C. M. BURGESS.

Spring Coal-Tongs.

No. 221,152. Patented Nov. 4, 1879.

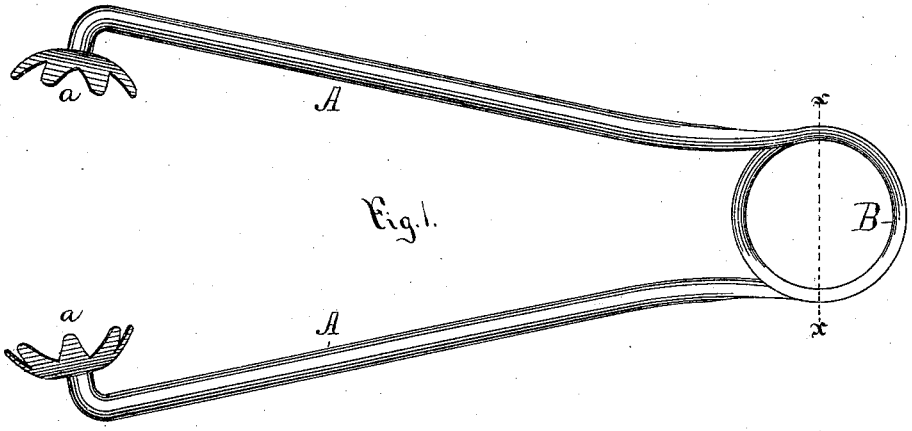

Fig. 1.

Fig. 2.

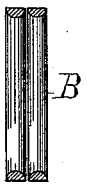

Fig. 3.

Witnesses.

W. B. Thomson

Sam'l Burr

Inventor.

Charles M. Burgess

By James Shepard Atty

UNITED STATES PATENT OFFICE.

CHARLES M. BURGESS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN SPRING COAL-TONGS.

Specification forming part of Letters Patent No. **221,152**, dated November 4, 1879; application filed June 23, 1879.

To all whom it may concern:

Be it known that I, CHARLES M. BURGESS, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Spring Coal-Tongs, of which the following is a specification.

My invention consists of a pair of spring coal-tongs having rigid arms connected by a light coiled spring, all formed of one and the same piece of metal, as hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of a pair of spring-tongs which embody my invention. Fig. 2 is a side elevation of the rod or wire blank from which the same is formed, and Fig. 3 is a transverse section of said tongs on line *x x* of Fig. 1.

A A designate the arms of the tongs, having pads *a a*, of any desired style, at their grasping ends, which pads may be secured to said arms in any proper manner. The arms should be practically rigid—that is, strong and stiff enough to pick up and firmly hold large pieces of coal or other objects, as required in the ordinary uses of coal-tongs—while at the same time the coiled spring B should be so light as to allow the arms to be easily operated.

If the coils which form the connecting-spring B of the arms A A were formed of wire stiff enough for the ordinary uses of coal-tongs, the spring would be so stiff that the arms could be operated only with inconvenience. For this reason spring coal-tongs have heretofore been made of three pieces—one light piece for the spring and two heavy or stiff pieces for the arms—secured by rivets or otherwise to the spring.

I form the rigid arms and light spring all of one piece of wire or other metal. I prefer to use wire of the proper size and stiffness to form arms which are sufficiently strong for the ordinary uses of coal-tongs, and reduce the portion which is to form the coiled spring by grinding or milling off about one-half of the stock, as represented in Fig. 2, in which *b* designates a portion of the full-sized rod, and *c* a part of the reduced portion of said rod or blank. This reduced portion is then formed into the coiled spring B, with the arms A A extending therefrom, as shown in Fig. 1, thereby making tongs of one piece of wire, with practically rigid arms, while the connecting-spring is light enough for convenience.

In the drawings I have represented the rod at the reduced portion as half-round in cross-section, and as formed up with the flat side out; but the rounded side may be made the outside of the coil, if desired, or the rod may be reduced on both sides, or made in any other form, so long as the spring portion is reduced to a smaller size in cross-section than the arms of the tongs.

My improved tongs are light, durable, and effective, and can be produced at a very small cost.

I am aware that pliers, which might be called light tongs, have been made with the arms and connecting-spring all of one piece of wire, with the same amount of stock at the points which formed the spring and arms.

I am also aware that butter-tongs and jar-lifters have heretofore been provided with handles composed of wire, which, without any change of form or reduction in bulk, is coiled to form a spring. Such a construction is not practicable for tongs with arms of the size and strength necessary for coal-tongs, and I hereby disclaim the same.

I claim as my invention—

As an improved article of manufacture, coal-tongs having practically rigid arms, composed of one piece of metal, reduced in bulk at the part bent to form a light spring for the arms, substantially as and for the purposes specified.

CHARLES M. BURGESS.

Witnesses:

H. E. RUSSELL, Jr.,

M. S. WIARD.