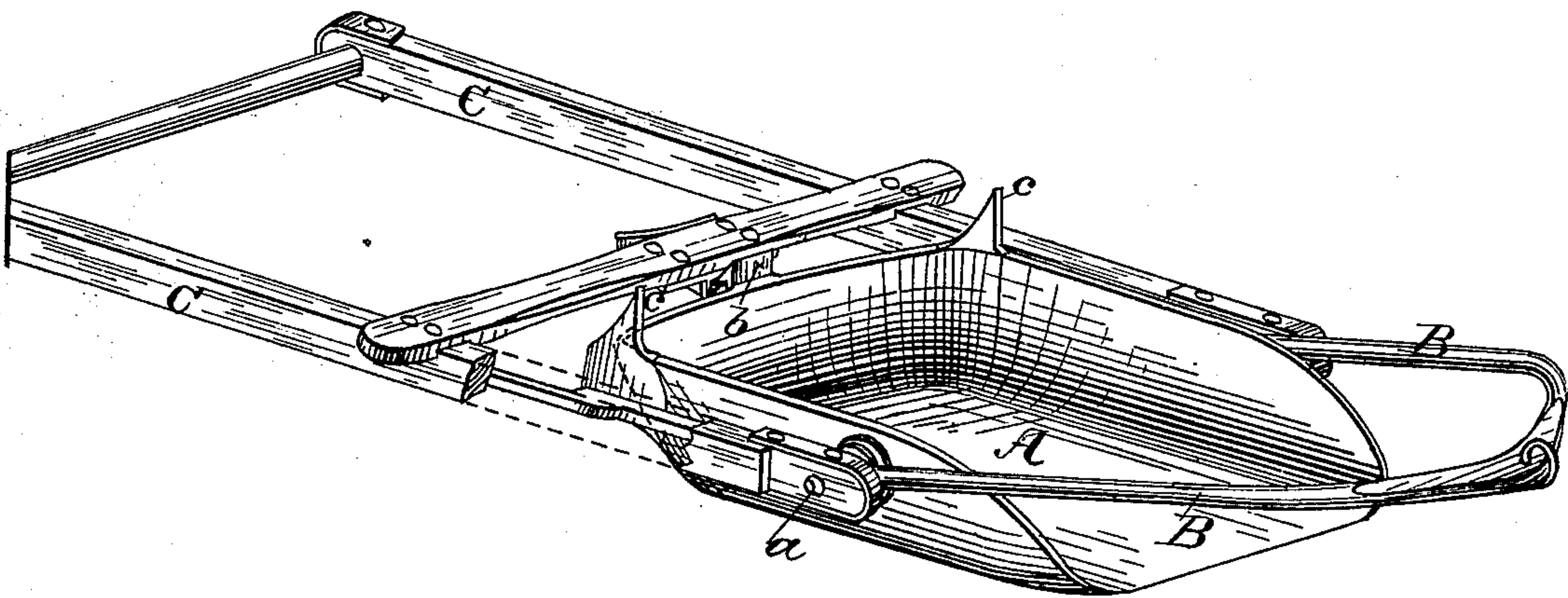


H. W. BALL.
Road-Scraper

No. 221,273.

Patented Nov. 4, 1879.



Witnesses:
Georgio
D. P. Cowl

Inventor:
Hiram W. Ball,
by H. Bailey
his Attorney.

UNITED STATES PATENT OFFICE.

HIRAM W. BALL, OF COLUMBUS, OHIO, ASSIGNOR TO JAMES KILBOURNE,
OF SAME PLACE.

IMPROVEMENT IN ROAD-SCRAPERS.

Specification forming part of Letters Patent No. **221,273**, dated November 4, 1879; application filed
September 27, 1879.

To all whom it may concern:

Be it known that I, HIRAM W. BALL, of Columbus, in the State of Ohio, have invented certain new and useful Improvements in Road-Scrapers, of which the following is a specification.

My invention has particular reference to the scoop of a road-scraper.

It has been usual, in order to avoid the weight and bulk which would be imparted to the scoop were cast metal used to any extent in its construction, to make such portions of the scoop as are liable to wear, and are required to enter the ground, of sheet or wrought metal.

Heretofore, however, such scoops have been made of two or more pieces bolted or riveted or otherwise fastened together. So far as my knowledge goes the said scoops, in all road-scrapers now in the market or in use, are made either of separate pieces of metal riveted together, or partly of wood and partly of sheet metal, the wooden parts composing the back or both back and sides of the scraper.

A scoop thus made is open to decided objection on several accounts. It is not so strong as it should be, and very liable to have its parts loosened and made shaky by use. The bolting or riveting needed to secure together its various parts is an expense, and is often imperfectly done. The scoop is expensive, and the angles formed at the points of junction of its several parts retain the dirt, and are an obstacle to the proper unloading or emptying of the scoop.

It is my aim to cheapen the cost of production of the scoop; to obtain for the scoop the maximum durability and strength without increased material, and to give it such form at the same time as will cause it to readily unload and prevent dirt from sticking to and accumulating within it.

To this end I form the scoop back, sides, and bottom of a single piece of steel, thus producing a scoop without seam or joint, and I round its surface so that there shall be no interior angles, the sides, bottom, and back gradually curving and blending into one another instead of forming abrupt angles with one another, as in the ordinary scoop.

This shape also imparts to the scoop great strength and durability.

The scoop is made from a sheet-steel blank of proper dimensions, which is swaged or formed to the required shape, and subsequently finished in any desired way.

I prefer to employ for its manufacture a drop-press, the drop weighing, say, a ton or more, having its lower end formed or provided with a die of proper shape, to operate in conjunction with a fixed or stationary mold or matrix below, the blank being placed over or upon the mold and there held in place by proper clamps, as is usual in striking up heavy sheet-metal articles.

I can thus produce rapidly and economically road-scraper scoops which possess striking advantages over the scoops heretofore in use in many respects, particularly in those respects heretofore referred to.

In the accompanying drawing I have shown a scoop, A, made in conformity with my invention, said scoop being represented as combined with bail-bars B and handles C, to form a revolving road-scraper. The handles, bail-bars, and scoop are hung in common centers *a*, and there are locking devices operated by the upward movement of the handles to disengage, so as to release the scoop.

Inasmuch as locking devices thus organized and operating are in extensive use, it is not deemed necessary to further refer to them. I would say, however, that the rear central catch, *b*, on the back of the scoop, may be formed from the metal of which the scoop is made and in one piece therewith, the blank being properly formed, so that when the scoop is struck up therefrom there will be a tongue or thickened part or projection at the proper point on the back, from which the catch *b* may subsequently be shaped and finished.

Runners can be readily fastened to the bottom of the scoop by suitable means, and the scoop can be fitted with any desired appliances, such as the grabs or points *c*, and can be connected to the draft-frame in any desired way.

I am aware that scoops have been made of cast metal in one piece.

I am also aware that articles of various kinds,

such as shovels, trays, and the like, have been struck up from a single piece of sheet metal. I claim none of these things.

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

A scoop for road-scrapers having upturned sides and back, and swaged or struck up from a single piece of sheet-steel, without seams,

joint, or interior angle, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 19th day of September, A. D. 1879.

HIRAM W. BALL.

Witnesses:

WILLIAM M. KURTZ,
OTWAY WATSON.