



Mechanism of using the Saw in Ancient Egypt

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Abstract


Ancient Egyptian heritage is one of the most important elements and sources of the ancient Egyptians artistic and creative vision, represented by the tools they used. It is a cultural heritage that allows us to study the civilization which was created using various tools for a variety of purposes. The emergence of tools was essential in improving human life and developing their ability to adapt to the surrounding environment. These tools performed their basic function in various crafts, forming wonderful artistic models that are evidence of their development in the art of tool making; it became the main basis for a civilized and advanced industry. The saw is one of these tools as a cutting tool, it has a long history that reflects the uses of this tool in construction, industry and carpentry. It can be said that the saw used as a simple tool and played a main role in the development of Egyptian civilization. This study aims to define the saw in Ancient Egypt, analyse the forms and usage of the saws in the daily life, and examine the technological development of the saws in Ancient Egypt.

Keywords: The saw; Tools; Prehistory; Carpentry.

Introduction

The saw was initially used in the form of a knife (Hoffman, 1984), it was made of copper or bronze blades and hammered at one end to form a strong blade that was heated and placed inside the wooden handle sides were either curved or straight while the back end was curved (Emery, 1972; Saraydar, 2012). The ancient Egyptians used the saw from the pre-dynastic period until the end of the New Kingdom; it was used in several purposes (Killen, 1980). They knew copper open cloud saws since the early dynasties, many copper saws appeared during the 1st dynasty, it was used for cutting a variety of materials (Zuber, 1956). Saws were used in many contexts throughout Egyptian history, especially in carpentry and furniture making, that show the sizes and use of different types of saws.


Simple saws became common in the 5th dynasty, it made with wooden handle, these were used for cutting wood and stone (Arnold, 1991). It may not seem that the shapes of saws in ancient Egyptian times changed very much, for example, two Saws consisting of blades about 300mm-350mm in length with long handles are displayed in the Egyptian Museum (Zuber, 1956).

Unfortunately, there is no information about the source or age of the saws, although their shapes were probably remained throughout time, the Saw was known in ancient Egyptian as  *wsi* (Erman & Grapow, 2002; Stocks, 1999).


Types of Saws


-Flint Saw:

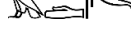
One of the oldest cutting tools in ancient Egypt which took the form of saw knives (Dived,1986),

it thought to be  *dm* known as the flint saw (Gardiner,1957; Stocks,1999) or a sharp flint saw, some of which date back to 3000 BC, coinciding with the development of the furniture industry. They were initially used as knives by ordinary people and butchers through the many scenes of daily life in tombs and temples (Craig; Vaughan& Hagni ,1981). As usual, there is nothing to show where the saws came from or how old they are, while the physical design of Egyptian saws may have stayed much the same, the metals from which they were made certainly changed (Olivier,2006). It was initially made of flint stone with sharp edges were characterized by being crudely shaped, then it developed and became well-shaped with handles were made of plant fibers, carpenters replaced them over the ages with copper knives used for sawing and turning (Long, 1976). A sawing knife was found in Abydos dating back to the 1st dynasty, it had edges resembling a saw blade, one of them was 45.cm long (Petrie,1925; Lucas&Harris,2012).

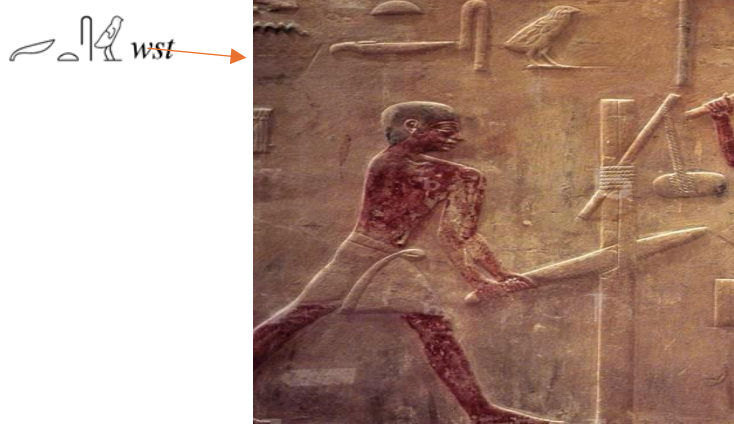
-Push Saw

The push saw was known as  *tf3* (Erman&Grapow,2002; Gardiner,1957), the blade is characterized by its slightly forward-drawn tip that ends in a slight rounding, the edge is designed to be slightly curved with teeth in the shape of an equilateral triangle, its front tip points downward during the sawing process so that the movement is forward (Goodman,1954).

The earliest copper saws appeared during 1st dynasty, there basic shape was very similar to knives from the same period; they were short with curved edges, a sharp rounded tip and the teeth on one side of the blade, they were known as *mds*  (Petrie,1904).

Saws used for cutting difficult parts or complex joints  and were usually one-handed to allow the carpenter to use his other hand to hold the piece steady; in contrast, it used for cutting beams or larger pieces often came in two-handed forms, allowing the craftsman to put his body weight behind the pushing action (Olivier,2006).

However, the ancient Egyptians had a copper saw, which they used in carpentry, it was often depicted in Egyptian art (PL. I),besides what has been found of carpentry saws from an early time in the ancient Egyptian civilization during the 1st and 3rddynasties, these copper saws ranged in length up to 40 cm and usually only one edge of the blade was serrated for pulling and not pushing during cutting, the blade was fixed in a straight wooden handle (Roeder, 1907;Goneim,1956)). An example of a fragment of an ancient Egyptian copper push saw was found in the Petrie Museum (UC30854), the use of saws as a rock-cutting tool is evidenced by the marks evident on the stone block engraved in the rock surfaces or on the cut surfaces (Stocks,1997).



(PL. I) Carpenter sawing wood by Saw, Saqqara, Tomb of Ty.

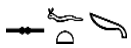
© <https://www.alamy.com/egypt-saqqara-tomb-of-ty> [Retrieved February 2 2025].

The rectangular push saws which made of bronze or copper were about 2.7 meters long and approximately 0.75–5 mm thick (Saraydar, 2012).



(PL. II) Saw marks on the granite Sarcophagi of Khufu, Fourth Dynasty. (Petrie, 1883).

- Pull Saw

The ancient Egyptians knew the copper pull saws since the early dynasties, the word  *sft*, *sf*, was refer more specifically to the pull saw (Erman&Grapow,2002), they were appeared during the 1st dynasty, the simple saws in the 5th dynasty were shown with wooden handle, it became common, and used for cutting wood and stone (Winlock,1930). It was designed from bronze with the blade facing towards the wooden handle, which is held with both hands and pulled back; the craftsman fixes his foot in a special position to be able to pull it without difficulty (Dunn,2010; Ruffle, 1977).



(PL. III) Plaster cast of Saw marks, sarcophagus, Fourth Dynasty, The Petrie Museum (UC 69833). (Klemm& Klemm:2001).

For example, a carpentry workshop model from the 11th dynasty which displays the wooden block to be sawed on a wooden post fixed to the ground by strips of linen or ropes made of palm fibers (Taylor, 2003), while in the case of small wooden pieces, the craftsman sawed them while sitting in a squatting position with the wooden block fixed with one of his feet and in his other hand a saw with its blade pointing upwards (Baker,1966;Saraydar, 2012).



(PL. IV) A Model of the Carpenter sawing a piece of wood, Twelve Dynasty, Thebes.

©<https://egypt-museum.com/model-of-a-carpentry-workshop/>[Retrieved February 2 2025].

The purpose of using pull saw was to cut wooden blocks of different lengths into boards of the same thickness with each board being 4 mm thick. A group of draw saws were found in the Step Pyramid at Saqqara (Killen,1980), with engravings on their blades that relate their number in the workshop or the classification of their uses, the beam was often supported by a sturdy frame, pegs, crossbeams, and weights (Till& Swart,1986).



(PL. V) A scene Carpenters using the pushing saw, Thebes, Tomb of Nebamun and Ipuky Eighteenth Dynasty. (Arnold, 1991).

To fully understand the technical aspects of sawing, it should consider the manufacturing process of the tool itself, which involves hammering its edges to increase its hardness and durability, and precisely drilling its teeth (Clarke& Engelbach,1999), pull saws blades were made of bronze, as evidenced by the green stains on their sides and the remaining sand grains (Petrie,1883). They came in a variety of shapes, including straight and circular saws, the thickness of the straight saws ranged from 0.03 to 0.2 inches, depending on the type of work (Lucas& Harris, 2012).



(PL.VII) A scene of the Carpenter using the pulling saw, Eighteenth Dynasty, Thebes, Rekhmi-re tomb (TT 100).

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-Ceremonial Saw

The development of saws in ancient Egypt was reflected in the emergence of new forms and uses depending on the quality, hardness, and availability of raw materials. Saws underwent an evolutionary process that evolved from simple flint knives and pull-and-push saws to stronger and more durable iron prototypes (Hawthorne & Smith:1979).

A type of saw appeared as ceremonial saws what handle was designed in the shape of the feather of Maat (Storemyr; Bloxam& Heldal:2007) this unusual shape was used for ceremonial purposes (Saraydar:2012) such as preparing meat for sacrifice to a god (Heldal& Storemyr: 2015).

The ritual saw was perhaps used as a religious tool in rituals including mummification, the hieroglyphic saw symbol was a clear sign of protection and vengeance. The deceased was often depicted fending off ominous and dangerous creatures with knives (Lauer:1962).

Study of a Group of Saws:


<p>Fig.1 Definition: Simple Saw. Date: First Dynasty. Provenance: unknown. Material: copper and alloy. Dimensions: Unknow. Accession Number: Petrie Museum (UC63497).</p>	 <p>©https://www.ucl.ac.uk/museums-static [Retrieved February 2 2025]</p>
<p>Fig.2 Definition: Saw. Date: New Kingdom, Eighteenth Dynasty, reign of Hatshepsut and Thutmose III. Provenance: Thebes, Valley of the Kings, tomb of Hatshepsut. Material: Bronze or copper alloy, wood. Dimensions: L. 19.1 cm (7 1/2 in.). Accession Number: The Metropolitan Museum of Art (30.8.2).</p>	 <p>©https://www.metmuseum.org/art/collection [Retrieved February 2 2025]</p>
<p>Fig.3 Definition: Ceremonial Saw. Date: New Kingdom, Eighteenth Dynasty. Provenance: Egypt. Material: Bronze. Dimensions: 12 3/8 x 1 5/8 in. (31.5 x 4.2 cm). Accession Number: Brooklyn Museum (65.133).</p>	 <p>©https://www.brooklynmuseum.org. [Retrieved February 2 2025]</p>

Fig.4

Definition: Puch Saw.

Date: New Kingdom, Eighteenth Dynasty.

Provenance: Deir El-Bahri, Temple of Hatshepsut

Material: Bronze.

Dimensions: L. 38 cm (14 15/16 in.); W. 4.8 cm (1 7/8 in.).

Accession Number: The Metropolitan Museum of Art (25.3.120).



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Fig.5

Definition: Saw.

Date: New Kingdom, Eighteenth Dynasty.

Provenance: Unknow.

Material: Bronze.

Dimensions: Unknow.

Accession Number: Petrie Museum (UC 63492).



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Fig.6

Definition: Pull Saw.

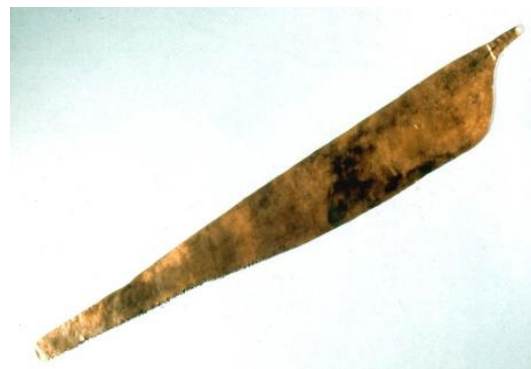
Date: New Kingdom, Eighteenth Dynasty.

Provenance: Thebes, Deir El-Bahri.

Material: Bronze blade.

Dimensions: L. 56.50 cm; W. 7.60 cm.

Accession Number: British Museum (EA30245).



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[Retrieved February 2 2025]

Fig.7

Definition: Pull Saw.

Date: New Kingdom, Eighteenth Dynasty.

Provenance: Thebes, Deir El-Bahri.

Material: Bronze blade.

Dimensions: Accession Number: British Museum (EA6040).



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From the previous table we can conclude the development of Saws in Egypt was:

The saw took the main design of a knife, which was used in the ancient era, the saw blades were made of copper and bronze (Lacau,1936).The process of manufacturing the saw began by hammering one of its ends to make the blade strong, it was heated and inserted into the wooden handle, which varied in length and had curved or straight sides while the back end was directed downwards (Petrie,1917).

The ancient Egyptians used the saw from the pre-dynastic period until the end of the New Kingdom it was used for several purposes (Lefebvre,1923); it may not seem that the shapes of saws in ancient Egyptian times changed much in an unusual way. Unfortunately, there are no details about the source or age of the saws, although the saw shapes may have remained present throughout time (Fig .1), according to Petrie, using saw dates back to the 1st dynasty as a wooden coffin signs of rough sawing were found date back to that era (Petrie,1917).

The metal Saw blades that appeared during the 1st and 2nd dynasties were characterized by several features (Emery,1981):

- 1- Blades made of one edge starting from its shoulder near the tongue fixed inside the handle and ending before its front ends (Fig.1).
- 2- Serrated blades along its length or along the largest part of it.
- 3- The sizes of the blades varied between short and long (Baker,1966).
- 4- The blades are disorganized and irregular.
- 5- The blades are rectangular with a straight top, unlike modern saw blades that have a triangular shape and end with a pointed tip (Klebs,1915).
- 6- Blades of various widths, some of which are three times the width of the other blades.

To fully understand the technical aspects of sawing, we must consider the manufacture of the tool itself, after the edges were beaten to provide greater hardness and durability, the blades were precisely drilled; the process was by no means perfect, the blades were often flat, blunt, or irregular in shape and texture (Lucas,1934).In contrast to the bidirectional orientation of modern saw blades, ancient blades were aligned in the same direction and left lines at alternating angles; the saw split the wood with the draw saw being introduced shortly after.

In the 1st dynasty, carpenters were able to overcome some of the technical difficulties they encountered when cutting large logs (Lucas,1948). The technique of sawing the boards did not change in the Old Kingdom(Hassan,1941), it allows the craftsman, although the copper saw is not very efficient, to saw correctly without vibration and breaking the blade, pushing saw were used for the cutting of a variety of rock objects including granite sarcophagi(PL.V), also other

suggested that a thin copper sheet in the form of a saw was used to make the front edge of closely jointed, limestone casing blocks as early as the 3rd dynasty(Lane ,1935).

Models of saws dating back to the Middle Kingdom featuring bronze blades mounted on wooden handles, were found in the tomb of Meket-re (PL. IV), ancient Egyptian draw saws were made of bronze and cold-cast copper until the Middle Kingdom (Garstang,1907) when bronze tools became more available; they were made of copper until iron began to appear in large quantities during the New Kingdom period in the late 26th dynasty (Fig.2).

During the New Kingdom, many saws were discovered with wooden handles with a curved wooden end (Fig.4,5), allowing the carpenter to control the handle to prevent it from being pulled out (Nicholson & Shaw,2002),it were similar to the handles of modern saws, and are distinguished by their circular bronze blades with sharp, curved edges and teeth directed at irregular distances towards the handle (Godman,1954) for example, what was found in El-Asasif cemetery(Kanawati,1981), the blades of which were engraved with the cartouche of King Thutmose III (Killen,1980), the total length of one of the saws was 380. mm, the width of blade was 35. mm and thickness were 1.mm, the total length of another Saw was about 567. mm in the British Museum (Fig.6,7).

Conclusion

The saw is considered one of the main tools made by the ancient Egyptians as a result of their need for a tool with which they could saw large types of trees to benefit from their wood. The ancient Egyptians used copper and bronze saws to cut wood, there were used in the manufacture of furniture and coffins. Tombs represented many saws with carpenters dating back to different eras, the ancient Egyptians knew saws made from several materials, such as wood and metal. The development of saws witnessed remarkable progress, starting with their shapes and first uses as knives and distinguishing each type separately. The first saws date back to the predynastic period; their edges were made with crudely sharp blades (Fig.1). Later, they evolved into more sophisticated saws, with handles made from plant fibers.

Saws were used in construction and sculpture as a tool for cutting stones such as limestone, which was easier to cut than granite, there is evidence of tools resembling large saws used in sculpture, especially in late period. The tomb scenes show the types of tools used by the ancient Egyptians, their materials, and their uses, especially the saw and the method of cutting and sawing, they also show scenes of how flint saws were manufactured from the beginning of the dynasties. Texts show cutting tools used by ancient Egyptians in surgical operations, such as small medical saws which were used in amputations and complex surgical operations, these saws were small in shape with fine teeth, and may have symbolic significance, they appeared among the medical tools engraved on the wall of the Kom Ombo temple. There is no clear evidence of the symbolic or ritual use of the saw, it may have been used as a symbolic or ritual tool in some religious or funerary ritual.Saws were used for cutting meat in ancient Egypt, but to a limited extent, as sharp knives were the most common cutting tool, however, in special cases, they were used to cut bones or large pieces of meat, such as the ceremonial saw in the shape of the feather of Maat (Fig.3), the unusual shape of the saw handle ,the symbol of truth, this shape suggests that the saw was used for ceremonial purposes, such as preparing meat for sacrifice to a god.

There were two types of Saws in ancient Egypt which can be divided into:

- A pull saw (Fig.6,7) is a type of saw that relies on a back-and-forth manual movement (pull and push) to cut a material, it was often used for cutting wood, possibly soft stones, furniture making and carpentry, their blades were made of copper or bronze (iron was not common before the Late Period), straight with sharp teeth, sometimes fixed in a wooden frame or used without a frame, which was often simple. It was used with a horizontal or vertical motion, repeatedly pulling and pushing to cut the wood, perhaps the pull saw was a one used in ancient Egypt.
- A push saw is a saw that moves the blade in the push direction (forward) to cut material, unlike a pull saw, which relies on pulling the blade backward or in both directions. It was used in general carpentry, such as cutting wood lengthwise and crosswise, making coffins and furniture, and preparing planks for boat building.

References

- Arnold, D. (1991). Building in Egypt:Pharaonic Stone Masonry. Oxford University Press, p.35.
- Baker, A. S. (1966). Furniture in the Ancient World, New York, p.298, pls.459.
- Clarke, S., & Engelbach, R. (1999). Ancient Egyptian Masonry: The Building Craft. Book Tree, p.112.
- Craig, J. R., Vaughan, D. J., & Hagni, R. D. (1981). Ore Microscopy and Petrography, Vol. 406, Wiley, p.54.
- Dived, R. (1986). The pyramid builders of ancient Egypt: A modern Investigation of Pharaoh's Workforce, Guild Publishing, pl. IXX.
- Dunn, C. (2010). Lost Technologies of Ancient Egypt: Advanced Engineering in the Temples of the Pharaohs, Simon and Schuster, p.210.
- Dunn, C. (2010). Lost Technologies of Ancient Egypt: Advanced Engineering in the Temples of the Pharaohs. Simon & Schuster, p. 210.
- Emery, W. B. (1949). Great tombs of the First Dynasty: Vol. 1. Excavations at Saqqara. Service des Antiquités de l'Égypte, p. 30.
- .(1972). Archaic Egypt. Penguin, pl. 39a.
- Erman, A., & Grapow, H. (2002). Wörterbuch der Ägyptischen Sprache Vol.V. J. C. Hinrichs Verlag,1077.
- Gardiner, A. H. (1957). Egyptian Grammar: Being an Introduction to the Study of Hieroglyphs (3rd ed.). Griffith Institute, Ashmolean Museum, University of Oxford.518.
- Garstang, J. (1907). The burial Customs of Ancient Egypt. London, pp. 77–78.
- Goneim, M. Z. (1956). The Buried Pyramid. London, p. 99.
- Goodman, W. L. (1954). The History of Wood working Tools. Bell, p. 110.
- Hassan, S. (1941). Excavations at Giza: Vol. III. Cairo, p. 87, fig. 118.

- Hawthorne, J. G., & Smith, C. S. (1979). On Divers Arts: The Foremost Medieval Treatise on painting, Glassmaking, and Metalwork. Courier Corporation, pp.34-47.
- Hoffman, H. A. (1984). Egypt Before the Pharaohs: The Prehistoric Foundation of Egyptian Civilization, pp. 178–187.
- Killen, G. (1980). Ancient Egyptian Furniture: Volume I: 4000–1300 BC. London, pl. X.
- Klebs, L. (1915). Die Reliefs des Alten Reichs: I. Heidelberg, p.87.
- Lauer, J. P. (1962). Histoire Monumentale des Pyramides d'Égypte: Tome 1 – Les pyramides à Degrés (IIIe dynastie). Bibliothèque d'étude, 39.
- Long, F. W. (1976). The Creative Lapidary: Materials, Tools, Techniques, Design. Van Nostrand Reinhold Company, p. 87.
- Lucas, A. (1934). Wood Working in Ancient Egypt. Empire Forestry Journal, 13(2), pp.213–218.
- Lucas, A., & Harris, J. (2012). Ancient Egyptian Materials and Industries. Courier Corporation, p. 78.
- Nicholson, I., & Shaw, P. (2002). The British Museum Dictionary of Ancient Egypt, p. 75.
- Olivier, L. (2006). Tool Marks and Construction in Ancient Tanis. In Proceedings of the International Congress on Construction (Vol. 2, pp. 1883–1900), p. 41.
- Petrie, F. W. M. (1883). The Domestic Remains of Ancient Egypt. Archaeological Journal, 40(1), pp.16–28.
- (1917). Tools and Weapons: Illustrated by the Egyptian Collection in University College, London, and 2,000 Outlines from other Sources (Vol. 12, No. 45). University College London, pp. 71–82.
- (1925). Tombs of the Courtiers and Oxyrhynchos. London, p. 5.
- (1904). Methods & Aims in Archaeology. Macmillan, p. 915.
- Ruffle, J. (1977). Heritage of the Pharaohs: An Introduction to Egyptian Archaeology. Phaidon, p. 98.
- Saraydar, S. (2012). The Egyptian Drill. Ethnoarchaeology, 4(1), pp. 37–52.
- Shaw, I. (2003). The Oxford History of Ancient Egypt. Oxford, pl. 96.
- Stocks, D.A. (1997). Derivation of Ancient Egyptian Faience core and Glaze Materials. Antiquity, 71(271), 179–182.
- Stocks, D. A. (2001). Testing Ancient Egyptian Granite-Working Methods in Aswan, Upper Egypt. Antiquity, 75(287), 89–94.
- Till, B., & Swart, P. (1986). Chinese jade: Stone for the Emperors. Art Gallery of Greater Victoria, p. 144.

Winlock, H. E. (1930). The Tomb of Queen Meryet-Amun at Thebes. New York, p. 89.

Zuber, A.(1956). Techniques du Travail des Pierres Dures dans l’Ancienne Égypte. Techniques et Civilisations, 29(5), 22.

Internet Websites:

- <https://www.alamy.com/egypt-saqqara-tomb-of-ty> [Retrieved February 2 2025].
- <https://egypt-museum.com/model-of-a-carpentry-workshop> [Retrieved February 2 2025].
- <https://www.ucl.ac.uk/museums-static> [Retrieved February 2 2025].
- <https://www.metmuseum.org/art/collection/search/544639> [Retrieved February 2 2025]
- <https://www.metmuseum.org/art/collection> [Retrieved February 2 2025].
- <https://www.brooklynmuseum.org> [Retrieved February 2 2025].
- <https://www.metmuseum.org/art/collection> [Retrieved February 2 2025].
- <https://www.ucl.ac.uk/museums-static> [Retrieved February 2 2025].
- <https://www.britishmuseum.org/collection> [Retrieved February 2 2025].
- <https://www.britishmuseum.org> [Retrieved February 2 2025].

ألية إستخدام المنشار فى مصر القديمة

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المستخلص

يعد التراث المصرى القديم مصدر من أهم المصادر الإبداعية وأحد منابع الرؤية التشكيلية والتقنية للفنان المصرى القديم والتي تمثلت فى الأدوات التي إستخدامها المصريين القدماء ، فهي تراث ثقافي سمح لنا بدراسة الحضارة التي صنعتها، فكلما زاد عدد الأدوات التي ينتجها المجتمع، كلما زادت الحاجة إلى الأدوات وإستخدامها. كان تطور الأدوات أساسياً في تحسين حياة الإنسان وتطوير قدراته على التكيف مع البيئة المحيطة وأدت هذه الأدوات وظيفتها الأساسية فى الحرف المختلفة فشكلت تحفا فنية تعد دليلاً وشاهداً على تقدمهم فى مضمار فن صناعة الأدوات؛ فأصبحت تلك الأدوات هى اللبنة الأولى لصناعة قوية ومتطورة ، من بين هذه الأدوات تبرز أداة المنشار، التي تطورت من وسيلة بسيطة للقطع إلى أداة متقنة تُستخدم فى مجالات متعددة كالبناء والنجارة والنحت. فيمكن القول أن المنشار منذ إستخدامه الأول كأداة بسيطة، لعب دوراً أساسياً في تطور الحضارة المصرية القديمة مما إنعكس ذلك على تطور التقنيات البشرية والإبتكارات التي ساعدت في بناء الحضارة وتقدمها عبر العصور وتحقيق مستوى عالٍ من الدقة والإتقان فى الأعمال الفنية والهندسية. يهدف البحث إلى تعريف أداة المنشار و ظهورها منذ عصور ما قبل التاريخ، إعتماذاً على النماذج الأثرية والمناظر التصويرية، مع تتبع ظهوره وتطوره عبر العصور، بالإضافة إلى ماسيتضح من نتائج توصلت لها الدراسة من ظهوره فى مجالات أخرى .

الكلمات الدالة :المنشار أدوات- عصور ما قبل التاريخ - النجارة