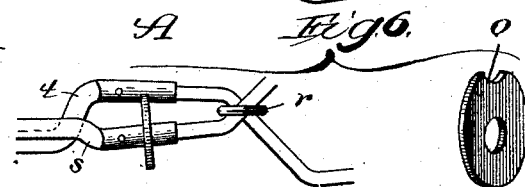
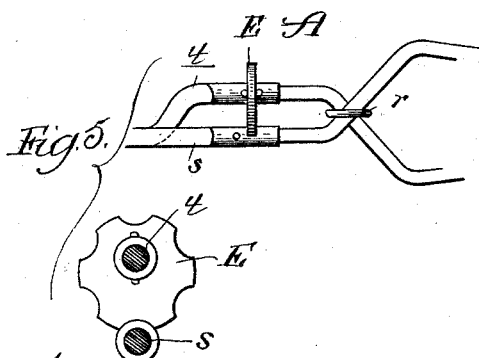
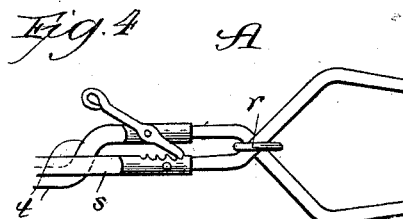
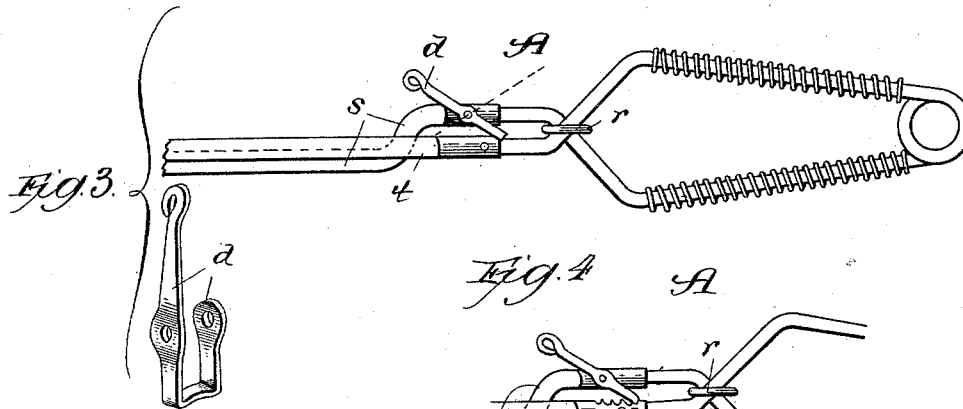
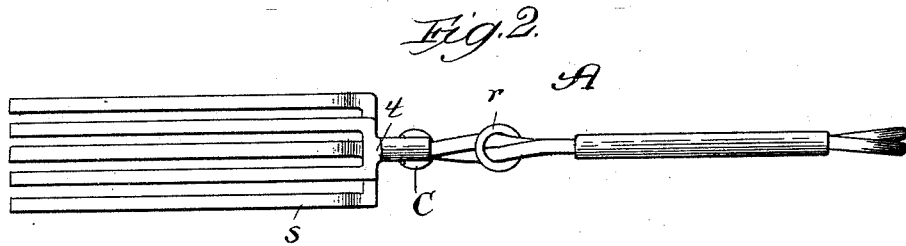
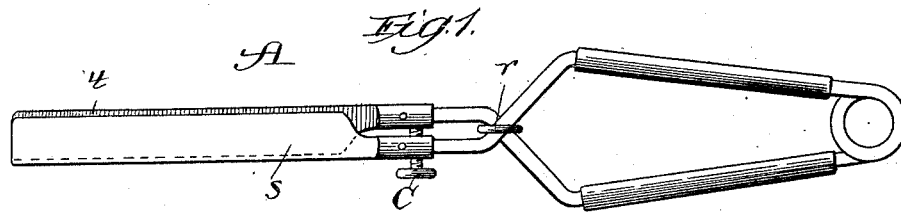


(No Model.)

M. CAMPBELL.
CRIMPING IRON.

No. 489,217.

Patented Jan. 3, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

MARK CAMPBELL, OF CHICAGO, ILLINOIS.

CRIMPING-IRON.

SPECIFICATION forming part of Letters Patent No. 489,217, dated January 3, 1893.

Application filed March 28, 1892. Serial No. 426,724. (No model.)

To all whom it may concern:

Be it known that I, MARK CAMPBELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Adjusting Devices for Crimping-Irons and Similar Devices, of which the following is a specification.

My invention relates to an improvement in wavers, fluters or crimpers and similar articles by which the depth of crimp or the amount of pressure exerted between the jaws under the action of the spring may be readily adjusted. The device is applicable not merely to grippers for use in crimping the hair and fabric but is also applicable to jewelers' gripping tongs, in the use of which on the various articles which are held thereby it is desirable that a limit shall be placed upon the pressure exerted upon each other by the jaws.

My invention consists in a crimper or similar device comprising extending and co-acting jaws caused to co-act under the operation of a spring usually part of or connected with the handle portion, said device being provided with an adjusting medium such as a set screw, pivoted dog, cam disk or the like held by one member and caused to bear against the other, whereby a stop is provided which prevents the jaws from approaching each other beyond a predetermined point.

My invention consists further in a similar construction in which the adjusting mechanism is mounted upon and secured to the jaws on the crimping side of the pivot.

My invention consists further in the preferred details of construction and combination of parts, all as hereinafter more fully set forth.

In the drawings—Figure 1 is a side elevation of a knife blade crimper for hair or fabric provided with an adjusting device in the form of a set screw; Fig. 2 is a plan view of the device shown in Fig. 1; Fig. 3 is a plan view of a crimper employing an adjusting device of modified form, viz., in the form of a pivoted dog; Fig. 4 is a view of a crimper involving a dog similar to that shown in Fig. 3 caused to bear against a ratchet on the other member; Fig. 5 shows a crimping device provided with an adjusting mechanism in the

form of a revoluble disk having circumferential notches on varying radii; Fig. 6 is a view of a crimper provided with an adjusting device in the form of a sliding notched disk movable toward and from the pivot.

A represents a crimping waving or fluting iron composed of two members *t s* adapted to mesh as the crimper is closed.

In the form shown in Figs. 1 to 6 the handle portion is in the form of a spring wire, the ends of which cross and are held to have a sliding connection with each other by the ring *r*. The tendency of the spring is to close the jaws on each other and they are separated by compressing the handle portion in the hand.

With the form of crimper shown in Figs. 1 to 6, and whether the blades or oval or round fingers are employed, the adjusting device is connected to the gripping portion in a manner suitable to the specific form of the adjusting device. Where a screw is employed, and this is usually the preferred form, a screw-hole is bored through one member *s* preferably through the sleeve on the gripping jaw, and a set-screw *C* is introduced. The set screw being turned inward causes the crimp to be comparatively shallow, and the set screw being turned outward causes the crimp to be comparatively deep. Where a pivotal dog *D* is employed, as in Fig. 3, it has its pivot on one jaw *s* and when thrown so that the dog shall extend at right angles to the jaws a shallow crimp is produced, when turned toward the point of the wires a greater crimp is produced and when thrown toward the crossing-point of the jaws a still greater crimp is produced.

Where the form shown in Fig. 4 is employed a larger number of adjustments are possible as each tooth on the ratchet may serve as a stop to be engaged by the dog.

With the form shown in Fig. 5, and which comprises a revoluble disk having notches on varying radii, the depth of crimp is made variable by turning the disk *E* to bring a different radius to extend between the jaws.

In the form shown in Fig. 6, which involves a sliding disk prevented from revolution, the various adjustments between a shallow and deep crimp are produced by sliding the disk from the pivotal toward the outer end of the

member s. Although the disk is shown as notched and non-rotary, it is quite apparent that it may be rotary and the notch omitted if desired.

5 What I claim as new and desire to secure by Letters Patent is—

1. In a crimper or similar device, the jaws mounted on handles crossing each other and having a free movement one upon the other,
10 whereby the jaws may be separated to their full extent, and an adjusting device mounted on one member between the point of crossing of the handles and the end of the jaws, and bearing against the other member, serv-
15 ing to limit the movement of the jaws toward

each other while preserving their substantially parallel relation, substantially as described.

2. In combination with the crimper having the crimping jaws *t s*, mounted on crossing handles a set screw *C* passing through one member at a point between the place of crossing of the handles and the end of the jaws and bearing against the other, as and for the purpose set forth.

MARK CAMPBELL.

In presence of—

J. N. HANSON,

W. W. WILLIAMS.