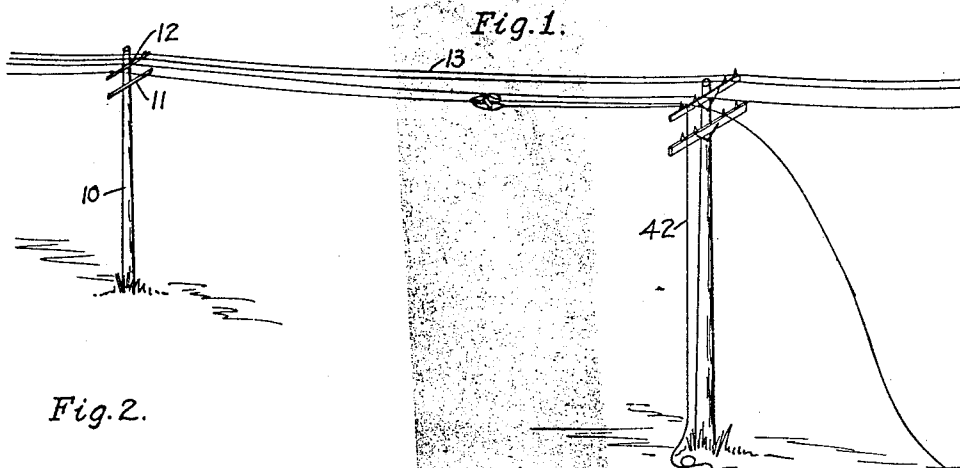
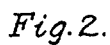
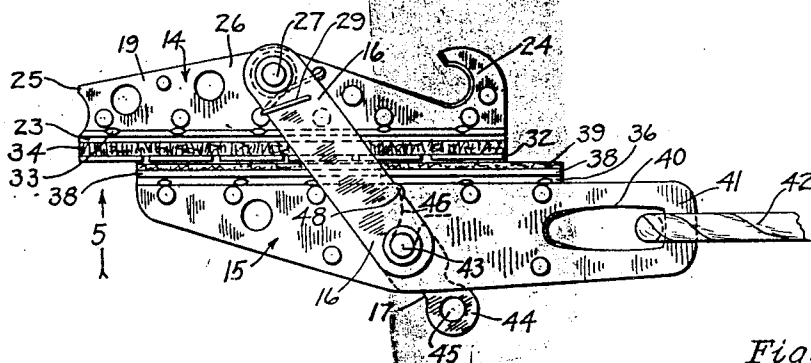
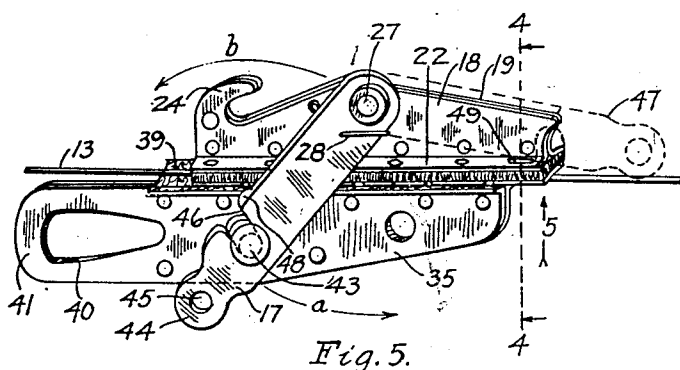
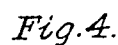
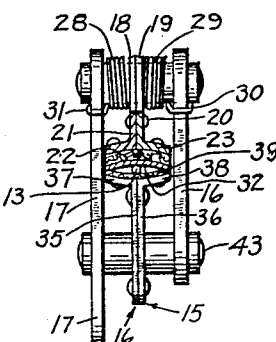


APPLICATION FILED NOV. 4, 1918.

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

HAZEL BURTON BUSH, OF REDLANDS, CALIFORNIA.

STRAIGHT LINE-WIRE CLAMP FOR STRETCHING WIRES.

1,320,600.

Specification of Letters Patent.

Patented Nov. 4, 1919.

Application filed November 4, 1918. Serial No. 261,094.

To all whom it may concern:

Be it known that I, HAZEL BURTON BUSH, a citizen of the United States, residing at Redlands, in the county of San Bernardino and State of California, have invented new and useful Improvements in Straight Line-Wire Clamps for Stretching Wires, of which the following is a specification.

My invention relates to a wire clamp and more particularly to a straight line wire clamp adapted for stretching wires on telephone, telegraph and especially heavy electric lines.

It is a well known fact that sharp bends or nicks in wires caused by the clamps now in use have a tendency to weaken them, so that when a stretching force is applied they break at the point where the clamp is used.

An object of my invention is to produce a clamp which will grip and hold securely, without injury, either solid or stranded wires of large or small diameter with or without insulation.

Another object is to provide a quick acting clamp which may be applied to soft aluminum wires or heavy, stranded, copper, insulated wires without injury to them.

Another object of my invention is to provide a clamp of the character described that readily can be applied to the wire and as readily can be released from it.

With these and other objects in view my invention consists in the construction and combination of parts hereinafter described and claimed.

In the accompanying drawings which form a part of this specification,

Figure 1 illustrates the application of my wire clamp to a wire of an electric light line.

Fig. 2 is a view in side elevation of a wire clamp embodying the principles of my invention.

Fig. 3 is a view in perspective of the wire clamp shown in Fig. 2.

Fig. 4 is a vertical sectional view on the line 4-4 of Fig. 3.

Fig. 5 is an enlarged fragmentary view showing one of the gripping plates of the upper jaw, as seen looking in the direction indicated by arrow 5 in Fig. 3.

Fig. 1 illustrates an electric light line having poles 10 with cross arms 11 upon which are fixed insulators 12 to which wires 13 are attached.

The clamp is formed of an upper jaw 14

and a lower jaw 15 held in coöperative relation to each other by links 16 and 17 pivotally connected to them. The upper jaw 14 is formed of two equal sized and like shaped plates 18 and 19 held together by rivets 20. The lower edges of the plates are straight and are bent outwardly from their meeting faces 21 at approximately right angles to them to form gripping flanges 22 and 23. The plates are irregular in form and have their upper edges cut away to form a hook 24 at one end and a horn 25 at the other. The links 16 and 17 have their upper ends attached to the middle portion 26 of the plate by a transverse pivot pin 27 which extends beyond the flanges 22 and 23, so that the links which are mounted near its ends clear the gripping flanges. Coil springs 28 and 29 surround the pivot pin 27 between the jaw plates 18 and 19 and the upper ends of the links 16 and 17 and have their inner ends fixed in the jaw plates, while their outer ends 30 and 31 are hooked around the edge of the pivot bars 16 and 17 respectively. The coil springs are wound in opposite directions, so that their unwinding tension operates to swing the lower ends of the two links toward the hook end of the upper clamping jaw. The gripping face of flanges 22 and 23 has a series of cross ridged plates 32, or gripping plates, fixed to the flanges by rivets 33, there being a thick layer of felt 34 or other yielding material held between the flanges and the plates. The rivets 33 extend through the flanges, the felt layer and the gripping plates and are so spaced as to pass through the longitudinal centers of the gripping plates, thus holding them embedded in the felt in such a manner that a slight longitudinal rocking action of the plates on the rivet heads is permitted so that in gripping a wire the plates readily adjust themselves to it. The holes in the gripping plates are somewhat enlarged to provide for this rocking action.

The lower jaw 15 is formed of two plates 35 and 36 similar to the upper jaw, but different in form. It is also provided with gripping flanges 37 and 38 which coöperate with the flanges of the upper jaw. These flanges are faced with thermoid brake facing 39 or a similar flexible material riveted to the flanges 37 and 38. The ends of these plates adjacent the hooked end of the upper jaw have an elongated hole cut

through them to provide a tie bar 41 for attaching a rope or draw line 42. The links 16 and 17 are pivoted to the lower jaw by a pin 43 extending through the middle of its plates parallel to pivot pin 27 and co-extensive with it. An extension lug 44 is formed on the lower end of link 17 and is provided with a hole 45 into which a rope or line may be inserted and tied. The upper edge of link 17 is cut away to form a slot 46, the width of which is slightly greater than the diameter of the pivot pin, so that the link may be swung on the upper pivot away from the lower pivot in the direction indicated by the arrow *a* into the position shown by the dotted lines 47. A small tooth 48 is formed on the edge of link 17 close to the slot 46 and is adapted to engage with a retaining groove 49 formed in the upper side of flange 22 of the upper jaw.

Operation: In adjusting the clamp to a wire, link 17 is grasped by the lug 44 and swung in the direction indicated by arrow *a* into the position indicated by the dotted lines 47, the tooth 48 engaging with slot 49 to hold it in that position. The upper jaw is then swung on the pivot 43 in the direction indicated by arrow *b* which pulls the jaws apart whereupon the wire is inserted between them. The upper jaw is then released and coil spring 29 acting on the link 16 clamps it down on the wire. Link 17 is then disengaged from the upper jaw flange and swung downwardly into its normal position, slot 46 engaging with the pivot pin 43 and coil spring 28 cooperating with coil spring 29 to close the jaws. Upon applying the pulling force, it is evident that the pull, exerted on the lower jaw and the friction between the gripping plates of the upper jaw and the wire will have a tendency to move the two jaws in opposite directions and to bring the links more nearly into a horizontal position, thus clamping the jaws tighter together, so that the harder the pull on the lower jaw the tighter the clamp, as a whole, grips the wire. As formerly explained, the individual gripping plates attached to the upper jaw are free to rock slightly about their longitudinal center. They will, therefore, adjust themselves to the wire and there will be a uniform pressure upon the wire throughout the length of the jaw without any tendency to bend or nick the wire.

In case the clamp is out of reach of the hand and it is desired to move it or disengage it from the wire a rope may be thrown over the hook 24 or horn 25 and by this means the clamp may be loosened and pulled into reach.

While I have shown the preferred construction of my wire clamp, as now known to me, it will be understood that various changes in construction and arrangement of

parts may be made by those skilled in the art without departing from the spirit of my invention as claimed.

I claim:

1. A straight line wire clamp for stretching wire comprising, an upper jaw provided with yieldable wire pulling gripping plates, a lower jaw provided with a flexible wire pulling gripping surface adapted to cooperate with the gripping plates of said upper jaw, spring controlled links for yieldably holding said upper and lower jaws in cooperative relation to each other, and means for attaching the pulling force to said lower jaw.

2. A straight line wire clamp for stretching wire comprising, an upper jaw having gripping flanges equipped with yieldable plates, a lower jaw having gripping flanges equipped with a flexible facing adapted to cooperate with said yieldable gripping plates of said upper jaw, opposite links pivotally attached to the middle of said upper and lower jaws so as to hold them in cooperative relation to each other, springs connected to said upper jaw and said links said springs acting to hold said upper and lower jaws in gripping contact with each other, and means for attaching the pulling force to said lower jaw.

3. A straight line wire clamp for stretching wire comprising, an upper jaw member having a hook formed on one end and a horn on the other, said hook and horn being formed integral with said jaw member; gripping flanges formed integral with said upper jaw member; gripping plates yieldably fixed to said gripping flanges; a lower jaw member having a tie bar formed on one end; gripping flanges formed integral with said lower jaw member, said lower jaw flanges being equipped with a flexible facing adapted to cooperate with the gripping plates on said upper jaw flanges; opposite links pivotally attached to the middle of said upper and lower jaw members so as to hold them in cooperative relation to each other, one of said links being provided with a slotted pivot hole so that it may be disengaged from its lower pivot and swung upwardly; coil springs attached to said upper jaw member and said links so as to hold said upper and lower jaws into gripping contact with each other; and means for holding the disengaged end of said link out of contact with its lower pivot while the wire is being inserted between said jaws or removed from them.

4. A straight line wire clamp for stretching wire comprising, a yieldable upper jaw equipped with a straight longitudinal gripping face, a flexible lower jaw equipped with a straight longitudinal gripping face adapted to cooperate with the gripping face of said upper jaw, spring controlled links

for yieldably holding said upper and lower jaws in coöperative relation to each other, and means for attaching a pulling force to said lower jaw.

5 5. A straight line wire clamp for stretching wire comprising, an upper jaw having straight longitudinal gripping flanges formed integral therewith, gripping plates yieldably fixed to said gripping flanges, a
10 lower jaw having straight longitudinal gripping flanges formed integral therewith and adapted to coöperate with the longitudinal flanges of said upper jaw, spring controlled connecting links pivotally attached to opposite sides of said upper and lower jaws
15 so as to hold them in coöperative relation to each other, and means for attaching the pulling force to the lower jaw.

20 6. A straight line wire clamp for stretching wire comprising, an elongated upper jaw plate having a hook formed at one end and a horn at the other, straight longitudinal gripping flanges formed integral with said upper jaw plate, gripping plates yield-

ably fixed to the gripping flanges of said 25 upper jaw plate, an elongated lower jaw plate equipped with a tie bar for attaching the pulling force, straight longitudinal gripping flanges formed integral with said lower jaw plate said gripping flanges being 30 equipped with a flexible facing adapted to coöperate with the gripping plates of said upper jaw, connecting links pivotally attached to opposite sides of said upper and lower jaws so as to hold them in coöperative 35 relation to each other one of said links having a slotted pivot hole in one end, springs attached to said upper jaw and said links so as to hold said upper and lower jaws into gripping contact with each other, and means 40 for holding the slotted end of said connecting link out of contact with its pivot when a wire is being inserted between said jaws or removed from them.

In testimony whereof I have signed my 45 name to this specification.

HAZEL BURTON BUSH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."