

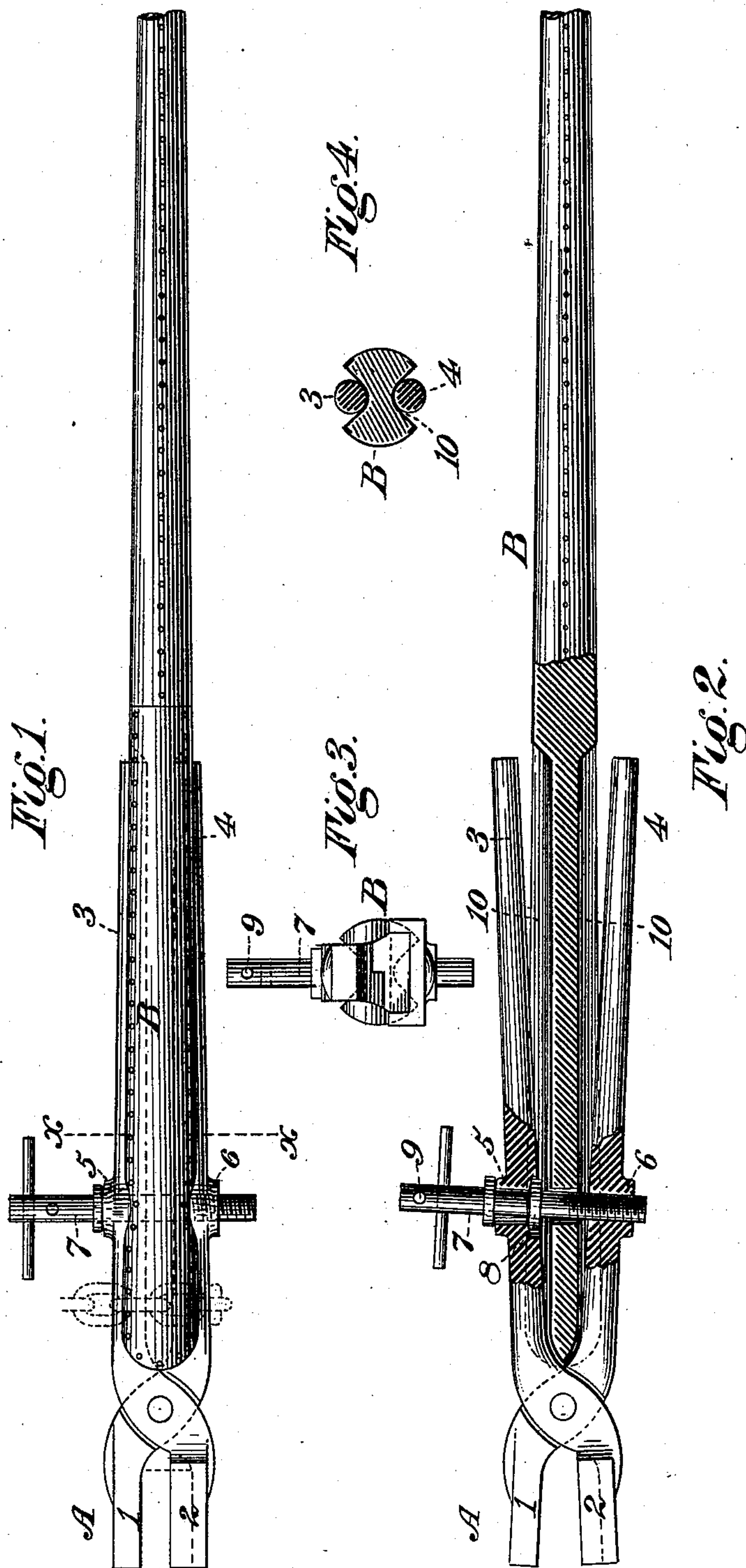
(No Model.)

E. KERR.

TOOL FOR HANDLING FORGINGS, INGOTS, &c.

No. 352,696.

Patented Nov. 16, 1886.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDWARD KERR, OF PITTSBURG, PENNSYLVANIA.

## TOOL FOR HANDLING FORGINGS, INGOTS, &c.

SPECIFICATION forming part of Letters Patent No. 352,696, dated November 16, 1886.

Application filed September 1, 1886. Serial No. 212,348. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD KERR, a subject of the Queen of Great Britain, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Tools for Handling Forgings, Ingots, &c., of which improvements the following is a specification.

10 In the accompanying drawings, which make part of this specification, Figure 1 is a view in side elevation of my improved tongs for handling ingots and other large articles during the operation of forging the same. Fig. 2 is a view  
15 of the tongs, partly in section and partly in side elevation. Fig. 3 is a front end view of the tongs. Fig. 4 is a transverse section on the line *x x*, Fig. 1.

20 The invention herein relates to certain improvements in tools or apparatus for handling large ingots or forgings during the working of the same under a steam-hammer.

25 In working large forgings or ingots it is customary to clamp two pieces of angle-iron at one end of the ingot or forging, a long piece of timber, usually termed a "porter-bar," also being bolted, clamped, or otherwise secured between  
30 said angle-irons, the porter-bar serving, when thus secured, as a handle for the manipulation thereof. The above-described manner of providing the ingot with a handle is objectionable, not only on account of its liability of becoming  
35 loosened, but also on account of the time required to secure the porter-bar in place, a half of a day being frequently consumed in that operation. It is also frequently necessary that both ends of a forging require shaping under a hammer, thus necessitating not only a chang-  
40 ing of the porter-bar from one end to the other, but also a change in the shape of the ends of the angle-bars which are applied to the forging.

45 The object of the invention is to provide a combined porter-bar and clamp which can be readily and securely applied to an ingot or forging, the clamping portion of the device being capable of easy detachment from the porter-bar, whereby clamps having differently-  
50 shaped jaws can be used in connection with a single porter-bar; and it is a further characteristic of the invention that the portion of the combined porter-bar and clamp which bears

upon the crane-chain used for supporting the forging is so shaped as to permit of the rotation of the porter-bar and forging through small  
55 arcs, which movements cannot be readily effected with the device now in use on account of its angularity.

In general terms, the invention consists in the construction and combination of parts, substantially as hereinafter described and claimed.

The clamping part A is shaped substantially similar to a pair of blacksmith's tongs, consisting of the two jaws 1 and 2 and the handles or  
60 reins 3 and 4, connected to the jaws and pivoted together near said jaws, as shown. The jaws 1 and 2 are made of a size and strength suitable for handling heavy forgings, and are shaped in accordance with the contour of the  
65 forging to be operated on, in order to obtain a firm hold thereon. The reins 3 and 4 are of a corresponding size, and of such a length as to afford considerable leverage in closing the  
70 jaws, and also a comparatively long bearing upon the porter-bar B. On the reins 3 and 4, at a suitable distance from their pivot, are  
75 formed bosses or projections 5 and 6, through which are formed holes, the hole in the boss 6 being threaded. A closing-screw, 7, is passed  
80 through the hole in the boss 5 and screwed into the threaded opening in the boss 6, the screw being held as against longitudinal movement  
85 through the boss 5 by collars 8, one of which is formed on the screw, the other being shrunk or otherwise secured thereon after the screw  
90 has been placed in position. The unthreaded end of the screw 7 is provided with holes 9, for the insertion of a capstan-bar for the rotation of the screw in closing the jaws 1 and 2, and at the same time closing the reins into the  
95 porter-bar.

The porter-bar B is a round piece of timber tapering toward its outer end, the size of said  
100 bar in cross-section and length being dependent upon the size of the forging to be handled. Along diametrically-opposite sides of the bar  
105 are formed grooves 10 for the reception of the reins 3 and 4, said grooves extending from the front or large end for a distance equal to the length of the reins, as shown. The porter-bar  
110 is arranged between the reins 3 and 4, its front end being in close proximity to their pivot-point, in order that when the reins are drawn toward each other by the screw, which also



passes through the porter-bar, said reins will have a bearing on the bottoms of the grooves 10 for nearly their entire length. The reins are made sufficiently elastic so as to be capable 5 of being sprung down into the grooves by the action of the screw, even when the jaws are closed onto quite large forging, such construction insuring not only the entrance of the reins into the grooves 10, but also a firm grasp by 10 the jaws on the ingot or forging.

In order to protect the porter-bar from injury by heat or otherwise, it is covered throughout its entire surface with sheet-iron, as shown.

It will be observed that when the reins have 15 been closed into the grooves of the bar the clamp and bar form practically one structure, and that the combined tool at the point where it bears upon the crane-chain is practically round, thereby permitting of the easy rotation of the 20 tool and forging through a small arc of a circle, and consequently the production of shapes under the hammer almost impossible with the crude device now in use for handling forgings. A series of tongs or clamping devices having 25 jaws differing in shape and size may be used in connection with a single bar, thereby increasing the utility of the tool.

I claim herein as my invention—

1. The combination of a pair of clamping-jaws operated by reins or handles, a porter-bar arranged between said reins, and means 30 for securing the reins and porter-bar together, substantially as set forth.

2. The combination of a pair of clamping-jaws and their reins or handles, a porter-bar 35 arranged between the reins, and a screw for closing the jaws and clamping the reins upon the porter-bar, substantially as set forth.

3. The combination of a pair of clamping-jaws and their operating reins or handles, a 40 porter-bar having longitudinal grooves in opposite sides, and means for simultaneously closing the jaws and forcing the reins into the grooves in the porter-bar, substantially as set forth. 45

In testimony whereof I have hereunto set my hand.

EDWARD KERR.

Witnesses:

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