

UNITED STATES PATENT OFFICE.

JOHN C. BUTTERFIELD, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF
HIS RIGHT TO BYRON C. BRADLEY, OF SAME PLACE.

IMPROVEMENT IN CONVERTING CAST-METAL PLOW-BEAMS INTO STEEL.

Specification forming part of Letters Patent No. **150,523**, dated May 5, 1874; application filed
May 2, 1874.

To all whom it may concern:

Be it known that I, JOHN C. BUTTERFIELD, of the city of Chicago, county of Cook, in the State of Illinois, have invented a new and useful Improvement in Converting Cast-Metal Plow-Beams into Steel, of which the following is a specification:

It is well known that plow-beams are subjected to strains in every direction of flexion and torsion. The ordinary trussed beams are, therefore, not sufficiently strong to resist strains, being only calculated to resist strains in definite directions. The ordinary plow-beams, therefore, require to be of such a thickness of web that they become objectionably heavy when made in suitable proportions to resist the strains required, or that they are subjected to, the strains being of the continued flexion and torsion kind, and producing a constant tendency to buckle in the web.

The object of my invention is to produce, as a new article of manufacture, a cast plow-beam, which is to be much lighter, and yet a great deal stiffer, than the ordinary wrought-iron or other beams.

After the plow-beam is cast of the desired or described form and shape, I submit it to the Jackson process, or any other, whereby the iron will be converted into steel, having, of course, made allowances for the surplusage of metal used in other beams. The strength and rigidity of the plow-beam are, by such conversion, largely increased by the proportion to its weight, which is, of course, greatly reduced, and more rigidity and stiffness obtained than in the old ones.

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

As a new article of manufacture, cast-metal plow-beams subjected to a suitable process for converting them into steel, whereby their strength and rigidity are greatly increased in proportion to their weight, substantially as herein described.

JOHN C. BUTTERFIELD.

Witnesses:

A. E. L. KEESE,
C. W. KEESE.