

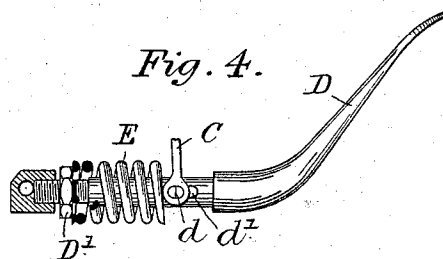
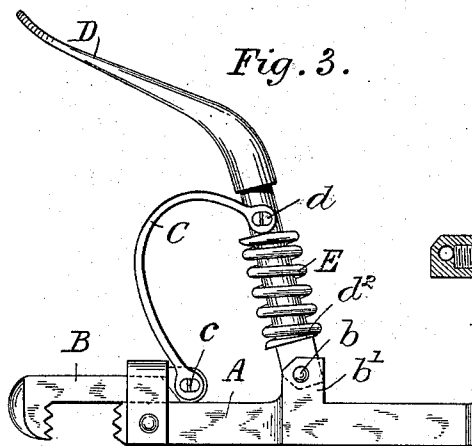
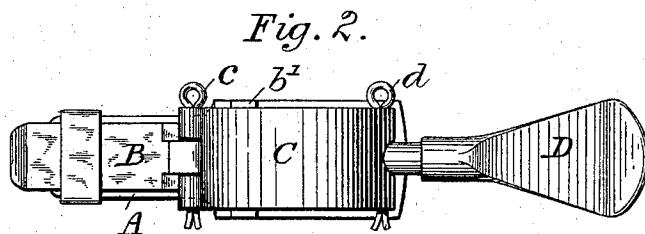
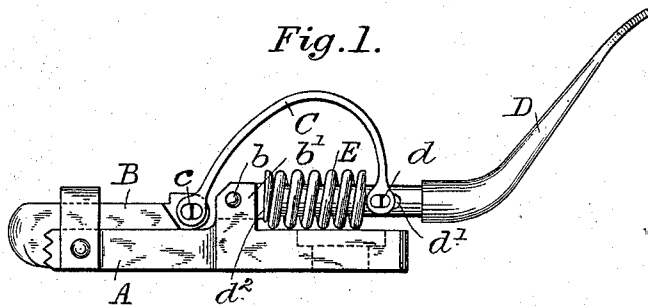
No. 608,012.

Patented July 26, 1898.

A. E. STIRCKLER.
GRIPPING APPARATUS.

(Application filed Mar. 26, 1898.)

(No Model.)



Witnesses:-
F. W. Luns
W. R. Edelen

Inventor:-
Albert E. Stirckler
by J. H. Edwards
his attorney

UNITED STATES PATENT OFFICE.

ALBERT E. STIRCKLER, OF NORTHAMPTON, ENGLAND.

GRIPPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 608,012, dated July 26, 1898.

Application filed March 26, 1898. Serial No. 675,318. (No model.)

To all whom it may concern:

Be it known that I, ALBERT EDWARD STIRCKLER, engineer, a citizen of the United States, and a resident of 26 Billing road, Northampton, in the county of Northampton, England, have invented new and useful Improvements in Gripping Apparatus, which invention is fully set forth in the following specification.

My invention has for its object to provide an improved gripping apparatus intended more particularly for gripping or holding the uppers of boots and shoes while being lasted, but which is applicable also for gripping or holding other articles or materials. For example, the apparatus may be applied for gripping or holding fabrics in tenting and finishing machines or as vises or like gripping devices for holding articles.

Apparatus constructed according to my invention consists of a combination comprising a fixed or stationary jaw and a movable jaw, between which the material or article can be securely held, a lever-handle for operating the movable jaw, a blade or bow spring connecting the movable jaw to the operating-lever handle, and a helical spring acting in combination with the blade or bow spring to securely grip or hold the material or article between the jaws.

Figure 1 is a side elevation, and Fig. 2 a plan, of a gripping apparatus constructed according to my invention, the parts being in the closed positions. Fig. 3 is a side elevation of the said gripping apparatus with the parts in the open positions, and Fig. 4 is a detail showing a modification.

A is the stationary jaw of the gripping device, on which is arranged to slide longitudinally the movable jaw B, which is connected at *c* to one end of a blade or bow spring C, the opposite end of which spring is connected to the stem or shank of the operating-lever handle D by a stud or pin *d*, capable of sliding longitudinally in a slot *d'* in the stem or shank of the said operating-lever. The operating-lever handle is pivoted at *b* to lugs or ears *b'*, projecting from the fixed or stationary jaw B at a point situated (when the jaws are in action) between the opposite ends *c* and *d* of the blade or bow spring C. Interposed between the pin *b*, on which the lever D turns and the end *d* of the blade or bow

spring C is a helical spring E, the said spring surrounding the shank or stem of the lever-handle and bearing at one end on the end *d* of the blade-spring and at its other end on a shoulder *d''* on the shank or stem of the lever-handle. When the lever-handle D is turned into the position shown in Figs. 1 and 2, the movable jaw B is forced toward the fixed jaw A, the blade or bow spring C being opened out or flattened more or less, according to the thickness of the article gripped between the jaws, and the helical spring E being at the same time more or less compressed, according to the thickness of the article placed between the jaws, whereby the pressure of both springs C and E is exerted on the movable jaw B to securely hold the material placed between the jaws A and B.

In the shank or stem of the lever-handle D there may be screwed a nut *D'*, as shown in Fig. 4, against which nut one end of the helical spring E bears, so that by screwing this nut along the stem or shank the power of the spring may be regulated as required.

The point of connection *c* of the bow or blade spring C to the movable jaw B is situated out of line with the center *b*, on which the lever D turns, so that when the lever D is turned to its full extent to grip an article between the jaws the said jaws cannot accidentally separate to release the article from the grip of the jaws.

I claim—

1. A gripping apparatus comprising a stationary jaw and a movable jaw slidable thereon, a lever-handle hinged or pivoted to the stationary jaw; a blade or bow spring connected at one end to the movable jaw and at its other end to a connection slidable on the stem or shank of the lever-handle; a helical spring bearing at one end on the slidable connection to which the blade-spring is attached, the opposite end of the said helical spring bearing on a shoulder on the shank or stem of the lever-handle the whole being combined so that by the movement of the lever-handle in one direction the combined power of blade or bow spring and the helical spring is exerted on the movable jaw so as to firmly hold an article placed between the stationary and movable jaws substantially as hereinbefore described.

2. A gripping apparatus comprising a stationary jaw and a movable jaw slidable thereon, a lever-handle hinged or pivoted to the stationary jaw; a blade or bow spring connected at one end to the movable jaw and at its other end to a connection slidable on the lever-handle; a helical spring surrounding the stem or shank of the lever-handle and bearing at one end against the slidable connection to which the blade-spring is attached and at its opposite end on a nut screwed onto the shank or stem of the lever-handle, the

said nut being capable of being screwed along the said stem or shank so as to compress more or less the helical spring to regulate the power thereof substantially as hereinbefore described. 15

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

A. E. STIRCKLER.

Witnesses:

WILLIAM FREDERICK UPTON,
HENRY DENIS HISKINS.