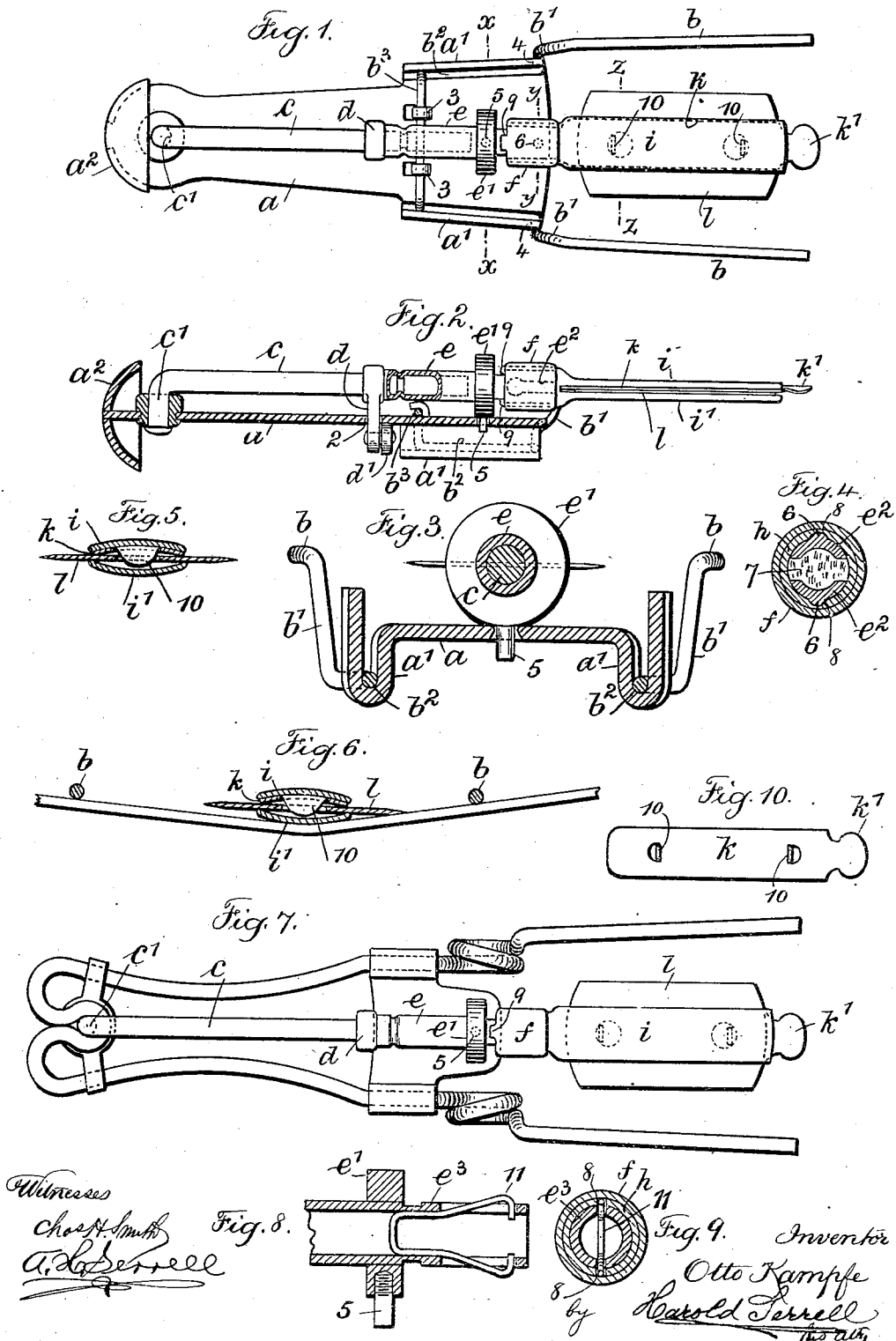


O. KAMPFE.
 RAZOR BLADE STROPPING DEVICE.
 APPLICATION FILED FEB. 20, 1909.

943,355.

Patented Dec. 14, 1909.



UNITED STATES PATENT OFFICE.

OTTO KAMPFE, OF NEW YORK, N. Y.

RAZOR-BLADE-STROPPING DEVICE.

943,355.

Specification of Letters Patent. Patented Dec. 14, 1909.

Application filed February 20, 1909. Serial No. 479,176.

To all whom it may concern:

Be it known that I, OTTO KAMPFE, a citizen of the United States, residing at the borough of Brooklyn, in the county of Kings, city and State of New York, have invented an Improvement in Razor-Blade-Stropping Devices, of which the following is a specification.

My present invention is an improvement upon the devices shown and described in my application for Letters Patent of the United States, filed August 24, 1908, Serial No. 450,030, and the object of my invention is the provision of a stropping device adapted to securely hold during the stropping operation the thin flexible razor blades now found upon the market, in an effort to prolong the useful life of such blades.

In the device of my present invention, as in the device of said application, I prefer to employ a bent wire frame having rest bars and to so arrange the parts that the center of the blade holder is below an operative plane passing through the centers of the rest bars, consequently when the instrument bears upon the strop the latter draws straight between its contact with the blade holder and either rest bar, and a very slight acute angle is produced by the strop line and a line through the blade, producing a fine tapering edge to the blade when sharpened.

In my present device a swinging rod is fulcrumed at one end to the frame or handle of the implement, which latter is composed in part of a metal plate and bent wire frame. A sleeve surrounds the pivot rod and carries a roller bearing on the plate. Means are provided for limiting the movement of the sleeve and roller and for holding the roller down against the plate. The device for engaging and holding the thin flexible blade comprises oppositely disposed jaw members having a spring action and gripping function and adapted to receive between them the thin flexible razor blade and a guide plate advantageously employed in connection therewith for centering the blade in the jaws, all of which is hereinafter more fully described.

In the drawing, Figure 1 is a plan view representing the device of my invention. Fig. 2 is a side elevation and section through the plate. Fig. 3 in exaggerated size is a cross section at the dotted line x, x , of Fig. 1. Fig. 4 of corresponding size is a cross

section at the dotted line y, y , of Fig. 1. Fig. 5 of corresponding size with Figs. 3 and 4, is a cross section at the dotted line z, z , of Fig. 1. Fig. 6 is a cross section through the stropping device and longitudinally of the strop showing the blade holder as in Fig. 5 in a stropping position. Fig. 7 is a plan representing the features of my invention as applied to an all wire frame as disclosed in my aforesaid application. Fig. 8 is a longitudinal section and Fig. 9 a transverse section through the union of the sleeve and the blade holding jaws showing a form of the invention. Fig. 10 is a plan of the blade holding and locking plate.

Referring particularly to Figs. 1 to 7 inclusive, I employ a metal frame and a wire frame connected together. The metal frame part includes a foundation plate a with oppositely disposed trough-shaped members a^1 at one end and a cap a^2 secured to the other end. The plate a is slotted at 2, is provided with lugs 3 and with notches 4. The wire frame comprises the diverging members b , the inclined members b^1 , trough members b^2 and the transverse member b^3 . There are connecting parts between the inclined members b^1 and trough members b^2 which extend through the notches 4 of the plate metal frame and there are also connecting parts between the trough members b^2 and the ends of the transverse member b^3 , and the transverse member passing over the surface of the plate a passes beneath the lugs 3 which hold the same securely in position, together with the holding function of the notches 4.

I employ a swinging rod c connected by a pivot c^1 to an opening in the foundation plate a , or as in Fig. 7, to a circularly bent central portion of the wire frame. An arm d is secured to the rod c and passes through the slot 2 of the plate a and beneath the plate, and a roller d^1 is connected by a pivot pin to the lower free end of the arm d ; the roller bearing against and moving over the under surface of the plate a to prevent the rod c lifting. The rod c passes forward of the arm d toward the blade and the forward end thereof is surrounded by a sleeve e held revolvably thereto by any desired mechanical device. I have shown for this purpose a circumferential groove formed in the sleeve e near the arm d , the same on the under side entering a groove in the rod c . This retains the sleeve on the end of the rod and permits it to turn. On the forward end of this

sleeve *e* is a roller *e*¹ which bears upon the upper surface of the plate *a*; the center of the plate beneath the roller being perforated to receive a pin 5 secured in the roller and passing freely through the opening; the office of the said pin and aperture in the plate therefor being to turn the roller and the sleeve *e* with the swinging movement of the rod *c*. The outer free end of the sleeve *e* is cut through longitudinally to form the jaws *e*² and these jaws are provided with oppositely disposed projections 6 forming the catches, and the sleeve *e* is circumferentially grooved forward of the roller *e*¹, and I prefer in the structure shown in Figs. 1 to 7 inclusive, to place between the jaws *e*² a block of rubber 7 acting as a spring to keep the jaws apart and compel them to perform their function with special reference to the catches 6.

The blade holding device comprises a sleeve *f*, a tube *h* within the sleeve, within which are oppositely disposed slots 8 or openings adapted when the parts are in their proper relation, to receive the catches 6 of the jaws *e*², and I provide the end of the tube *h* adjacent to the roller *e*¹ with projections 9, the free ends of which are advantageously bent down into the circumferential groove in the sleeve *e* forward of the roller *e*¹; the same acting to prevent the sleeve *f* and tube *h* accidentally coming away from its connection with the end of the sleeve *e*.

Formed integrally with the tube *h* are spring jaws *i* *i*¹ slightly convex on their outer surface and consequently concave on the inner surface, with the concave portions oppositely disposed and the respective edges of the arms almost meeting. These jaws are adapted to receive between them a thin sheet metal razor blade *l* and in order to hold the blade in position, I prefer to employ a locking plate *k* provided with a free end *k*¹ to be engaged by the fingers, and projections 10 so spaced apart as to pass up into the usual holes provided in the thin metal razor blades *l* upon the market, and which holes adapt the blade to fit over projections of the holder of the safety razor device for which they are made.

In the form of my invention shown in Fig. 8, the free end of the sleeve *e*² is provided with oppositely disposed slots for the spring catch-wires 11. These are the equivalent of the catches 6, they are of tapering form and at their higher ends adapted to enter the inner grooves or slots 8 of the tube *h* to constitute a securing device for the holding of the sheet metal jaws to the sleeve *e*.

In the form of my invention shown in Fig. 7, I have adapted the features of this invention to the wire frame shown and described in my aforesaid application for Let-

ters Patent, and except for this wire-frame construction and the plate which extends across between the side members thereof and forms the substitute for the connecting part of the foundation plate *a*, all the other parts described are the same and carry the same letters and numerals of reference.

Fig. 6 illustrates the position of the diverging members *b* of the frame, the sheet metal razor blade and the blade holding jaws with reference to a strop, it being possible for the strop to contact with one of the members *b* and the under surface of one spring jaw *i*, or if the strop is held sufficiently loose, the strop may contact with an under surface of both diverging members *b* as well as the under surface of one spring jaw, and as the stopping device is moved up and down the strop, a slight swinging movement is given to the sheet metal razor blade by the swinging of the rod *c* and the partial turning of the roller *e*¹ and the action produced thereon by the pin 5, so that first one edge of the razor blade and then the other are brought into position to sharpen the same and produce a fine tapering edge.

I prefer in the device of my present invention to arrange the blade holder so that the back thereof with reference to the longitudinal axis of its operating rod, is at an obtuse angle as disclosed in reissued Letters Patent #12,164, granted to F. R. and O. Kampfe, October 27, 1903.

I claim as my invention:

1. A razor blade stropping device for thin flexible normally flat blades, comprising a frame to be grasped by the hand, an arm pivotally mounted in said frame and adapted for a swinging movement, a sleeve connected to and revoluble upon the free end of said rod, jaws adapted to receive a thin flat flexible blade, means for holding the blade between the jaws, means for removably connecting the jaws to the free end of said sleeve, means for locking the said jaws to the end of said sleeve, and devices connected to the frame and adapted to bear upon the surface of a strop.

2. A razor blade stropping device for thin flexible normally flat blades, comprising a frame to be grasped by the hand, an arm pivotally mounted to said frame and adapted for a swinging movement, a sleeve connected to and revoluble upon the free end of said rod, jaws adapted to receive a thin flat flexible blade, means for holding the blade between the jaws, means for removably connecting the jaws to the free end of said sleeve, means for locking the said jaws to the end of said sleeve, devices connected to the frame and adapted to bear upon the surface of a strop, and means for imparting a limited swinging movement to said jaws and blade.

3. A razor blade stropping device for thin flexible normally flat blades, comprising a frame to be grasped by the hand, an arm pivotally mounted to said frame and adapted for a swinging movement, a sleeve connected to and revoluble upon the free end of said rod, means connected to the rod and adapted to hold the same down to a predetermined position, a roller connected to said sleeve at its free end and adapted to bear upon the surface of the frame with a rolling motion, means for limiting this motion, a sleeve adapted to pass over the free end of the aforesaid sleeve, and a spring acting device for holding the parts together and preventing accidental displacement, and jaws formed with the sleeve and adapted to receive between them a thin flexible normally flat blade to be sharpened.

4. A razor blade stropping device for thin flexible normally flat blades, comprising oppositely disposed slightly curved spring jaws receiving a blade, a swinging support for said jaws and means for removably connecting the same therewith, a frame to which said support is connected and a plate having parts adapted to engage the blade to be sharpened and to fit with the blade between the jaws.

5. A razor blade stropping device for thin flexible normally flat blades, comprising a frame, a pivotally connected swinging arm secured to said frame, a revoluble member upon the free end of said arm, spring catches on the free end of said sleeve, jaws adapted to receive the blade to be sharpened, a sleeve at one end of said jaws adapted to fit over the free end of the aforesaid sleeve and having recesses adapted to engage the catches thereof, and means acting to prevent the accidental separation of said jaws and sleeve from the revoluble sleeve.

6. A razor blade stropping device for thin flexible normally flat blades, comprising a frame, a pivotally connected swinging arm secured to said frame, a revoluble member upon the free end of said arm, spring-

catches on the free end of said sleeve, jaws adapted to receive the blade to be sharpened, a sleeve at one end of said jaws adapted to fit over the free end of the aforesaid sleeve and having recesses adapted to engage the catches thereof, a circumferential groove on the revoluble sleeve adjacent to the end catches and projections on the surrounding sleeve adapted to be bent down in said groove to prevent the accidental separation of the parts.

7. In a razor blade stropping device, a foundation plate having trough-shaped opposite members, a wire frame having diverging members adapted to bear upon a strop, inclined members, trough members, a transverse member and connecting parts, lugs upon the foundation plate adapted to engage the transverse member of the wire frame, and notches at the corners of the trough members of the foundation plate adapted to engage other parts of the wire frame and so hold the wire frame in a fixed relation to the foundation plate.

8. In a razor blade stropping device, a foundation plate having trough-shaped opposite members, a wire frame having diverging members adapted to bear upon a strop, inclined members, trough members, a transverse member and connecting parts, lugs upon the foundation plate adapted to engage the transverse member of the wire frame, and notches at the corners of the trough members of the foundation plate adapted to engage other parts of the wire frame and so hold the wire frame in a fixed relation to the foundation plate, the said oppositely disposed trough members having high sides which in the operation of the stropping device become finger rests.

Signed by me this 16th day of February 1909.

OTTO KAMPFE.

Witnesses:

GEO. T. PINCKNEY,
E. ZACHARIASEN.