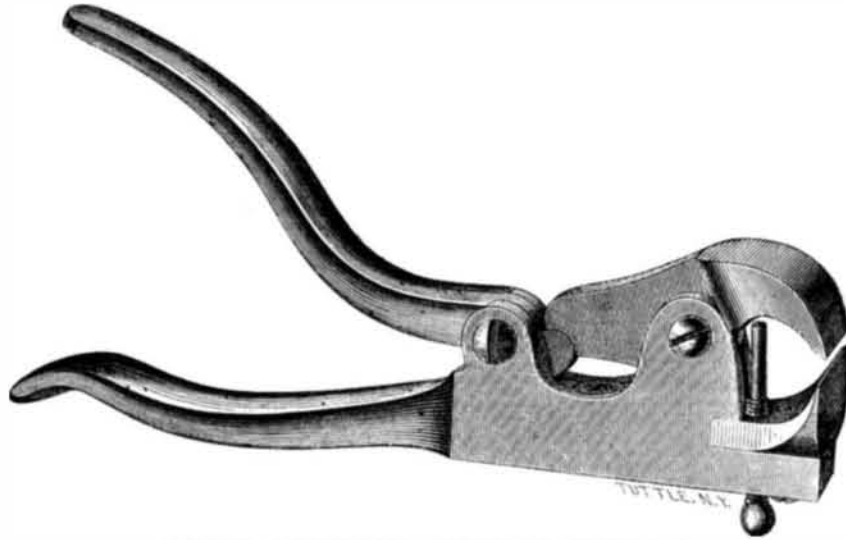


Improvement of Cutting Nippers.

The ordinary wire cutters, or cutting nippers, have no device to prevent the edges of the jaws from bearing powerfully one upon the other, and thus becoming speedily dulled or broken, which once being the case there is no remedy but to procure a new pair.

The one represented in the engraving differs essentially from others in these points, and also in the fact that it acts with a much more powerful leverage. Its construction and mode of operation are apparent from an examination of the engraving. The cutting portion of the stationary jaw is capable of being removed and ground when dull, being secured by a screw passing through the stock and secured in the cutter, and being also seated at its inner edge in that portion of the stock that forms a fulcrum for the movable jaw, which does not, as is usual, extend to the hand end to form one of the levers, but ends a short distance back from its fulcrum in a rule joint, on its underside, which engages with the handle proper, pivoted close to its inner end.



HALL'S IMPROVED CUTTING NIPPERS.

It will be understood that by depressing the outer lever, or

bringing the two handles together, an immense leverage is brought to bear upon the movable cutter, while a spring seated under it raises the cutting edge when the pressure is removed. An adjustable screw, passing through the lower jaws and coming in contact with the inside of the upper jaw when closed, prevents the edges from coming into injuri-

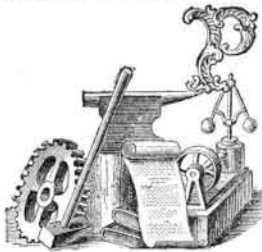
ous contact. The jaws are made of the best cast steel and tempered so as to cut pianoforte wire without showing a mark. All the parts are manufactured by gages, so that any

portion, if injured, may be readily replaced by a duplicate. The patent for the United States was obtained through the Scientific American Patent Agency, May 14, 1867, and foreign patents are now pending through the same agency. Further information may be obtained by application to Hall & Gifford, 187 Bowery, or at the office of the European Company, 85 South street, New York City.

CURIOSITIES OF IRON.

In some marked respects iron differs from all other metals. If it was as scarce as gold and silver there is no doubt it would be deemed much more valuable than either, not only for its usefulness but because of its singular qualities. While gold, silver, copper, and other metals are softened by heating and sudden immersion in cold water, the effect of this process on iron is directly the reverse. Although its grain is coarse compared with that of the metals just mentioned, it will receive and retain a fine edge impossible to be induced upon them. It can be changed from a brittle, impure mass without tenacity, to a substance so tough, ductile, malleable, and elastic as to be quite unapproachable in these respects; or it can be made into steel as brittle as glass while as elastic as it is possible to conceive of any metallic substance.

While cast iron is one of the most brittle substances known, yet the manipulations of the puddler, aided by fire and oxygen, readily change it to the toughest and most fibrous material. Yet even as cast iron it possesses much elasticity. A large steam cylinder if allowed to rest upon its side will sink by its own weight, so that if five or six feet in diameter it will be depressed from top to bottom of its diameter over an inch. Wire drawn from iron is worked just as wax would be by the moving of the outside particles over the inner as it passes through the dies; yet this process makes it almost as hard and compact as steel.



PATENTS

The First Inquiry that presents itself to one who has made any improvement or discovery is "Can I obtain a Patent?" A positive answer can only be had by presenting a complete application for a Patent to the Commissioner of Patents. An application consists of a Model, Drawings, Petition, Oath, and full Specification. Various official rules and formalities must also be observed. The efforts of the inventor to do all this business himself are generally without success. After a season of great perplexity and delay, he is usually glad to seek the aid of persons experienced in patent business, and have all the work done over again. The best plan is to solicit proper advice at the beginning.

If the parties consulted are honorable men, the inventor may safely confide his ideas to them: they will advise whether the improvement is probably patentable, and will give him all the directions needful to protect his rights.

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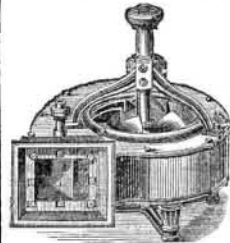


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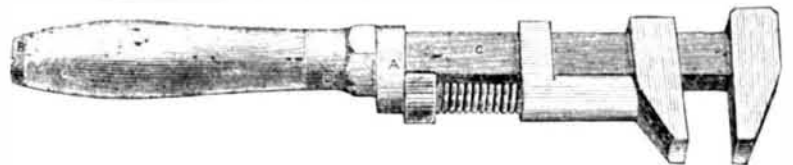
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