

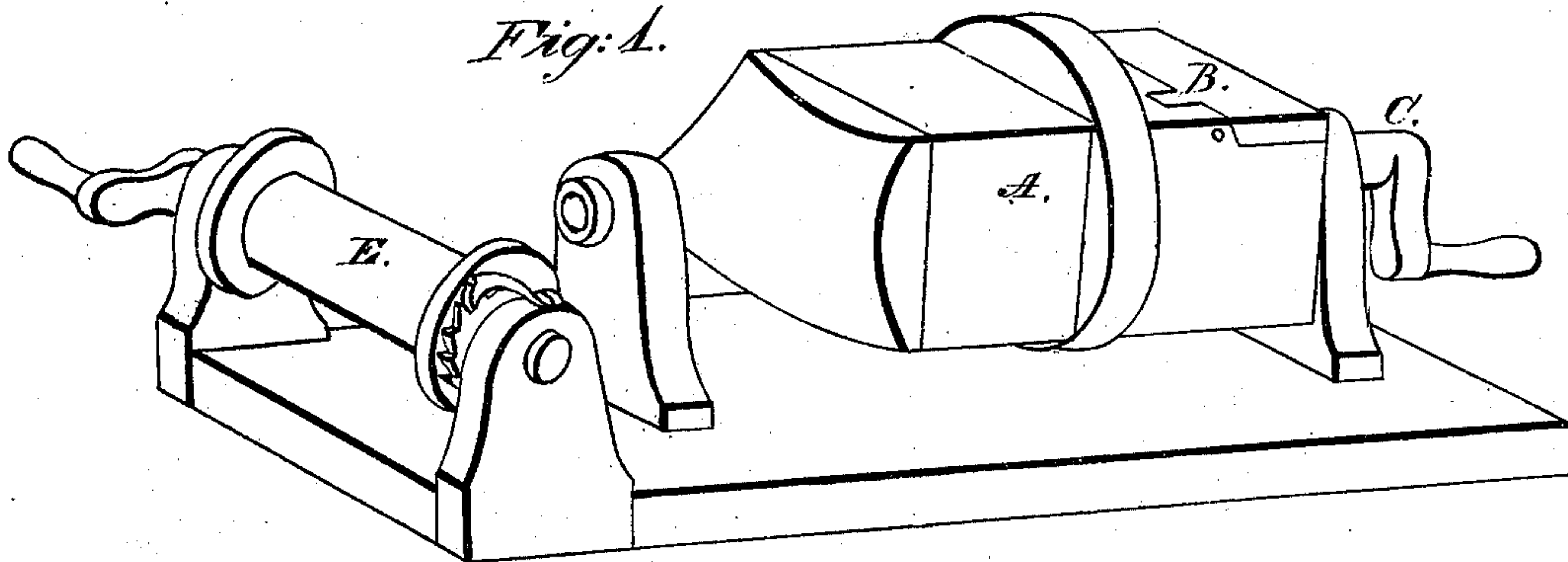
*D. D. Parmelee.*

*Utilizing Tin Scrap.*

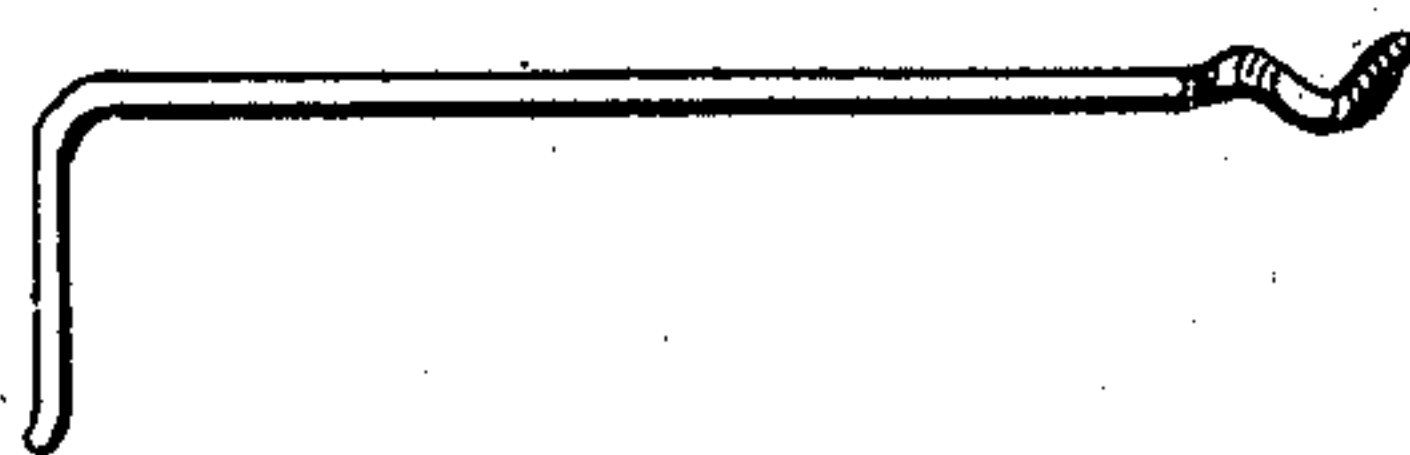
*Nº 91,962.*

*Patented Jun. 29, 1869.*

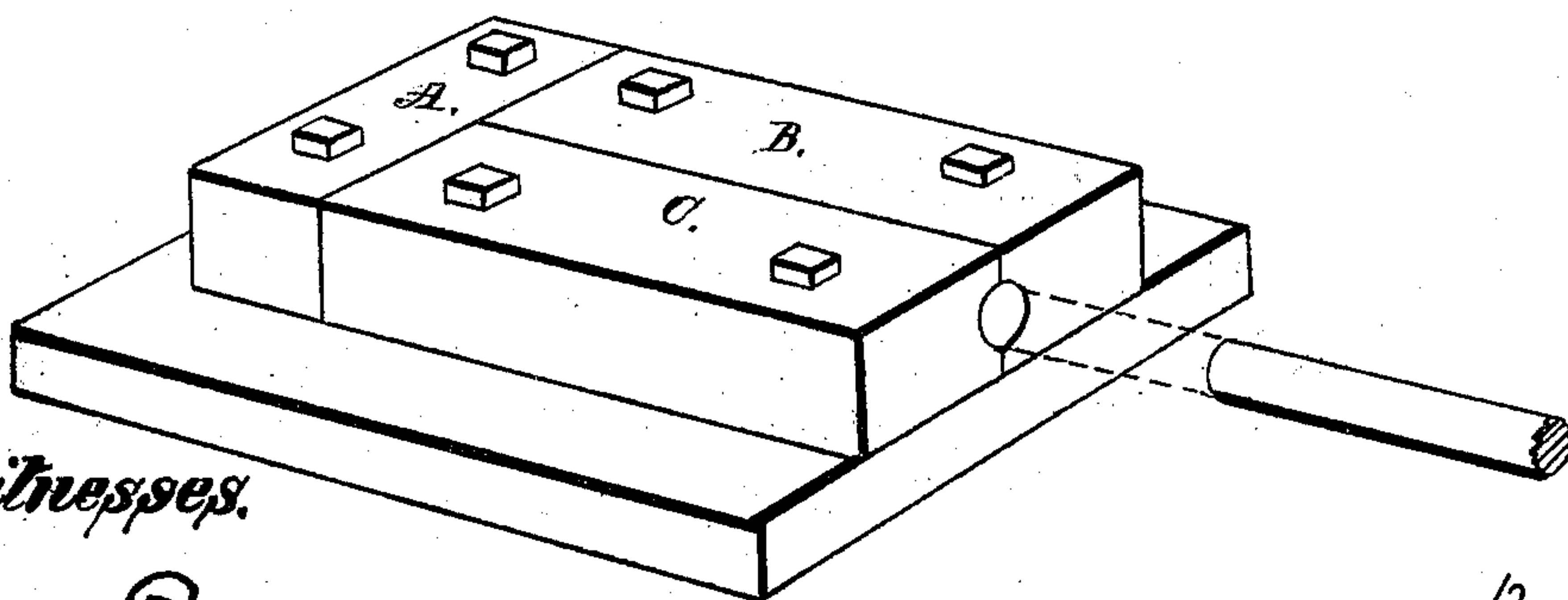
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



*Witnesses.*

*W. Bailey*

*Inventor:*

*D. D. Parmelee*  
*by A. Pollock*  
*Atty.*

# United States Patent Office.

I. D. PARMELEE, OF NEW YORK, N. Y.

Letters Patent No. 91,962, dated June 29, 1869.

## IMPROVED MODE OF UTILIZING TIN-PLATE CUTTINGS IN THE MANUFACTURE OF IRON AND STEEL.

The Schedule referred to in these Letters Patent and making part of the same.

### To whom it may concern:

Be it known that I, D. D. PARMELEE, of the city, county, and State of New York, have invented a new and useful process by which refuse tin-plate, scraps, or the waste cuttings of tin-plate, are utilized, by converting them into or in the manufacture of cast-iron, or wrought-iron, or steel.

The following is a description of the process, which will enable others acquainted with the art to which this, my invention, pertains, to practise the same.

I work the shreds or scraps into compact ingots by first twisting them into a rope, by means of an apparatus shown in Figure 1, of which A represents a rectangular bar of iron, having at one end a cone with an aperture proportionate to the size of the rope to be made, and at the opposite end a door or lid, B. The apex of the cone is formed into a hollow journal, and rests in a suitable box, while the opposite end is provided with a solid journal, which also rests in a proper journal-box; the whole being so constructed that it will freely revolve by turning a crank, C, or, if desirable, by a belt over a pulley.

Opposite the aperture in the cone-end, is a drum or windlass, E, turned by a crank, and held to its place by a ratchet-wheel and pawl.

The shreds of tin-plate are put into the box A, and the lid closed. At the aperture a small rope is formed by twisting. An implement, such as represented in Figure 3, may be used for that purpose; and the rope thus formed is drawn out of the box sufficiently to attach it to the windlass. The box is then made to revolve, which performs the twisting, while the windlass draws and coils the rope.

Before all the scraps have been removed from the box, it is refilled, and thus a continuous rope is formed.

The next step is to cut the rope into pieces of, say, four pounds each, and to place these sections in a mould, represented in Figure 2, consisting of three sections, A B C. A piston or rammer is then employed to force the scraps composing the rope compactly against section A. I prefer the mould to be cylindrical. The ingots thus forced will be about three

inches in diameter, and weigh about four pounds each.

These ingots are enclosed in any suitable mould, as of sand, loam, or composition of clay and plumbago, and eight pounds of melted cast-iron are poured on them, so as to permeate and firmly cement the mass together.

The proportion I have named of cast-iron to the weight and size of the plate ingot, is as small as I have found economical; but, of course, a larger quantity of iron may be added.

Instead of pouring the molten iron on to the ingot in the mould, the ingot may be dipped once or several times in molten iron, and a similar result will be obtained.

The ingots so prepared are melted in the cupola or other furnace, in the ordinary manner of melting cast-iron, or puddled in the puddling-furnace.

Having thus described my invention, and the manner in which the same is or may be carried into effect, I would observe that I do not wish to be understood as claiming the mixing of waste masses of solid iron with molten iron, preparatory to remelting or reheating the conglomerate; nor yet, broadly, utilizing waste tin-scraps; but

What I do claim, is—

1. The process herein described, of utilizing the waste cuttings or scraps of tin-plate, by forming the same into ingots, substantially as described, and subjecting such ingots to the melting or puddling-process in any suitable furnace, as herein set forth.

2. The formation of interlaced masses of tin-scraps, preparatory to their being dipped in or mixed with molten cast-iron, substantially as set forth.

3. The production of ingots composed of waste tin-scraps and cast-iron, substantially as herein set forth.

4. The method of and means herein described, for producing skeleton ingots of waste tin-plate.

In testimony whereof, I have signed my name to this specification, before two subscribing witnesses.

Witnesses:

D. D. PARMELEE.

THOS. H. TODD,

H. S. ANABLE.