

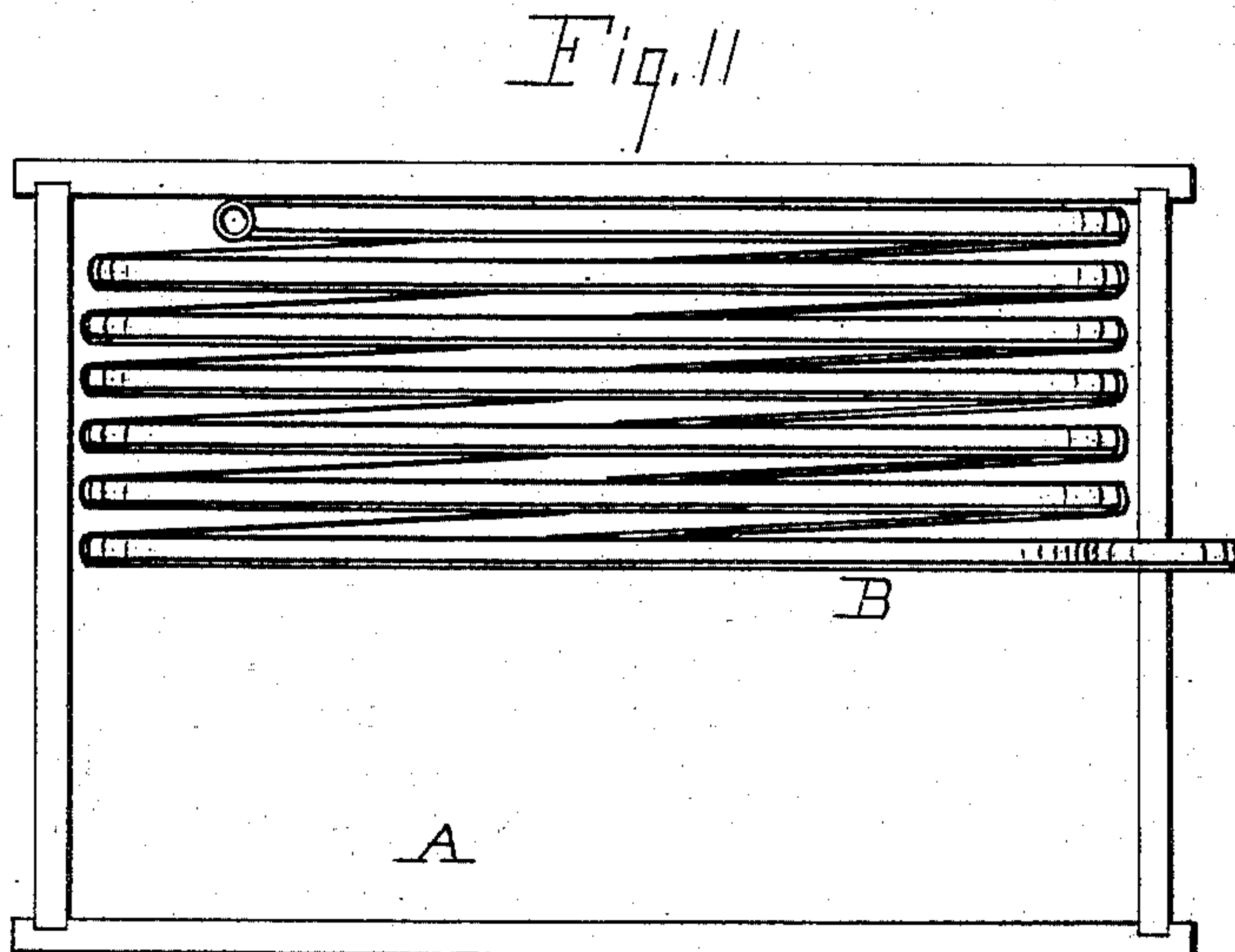
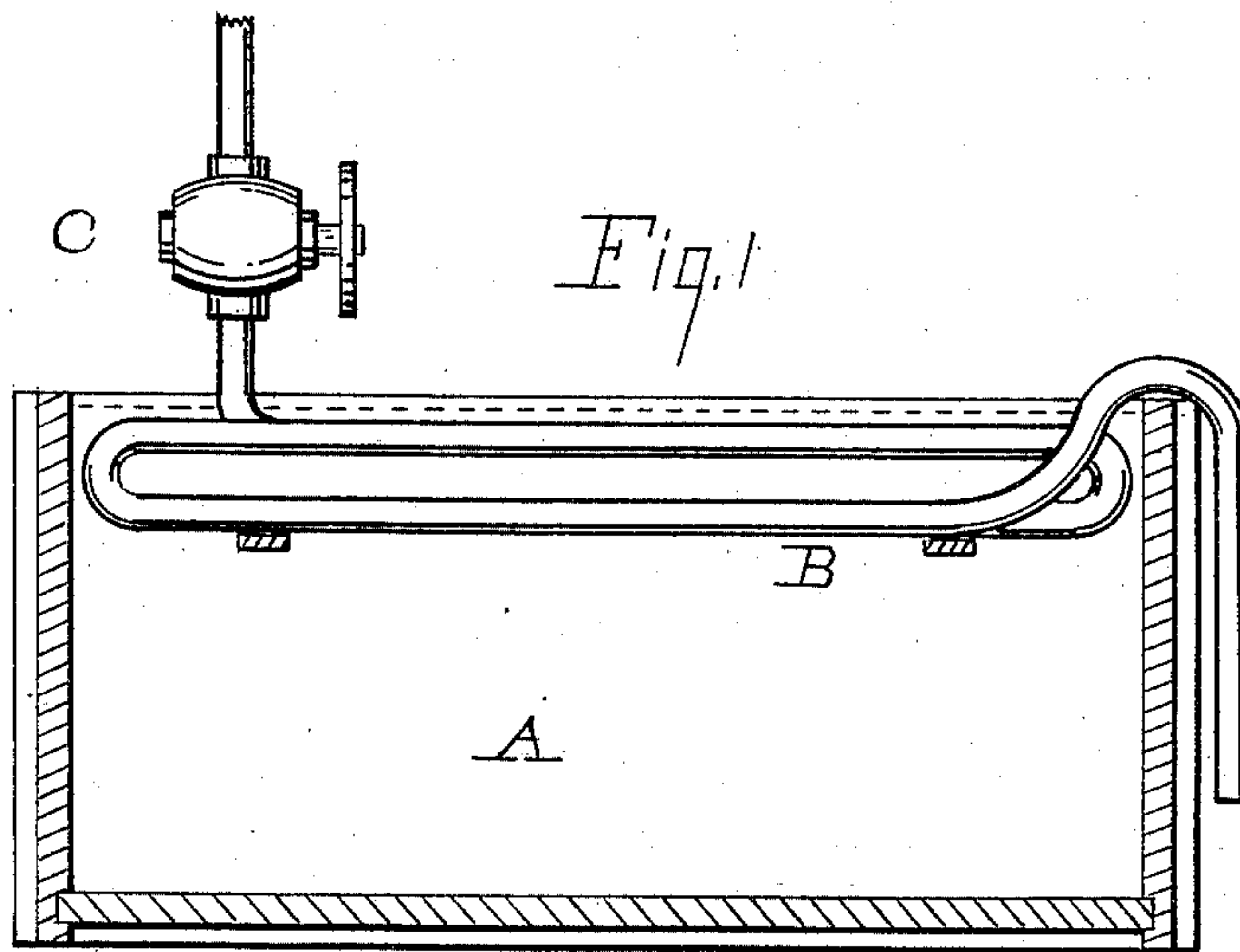
(No Model.)

A. A. SIMONDS.

TEMPERING TANK.

No. 277,518.

Patented May 15, 1883.



WITNESSES
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UNITED STATES PATENT OFFICE.

ALVAN A. SIMONDS, OF DAYTON, OHIO.

TEMPERING-TANK.

SPECIFICATION forming part of Letters Patent No. 277,518, dated May 15, 1883.

Application filed January 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALVAN A. SIMONDS, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a certain new and useful Improvement in Tempering-Tanks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to

which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification. My invention relates to tanks in which to

temper steel; and it consists of an arrangement of a pipe of the form of a flat spiral with coils nearly abutting, arranged near the top and to one side of the tank and slightly beneath the tempering-fluid, the object being to apply a

cold circulating agent at the point where the tempering-fluid is most heated by the immersed steel. I attain the object by the mechanism illustrated in the accompanying drawings, in which—

Figure I is a longitudinal section of the tempering-tank. Fig. II is a top view of the same. Like letters on the different figures designate like parts.

A represents a wooden tank, constructed in the usual manner. The only requisite of the tank is that it shall hold its fluid contents, and therefore may be constructed of any form or material suitable to the various articles to be tempered therein. B is a leaden pipe, preferable for ordinary uses, and is of the form of a flat spiral with the several coils nearly abutting. It is supported on bars attached to the sides of the tank, or on benches resting on the bottom of the tank, the top portion being slightly beneath the fluid

line, (indicated by dotted lines, Fig. 1,) and arranged along one side of said tank, leaving the opposite free for the immersion of the metal to be hardened.

C is a stop-cock used to shut off the flow or regulate it as desirable.

The pipe is connected with a tank overhead, which is supplied by water from a well or otherwise. The length of pipe and the volume of water should be sufficient to keep the tempering-fluid below 85°, as if much above this temperature the steel immersed is not sufficiently hardened. The effect of flowing cold water through a metallic pipe within the upper stratum of the tempering-fluid near the point of immersion, is to secure a greater uniformity of hardness to the steel subjected to the process.

I am aware that water has been circulated through tempering-tanks in a variety of ways; and the novelty of my invention consists in the arrangement of the pipe near the top and to one side of the tank and immediately beneath the tempering-fluid.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

A metallic pipe consisting of a series of flat spiral and nearly abutting coils with suitable terminals, and so arranged that said coils are suspended near the top and to one side of a tempering-tank and beneath the surface of the contained fluid, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALVAN A. SIMONDS.

Witnesses:

B. PICKERING,
SUMNER T. SMITH.