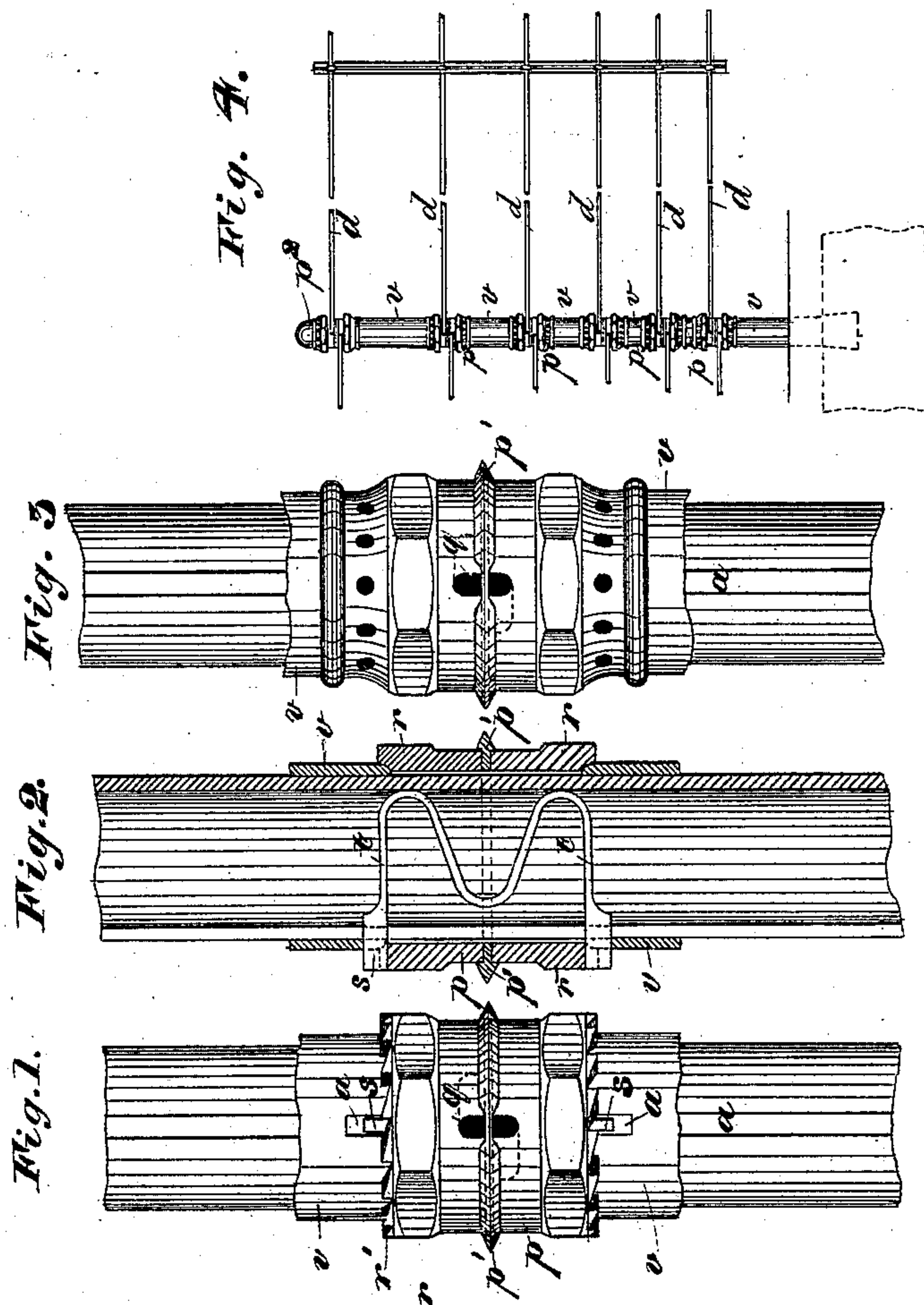


(No Model.)

W. ORR.  
FENCE WIRE STRAINER.

No. 359,464.

Patented Mar. 15, 1887.



attest:  
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# UNITED STATES PATENT OFFICE.

WILLIAM ORR, OF GLASGOW, COUNTY OF LANARK, SCOTLAND.

## FENCE-WIRE STRAINER.

SPECIFICATION forming part of Letters Patent No. 359,464, dated March 15, 1887.

Application filed November 15, 1886. Serial No. 218,936. (No model.) Patented in England March 29, 1886, No. 4,403; in France May 28, 1886, No. 176,421; in Belgium May 29, 1886, No. 73,298; in Victoria July 13, 1886, No. 4,620; in Canada September 6, 1886, No. 24,892; in Cape of Good Hope October 11, 1886, No. 364, and in New South Wales November 23, 1886, No. 1,971.

*To all whom it may concern:*

Be it known that I, WILLIAM ORR, a citizen of the United Kingdom of Great Britain and Ireland, residing at Glasgow, in the county of Lanark, Scotland, have invented new and useful Improvements in Strainers or Winders for the Wires of Metal Fencing, (which has not been patented in any country, except Great Britain by Letters Patent dated March 29, 1886, No. 4,403; in France by Letters Patent dated May 28, 1886, No. 176,421; Belgium by Letters Patent dated May 29, 1886, No. 73,298; Victoria by Letters Patent dated July 13, 1886, No. 4,620; Canada by Letters Patent dated September 6, 1886, No. 24,892; Cape of Good Hope by Letters Patent dated October 11, 1886, Register folio No. 364; and New South Wales by Letters of Registration dated November 23, 1886, No. 1,971;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the manufacture or art to which it relates to make and use the same.

This invention relates to strainers or winders for the wires of strained-wire fencing, and, while applicable to various forms of straining posts or standards, the improved winder is specially adapted for use with the form of standard described under my application for United States Patent filed July 26, 1886, Serial No. 209,152.

The improved strainer consists of a hollow winding-drum of such diameter as to be capable of being slipped over the post or standard, the said drum being maintained at the proper height by means of a sleeve or distance-piece, and provided with means for retaining it to its adjustment independent of any other drum with which it may be associated, or a series of the said drums having retaining devices and maintained at the proper position upon the post, according to the number of wires in the height of the fence, by sleeves or distance-pieces. In erecting the straining-post, a sleeve of such length as to support the lowest winding-drum at the proper distance from the ground level is first slipped over the standard and secured in position. A winding-drum is then slipped down the standard and next a loose collar or ring, then another wind-

ing-drum, and after that a sleeve of the required length to give the requisite distance between the drums for the lower and those for the next higher lengths of wire in the fence, and so on until the upper lengths of wire are provided for, a nut or cap being screwed or otherwise secured on the upper end of the standard, so as to make the adjustment permanent.

By the provision of two winding-drums contiguous to each other, as described, the lengths of wire extending both to the right and left are or may be strained at the same post. The drums are turned so as to strain the wires by means of a wrench or key, the jaw of which is applied to a paned portion on the drum; and to prevent the drums from slipping back, each of them may also have ratchet-teeth formed around it, the teeth of the higher drum in each pair being on the upper edge and those of the lower drum on the under edge. A pawl composed of a **W** or like waved spring maintains the drum in the desired position when the winding has been effected; or back-slipping of the drums may be prevented by forming each of them with a series of slots around it, and passing a pin through one of these slots and through a slot or a hole made in the standard.

Referring to the accompanying drawings, Figure 1 represents the improved strainer or winding-drum in elevation on a post or standard. Fig. 2 is a vertical section of the drum and post at right angles to Fig. 1. Fig. 3 is an elevation of a slightly-modified construction. Fig. 4 is a view showing a part of the fencing, with the drums in position on the straining-post.

The strainer (seen in elevation at Fig. 1 and in vertical section at Fig. 2) consists of two hollow winding-drums, *p*, which are slipped over the standard, these drums being separated from each other by a ring, *p'*, which at a part of its periphery is recessed on its upper and under sides, to enable the end of the wire to be easily passed into a hole, *q*, made in the drum to receive it, the wire coming from one direction having its end inserted in one drum and that from the opposite direction in the other.

The drums *p* are turned, so as to strain the



wire, by means of a wrench applied to the part  $r$ , and to prevent the drums from slipping back each of them has a series of ratchet-teeth,  $r'$ , around the part  $r$ , into which pawls  $s$ , formed on the end of a **W** or like waved spring,  $t$ , enter. The standard is made hollow, with a vertical slot,  $a$ , running throughout its length, and the spring is placed inside the standard, with its ends  $s$  projecting out through the slot  $a$ ; or, instead of the ratchet-teeth  $r'$  and spring-pawls  $s$ , the drums  $p$  may be prevented from unwinding by forming each of them, as illustrated under the slightly modified arrangement at Fig. 3, with a series of holes around a neck above the paneled part  $r$ , a key being passed through one of the said holes into the vertical slot  $a$ , or into a hole cut in the standard to receive it. In this case, as the spring is dispensed with, the standard need not be hollow.

The winding-drums for the different wires in the height of the fence are maintained at proper distances apart by sleeves  $v$ , and in erecting the straining-standard a sleeve,  $v$ , of such length as to support the lowest winding-drum,  $p$ , at the proper distance from the ground, is first slipped over the standard and secured in position. A pair of winding-drums is then placed on the standard to strain the lowest length of wires; then another sleeve  $v$ , of length sufficient to give the necessary distance between the lowest pair and the next upper pair of winding-drums  $p$ , and so on until the upper length of wire is provided for, a cap or nut,  $p^2$ , Fig. 4, being screwed or otherwise secured on the upper end of the standard to finish the post and make the adjustment permanent.

Having now described the invention, what I desire to claim and secure by Letters Patent is—

1. The combination of a standard or post having a vertical slot,  $a$ , the sleeve  $v$ , fitting around said standard or post, drum  $p$ , supported on the sleeve, having a hole,  $q$ , and part  $r$ , and a projection or locking device engaging the drum and the standard or post through the slot, substantially as described.

2. The combination of the hollow standard

having a slot,  $a$ , the sleeves  $v$ , the paired drums  $p$ , having holes  $q$  and parts  $r$ , ring or collar  $p'$  between the paired drums, means for retaining the drums in adjusted position, and a securing cap or nut,  $p^2$ , substantially as described.

3. In metal fencing, a strainer consisting of a standard having a slot, a hollow drum having a hole for the insertion of the end of the wire, a paneled part for the application of a key or turning device, and a series of ratchet-teeth with which is geared a spring-pawl, substantially as described.

4. In metal fencing, the combination, on a post, of two strainers separated from each other by a ring or collar and each consisting of a hollow drum having a hole or slot to receive an end of the wire, a paneled part for the application of a turning device, a series of ratchet-teeth around the top of the said paneled part, and a spring-pawl geared with the said teeth, substantially as described.

5. In metal fencing, the combination of a tubular post having a spring-pawl at its interior, with ends projecting through a vertical slot extending the length of the post, and a series of hollow straining-drums arranged in pairs and constructed as described, each pair being separated from the next by a distance-sleeve having slots at its upper and lower ends for the throughward passage of the pawls, substantially as set forth.

6. In metal fencing, the combination of a tubular post having a vertical slot throughout its length with a series of hollow straining-drums arranged in pairs and separated by a loose collar, as described, each pair being spaced from the next by a distance-sleeve, substantially as set forth.

In witness whereof I have hereunto set my hand and seal this 27th day of October, 1886.

WILLIAM ORR. [L. S.]

Witnesses:

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