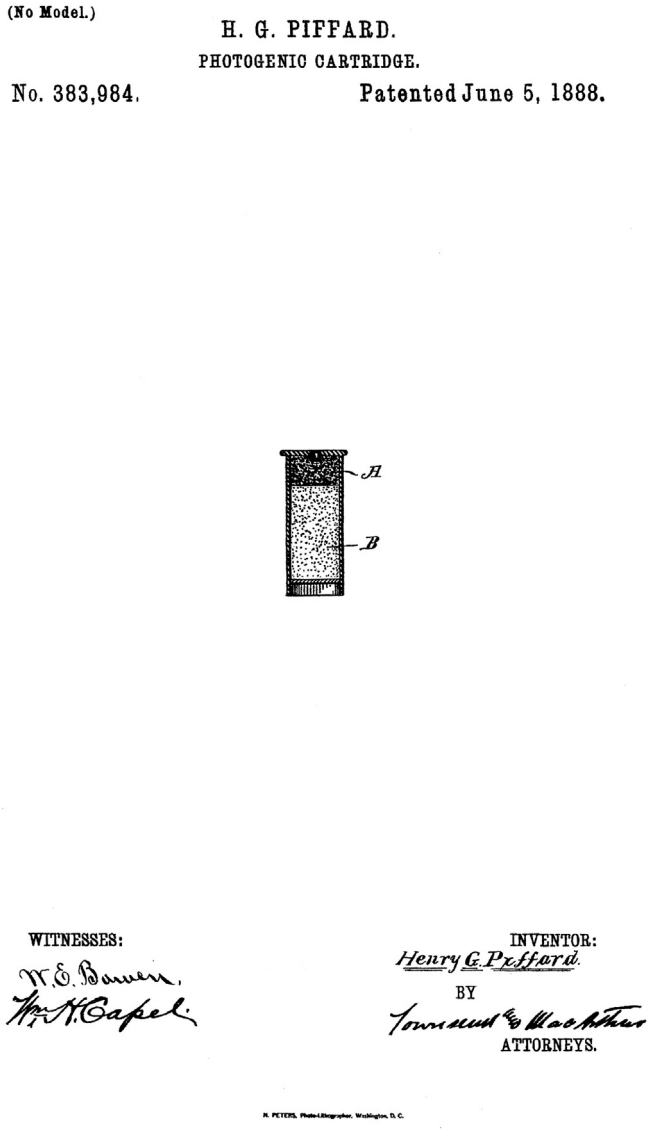
E. & H.T. Anthony & Company immediately began advertising the Piffard product for "instantaneous photography at night." In their annual *Anthony's Photographic Bulletin* for 1888,[12] the firm advertised the photogenic cartridges, which, when "...fired from a pistol have induced us to place them upon the market. Each cartridge will give sufficient light for an ordinary exposure or small group. They contain no chlorate of potash and can be handled without danger." The pistols were $4.00 each, and a box of 15 cartridges was only $1.00. Piffard himself discussed, "An Improved Method of Magnesium Lighting Specially Adapted to Studio and Gallery Use.[12]" Piffard suggested using a reservoir of compressed air to blow small amounts of the magnesium powder through the flame of an alcohol lamp. If compressed oxygen were used in place of air, "...the effect is still more striking." It does not appear to have been a very safe delivery method, and alternative methods were developed to achieve "instantaneous photography."

Although contemporaneous to the pistol, how many of the cartridges were made remains unknown. The box notes that the Anthony firm is the "sole agent," suggesting that they did not make the cartridges, but rather was only their distributor.

Uses of Piffard's cartridges

Why did Piffard stray from his interest in skin diseases to invent pistol cartridges? Although Piffard certainly had potential as an inventor, another note on the box gives a clue as to why he did so—for "instantaneous photography at night."

A friend of Piffard's, Jacob A. Riis, was a journalist, whose own experiences as an immigrant in New York City focused his attention on the living conditions of the poor. He wanted a better way to illuminate the dark conditions of their lives, particularly interiors of apartments, but did not think photography suitable to accomplish that goal. Then, early in 1887, Riis learned of an invention that would become a forerunner of flash photography. Developed by a pair of Germans, Adolf Miethe and Johnannes Gaedicke, their flash powder contained magnesium and potassium chlorate (potash), along with some stabilizers. The powder used a pistol-like piece of equipment to ignite it.


(No Model.)

H. G. PIFFARD.

PHOTOGENIC CARTRIDGE.

No. 383,984. Patented June 5, 1888.

A

B

WITNESSES:

W. E. Bowen.

Wm. H. Capel.

INVENTOR:

Henry G. Piffard.

BY

Townsend & MacArthur

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

Fig. 4 The illustration for Piffard's "Photogenic Cartridges," covered by U.S. Patent No. 383,984, page 1. Text omitted. Reproduced with permission from the US Patent Office.

Using the doctor's patented powder, Riis, Piffard, and several other friends began using the new mode of momentary flash to photograph the slums of the Lower East Side.[13] In 1890, Riis published *How the Other Half Lives: Studies Among the Tenements of New York,* illustrated with many photographs taken by Piffard.[14] Two years later, in 1892, Riis published *The Children of the Poor,* which focused on many of the children he had encountered during his travels in the city.[15] Considered a "muckraker,' Riis, nonetheless, drew attention to the plight of the immigrants and others stuck in the city's crime-ridden sections.[16]

Not surprisingly, Piffard then applied his invention to his own studies of skin diseases. After a brief mention of "photography made easy" in the *Journal of Cutaneous & Venereal Diseases*,[17] Piffard expanded on the topic with a contribution, "Cutaneous Photography Made Easy," for the *Quarterly Compendium of Medical Science.*[18] In 1891, he published a monograph, *A Practical Treatise on Diseases of the Skin,*[6] which was illustrated with approximately 50 photographs taken by using his flash cartridges. He published another paper that gave advice about recording a patient's presentation through photography.[19]

It appears Piffard never marketed his invention personally, but instead licensed Anthony & Company to distribute the cartridges. The firm, in turn, had the cartridges made for their exclusive distribution. The exacting metalwork involved in extruding the copper rim-fire cases probably precluded Anthony from making them in-house. The firm may have chosen the Colt Deringer as the pistol to use in conjunction with the cartridges they wanted to sell, and that determined the caliber of the cartridges. Along with the publications that used the images they helped create, at least a few of these photogenic cartridges have survived. They show a practical application of the doctor's inventiveness, and the Anthony firm's marketing aptitude.

Although Piffard continued to invent, his passion was dermatology, and he devoted much of his professional career to it. Before his death in 1910 of pneumonia, he also served with a surgical appointment at the New York Dispensary for Diseases of the Skin, and later as a professor of dermatology at the University of the City of New York.

Conclusions

Piffard's interests, energy, and inventive nature resulted in remarkable achievements in diverse fields, including being credited as a founder of the field of dermatology, and as a pioneer of the use of X rays and flash photography in medical applications. No wonder he is still referred to as "Brains Piffard" by some associates for his passion, the specialty of dermatology.

References

1. Marmelzat WL. Medicine and history: "Cutaneous surgery made easy" (1887), Henry G. Piffard's original contribution. *J Dermatol Surg* 1976;2:297,341-343.
2. Parish LC. Biographica dermatologica: Henry Granger Piffard. *Cutis* 1966;2:52,56.
3. Cropley T, Henry G. Piffard (1842-1910). In: Löser C, Plewig G, Burgdorf WHC, eds. Pantheon of Dermatology. Berlin, Germany: Springer-Verlag; 2013. p. 865-868.
4. Piffard HG. *A Guide to Urinary Analysis: For the Use of Physicians and Students.* New York: NY:William Wood & Co.. 1873.
5. Piffard HG. *An Elementary Treatise Upon Diseases of the Skin: For the Use of Students and Practitioners.* New York, NY: Macmillan. 1876.
6. Piffard HG, Fuller RM. *A Practical Treatise on Diseases of the Skin.* New York, NY: D. Appleton & Co.. 1891.
7. Piffard HG. *Bibliotheca Dermatologica: Catalogue of Cutaneous Literature in the Library of Henry G. Piffard, M.D.* New York, NY: Bradstreet Press. 1879.
8. Piffard HG, Thomas AR, National Center for Homoeopathy (U.S.), et al. A treatise on the materia medica and therapeutics of the skin. *Wood's Library of Standard Medical Authors*. New York, NY: W. Wood & Company; 1881.
9. George Tiemann & Co. *The American Armamentarium Chirurgicum.* New York, NY: George Tiemann & Co.; 1879.
10. Fox GH. *Photographic Illustrations of Skin Diseases.* New York, NY: E. B. Treat. 1880.
11. Historic Camera History Librarium. E. & H.T. Anthony Company history. Available at: http://www.historiccamera.com/cgi-bin/librarium/pm.cgi?action=display&login=anthonyco. Accessed January 22, 2018.
12. Chandler CF, ed. Anthony's Photographic Bulletin. New York, NY: E. & H.T. Anthony & Co.; 1988. p. 217.
13. Burns SB. *Photographic History of Nineteenth Century Dermatology: Selections from the Burns Archive.* New York, NY: Burns Archive Press. 2005.
14. Riis JA. *How the Other Half Lives: Studies Among the Tenements of New York.* 1903.
15. Riis JA. *The Children of the Poor.* New York, NY: Scribner's Sons. 1892. xi, 300 p.p.
16. Riis JA, Doherty RJ. *The Complete Photographic Work of Jacob A. Riis.* New York, NY: Macmillan. 1981.
17. Piffard HG. Cutaneous photography made easy. *J Cutan Genito-Urin Dis* 1888;6:41-43.
18. Quarterly Compendium of Medical Science. Cutaneous photography made easy. Available at: https://play.google.com/books/reader?id=nnMCAAAAYAAJ&hl=en&pg=GBS.PA282. Accessed February 6, 2018.
19. Piffard HG. A suggested improvement in the correction of lenses for photomicrography, photography, and photoastrography. *Am J Med Sci* 1893: 23-29.
20. Piffard Henry G. patentshttps://google.com/search?. Accessed January 22, 2018. text for U.S. Patent No. 383984.