

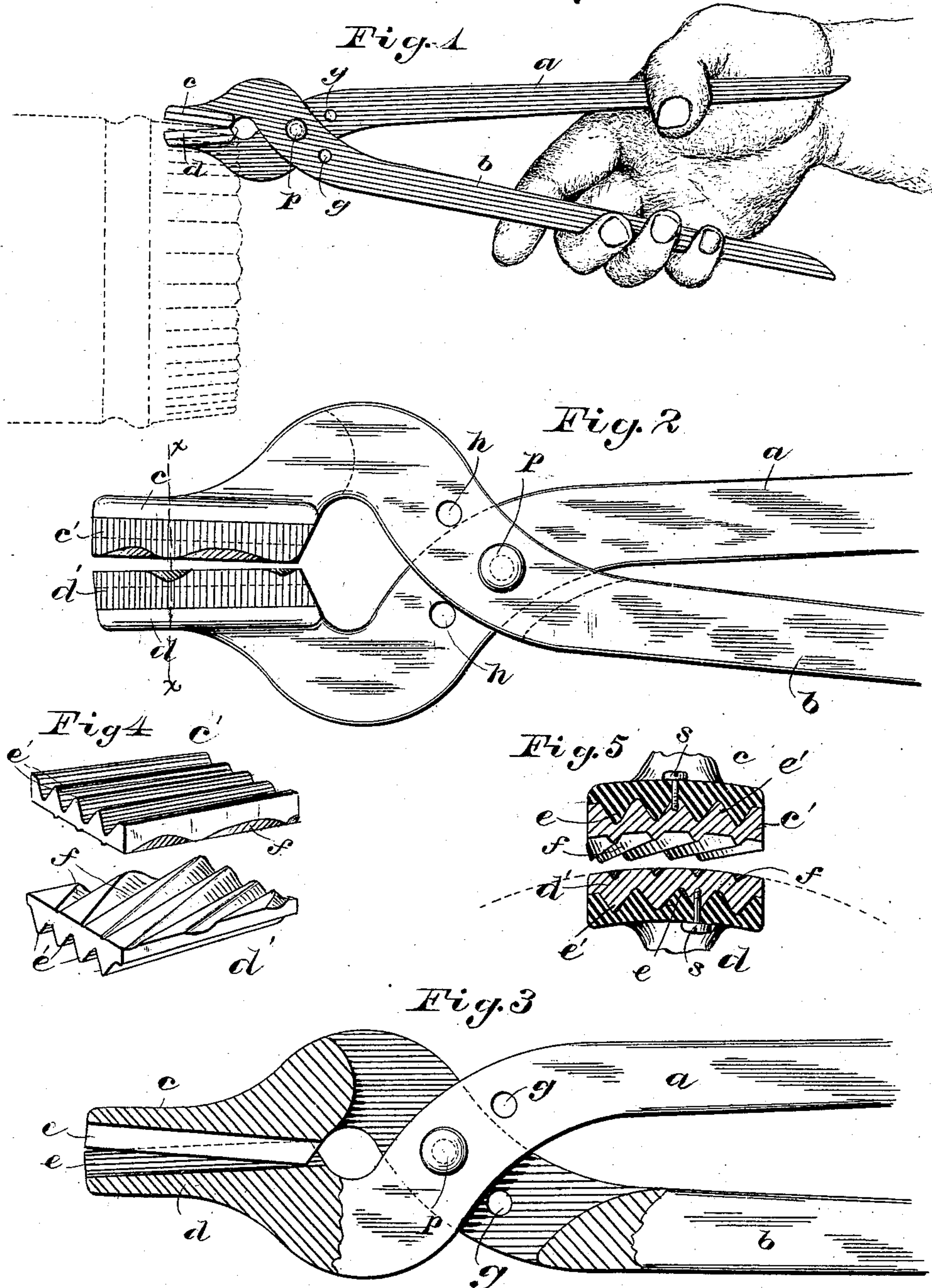
(No Model.)

F. R. PACKHAM.

CRIMPING TONGS.

No. 273,382.

Patented Mar. 6, 1883.



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CRIMPING-TONGS.

SPECIFICATION forming part of Letters Patent No. 273,382, dated March 6, 1883.

Application filed November 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. PACKHAM, a citizen of the United States, residing at Mechanicsburg, in the county of Champaign and State of Ohio, have invented a certain new and useful Improvement in Crimping-Tongs, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a device for crimping sheet metal.

The object of my invention is to provide a crimping device in the nature of a pair of tongs particularly adapted to crimping the ends of sections or joints of sheet-metal pipe for the purpose of tapering the same, so that the different sections so crimped may be readily joined together in the ordinary manner.

My invention consists of a pair of jaws, each provided with a series of serrations or flutes of equal depth throughout their length, in combination with a pin which pivots said jaws together, and which is so placed in relation to said jaws that when closed together the serrations in the different jaws will be completely engaged at one end and be gradually separated toward the other end, whereby crimps or flutes of a depth gradually decreasing to a feather-edge may be produced.

My invention further consists in providing crimping-tongs with detachable jaws, the working-faces of which are provided with serrations of a different character from those in the permanent jaws, the other or outer faces of said detachable jaws being formed to fit the serrations of the permanent jaws, whereby the same tongs may be adapted to perform different kinds of work.

My invention further consists in certain constructions and combinations of parts, as herein-after more fully described and claimed.

In the accompanying drawings, which form a part of this specification, Figure 1 is a view illustrating the manner of using my improved crimping-tongs. Fig. 2 is a side elevation view of the tongs, showing the detachable jaws inserted for use. Fig. 3 is a partial sectional elevation, showing the tongs arranged for use without the detachable jaws. Fig. 4 is a perspective view of the detachable jaws removed,

and Fig. 5 is a sectional view taken on the line *x x* in Fig. 2.

Like parts are indicated by similar letters of reference in the different views.

In the said drawings, *a* and *b* represent respectively the handles of the tongs, which are pivoted together by a pin, *p*.

c and *d* are the permanent jaws, each of which is made in a single piece with one of the handles *a b*, and each provided with a series of serrations or flutes, *e e*, of an equal depth throughout their length.

c' d' are the detachable jaws, provided on their outer faces with serrations *e' e'*, which correspond with the serrations *e e* of permanent jaws *b c*, and provided on their inner or working faces with diagonal serrations *f f*. These serrations *f f* are of a gradually decreasing depth from heel to point of jaw.

The handles *a* and *b* are each provided with two holes, *g* and *h*, for the pin *p*.

When it is desired to use the tongs without the detachable jaws the pin *p* is inserted through the holes *h h*, which are so placed in relation to the jaws *b c* that when the tongs are closed the jaws are brought into the relative position shown in Fig. 3—that is, at an angle with each other—so that while the serrations completely engage at the heel of the jaws they separate gradually toward the point.

To crimp a piece of metal or the end of a pipe, the metal is inserted between the jaws, which are then closed together by means of the handles *a b*. The serrations in the respective jaws coming entirely together at the heel of the jaws, the crimps produced in the metal will be at this point of a depth corresponding to the depth of the serrations in the jaws; but by reason of the relative position of the jaws above stated the said crimps in the metal will gradually decrease in depth up to a feather-edge. Crimps or flutes when thus formed in the metal of a pipe at its end produce a perfect taper in the pipe at the end so crimped.

When it is desired to use the detachable jaws the pin *p* is put through the holes *g g*. The detachable jaws are then inserted in the permanent jaws, with their straight serrations *e' e'* fitting in those, *e e*, in said permanent jaws. The detachable jaws are then secured

in this position by a small screw, *s*, or in any other suitable manner. The tongs may be now used for producing diagonal crimps, and the serrations being of gradually-decreasing depth
 5 a taper may be produced, as before. In ordinary work the straight serrations in the permanent jaws will be used; but in crimping stove-pipe of an inferior quality the diagonal serrations are preferable, as by their use the
 10 crimps are produced in the metal across the grain. The metal, when thus crimped, will not be apt to split, as is sometimes the case when the crimps are made in the metal parallel with the grain.

15 I make the jaws in cross-section on the arc of a circle, as shown in Fig. 5, when intended exclusively for crimping pipe, so that the circular form of the pipe will be retained. This is particularly desirable when the tongs are to
 20 be used for crimping small pipe.

It is evident that the relative position of the straight and diagonal serrations may be reversed and the same result be obtained—that is, the diagonal serrations may be placed in
 25 the permanent jaws and the straight serrations in the detachable jaws.

If desired, the jaws *c d* may be placed at an angle to the handles *a b* without departing from the spirit of my invention; and, indeed,
 30 this may be found advantageous in some kinds of work.

Having described my invention, I claim as new and original—

1. The combination, with the jaws *c* and *d*,
 35 each provided with a series of serrations of equal depth throughout their length, of a pin, *p*, pivoting said jaws together, said pin being so placed in relation to said jaws that when closed together the serrations in the different
 40 jaws, while being completely engaged at one end, will be gradually separated toward the other end, substantially as and for the purpose set forth.

2. The combination, in a pair of crimping-
 45 tongs, of a pair of permanent pivoted jaws

with a pair of detachable jaws, said permanent jaws each provided with a series of serrations, the serrations of one jaw being adapted to fit those of the other jaw, and said detachable
 50 jaws each serrated on one face to correspond with the serrations in one of the permanent jaws, and each provided on the other or working face with serrations of a different character from the serrations in the permanent jaws.

3. The combination of the pivoted jaws *c d*,
 55 each provided with a series of serrations, the serrations in the different jaws being adapted to fit each other, said jaws being formed in cross-section on the arc of a circle and relatively adapted to produce crimps of a gradu-
 60 ally-decreasing depth, substantially as and for the purpose set forth.

4. In a pair of crimping-tongs, the combination, with a pair of permanent jaws, of detachable jaws adapted to be inserted in the
 65 permanent jaws, one pair of said jaws being provided with a series of straight serrations and the other pair provided with diagonal serrations, substantially as and for the purpose
 70 set forth.

5. The combination, with the handles *a b*, each provided with holes *g h*, and permanent jaws *c d*, having serrations *e e*, of detachable
 75 jaws *c' d'*, having serrations *f f* of a different character from those, *e e*, in the permanent jaws, substantially as shown and described.

6. The combination, with the pivoted jaws *a b*, formed in cross-section on an arc of a circle, and provided with serrations *e e* of equal
 80 depth throughout their length, of a pin, *p*, so placed that when closed together said jaws will form an angle with each other, substantially as shown and described, and for the purpose set forth.

In witness whereof I hereunto subscribe my
 85 name this 27th day of October, A. D. 1882.

FRANK R. PACKHAM.

Witnesses:

T. F. SHEPHERD,
 A. J. SHEPHERD.