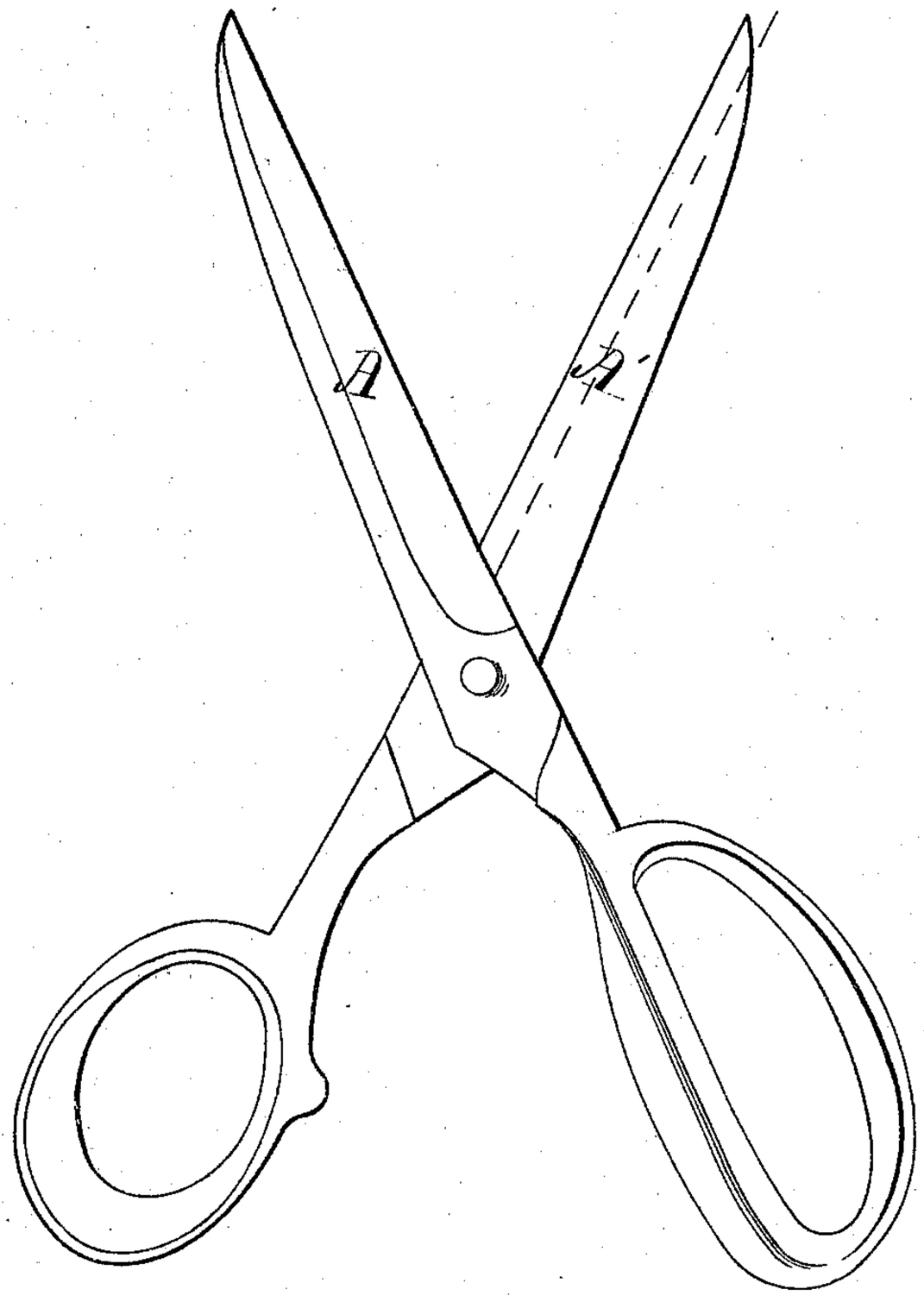
W. S. Butler,

Tempering Shears,

No. 21,319, Patented Aug. 31, 1858.



UNITED STATES PATENT OFFICE.

WM. S. BUTLER, OF ROCK HILL, CONNECTICUT.

MANUFACTURING SHEARS.

Specification of Letters Patent No. 21,319, dated August 31, 1858.

To all whom it may concern:

Be it known that I, WM. S. BUTLER, of Rock Hill, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in the Process of Tempering Shears; and I do hereby declare that the same is described and represented in the following specification and drawings, and to enable others skilled in the art to make and use said improvement I will proceed to describe its construction and operation, referring to the drawings, in which the same letters indicate like parts in each of the figures.

The nature of my improvement will be understood from the specification and drawings.

In the accompanying drawings is represented a pair of shears in order to more clearly show and describe the mode of producing the proper and desired amount of hardness in cast iron to make a good cutting edge that will hold a good comparison with steel.

It is well known by all foundry men that the molding sand is subjected to go through a process of what is called "tempering," which is done by pouring water upon the sand, sometimes with a pail, and sometimes with a water pot, or sprinkler; persons after becoming accustomed to the business are enabled to judge very accurately how much wetting is required, and is usually immediately after the castings are taken out of these molds, while yet they are quite warm, so that the sand shall become of an even moisture. The above course is pursued more particularly in small castings. In the molding of these shears the same course is pursued as in the molding of all other small castings.

It has always been the practice of molders to wet the sand slightly with water from a cloth or sponge around the pattern before drawing it from the mold, in order to strengthen and prevent the sand from breaking up when the pattern is drawn from the mold. Now the process of producing the temper is as follows. After the pattern is drawn from the mold particular pains are taken to wet well the sand on the surface and near the cutting edge, as shown at A′, about $\frac{1}{8}$ or $\frac{1}{4}$ inch wide so that when the molten iron is poured into the mold it will chill that portion thereof so much as to give it a sufficient hardness.

I am aware that shears and other articles have been cast upon iron or steel plates called chilled placed in the mold. Such I do not claim, neither will it answer for this purpose, because it produces too hard an edge and is likely to nick. I am aware also that shears have been made of cast iron, but in no instance have I known of any that will hold an edge. I have also known cast iron shears made and passed through a hardening process after they are cast and taken out of the molds and from the building, and I have known them converted into steel by a process invented and patented by a Mr. Isham some years since. Also that they have been made malleable and plated with steel, any and all of which I do not claim.

The advantages derived by this process of tempering over all others are, first, they possess every advantage of the steel goods for cutting and durability. Second, they can be more easily manufactured into symmetrical proportions. Third, they can be manufacturned at one eighth the cost of steel plated goods.

What I claim therefor and desire to secure by Letters Patent is—

A new article of manufacture, a pair of shears made of cast iron with their cutting edges A′, hardened, or tempered, in the manner described.

WILLIAM S. BUTLER.

Witnesses:
JOEL H. BLISS,
FORMY W. BLISS.