

No. 782,546.

PATENTED FEB. 14, 1905.

E. G. CHRISTIANSEN.

NIPPERS ADAPTED TO BEND AT RIGHT ANGLE AND TO FLAT THE ENDS
OF METAL WIRES.

APPLICATION FILED OCT. 20, 1904.

Fig. 1.

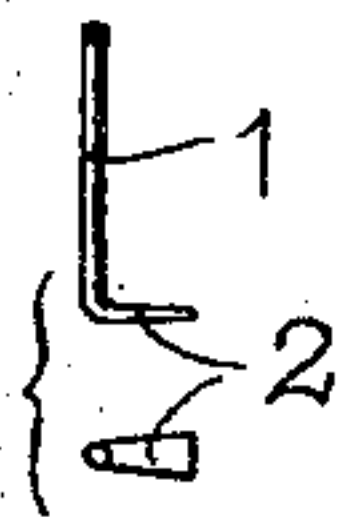


Fig. 3.

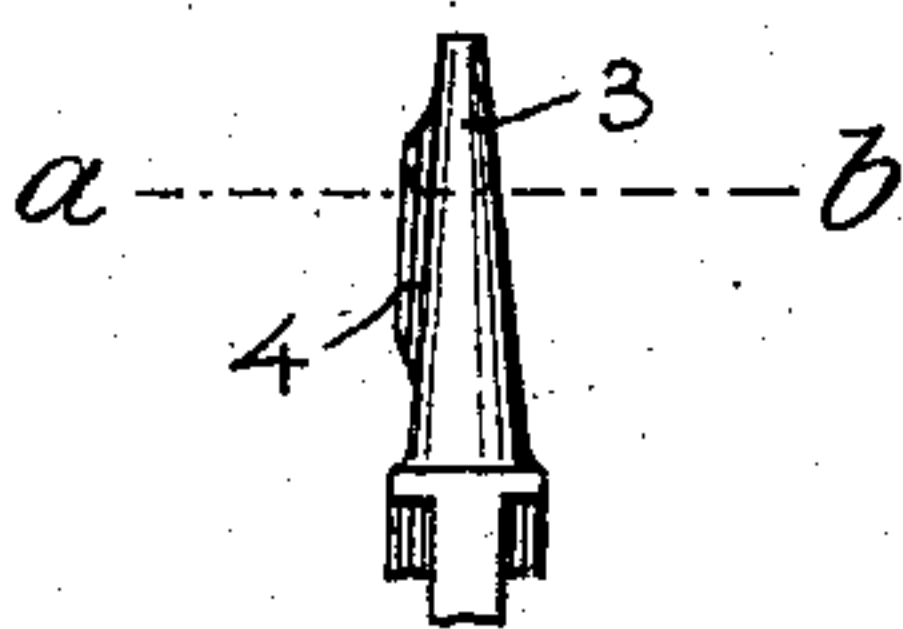


Fig. 4.

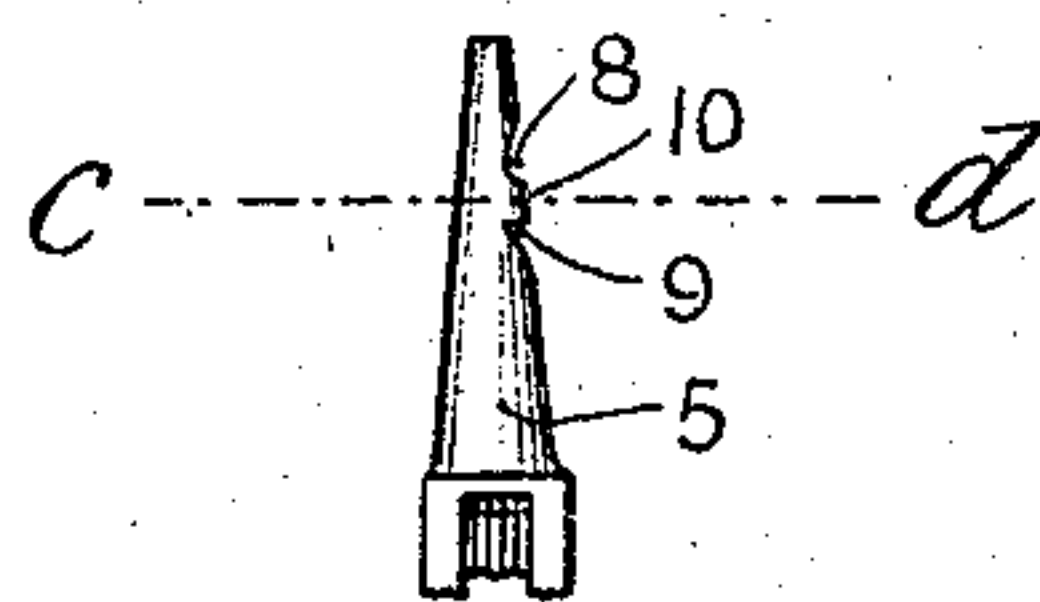


Fig. 2.

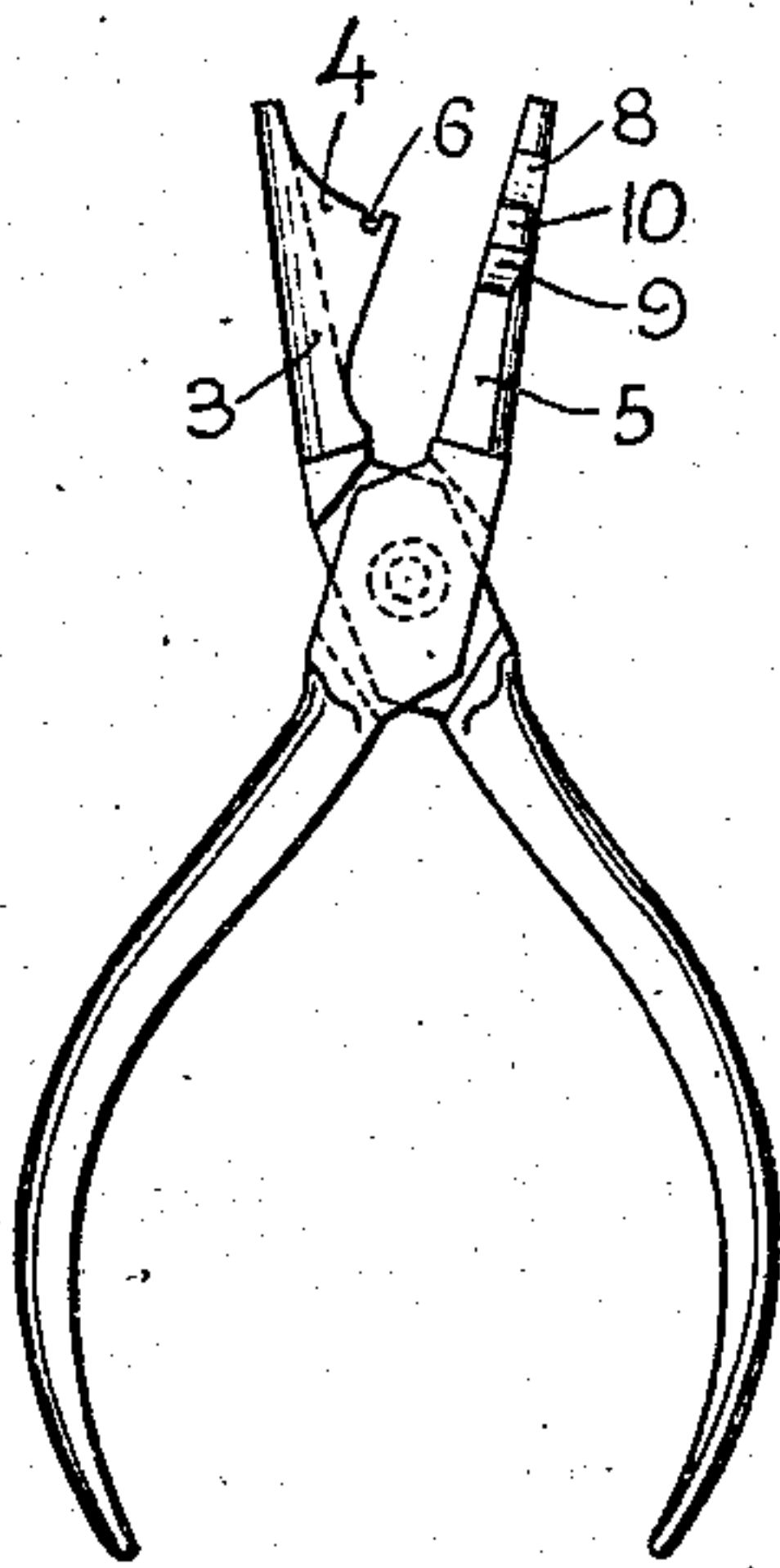


Fig. 5.

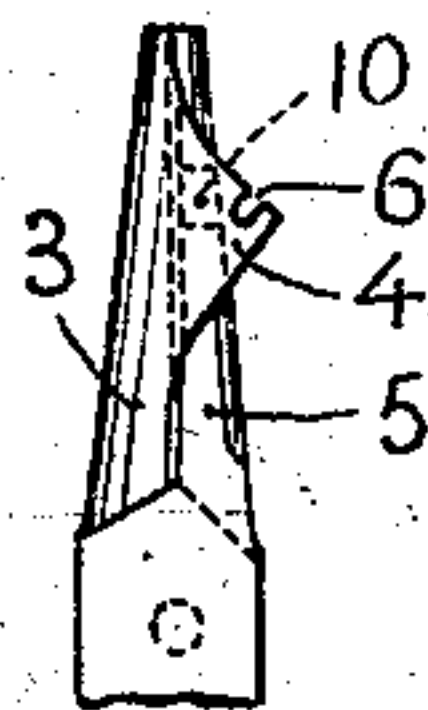


Fig. 6.

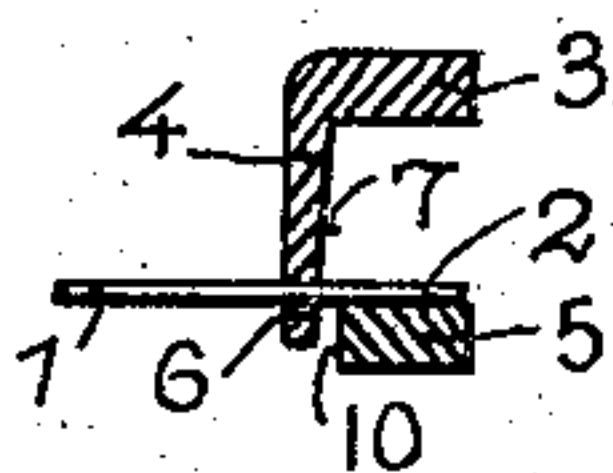


Fig. 7.

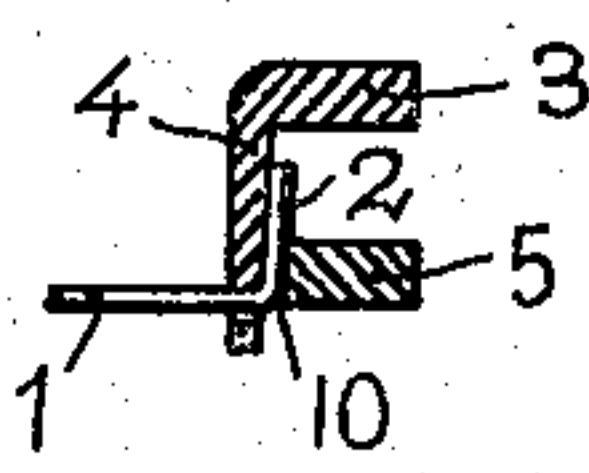
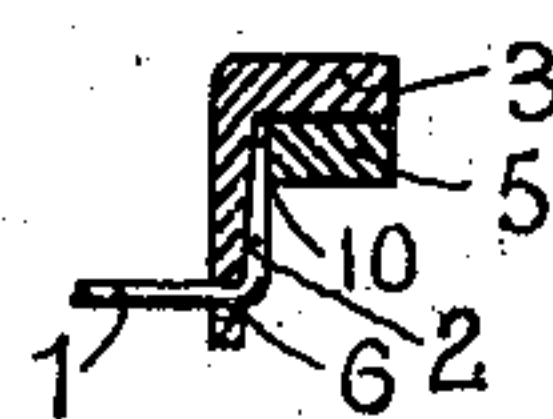


Fig. 8.



Witnesses:

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EDUARD GREYSEL CHRISTIANSEN, OF DRAMMEN, NORWAY.

NIPPERS ADAPTED TO BEND AT RIGHT ANGLE AND TO FLAT THE ENDS OF METAL WIRES.

SPECIFICATION forming part of Letters Patent No. 782,546, dated February 14, 1905.

Application filed October 20, 1904. Serial No. 229,250.

To all whom it may concern:

Be it known that I, EDUARD GREYSEL CHRISTIANSEN, dentist, a citizen of the Kingdom of Norway, and a resident of Börsen, Drammen, Norway, have invented certain new and useful Improvements in Nippers Adapted to Bend at Right Angle and to Flat the End of Metal Wires, of which the following is a specification.

The object of my invention is to provide a pair of nippers adapted to bend at right angle and to flat the end of metal wires by a single operation. Such a pair of nippers may preferably be used by dentists when artificial teeth furnished with pins shall be made and which pins are shaped as mentioned above.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation and a plan of a wire which is shaped for the purpose mentioned. Fig. 2 is a side elevation of the nippers, the jaws of which are shown separated. Figs. 3 and 4 are side elevations of the two jaw parts. Fig. 5 is a side elevation of the upper part of the nippers, the jaws of which are pressed together. Figs. 6, 7, and 8 are sections along the lines *a b* and *c d*, Figs. 3 and 4, drawn to an enlarged scale and illustrating three operating positions.

The end 2 of the metal wire 1 shall first be bent at right angle and then made flat, as shown in Fig. 1. For this purpose one jaw part, 3, of the nippers is provided with a blade 4, projecting from one side of said part so that the blade when the jaws are pressed together passes over the side of the other jaw part, 5, Fig. 5. The blade has at its outer edge a notch 6 adapted to receive the metal wire 1, Fig. 6, the inner side face of the blade being inclined, as shown at 7, Fig. 6.

The nippers are operated as follows: The metal wire 1 is inserted in the notch 6, Fig. 6, so that its outer end 2, which shall be bent, projects a suitable distance between the jaws, whereafter these latter are forced together. The part 10 on the jaw 5 hereby first will meet with the metal wire, Fig. 6, then bend the same at a right angle, and immediately thereafter the bent end 2 will be gradually compressed, Fig. 7, as the distance between

the blade 4 and the active portion 10 on account of the inclined face 7 is successively reduced when the jaws are forced together. In Fig. 8 the jaws are shown completely compressed. Here the whole end 2 has been pressed flat, whereby it is increased in width, as shown in Fig. 1. It is seen that the whole work is made during a single operation by only forcing the jaws together.

When the nippers shall be used for bending and flattening pins for artificial teeth, one of the pins must remain unactuated when the other one is shaped. For this purpose the one jaw part, 5, of the nippers is provided with notches 8 and 9 at both sides of that portion 10 which causes the shaping. When one of the pins is shaped, the other one will find a place in one of these notches 8 or 9, and it therefore will not be acted upon when the jaws are forced together.

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

1. A pair of nippers adapted to bend at right angle and to flat the end of metal wires, and comprising two jaws, one of which is provided with a portion projecting to the side and passing over the side of the other jaw part, which portion has a notch to receive the metal wire and an inclined inner face, the distance of which from the acting portion of the other jaw side is gradually decreased, when the jaws are forced together, whereby the wire first will be bent and then made flat during a single operation.

2. A pair of nippers adapted to bend at right angle and to flat the end of metal wires, and comprising two jaws, one of which is provided with a side blade 4, having at its outer edge a notch 6 to receive the metal wire and being so located, that the blade, when the jaws are forced together, passes over the side of the other jaw 5, whereby the inner face 7 of the blade 4 is inclined in such a manner, that the distance between said face 7 and the side of the jaw 5 is gradually decreased when the jaws are forced together.

3. A pair of nippers adapted to bend at right angle and to flat the end of metal wires, and comprising two jaws, one of which is

provided with a side blade 4, having at its
outer edge a notch 6 to receive the metal wire
and being so located, that the blade, when the
jaws are forced together, passes over the side
5 of the other jaw 5, which latter is provided
with notches 8 and 9 at both sides of its ac-
tive portion 10, whereby the inner face 7 of
the blade 4 is inclined in such a manner, that
the distance between said face 7 and the side
10 of the jaw 5 is gradually decreased, when the

jaws are forced together, all for the purpose
of making the nippers suitable especially to
shape the pins for artificial teeth.

In testimony whereof I have signed my name
to this specification in the presence of two sub- 15
scribing witnesses.

EDUARD GREYSEL CHRISTIANSEN.

Witnesses:

AXEL LAHN,

RICHARD LOKKE.