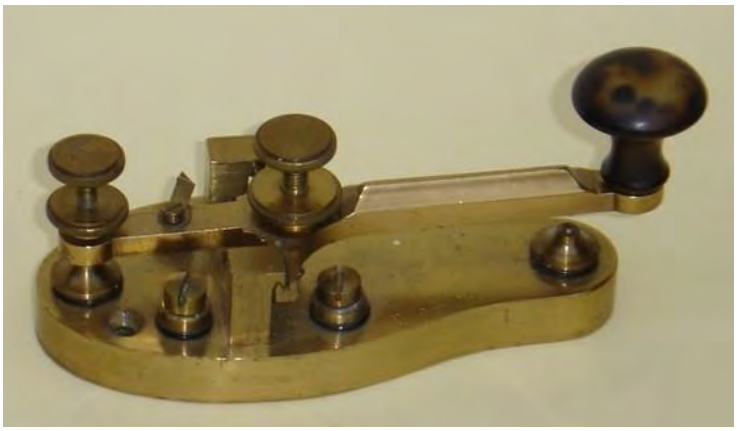
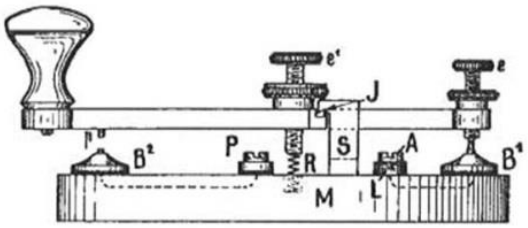
ABOUT THE '*BELGIAN*' "VICTOR" KEY

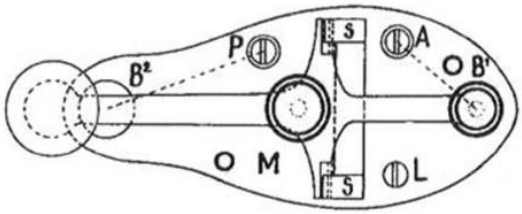


The photo above shows the most popular morse key in Belgium. It was in use for many decades by our PTT (up to about 1950) and was made by manufacturers such as Ch. Richez in Brussels and E. Gérard in Liège. But was it of Belgian design? I don't think so… Indeed, it was the L.G. Tillotson company that introduced a new principle for moving the arm of a morse key: the "knife-edge pivot". It was based upon the patent of E.M. Hamilton, granted on Dec. 26, 1882.(see the article below). The form of the Belgian key is somewhat different from the US one, but both use exactly the same knife-edge pivot principle. Further photos speak for themselves.

Below I have reproduced an article as a tribute to the late Roger Reinke (Alexandria, VA, USA), who was a good friend of mine. In August 1996, in the Antique Wireless Association's *Old Timer's Bulletin*, he published an interesting article about the "American" Victor key, to which I have taken the liberty of adding a couple of images.

The drawing below is from one of our PTT telegraph instruction booklets of 1931.





KEY & TELEGRAPH

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SIMPLICITY IS STRENGTH! COMPLEXITY IS FATAL!

Reading about pivots on telegraph instruments may cause acute apathy, but it is in fact rather 'interesting what can happen when levers must be made to move freely in a fixed plane. Regardless of the year of manufacture or the maker, the manner of pivoting a lever on a telegraph instrument is remarkably consistent, whether it be a key or sounder lever, or a relay armature.

(No Model.)

E. M. HAMILTON.

TELEGRAPH KEY.

No. 379,063. Patented Mar. 6, 1888.

Fig. 1.

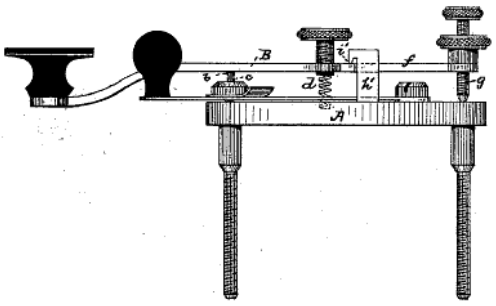
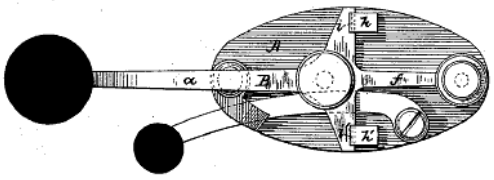


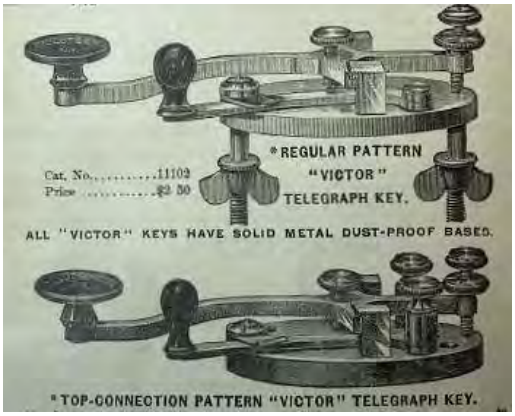
Fig. 2.



Pivoting levers are usually held in place by pointed trunnions, which fit into screws that are machined to accept the points of the trunnions. (On a few early instruments, the screw is pointed and the trunnion is recessed.) The trunnion screws may be adjusted to provide the right "play", which is an important element of efficient keying, of course, and in the case of sounders and relays, the play can affect the proper functioning of the instrument.

Mechanically, this pivoting arrangement made sense to the early makers, since the components were produced inexpensively and offered the ability to easily adjust the play. Electrically, the design left something to be desired. In the case of keys, or any other instrument that depends on the pivots to complete an electrical connection to one side of the line, if the trunnions' adjusting screws are loose,- circuit continuity could be adversely affected. An additional electrical problem could be caused by the oxidation of the trunnions (usually iron or steel) in contact with a brass adjusting screw. Makers of many radio keys avoided this problem by securing a flexible wire or strap between the key lever and the base.

“Simplicity is strength!...“ is from the title of an E. S. Greeley & Co. advertisement of the 1890s which extolled the merits of “simple” pivots for instruments, and particularly the knife edged pivot used on “Victor” keys. The Greely ad condemned conventional pivots. “*It is a principle of mechanics that is universally admitted that an adjustable feature… where adjustability is not absolutely required - is a weakness, and it has been our opinion…that adjustable trunnions in telegraphic apparatus is (sic) a serious fault… There is one fixed central position that is desirable in the axis of a telegraph key. relay, sounder and kindred instruments, and when that fixed center is departed from. an injury commensurate with the degree of deviation is inflicted. Wabbling levers, chewed off contacts, choked transmission and general ‘drunkenness’ of action are the inevitable results of badly made and ‘worked loose' adjustments.*"



The photo on the right comes out of a Greeley catalogue.

The company went on to claim that the "the hurried and worried instrument maker of the pioneer period" used trunnions by accident. Finally, after roundly faulting others for their lack of attention to mechanics, the ad urges the reader to “Become acquainted…with the merits of Victor Telegraph Instruments, and you will soon have occasion to smile at your affection for the clumsy ‘old timers’. The world moves! Move with it.” Alas, the world was largely unmoved, for very few instruments of the Victor family turn up these days. It took this writer about 25 years to find a Victor sounder, for example. With it was a nickel plated Victor key. a style about as rare as the sounder. None of the commercial telegraph companies or the railroads seemed to have used Victor instruments in any significant number, with the possible exception of the key. Greeley simultaneously and without apology offered a complete line of instruments equipped with conventional trunnions, so one wonders how serious Greeley & Co really was about the merits of the Victor pivots.

The Victor key. made in both legged and legless styles, was popular with some operators for good reason, advertising hyperbole notwithstanding. The knife edge pivot does offer a different but comfortable feel which led to its use in speed contests, and its users were apparently winners a good share of the time. The key was the only Victor instrument that employed the knife edge pivot. All the others - pony relays, regular relays, sounders, polar relays, pole-changers - used a pin and socket (or a groove on one side) type of pivot. This pivoting arrangement differs from a conventional pivot only in that the pin is fixed, rather than adjustable, and that the axis is vertical rather than horizontal. The first Victor keys, made by L. G. Tillotson based on the patent of E. M. Hamilton granted on Dec. 26, l882, did have a design problem that was not noted in the Greeley ad. The knife edge pivot could slip slightly to either side so that the contact points were out of alignment. This was remedied in later production by the addition of a small steel pin in one side of the pivot between the lever and its support' [1].

The popularity of the Victor key appears to have given rise to at least one interesting “copycat.” Belgian or Austrian or Dutch makers. perhaps all of them, offered the key pictured in the drawing [2]. Apart from he open circuit wiring and the knob, it is remarkably similar to the Victor, especially the knife edge pivot. Patent information for the key was not available. The popularity of this key in European circles seems to parallel U.S. experience in that few have survived. Perhaps Tillotson or his successor Greeley licensed the design, but that awaits discovery. Beyond the makers noted, Jesse H. Bunnell was the only other American maker known by the writer to incorporate the knife edge pivot, in one cable key and in his very limited production of the regular Victor key.

NOTES

[1] Interestingly, Hamilton's patent specification noted that lateral shifting could be prevented by inserting spin-,but apparently a number of keys were made initially without them.

[2] Thanks to Fons Vanden Berghen of Belgium for the copy of the drawing. It is assumed that European makers were inspired by Hamilton, but Hamilton could have copied the European key. Until dates can be determined, we're inclined to be nationalistic.

End of the article by Roger REINKE

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