Stanley's Shuttle Plane

By Neil Searle

John Kay (17 June 1704 – c. 1779) was an English inventor whose most important creation was the flying shuttle, which was a key contribution to the Industrial Revolution.

In previous looms, the shuttle was thrown, or passed, through the threads by hand, and wide fabrics required two weavers seated side by side passing the shuttle between them. Kay mounted his shuttle on wheels in a track and used paddles to shoot the shuttle from side to side when the weaver jerked a cord. Using the flying shuttle, one weaver could weave fabrics of any width more quickly than two could before.

Fig.1. Shuttle with timber Pirn. Flying shuttle showing metal capped ends, wheels, and a pirn of weft thread. The role of the shuttle is to insert the weft between the warp threads on the loom. The shuttle was invented in 1733. (British Patent GB 542,1733).

Fig.2 Made around 1935, it has the number L20-82E-HFL cast into the bed. The length of the plane alone is 9 & 3/4". When the frame is attached and adjusted close to the plane it is 10 & 5/16" long, excluding the adjustment screw. The frame, attached is shown in **Fig.4.**

It should be noted that this plane was not used for making shuttles, rather it was used to "true up'' the shuttle, to bring the worn bottom and sides back again to a parallel with the longitudinal center of the shuttle.

Fig.3. They were not offered in any standard catalogues because it is not a carpenter's plane, it was designed to be used in the textile industry.

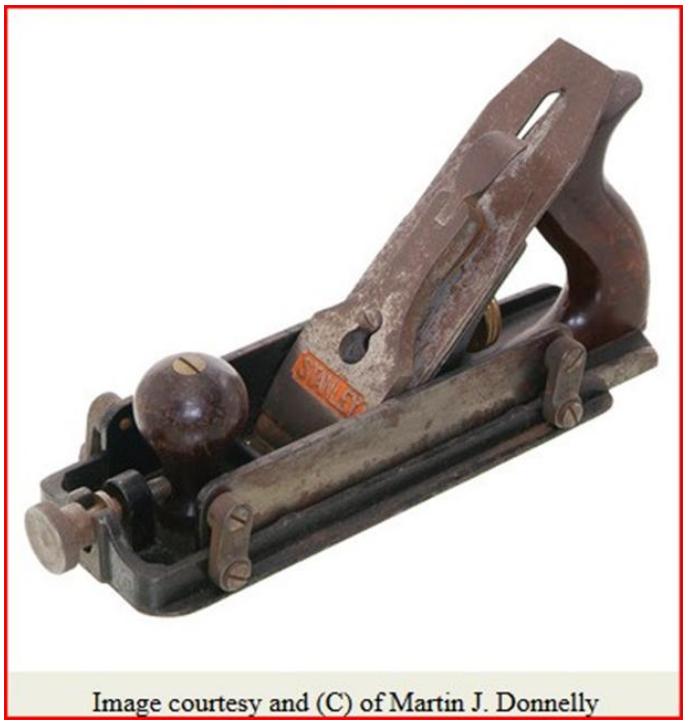


Image courtesy and (C) of Martin J. Donnelly

Fig.4. Showing the frame attached (I believe this example was from John Walter's collection) The plane is raised and lowered in relation to the frame by the swivels attached, rather than the slotted arms shown in the drawing. Also, the frame adjustment screw and its receiver are located at the toe rather than at the heel.

I did have a look in John Walter's book, Antique and Collectable Stanley Tools and couldn't find this plane.

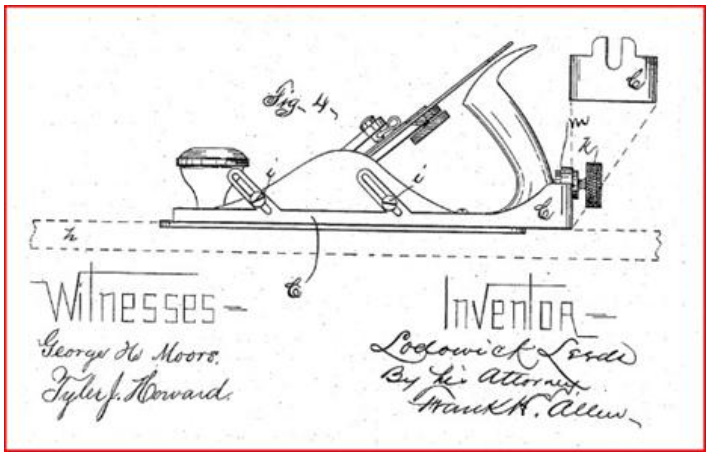


Fig.5. The patent claims the "metallic frame" for holding the loom shuttles. Once a shuttle is clamped in the frame, the sides can be planed down one after another, ensuring orthogonality**.** Applied Apr. 06, 1885. Granted: Nov. 24, 1885. Extract from the patent *''I use preferably an iron plane of the form commonly known as the Bailey plane, having means for ready adjustment of the iron, and to such a plane I attach a metallic frame, 0, which is so arranged that the plane may be readily lowered to reach the shuttle as said shuttle is being planed."*

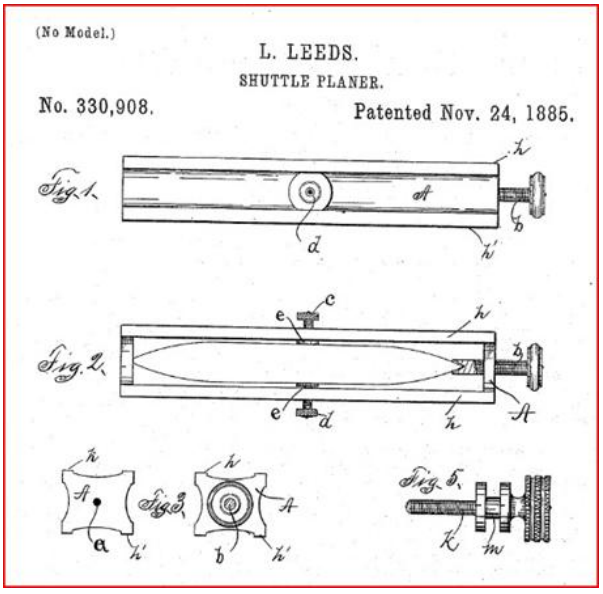


Fig.6. *Invented by LODOVVICK LEEDS. '' Be it known that I, LODOWIOK LEEDS, a citizen of the United States, residing in the city and county of New London, and State of Connecticut, have invented certain new and useful Improvements in Shuttle-Planers…."*

"A device for holding a shuttle while in the act of planing or truing up the same, consisting of a frame provided with cup centers to support said shuttle by its tips, and means for squaring up and holding said shuttle"

"This invention relates to a new mechanical device by means of which loom-shuttles may be securely held and planed or trued up on one or more sides…." ''I use preferably an iron plane of the form commonly known as the Bailey plane, having means for ready adjustment of the iron, and to such a plane I attach a metallic frame, 0, which is so arranged that the plane may be readily lowered to reach the shuttle as said shuttle is being planed…..''

The constant reciprocating movement of the shuttle as it travels back and forth in the shuttle-box tends to so wear the sides and bottom of said shuttle that it becomes necessary to frequently "true it up", or. in other words, to bring said worn bottom and sides back again to a parallel with the longitudinal center of the shuttle.

Although the patent drawing illustrates a Bailey-Victor plane, it is doubtful that Bailey-Victor planes were actually manufactured with these features. At any rate, the Stanley Rule & Level Co. was sole distributor of Bailey-Victor planes in 1880, and purchased Bailey's entire business in 1884, thus they would have had control over this patent even if Bailey was involved.

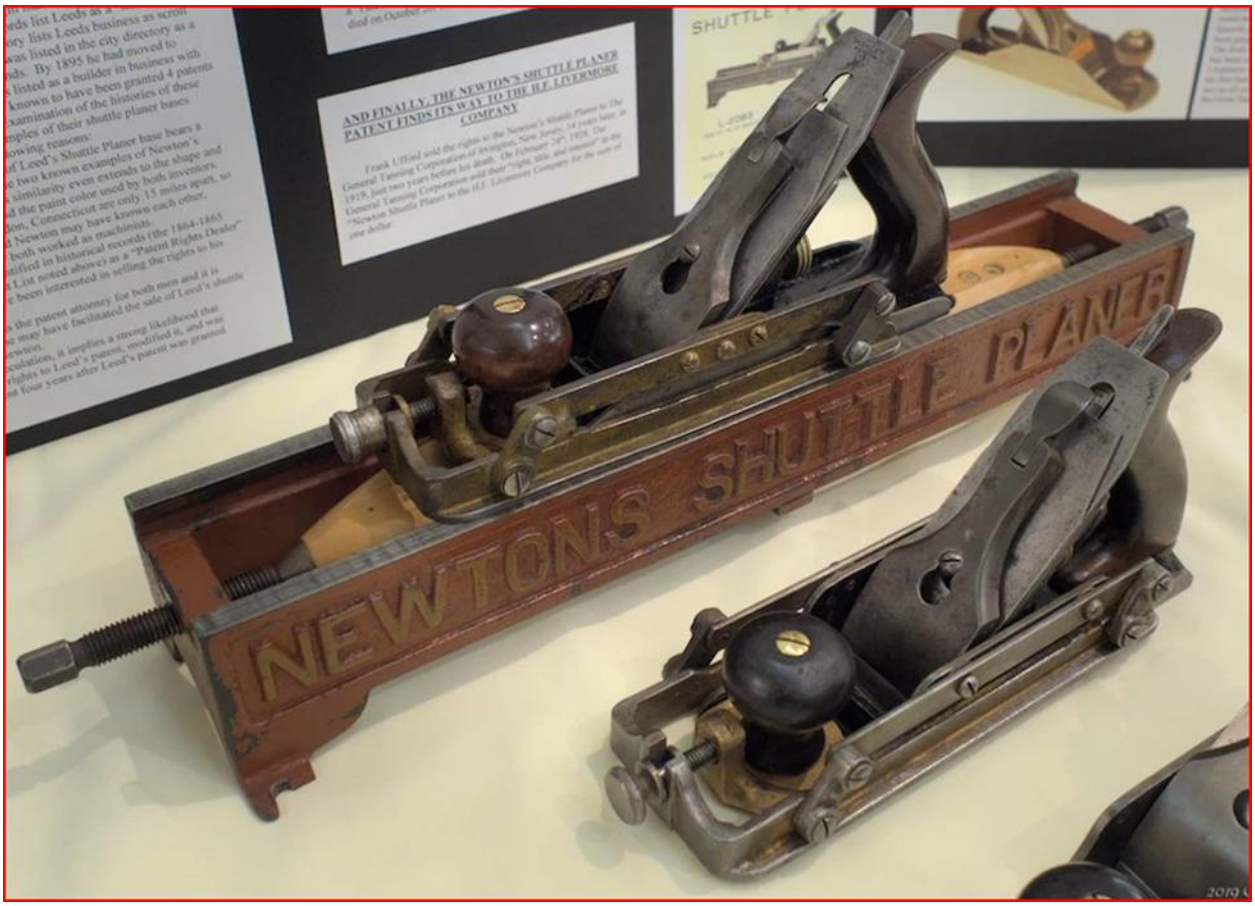


Fig. 7. **Newton Shuttle Planer** Base or Cradle, 19 1/8" l. x 3 3/8" w. x 3" h. U.S. Patent No. 412,930 granted to J. M. Newton Oct. 15, 1889. Norwich, Conn. NEWTONS SHUTTLE PLANER cast on one side, F. M, UFFORD. NORWICH, CONN, PATENT RIGHTS SECURED cast on opposite side

The patent for the Newton Shuttle Planer was granted to John M. Newton of Norwich, CT. on Oct 15, 1889, Newton was born In 1840 The 1880 Directory lists him as a machinist. He later became involved in the manufacture of textile machinery. In 1895 he was listed as "retired." No other Information is available. The F. M. UFFORD cast on the frame was Frank M. Ufford. He was listed in the 1890 Norwich Directory as owning a "pistol shop" on North Main St. He probably purchased the patent rights from Newton, and cast the shuttle planer at his shop. Apparently he contracted with the Stanley Rule & Level Co. to have the planes made that equipped the shuttle planer. The early type shuttle planes known date from the 1890 period, The later style shuttle planes, as shown on the October page, date from the 1920's and have the L20-82E-HFL designation. The HFL is believed to represent the H. E Livermore Co, originally located at (Alston) Boston, Mass. They probably contracted with Stanley to have the planes manufactured/ c. 1925. This firm Is still in business, but has no Information. (See the M-WCA Journal, "The Gristmill", No. 99, June 9000, pp. 19-14, with article by Pau' Van Pernis for more Information.)

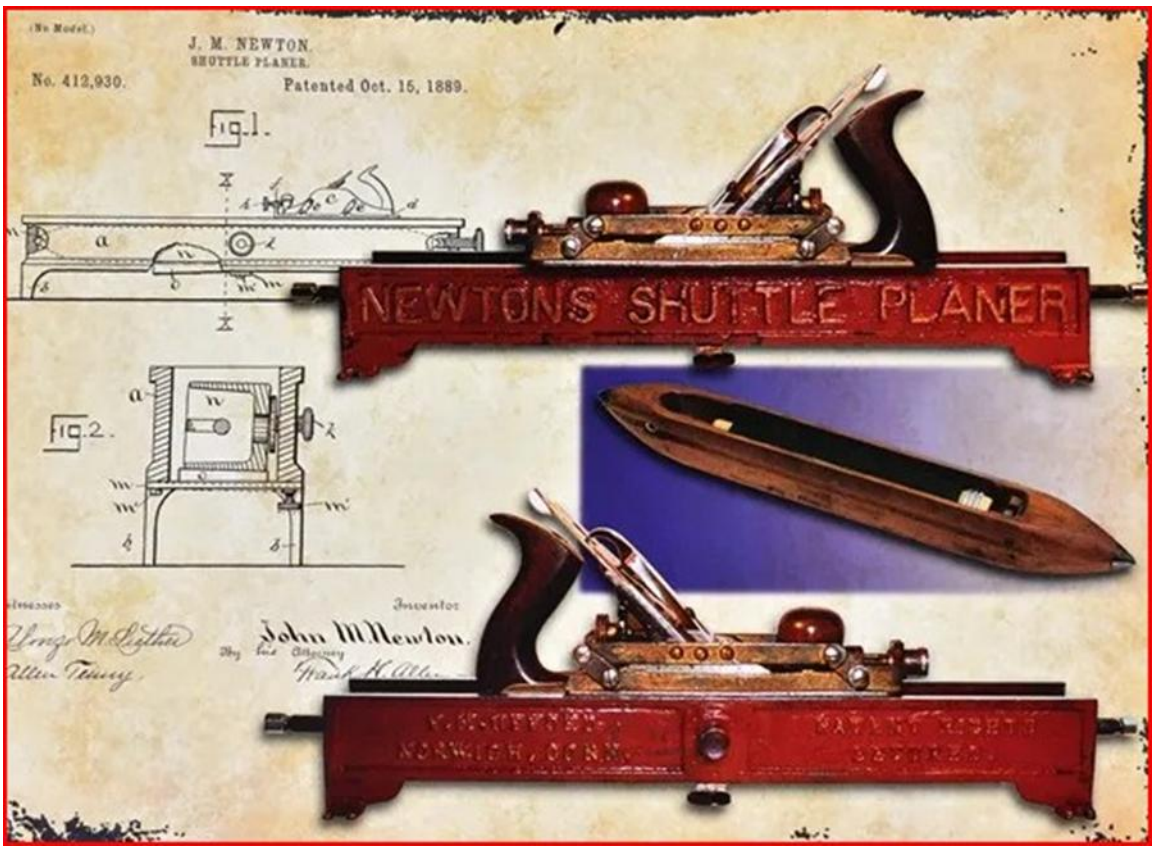


Fig.8. A page from Roger K. Smith's calendar. Roger Smith's 2010 Calendar also talks about this plane when discussing the Newton's Shuttle Planer patented by JM Newton. Very interesting history on that thread and it mentions how the HFL reference is likely representing the H.F. Livermore Company. (see Fig.9.) It looks like this particular plane was probably produced in the 1920's based on that info.

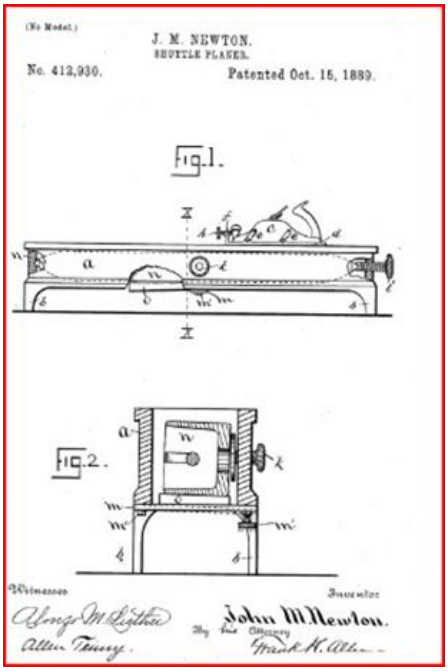


Fig.9. J. M. NEWTON. SHUTTLE PLANTER. Pat. No. 412,930. Patented Oct. 15, 1889.

This patent came four years after LODOVVICK LEEDS patent.

John Newton states in his patent description… "*a shuttle may not only be squared up, but may as readily be tapered or beveled, if desired. Many of the shuttles used in weaving are so beveled to overcome, in a measure, the tendency and liability to jump upward and out of the shuttle-race as they shoot ahead. The. slight bevel thus provided leaves the bottom-of the shuttle a little wider than the top, thus enabling the shuttle-box brake-spring to hold said shuttle down in the race as said shuttle passes under said spring.*"

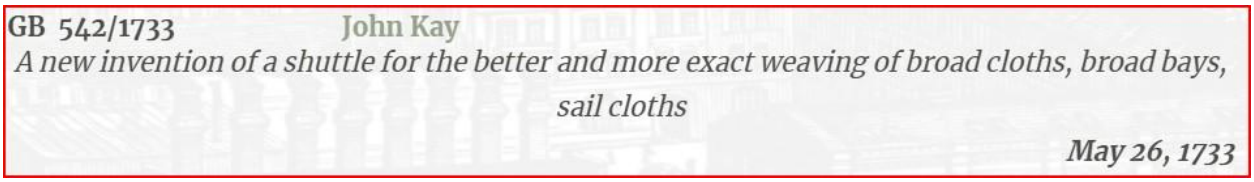
Fig.10. The H.F. Livermore Co. (see Fig.8.) was a loom-repair parts factory in Allston, Massachusetts. Notice the flying shuttle in the letterhead. (1887-1953)

Fig.11. This is one of the variations of the shuttle plane, at first glance it may be mistaken for a Bedrock with the flat top, side rails. The tags indicate that the collector bought this from Roger K. Smith in 1991.

If you look at Fig. 7., the planes shown appear to be the same shown above. The two planes appear to have a bronze attachment fixed under the front knob and in turn, to be able to fix to the holding frame.

Fig.12.

Re. Fig. 12. And from Patrick Leach…. "*Extremely rare (and I don't use that term loosely here) HFL-L2082E smoothing plane; this started out in life as the shuttle plane, but when the rush to own those dried up Stanley was left with a bunch of castings and no buyers; someone got the brilliant idea to mill off the cast boss at the toe, mill the sides down, and then sell the plane as a smoother thereby recouping some of their investment; this is such a plane, the second to show up (I've found both of them), and is 100% guaranteed to be a Stanley effort; as-found, and for the guy who has to have the rarest of the rare in Stanley*" (Courtesy, Patrick Leach)



John Kay's Patent for the shuttle. John Kay, born in 1704 in Bury, Lancashire, was the son of a wool manufacturer, and he grew up surrounded by the textile industry.

Note: I occasionally include extracts from US or British patents, these often include spelling mistakes in the actual patent descriptions. I tend to simply use italics and brackets to highlight the patent descriptions, mistakes and all. Now, although I do believe mistakes were common and/or some words were spelt differently, I have since discovered that one of the few shortcomings of Google Patents is that they used Optical Character Recognition software when these documents were scanned in, and the quality of the original had a direct impact on how it was interpreted. I have on only one occasion noticed spelling where Google patents differed (the same patents) from DATMAP.

Ref: Britannica. Wikipedia. The Gristmill. Roger K. Smith 2010 calendar. Plane Talk (1987) Meekers Tools. MJD Tools. Patrick Leach Tools.