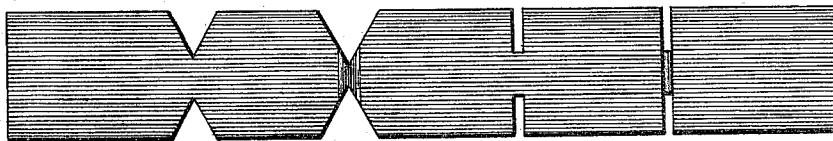
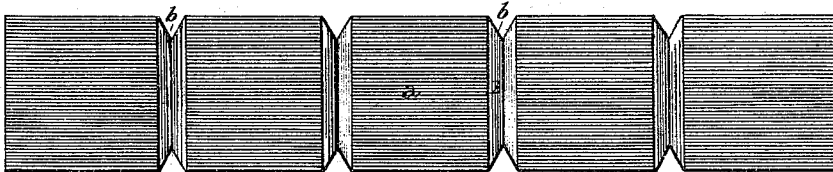


O. BOLTON, Jr.

Manufacture of Steel Plates.

No 140,762.

Patented July 15, 1873.



WITNESSES.

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UNITED STATES PATENT OFFICE.

OGDEN BOLTON, JR., OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF STEEL PLATES.

Specification forming part of Letters Patent No. **140,762**, dated July 15, 1873; application filed March 7, 1873.

To all whom it may concern:

Be it known that I, OGDEN BOLTON, JR., of Pittsburg, county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in the Manufacture of Steel Plates or Sheets, of which the following is a specification:

The nature of my invention relates to the manufacture of steel; and consists in running the metal from a steel-melting furnace or Bessemer converter into molds so that the ingot or ingots formed have a recess or recesses cast in them; and in the manufacture of mild steel plates such as are usually employed for boiler-plate—if the ingots are cast without recesses, cutting the ingot into any suitable size, and reducing the pieces to plates or sheets, as will be more fully set forth hereafter.

The accompanying drawings show plan views of ingots cast with recesses.

In the manufacture of steel by the Bessemer converter or steel-melting furnaces the steel is either cast in single ingots or in groups. In casting several single ingots the difficulties are various—the steel may clog in the nozzle, causing a skull in the ladle, or the stoppers may burn or break, causing a waste of steel. In casting groups of ingots, the connection between the center and other ingots, called sprues, are waste, as also a portion or all of the center ingot.

To obviate these difficulties I cast a heat from either a steel-melting furnace or Bessemer converter into one or more ingots, *a*, having recesses *B* formed in them. These recesses are formed by corresponding projections in the mold or molds. Where one mold only is used

for the whole heat the steel may be run direct from the furnace or converter. These ingots can then be broken up or cut, by means of circular saws or other suitable instruments, into pieces.

In the manufacture of soft steel, such as is used for boiler-plate, the advantage of running the whole heat from a Bessemer converter or melting-furnace into one or only a few ingots is greater than in higher grades of steel. The steel is then run into a mold or molds, and the ingots may have a recess or recesses cast in them, and then, by means of falling weights, circular saws, or other suitable instruments, may be divided into pieces, or the ingots may have the recesses formed in them after being cast and then be divided.

Where the ingots are cast double or more than double the size required for a plate the ingots may be first partially rolled, then cut, and placed in the furnace again, and finished in the ordinary way.

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

1. The method described of casting an ingot of steel with a recess or recesses, substantially as set forth.

2. The method described of manufacturing soft-steel plates, substantially as specified.

In testimony that I claim the foregoing as my invention I affix my signature this 17th day of February, 1873.

OGDEN BOLTON, JR.

Witnesses:

JOHN S. HOLLINGSHEAD,
HARVEY LIST.