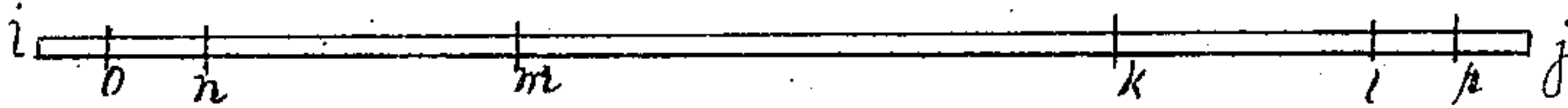
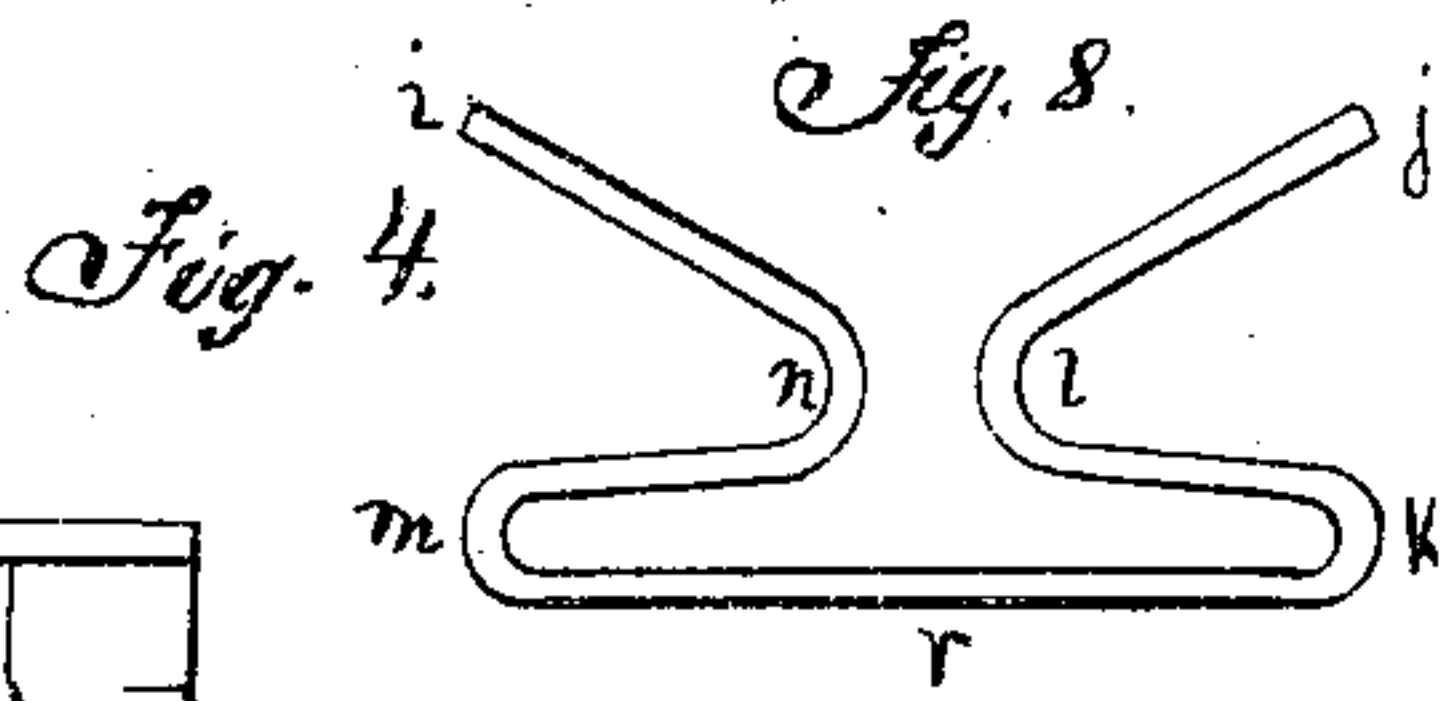


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Fig. 12.



Wes Malick's Device for bend'g Harness Irons.



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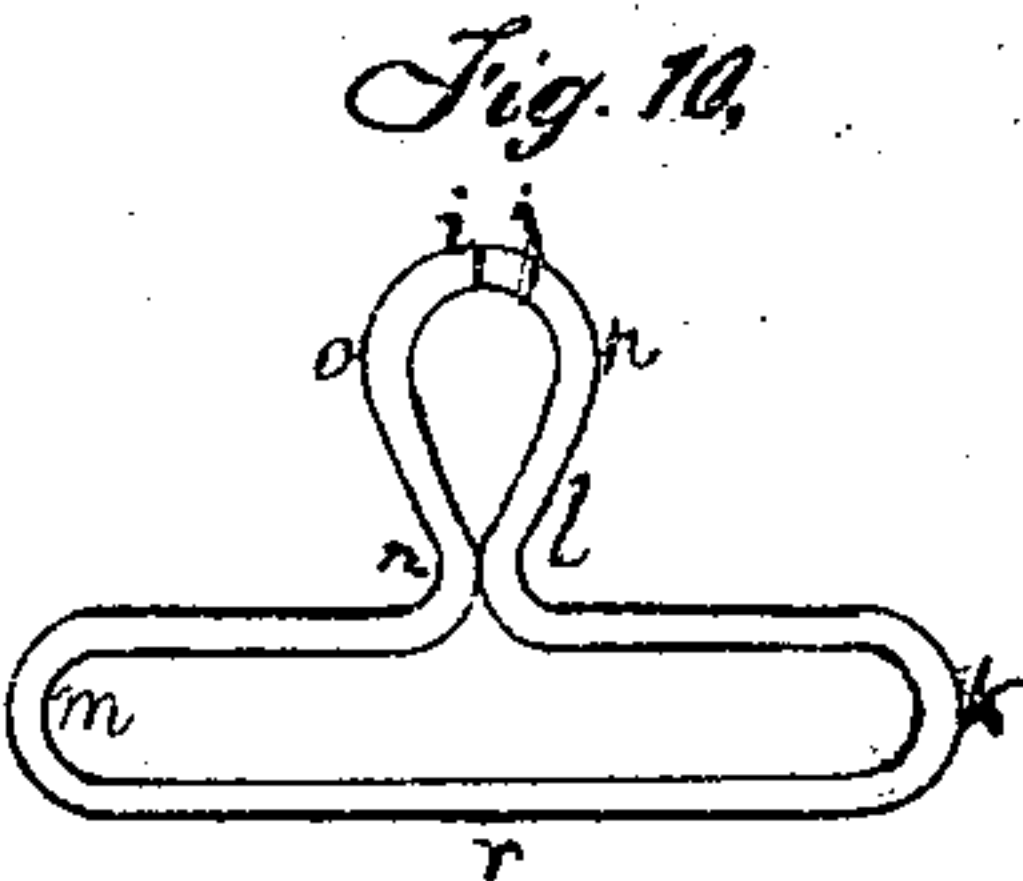
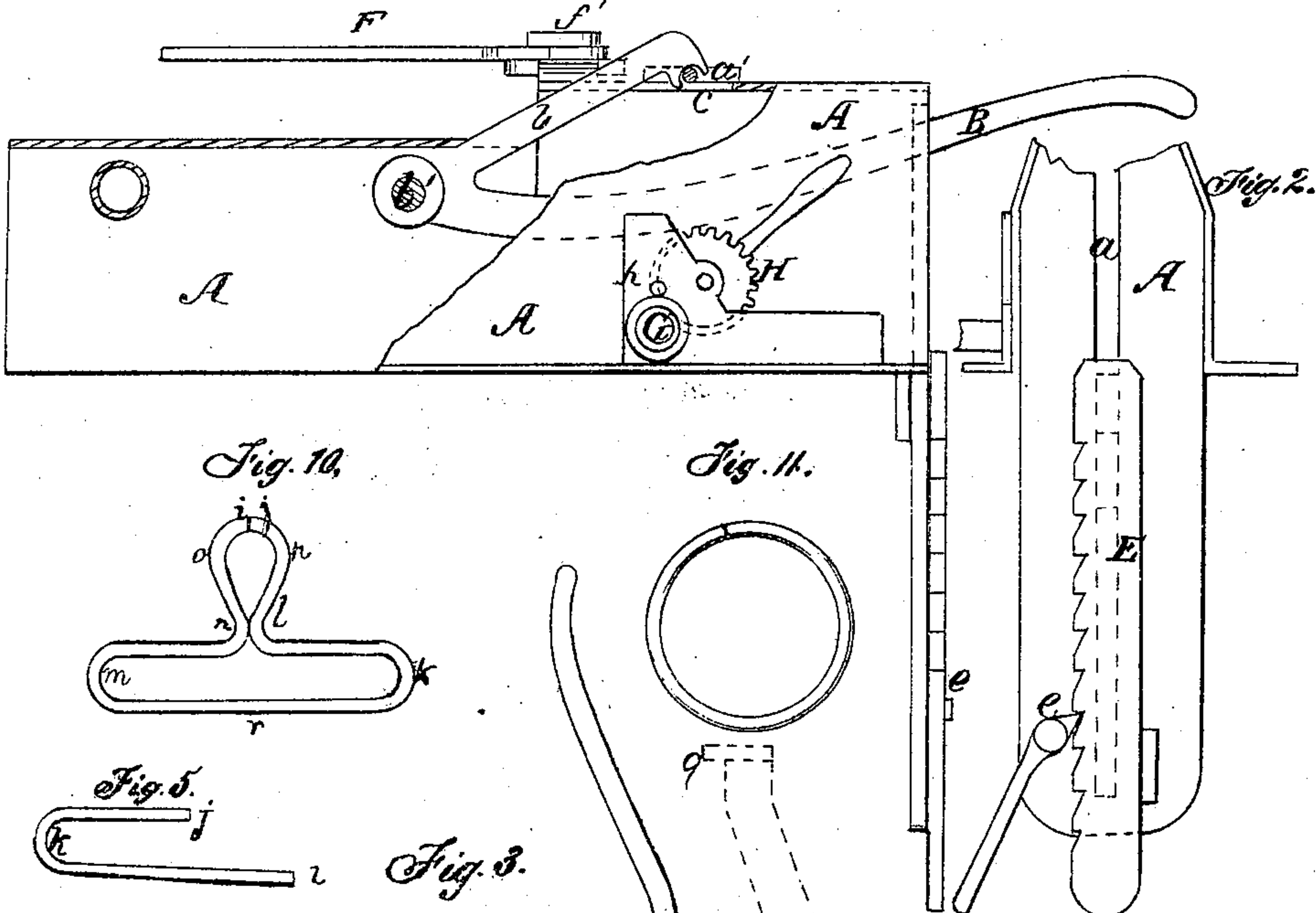
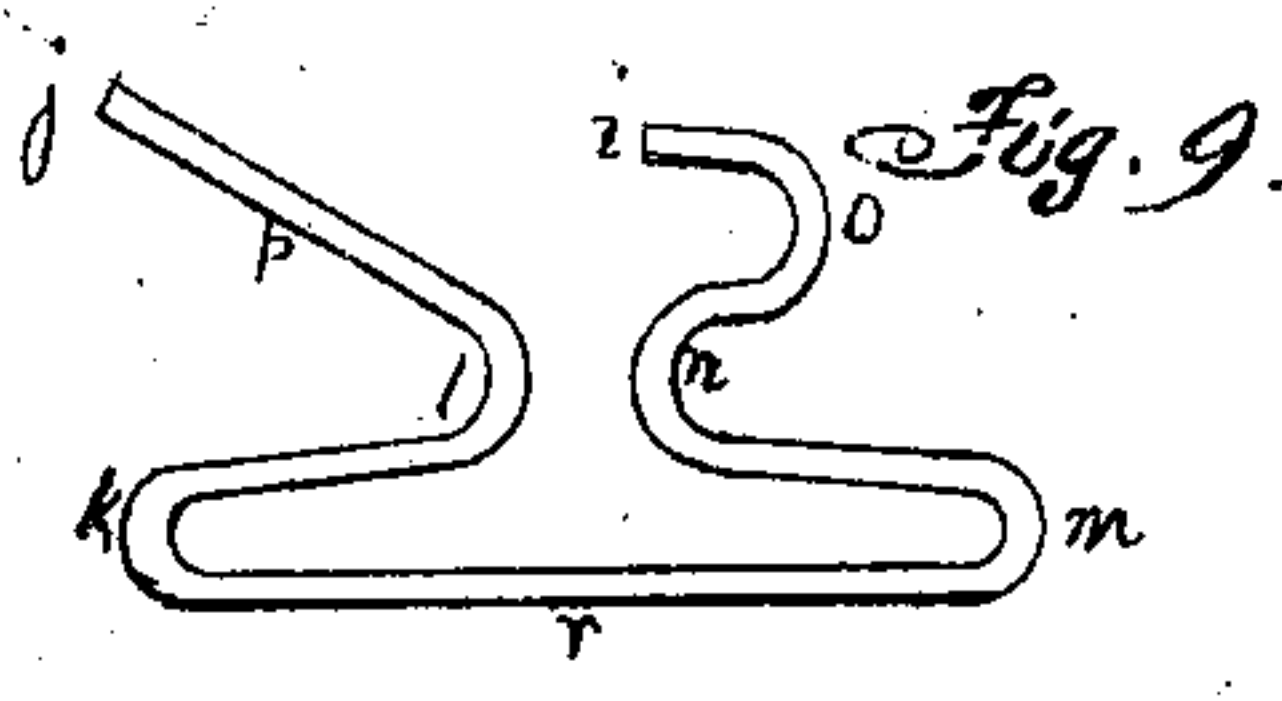


Fig. 11.

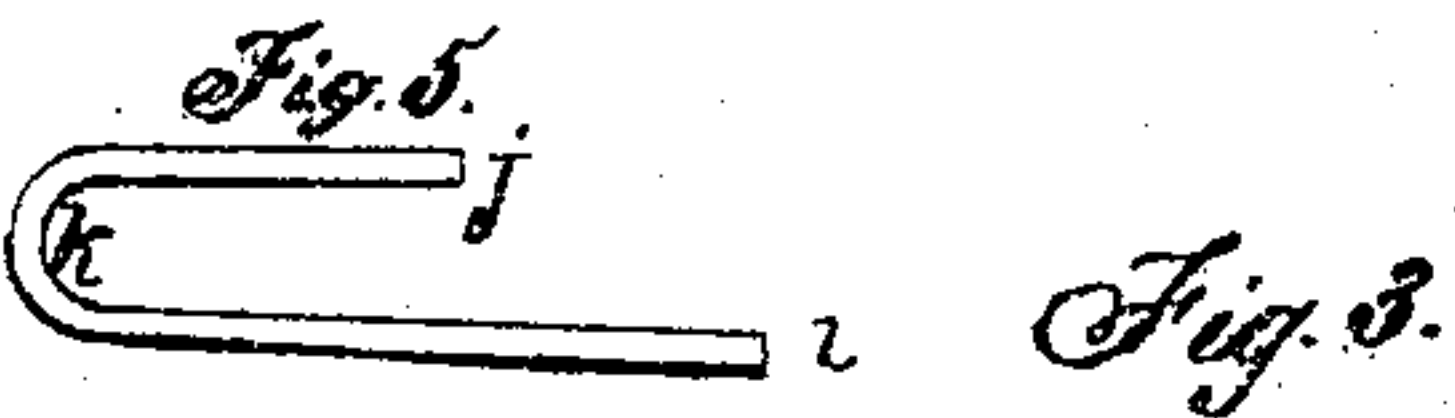
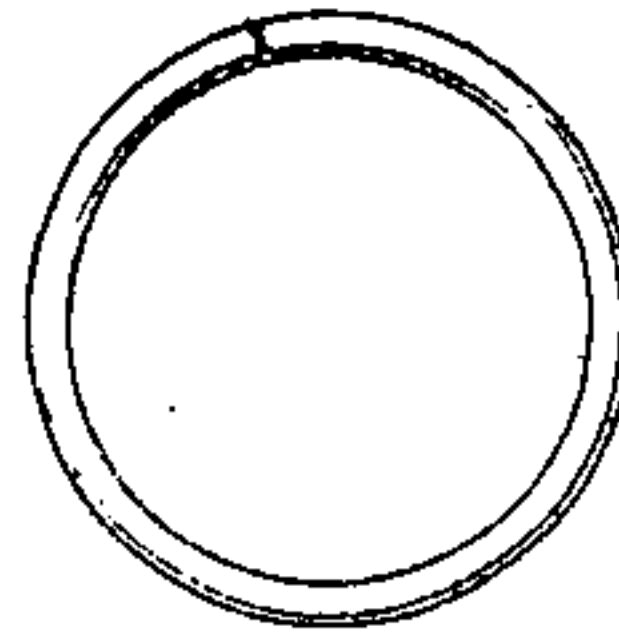
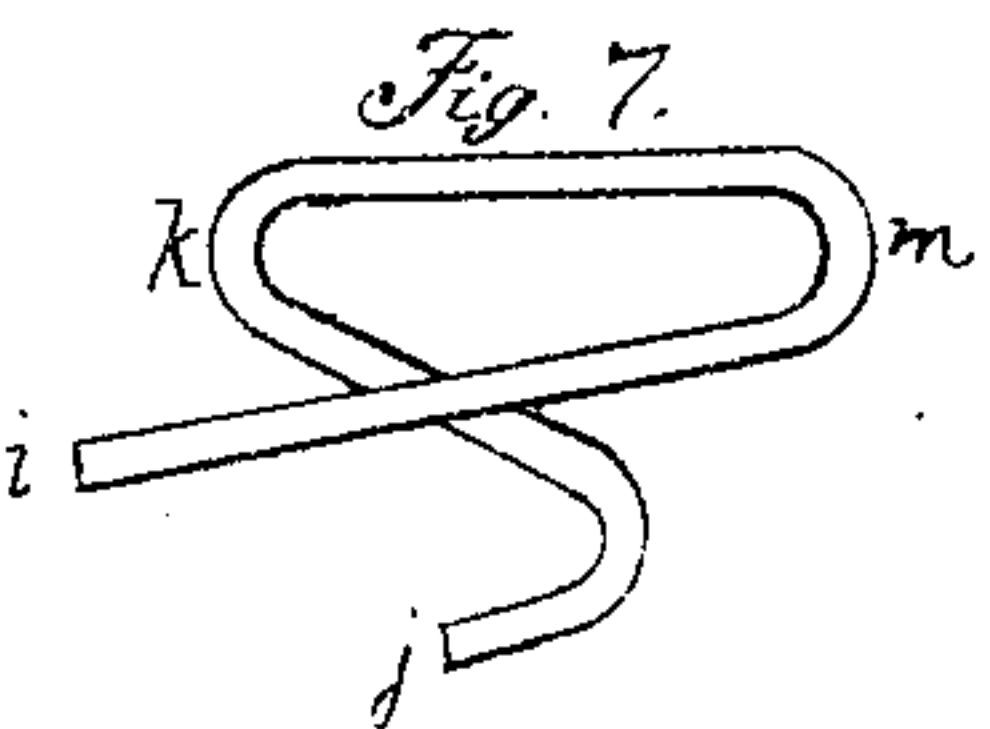
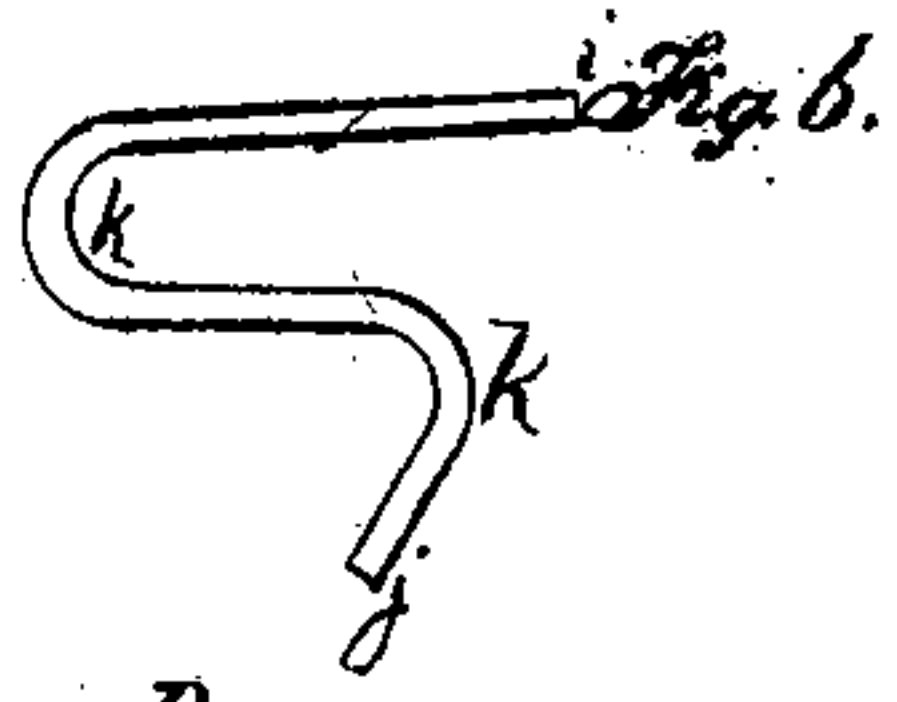
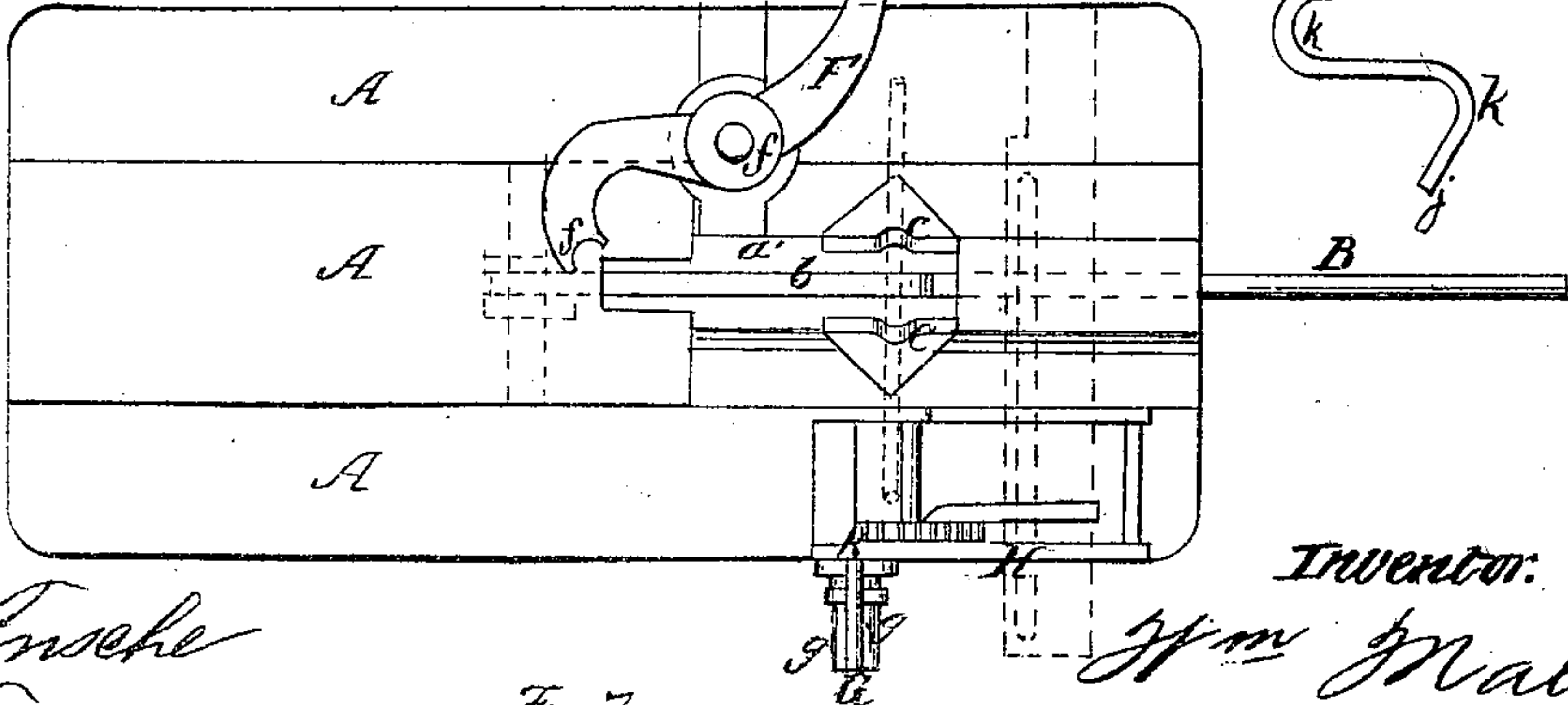


Fig. 3.



Witnesses

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WESLEY MALICK, OF TIDIOUTE, PENNSYLVANIA.

Letters Patent No. 72,874, dated December 31, 1867.

IMPROVED BENDING-DEVICE.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WESLEY MALICK, of Tidioute, in the county of Warren, and State of Pennsylvania, have invented a new and improved Device for Bending Harness and other Iron; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to an improved device for bending harness-irons, and consists of a hollow metal frame having a slot at one end and at top, through which work the arms of an elbow-lever, having a notch at the end of its short arm. The iron to be bent is placed across the slot and set into the notch of the short arm, which is then pressed down by the long arm, bending the iron through the slot in the top of the frame in the form of a loop whose sides are parallel, one being a little longer than the other. Another notched bent lever, working horizontally, seizes the sides of the loop, at the points at which they are to be bent, and bends them one side. The long arm of the vertical lever works through the slot in the end of the frame, and the depth of the loop is regulated by a stop or gauge working in the slot and held by a dog. Rings may be made by slightly bending the wire by means of the vertical lever across the slot throughout its length. In the accompanying drawings—

Figure 1 is a side view partly in section of my device for bending iron.

Figure 2 is an end view, and

Figure 3 a top view thereof.

Figure 4 is a side elevation of the gauge employed to regulate the height of the stop and the lengths of the iron to be bent. The application of this gauge is shown in red lines, fig. 3.

Figures 5, 6, 7, 8, 9, 10, 11, are side views of iron, showing the different forms it is made to assume during the process of bending.

Figure 12 is a side view of a rod of iron, to which reference will be hereinafter made in describing the operation of my bending-device.

Similar letters of reference indicate like parts.

A A is the frame, having slots *a* and *a'* at end and top, through which work the long arm B and the short arm *b* respectively of the elbow-lever B *b*, which has its fulcrum in the frame at *b'*. The short arm *b* is provided with a claw or notch, *f*, at its extremity. *c c* are two projections across the top slot *a'*, in the grooves of which the iron to be bent is placed. The height or length of the loop to be formed in the iron is regulated by the stop E arranged to slide upon the end of the frame over the slot *a*. The stop is provided with notches, in which a dog, *e*, catches to hold it in the desired position. The stop may, however, be dispensed with, and the depth of the loop determined solely by the skill of the workman. The slotted frame might also be dispensed with, leaving the frame entirely open. The desired height of the stop E and depth of the loop can be regulated by the gauge, figs. 3 and 4, which also serves to regulate the length of the iron to be bent. F is a curved lever, pivoted in a horizontal position at *f'*, upon the top of the frame, and provided with a claw, *f*.

Having described the parts of my invention, I will proceed to describe their operation in bending the iron to the desired form.

In fig. 12 a piece of iron is shown, say four inches and one-fourth in length, divided into unequal parts, represented by *i j k l m n o p*. This wire is taken in the left hand, near the end marked *i*, and passed upon the grooved projections *c c*, along the ruled gauge, until the end *j* strikes or reaches the rest or stop *q*, shown in fig. 3, on the gauge, when the part marked *k* will be immediately under the jaw of the elbow-lever B, which is then depressed until it strikes the upper edge of the stop E. The wire by this operation is made to assume the shape shown in fig. 5. Before the elbow-lever B is raised by the right hand, the handle of the curved lever F is seized with the left and pulled in the direction of the arrow, shown in fig. 3, thereby forming the iron into the shape shown in fig. 6, this second bend being at the point marked *i*. The lever F is now pushed back, the elbow-lever B raised, and the bent wire removed from the machine. It is then grasped by its bent end *j*, said end being uppermost, and its opposite end placed along the gauge in the grooved projection, as before, until the end *i* strikes the stop *q*, which brings the point *m* under the notched jaw of the elbow-lever, which is again depressed, bending the wire into the shape represented by fig. 7. The lever F is again pulled in the direction of the arrow, fig. 3, and returned, shaping the iron, as shown in fig. 8, or nearly so. To complete the blank,

the wire is taken in the left hand at its centre *r*, the two ends turned to the right, the point *K* being up, and the point *m* down. The end *i* is passed along the gauge to a point midway between *i* and *n* marked *g*, where it will be again under the jaw of the elbow-lever, the point *n* resting upon the left projection *C*. The elbow-lever is lightly depressed until the point *i* of the iron is brought to the centre, or even with the point *n*, bending it, as shown in fig. 9. The elbow-lever is now raised and the wire again removed, and the process reversed; that is to say, it is again grasped at its centre *r* with the left hand, the point *m* up and the point *k* down, and its end, *j*, placed under and past the elbow-lever until the point *l* is upon the left projection *c*, the point *p* being under the jaw of the elbow-lever, which is pressed lightly down in the groove *a* until the end, *j*, of the wire meets the end, *i*, already finished, when the blank will have assumed the completed shape represented in fig. 10. Rings, as shown in fig. 11, may be made by the vertical elbow-lever alone, by repeatedly bending the iron slightly through slot *a'* along its entire length, or by placing the end thereof into one of the holes *g g* of the cylinder *G* attached to the side jaws *H*, when the iron will be bent against the bar *K*, the gear *H* operating cylinder *G*.

By the use of the above device, staples, chains, links, rings, cockeyes, &c., may be bent without first heating the iron, and can be gauged to any desired size or shape, one man only being employed in the work.

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

1. The arrangement of the elbow-lever *B b*, hung in the slots *a* and *a'*, and the frame *A*, substantially in the manner and for the purpose specified.
2. The combination of the stop *E*, arranged in the slot *a*, with the frame *A* and lever *B b*, as herein described for the purpose specified.
3. The horizontal lever *F*, constructed as described, in combination with the elbow-lever *B b*, grooved projections *c c*, and frame *A*, substantially as herein described for the purpose specified.

WESLEY MALICK.

Witnesses:

THOS. B. MONKS,
JAMES McGUIRE.