No. 607,751. Patented July 19, 1898.

A. L. KITSELMAN.

WIRE STRETCHER.

(Application filed Apr. 16, 1898.)

(No Model.)

Fig. 1.

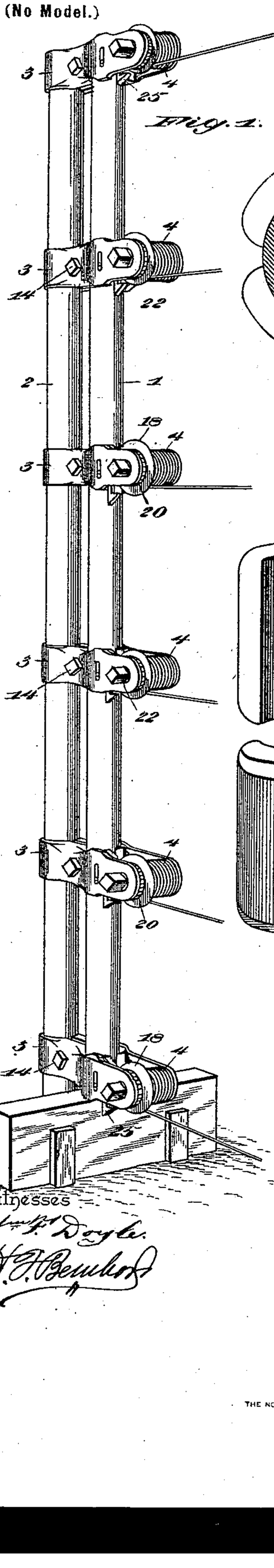


Fig. 2.

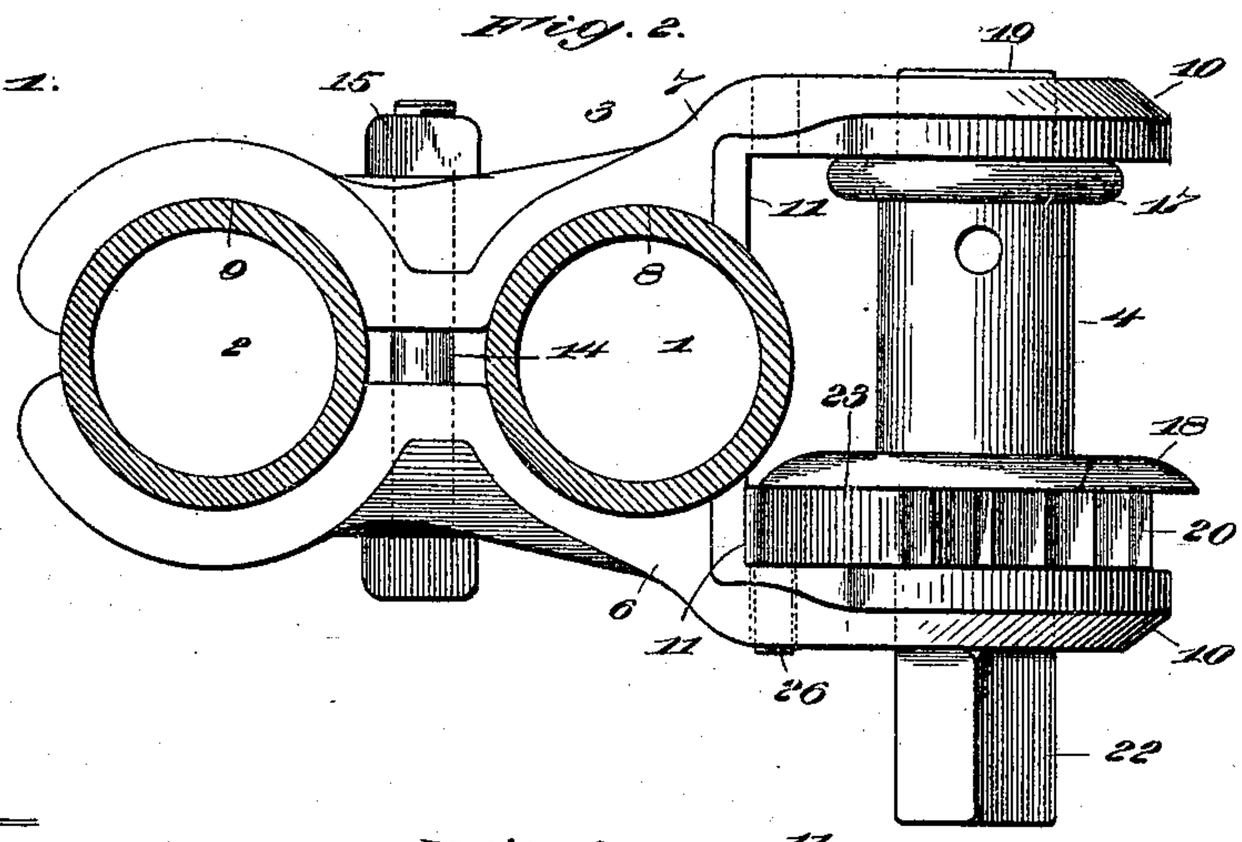


Fig. 3.

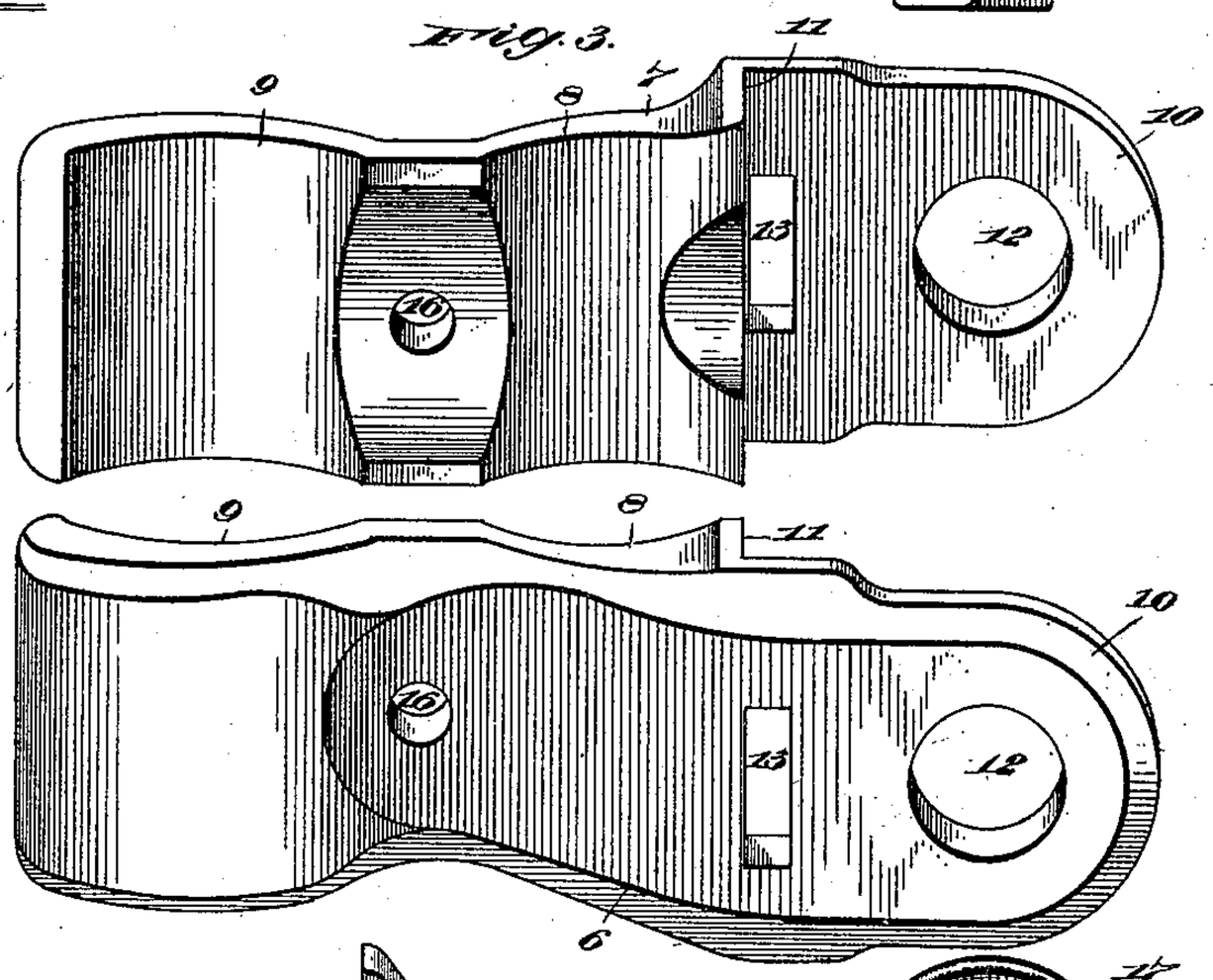


Fig. 5.

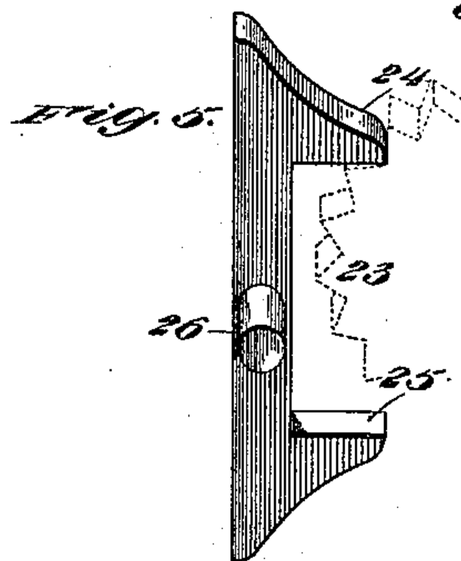
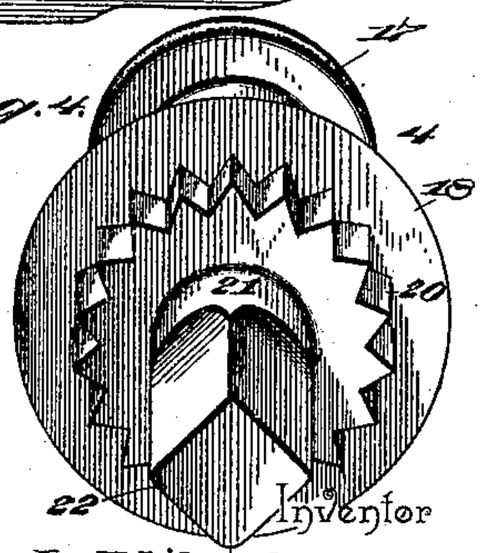


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALVA L. KITSELMAN, OF RIDGEVILLE, INDIANA.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 607,751, dated July 19, 1898.

Application filed April 16, 1898. Serial No. 677,879. (No model.)

To all whom it may concern:

Be it known that I, ALVA L. KITSELMAN, a citizen of the United States, residing at Ridgeville, in the county of Randolph and State of Indiana, have invented a new and useful Wire-Stretcher, of which the following is a specification.

My invention relates to wire-stretchers for use in connection with a fence-making machine for the purpose of holding under proper tension the line-wires or strands of a wire fence during the operation of making and installing the same in the open field.

One object of the present invention is to provide an improved construction which may be applied readily and without undue care to double standards, which form a part of its stretcher mechanism, which device clamps or holds itself firmly in position on said standards by a single bolt and also supports the revoluble take-up drum or spool in a manner to hold the same from displacement and permit proper rotation thereof in the clamping-bracket.

A further object of the invention is to provide an improved clamping-bracket which is adapted for use in connection with a double slidable pawl that is loosely attached to the bracket and is adapted for use in connection with either section or member thereof, whereby the sections of one bracket may be applied to either side of a double post and the spool and pawl may be used in either of two positions on the clamp, so as to enable the operator to manipulate the drum or spool on one side or the other of a fence.

With these ends in view the invention consists in the combination, with a supporting-column in one or two parts, of a vertically-divided two-part clamp fixed on said standard or column and adapted to be moved to any desired position vertically thereon and a rotatable take-up spool journaled in said clamp and held at the adjusted position therein by a check-pawl which is carried by said clamp.

The invention further consists of a vertically-divided clamp having its members provided on their opposing faces with coincident seats adapted to snugly fit to the column, a single bolt which draws both members of the clamp firmly upon said column, a rotatable take-up spool journaled in the members of the divided clamp, and a double check-pawl adapted to be slidably connected to either member of the clamp and arranged in operative relation to a toothed section of the take-up spool.

The invention further consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of a wire-stretcher structure constructed in accordance with my invention. Fig. 2 is a horizontal sectional view through the two-part column on a plane above one of the clamps and its take-up spool, said clamp and spool being shown in plan. Fig. 3 is a detail perspective view of the clamping-bracket, with the members thereof separated to more clearly show the construction of the same. Figs. 4 and 5 are detail perspective views of the take-up spool and the pawl, respectively.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

In carrying my invention into practice I employ a vertical column which carries a series of clamps or brackets attached thereto by frictional engagement with the same, and in the said clamps or brackets is journaled a series of take-up spools or drums each adapted to be held in its adjusted position by a double pawl which is in operative relation at all times to its proper spool or drum and is adapted to engage therewith should the bracket be inverted or applied in either of two positions to the column.

The vertical column is preferably composed of two posts or standards, (indicated by the numerals 1 and 2 in the drawings.) The pair of posts or standards are employed for the purpose of adding strength and stability to the structure and of enabling the clamps or brackets to be applied thereto and hold themselves firmly in position thereon by frictional contact; but it will be understood that I do not strictly confine myself to the employment of the two posts or standards, be-

cause under some conditions of service a single post or column may be used. The posts or standards forming the column are of tubular form, being made from the material or stock known to the art as "gas-pipe," and said tubular posts are of uniform diameter and arranged in parallel relation to each other. On this two-part column is frictionally clamped a series of brackets or clamps 3, which correspond in number to the strands or line-wires used in making the woven fabric that constitutes the fence-web, and each clamp or bracket carries a take-up spool 4, the construction of which will be hereinafter described.

Each clamp or bracket 3 is divided vertically throughout its length to produce complemental members or sections 6 7, each of which is cast in a single piece of metal and corresponds in shape and construction to the other member, so that a pair of the members may be assembled in proper relation and used in either the proper or inverted position on the two-part column for rigid attachment thereto. Each member or section of the clamp is provided on one face thereof with segmental seats or recesses 8 and 9, which are separated or divided by intervening lugs 10, and at one end of each section or member is formed a plate 10, which is offset to one side of the line of the member and the seat portions 8 9 therein, so as to form a vertical shoulder 11 in a plane between the plate 10 and the seat portion of the member or section. A pair of these members or sections are assembled together on opposite sides of the column in a manner to have the seats 8 9 on the inner opposing faces of the members and with the plates 10 of the two sections extending outwardly in advance of the column, said plates being parallel to each other. The complemental sections of the clamp or bracket are arranged to have their seats 8 and 9 bear firmly against the opposite sides of the posts or standards of the column, and said members are clamped or drawn together, so as to grip the two standards by frictional engagement by means of a single bolt 14, which passes through coincident holes 16, which are provided in the sections or members 6 7 at points between the spaced seats 8 and 9 therein. The bolt 14 has its head applied against one section or member of the clamp, while its threaded end receives a clamping-nut 15, that binds against the other section or member of the clamp. The plates 10 of the two clamp members are provided with circular holes 12, that constitute the journal-bearings for the take-up spool or drum, and each member or section is, furthermore, provided with a vertical slot 13, which is produced in the plate on a line between the journal-opening 12 and the vertical shoulder or offset 11.

The take-up spool or drum 4 is cast in a single piece of metal and in the form represented by Fig. 4 of the drawings. The body of the spool is of cylindrical form, and it has the flanges 17 18 as an integral part thereof, the flange 18 being of greater diameter than the flange 17. At one end the spool is provided with an integral journal 19, adapted to one of the journal-openings 12 in one section or member of the clamp. Adjacent to the flange 18, of large diameter, the spool is provided with a toothed flange 20, the teeth of which lie radially to the axis of the spool, and outside of this toothed flange or section of the spool it is made with a cylindrical journal 21, that is adapted to fit the opening 12 in the other member or section of the clamp. The spool is further provided with an angular stem 2, that is integral with said spool and projects in axial alinement therewith from the journal 21, and said angular stem is designed to extend beyond the clamp to normally lie outside of the same and be always accessible to a wrench or other implement, by which the spool may be rotated whenever desired to increase the tension of the strand or line-wire, which passes through a suitable opening in the drum or spool and is adapted to be coiled thereon.

The double pawl 23 is made or cast in a single piece of metal, and at its opposite ends it is provided with the projecting lips or prongs 24 and 25. This pawl is provided at a point intermediate of its length with a guide-stud 26, made as an integral part of the pawl in the operation of casting the same, and said stud is fitted to play idly in the slot 13 of one or the other members of the clamp, according as the clamp is applied to have the spool accessible from the right or left hand side of the fence.

By having the clamps divided into complemental sections or members each clamp may be readily applied to the column and held securely thereon independently of every other clamp, and the clamp is bound firmly on the column by a single bolt, to be held in place thereon solely by frictional contact. Each clamp may be adjusted vertically on the column, thus providing for the proper spacing of the clamps or brackets and enabling the line-wires to be strained and to be arranged at uniform or variable distances, as may be desired by the operator in weaving the web of the fence fabric. The parts of each clamp may be readily assembled together in proper relation, and in fitting the spool or drum to its proper clamp the journal 19 should be seated in one of the openings 12 and the journal 21 arranged in the opening of the other member. Previous to tightening the bolt the pawl 23 should be placed in one clamp member against the offset or shoulder 11 thereof, and the guide-stud 26 of said pawl fits in the slot 13 of the clamp member, so as to hold the pawl in proper engagement with the clamp, while insuring the desired adjustment of the pawl to release its prong or lip from the toothed section or flange of the spool. This pawl is slidably

confined within the bracket by fitting in the angular corner or space formed by the offset or shoulder 11 and the plate 10 of one section, and said pawl is prevented from displacement, while being free to have the desired vertical movement, by the imperforate flange 18 of the spool, the offset or shoulder 11, and its guide-stud 26, which is adapted to play in the slot 13 of the clamp. The lips or prongs 24 and 25 of the pawl are spaced apart a sufficient distance for the pawl to be raised slightly and to clear the radial teeth of the flange or section 20 of the spool, and the stud 26 of the said pawl provides a convenient means by which access may be obtained thereto from the outside of the clamp for adjusting the pawl to release it from the toothed part of the spool. The pawl acts by gravity to hold itself in engagement with the spool; but it is readily adjustable by hand for disengagement from said spool, thus permitting the latter to be rotated by a wrench or other implement applied to the angular stem thereof.

In operation the column of the stretcher mechanism is held firmly in place by any suitable means in the line of the fence, and the clamps are properly adjusted and spaced on said column according to the desired spacing of the line-wires or strands which are to form a part of the fence fabric. The wires are now strung and attached to the series of spools 4 of the stretcher mechanism, and each spool is operated by a suitable implement to strain the strands or line-wires, the pawl of the spool being held out of engagement with the toothed section thereof during the rotation of said spool. When the wire has been placed under proper tension, the pawl is released, and it drops by gravity into engagement with the toothed section of the spool.

One of the important features of my invention is the reversibility of the clamp and take-up spool, with which is combined the double pawl that is adapted to be connected with the slotted part of one or the other of the sections or members of said clamp. It is frequently desirable to have the take-up spool accessible from either side of the fence, and in my invention this is provided for by turning the clamp upside down, or inverting it, thus changing the position of the take-up spool from right to left, or vice versa, and making the angular stem thereof accessible to the operator from one side or the other of the fence fabric. In this manipulation or adjustment of the clamp it is only necessary to loosen the bolt, change the position of the spool in the members of the clamp, adjust the slidable pawl from one member to the other, and again tighten the bolt.

Another important feature of the clamp and spool is the construction of the clamp members with the slots 13 therein, the radial teeth on the spool, and the double pawl, which enables the device to be used in either of two positions, the pawl being readily adapted to either member of said clamp or bracket. The clamp, the spool, and the pawl are exceedingly simple in construction, as each part is adapted to be cast in a single piece of metal, which renders it possible to produce the device at a very low cost, because the castings require a minimum amount of finishing, and they may be bolted directly together and to the column to support the spool and the pawl in proper position.

I am aware that changes in the form and proportion of parts and in the details of construction may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of the invention, and I therefore reserve the right to make such modifications as clearly fall within the scope of the invention.

Having thus described the invention, what I claim is—

1. A wire-stretcher consisting of a column, a two-part bracket clamped to said column, and a take-up spool mounted on the bracket, substantially as described.

2. A wire-stretcher consisting of a column, a two-part bracket clamped to said column by frictional contact therewith, a take-up spool journaled in said bracket, and a pawl, substantially as described.

3. A wire-stretcher consisting of a column, a vertically-adjustable bracket clamped thereto, and a take-up spool journaled in the bracket for rotary adjustment therein and for vertical movement therewith, substantially as described.

4. A wire-stretcher consisting of a wire-column, a two-part bracket having complemental members held frictionally on the column by a single bolt, and a take-up spool journaled in said bracket, substantially as described.

5. In a wire-stretcher, a two-part bracket having its members provided with seats in their opposing faces, and a single clamping-bolt which couples the members together and is adapted to frictionally clamp the same on a column, in combination with a spool journaled in the bracket, and a pawl carried by the bracket in operative relation to the spool, substantially as described.

6. In a wire-stretcher, a two-part bracket having seats in the opposing faces of the members thereof and each member provided with a guideway for a pawl, and a clamping-bolt to draw the members frictionally against a column, in combination with a spool journaled in the members of the clamp, and a pawl adapted to fit slidably to either member of the clamp, substantially as described.

7. In a wire-stretcher, a two-part clamp provided with the bearing-plates and with vertical ledges or shoulders between the clamping and bearing portions thereof, combined with a spool, and a pawl fitted to the shouldered portion of one clamp member and adapted for use interchangeably with either clamp member, substantially as described.

8. In a wire-stretcher, the combination with a column, of an invertible two-part clamp or bracket adapted to be held on the column in either of two positions by frictional engagement therewith, a spool journaled in the clamp or bracket, and a double pawl adapted to either member of said clamp, substantially as described.

9. In a wire-stretcher, the combination of a two-part column, a two-part clamp, the members of which are provided with seats on their opposing faces adapted to fit the members of said column, a single bolt which draws the members of the clamp together and holds the same in tight frictional engagement with said column, a take-up spool journaled in the members of the clamp, and a slidable pawl guided by the clamp and adapted to engage with said spool, substantially as described.

10. In a wire-stretcher, a two-part clamp provided within its bearing-plates with a guideway, combined with a spool, and a double pawl slidably fitted in the guideway of the clamp and adapted to engage with said spool, substantially as described.

11. In a wire-stretcher, a two-part clamp consisting of the complemental shouldered members provided with vertical slots, combined with a spool journaled in said members of the clamp, and a double pawl adapted to be fitted slidably to either shouldered part of the clamp members and provided with a guide-pin to fit in the slot of one of the clamp members, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALVA L. KITSELMAN.

Witnesses:
O. L. BARBER,
WILLIAM B. STARR.