

Fig. 5

Handwrought Nails 18th & Early 19th Centuries

General Purpose Nails

Fine drawn point

Flat or Chisel point

T-heads



Flooring Nails

Headless & L-heads

Lath Nail

L-head Trim Nail

Cast Iron Lath Nail



Machine-Cut Nails 19th & 20th Centuries

Handmade heads

lath nail

Brad handmade head

machine headed

machine-cut L-head floor nail



Modern Cut Nail

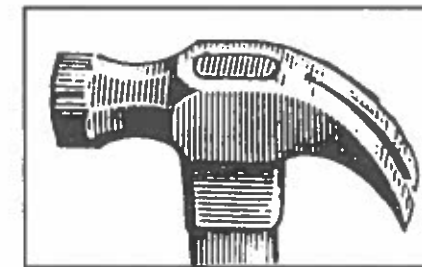
Modern Wire Nails



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On the Trail of the Nail

I first became aware of nails as objects worthy of more specialized attention than is usually given them, after inspecting the condition of one of the Museum's historic buildings. I had caught my leather coat on one of these "historic" nails, and in frustration tugged until the nail came out. I put it in my pocket and forgot it until a few weeks later when I emptied my pockets onto my desk and the nail tumbled out. I compared it to descriptions in the leaflet "Nail Chronology of the American Association of State and Local History", and realized that I had a beautiful "18th century fine-drawn hand wrought nail with rose head in the 10 penny size". From that moment I became intrigued with the different types of nails and their technology.



per, or steel, depending upon their intended use, but the most important classifications are hand wrought nails, machine wrought nails, cast nails, and wire or French nails.

In early times nails were described by the term "penny",

which, when coupled with a certain number, indicated to the knowledgeable the exact size of the nail. For instance, a three-penny nail was one and one-quarter inches long and a sixty-penny nail was six inches in length. Those larger than the sixty-penny nail were called spikes, and their main use was pinning together the frames of buildings, sometimes replacing the early form of "treenail".

Wooden nails or "treenails", the forerunner of metal nails, are most readily visible where they secure the roof rafters in 18th or 19th century frame buildings. This seems to have been their primary function — pegging together the wooden frames of the old buildings.

Before 1780 all metal nails were made by hand, and in Nova Scotia this type of nail can be found not only in 18th century structures, but also in those erected during the first half of the 19th century. These later buildings were subjected to additions so it is not unusual to

There are four common types of nails made and used in Nova Scotia in the 18th and 19th centuries. These are the nails most commonly found in buildings dating from this period. I have made up sample display boards to show the development of these nails, from the early wooden forms to the later wire nails. Included in the four types are many varieties of nails — about 400 in all. They are made of different metals, such as iron, brass, zinc, cop-

find machine cut nails interspersed with the hand wrought.

Contrary to common belief, buildings in Nova Scotia were not burned down in order to recover the nails. The seasoned lumber and frames were much too valuable for that. Instead they were moved complete, or were carefully dismantled and the timber, as well as the nails, used in the construction of other buildings.

A full time nail maker was called, naturally enough, a "nailer", and as yet there have not been found any records in Nova Scotia to confirm that this trade existed here as it did overseas. In the 1700's most nails were imported into Nova Scotia from Great Britain and some from the United States. Some were made locally by town and village blacksmiths, who employed the same technique used to make the imported nails.

Nails were hand wrought from a material called "nail rod", a soft malleable strip of forged iron from one-eighth to one-quarter inch square by approximately five feet long, which was obtained from an iron-monger or a foundry. The end of the nail rod was heated to

a black heat only, and this end was then pointed by giving it a few hammer blows, either to all four sides of the rod, which would taper the end to a fine-drawn point, or on two sides only, which produced instead a flat pointed nail. The rod was then partially cut by placing it against the hardy on the anvil (fig. 1) and giving it a blow with the hammer. The pointed end of the rod was then placed in the "nail header" (fig. 2) and the rod end was snapped off and replaced in the smith's hearth for reheating. The protruding end of the nail in the header was hammered down and spread around the hole (fig. 3) forming the head. In the case of clasp nails, the head was formed with two strokes of the hammer, while rose head nails required four strokes. Ornamental or stamped head "swages" or dies were used to make the heads on the larger sized nails such as framing spikes. It is estimated that a common smith, unused to the trade, could make about 200-300 nails per day; one who was fairly well accustomed to such work would turn out between 800-1000 nails; a really proficient nailer could produce 2,300 nails per day!

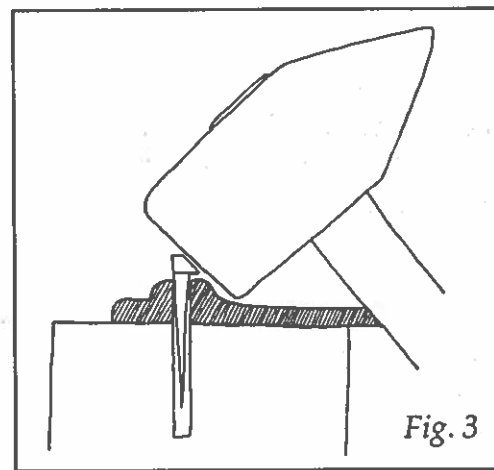
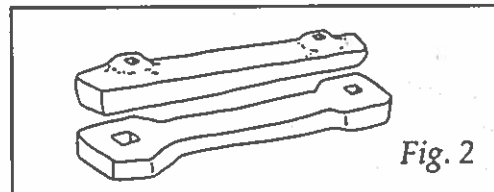
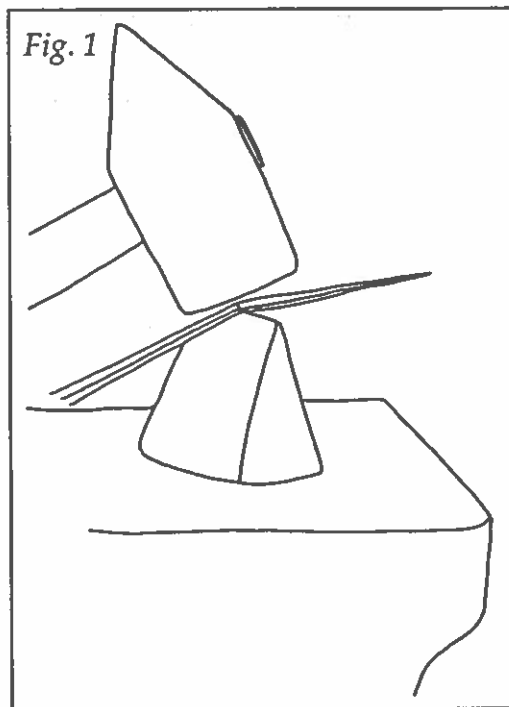
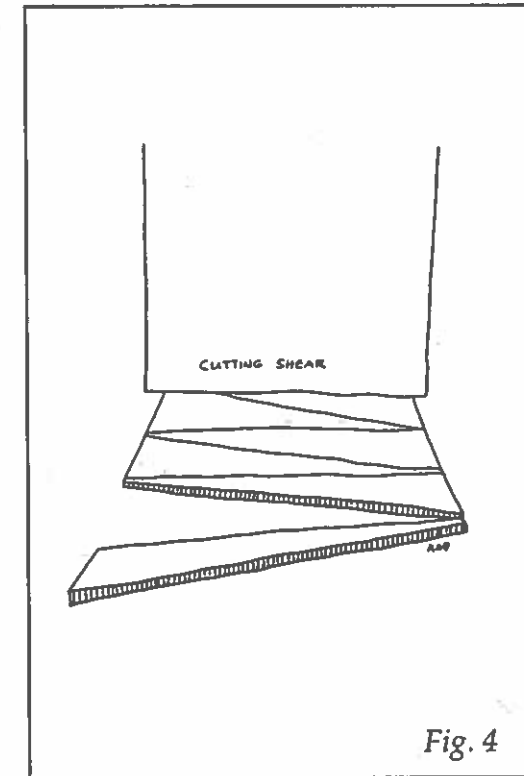


Figure 5 shows some of the more common hand wrought nails that one might find in 18th and 19th century buildings. The unusual small cast nail, a sample of those which were cast in sand moulds by the ordinary process, can be found in some buildings which date from around the 1820's, in and around the Halifax area. This might possibly indicate that they were imported, since Halifax at that time was an important shipping port.

It is still not certain who invented the first nail-cutting machine, although the Americans are given some of the credit for developing machines of superior quality in the last quarter of the 18th century. These early nail-cutting machines operated quite simply. Plates of mild steel, about one foot long and of the same thickness as the finished nail, were heated and fed into the foot-powered machines. A sturdy frame held heavy iron shears which rose and fell, cutting into the plates as they did so. On every stroke, a tapered strip of iron or "nail blank" was cut from the plate. The plate would then be turned over so a uniform taper on the blanks could be obtained (fig. 4).

A 5% duty tariff was placed on imported nails after 1845, so following this period they were produced locally on a fairly large scale. During the years from 1821 to 1863 there appear to have been about seven factories in Nova Scotia producing cut nails in quantity. One of the most successful was Edward Albro and Co., situated on the Dartmouth side of Halifax Harbour. This company was the only one awarded a prize for cut nails at the Industrial Exhibition of 1854.

The importance of the cut nail was starting to diminish around 1845 with the invention of the first machine which would make nails from wire, developed in France. These round-shanked pressed wire nails were known as "French" nails or wire nails. They were introduced into America from France in 1883 and into Nova Scotia around 1890. The machines that produced these nails worked on



the same general principles as the ones that made the early cut nail. The wire nails were produced by feeding into the machines pliable steel wire which was unwound, straightened, cut into lengths and headed by intermittent blows or by pressure. The pointing was done with pressure dies. The wire nails were no better than the older wrought or cut nails; their chief advantage lay in the speed of production, a rate of 1000 nails per minute. They were polished and trimmed in revolving drums which contained scrap iron and sawdust.

Although wire nails are in common use today, cut nails continue to be used by some carpenters for laying hardwood floors, by boat builders, and in some masonry work. The early wire nails can be distinguished from the more common modern nails by their heads, which in the older nails have a bulbous and irregular shank. I have yet to find samples of these early wire nails in any of the houses I have examined in Nova Scotia, but I'm still on the trail! Ken Gilmour