

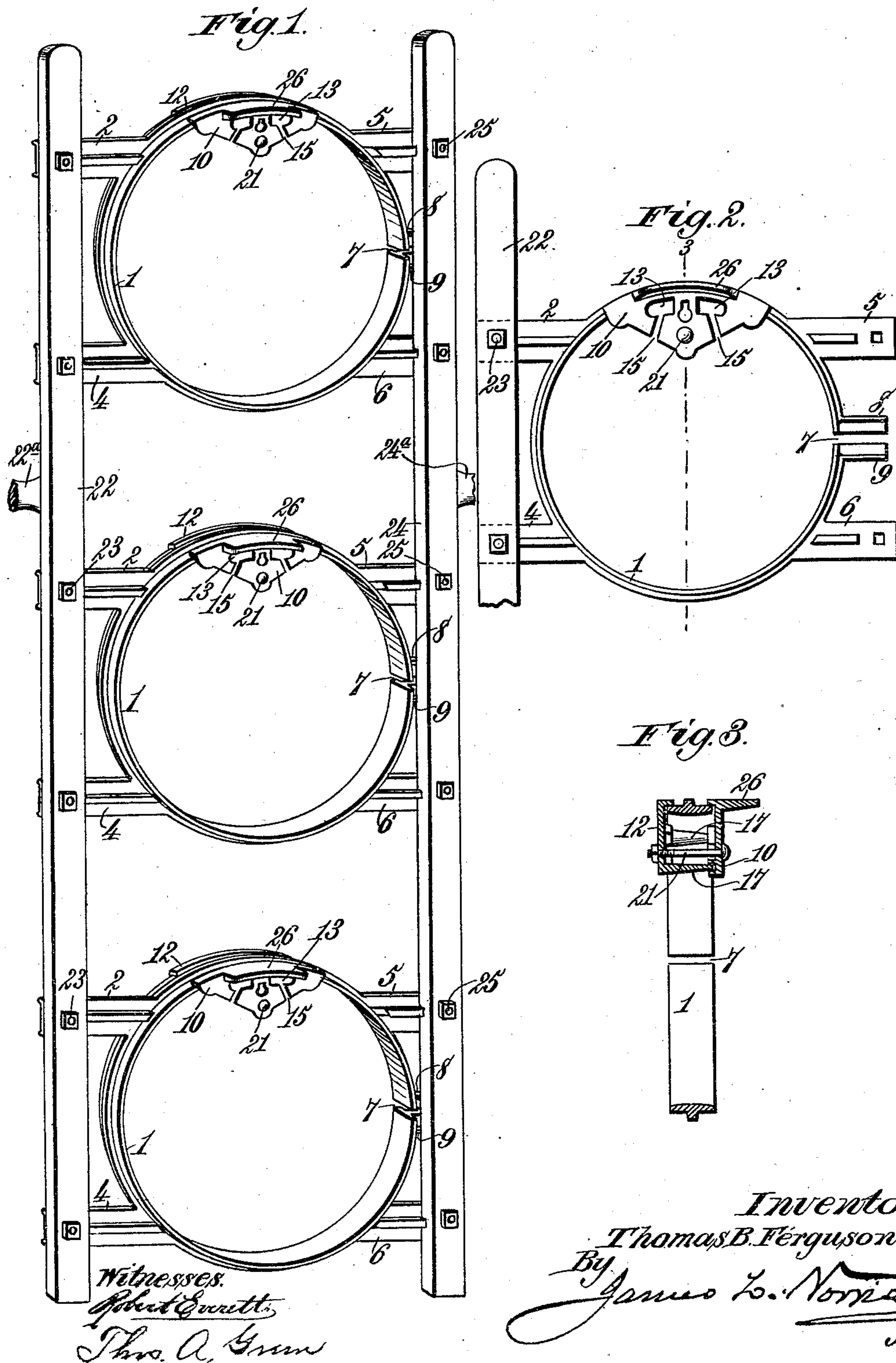
(No Model.)

2 Sheets—Sheet 1.

T. B. FERGUSON, Jr.
MACHINE FOR WIRING FENCE PICKETS.

No. 553,188.

Patented Jan. 14, 1896.



Witnesses.

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Thos. A. Green

Inventor.

Thomas B. Ferguson Jr.

By James L. Norris.

Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

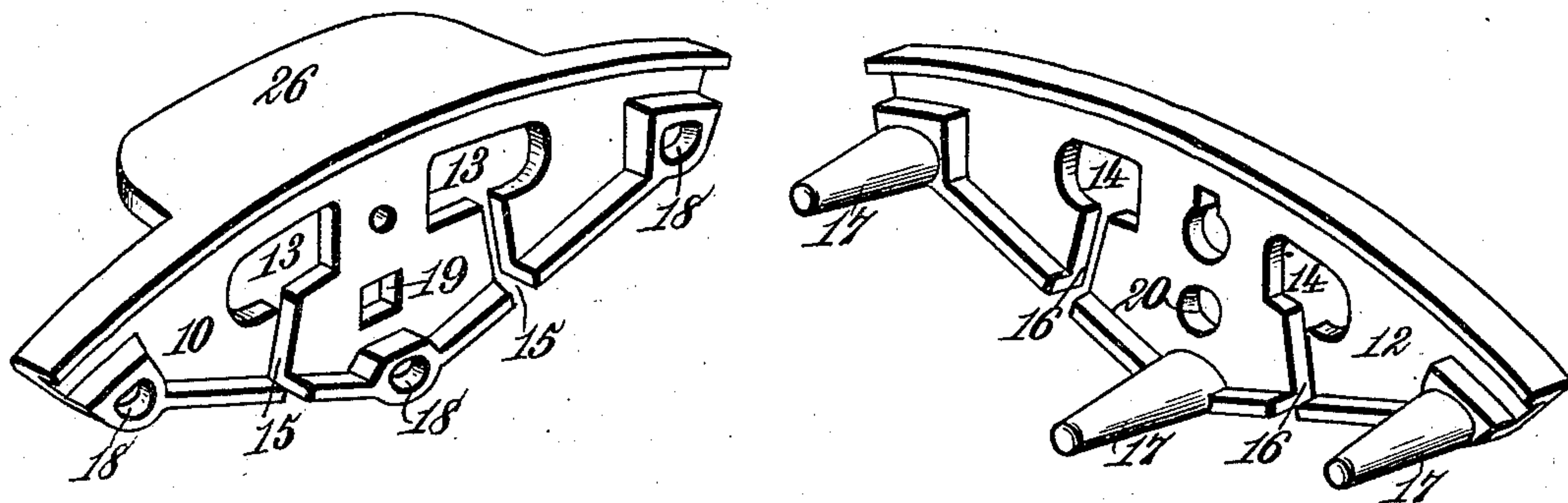


Fig. 5.

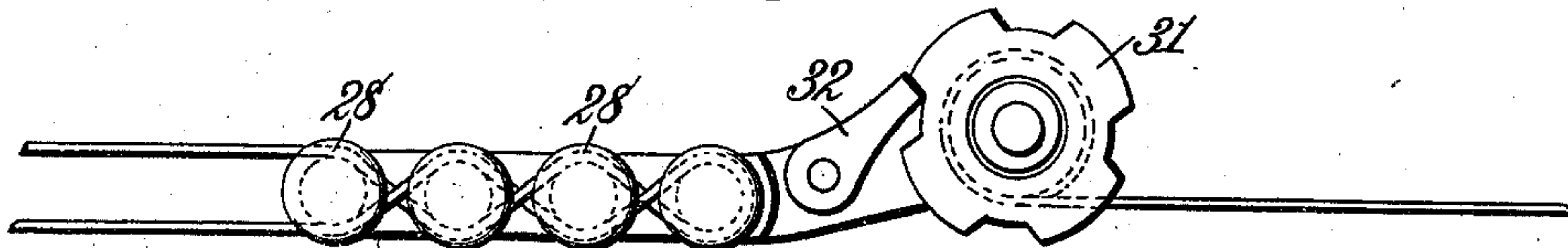


Fig. 6.

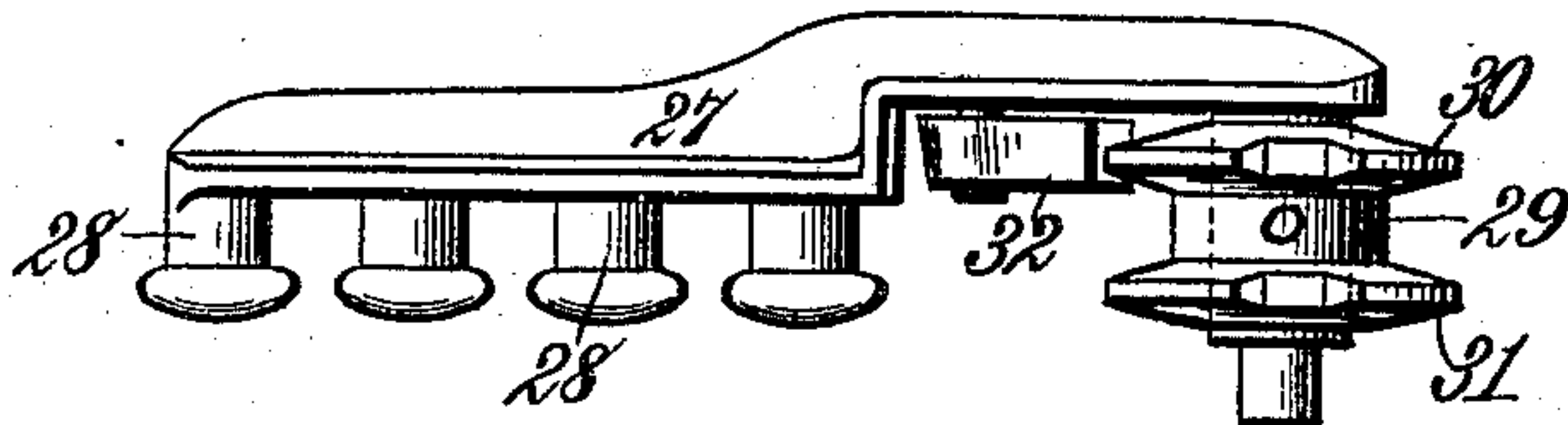
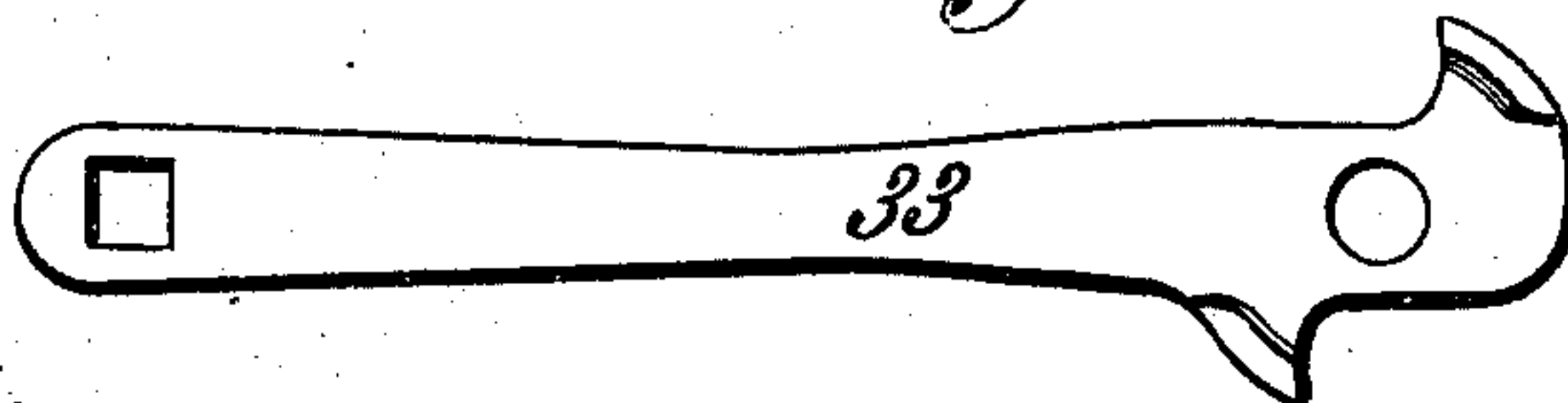


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS B. FERGUSON, JR., OF SPRINGFIELD, MASSACHUSETTS.

MACHINE FOR WIRING FENCE-PICKETS.

SPECIFICATION forming part of Letters Patent No. 553,188, dated January 14, 1896.

Application filed November 4, 1895. Serial No. 567,875. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. FERGUSON, Jr., a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Machines for Wiring Fence-Pickets, of which the following is a specification.

This invention relates to that class of hand-operated devices or machines for twisting the picket-holding wires of picket-fences, wherein a series of guide-rings, connected at one side to an upright or handle bar, are provided with twister-heads movable in a circular path upon the guide-rings for the purpose of twisting the wires between successively-inserted pickets, as described, for example, in Patent No. 376,514. In this type of devices or machines the longitudinal pairs of picket-holding wires require to be inserted or passed through the twister-heads. To facilitate this insertion of the wires, the guide-rings have been slotted, split, or divided at the sides opposite the upright or handle bar for the passage of the longitudinal pairs of pivoted holding-wires, so that the guide-rings can be applied to and removed from such wires. The twister-heads have also been so constructed that the picket-holding wires can be engaged therewith and disengaged therefrom without threading the ends of the wires through the twister-heads. The prior devices or machines are, however, objectionable for several reasons, chiefly because it is difficult to maintain all the rings in a true perpendicular plane and efficiently and satisfactorily operate them by the employment of a single handle-bar at one side only of the guide-rings, while the free ends, formed by slotting, splitting or dividing the rings at the side opposite the handle-bar, permit the rings to warp and the ends to be easily moved out of accurate alignment or coincidence, thereby causing the twister-heads to bind, interfering with their perfect circulatory movement around the ring in the twisting operation and materially weakening the guide-rings.

The chief object of my present invention is to improve the prior construction of this class of wire-twisting devices or machines for securing the pickets of picket-fences and to facilitate the operation of the device or ma-

chine by enabling all the rings to be conveniently and positively maintained in a perpendicular plane during the twisting operation, which is advantageous in that smooth and correct action of the movable parts is secured.

The invention also has for its object to strengthen the slotted, split, or divided rings and retain the two extremities of each ring in true alignment of coincidence for obtaining proper movements of the twister-heads, without binding, in that class of devices or machines wherein the guide-rings are slotted, split or divided.

The invention also has for its object to strengthen the structure as a whole, whereby it is possible to obtain a better leverage, properly twist larger wires than is possible with ordinary constructions, secure better and more substantial twists, ease the operation of twisting the wires, and prevent displacement of the ends of the ring when knocking the pickets tightly in place by the action of the lateral knockers on the twister-heads.

The invention also has for its object to improve the construction of the circulatory-moving twister-heads, whereby the longitudinal pairs of wires which are to be twisted at intervals to secure the inserted pickets can be readily engaged with and disengaged from the twister-heads.

To accomplish all these objects my invention consists essentially in a hand-machine for twisting picket-holding wires, composed of a plurality of guide-rings having laterally-extending arms at their opposite sides, handle-bars secured to said arms at opposite sides of the rings, and twister-heads movable around the guide-rings for twisting the wires to secure the pickets, said oppositely-arranged handle-bars enabling all the guide-rings of the series to be maintained in a perpendicular plane during the twisting operation.

The invention also consists in a hand-machine for twisting picket-holding wires, composed of a plurality of split or divided guide-rings having at one side an attached handle-bar, a removable and replaceable handle-bar arranged at the opposite side of said guide-rings and connected to the end portions of the rings formed by the splits or divisions therein, and serving to maintain the end portions of the splits or divisions in correct alignment

or coincidence, and twister-heads movable around the guide-rings when the latter are operated by the handle-bars.

The invention also consists in certain other features of construction and combination or arrangement of parts hereinafter fully described in detail, and pointed out in the claims, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved hand device or machine for twisting picket-holding wires. Fig. 2 is a detail elevation of one of the guide-rings and a portion of one of the handle-bars, the other handle-bar being detached to show the slotted, split, or divided construction of the ring. Fig. 3 is a sectional view, taken on the line 3-3, Fig. 2. Fig. 4 is a detail perspective view showing the two parts of one of the twister-heads separated from each other to better illustrate their construction. Fig. 5 is a side elevation of a wire-tightener adapted to be used in connection with my invention. Fig. 6 is a plain view of the same, and Fig. 7 is a side view of a wrench for operating the drum of the wire-tightener.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein the numeral 1 indicates the guide-rings, each of which is circular and formed integral at one side with two laterally-projecting arms 2 and 4, while from the opposite side, and in line with the arms 2 and 4, extend similar arms 5 and 6. The guide-rings are also each divided to form a wire entrance and exit slot or split 7 in such manner that the ring is in fact provided with two ends, separated a sufficient distance apart to permit the passage of the wires which are to be twisted, for the purpose of securing the pickets in position.

The end portions of the rings are formed integral with laterally-extending lugs 8 and 9, (best seen in Fig. 2,) separated at their inner edges a distance apart coincident with the distance between the ends of the ring, so that the separated edges of the lugs 8 and 9 constitute guides for guiding the wires into and out of the guide-ring, as will be obvious. The lugs 8 and 9 are located centrally between the laterally-projecting arms 5 and 6.

The guide-rings are each provided with a circularly-moving wire twister-head, composed of two plates 10 and 12, Fig. 4, which are similar in outline and constructed with elongated wire-receiving eyes 13 and 14, from which lead diverging slots 15 and 16. The plate 12 is provided with a plurality of lateral studs 17, adapted to enter sockets 18 in the plate 10. The plates 10 and 12 are also provided with bolt-holes 19 and 20 for the passage of a bolt 21, as shown in Fig. 3, which serves to connect the twister-head plates 10 and 12 together when said bolt is properly tightened. The lateral studs 17, entering the sockets 18, steady the two plates with refer-

ence to each other, and since the plates are connected by the bolt 21 it will be obvious that a very strong and substantial twister-head is obtained. When the twister-head plates 10 and 12 are connected through the medium of the studs 17, sockets 18, and bolt 21, the two eyes 13 of the plate 10 are coincident with the eyes 14 of the plate 12 and the two slots 15 are coincident with the two slots 16 in such manner that the two longitudinal wires introduced between the arms 8 and 9, and through the slot 7 of each guide-ring, can be readily inserted through the slots 15 and 16 into the eyes 13 and 14 of the twister-head. After the two wires engaged with each twister-head have been twisted at various points to complete the fence, the wires can be readily moved out of the eyes 13 and 14 through the slots 15 and 16, and thence through the slot 7 of the guide-ring, for the purpose of detaching the device or machine from the fencing.

The arms 2 and 4 of each ring are secured to a perpendicular handle bar 22, at one side of the rings, through the medium of bolts 23. The arms 5 and 6 of each ring are also secured to a perpendicular bar 24 at the opposite side of the rings through the medium of bolts 25, as will be understood by reference to Fig. 1.

The lugs 8 and 9 which are located centrally between the arms 5 and 6 of each ring are in the nature of gage-lugs, in that they lie squarely against one side of the handle-bar 24, so that when the latter is bolted to the arms 5 and 6 of the several guide-rings the ends of the rings formed by the slots, splits or divisions 7 will be in exact alignment or coincidence.

The handle-bar 24 may, if desired, be bolted to the lugs 8 and 9. The attachment of the handle-bar 24 to the arms 5 and 6 of the guide-rings serves to maintain the ends of the rings formed by the slots, splits, or divisions 7 in correct alignment or coincidence, so that it is impossible in the operation of the device for the ends of the rings to become displaced or thrown out of alignment. This is especially advantageous, in that the rings are each constructed with a knocker, as at 26, extending laterally from the twister-head, so that when a picket has been inserted in front of the twisted parts of the wires the device or machine as a whole can be shifted horizontally to cause the knockers 26 to strike the picket and drive it tightly against the twisted parts of the wires, after which the wires are twisted against the opposite edges of the picket to securely hold it in place.

The uprights or handle-bars 22 and 24 are provided with suitable gripping-handles 22^a and 24^a in such manner that an operator standing at each side of the fence can grasp the upper end of an upright or handle bar with one hand and hold the gripping-handle with the other hand. It will, therefore, be obvious that two persons holding the machine

in this manner can easily maintain it in a perpendicular plane, or nearly so, while operating the same to twist the wires.

In the drawings the gripping-handles are broken away for convenience to admit of other parts being illustrated on as large a scale as possible. It is not deemed necessary, however, to illustrate the handles complete, as they are of the ordinary construction, adapted to be grasped by the hand of the operator.

In Figs. 5, 6, and 7 I illustrate a wire-tightener and a wrench for use in connection therewith. These devices are useful in connection with the machine for twisting the wires, but they constitute no essential part of my invention.

The wire-twister comprises a metallic bar or frame 27 having a series of snubs or posts 28 extending therefrom. The bar or frame 27 carries a drum 29 having notched heads 30 and 31. The notched head 30 is adapted to be engaged by a pawl 32. A wire may be wound upon the drum 29 through the medium of the wrench 33, which is constructed to engage the head 31 for rotating the drum. The construction of the wire-tightener and the manner of using the same are the same as described in Patent No. 494,537, and therefore a more detailed explanation of the same is not deemed essential.

It will be observed that in my improved device or machine two upright handle-bars are located at opposite sides of the rings, which is very advantageous, in that this construction renders it possible for the operators or workmen to support the device or machine at opposite sides, and thus maintain all the guide-rings in a perpendicular plane, for the purpose of securing efficient and satisfactory operation of the twister-heads. Where a plurality of guide-rings having twister-heads are connected at one side only with an upright handle-bar, it is impossible for the single operator to maintain or preserve the construction as a whole, in a perpendicular plane, and consequently with ordinary devices of this character the twister-heads bind and the operation of the machine is accomplished with difficulty.

Having thus described my invention, what I claim is—

1. A hand machine for twisting picket holding wires, consisting of a plurality of guide-rings having laterally extending arms at their opposite sides, handle-bars secured to said arms at the opposite sides of the rings so that two operators can manipulate the machine and maintain all the rings in a perpendicular plane, and twister-heads movable around the guide-rings for twisting the wires

to secure the pickets, substantially as described.

2. A hand machine for twisting picket holding wires, consisting of a plurality of slotted or split guide-rings having at one side an attached handle-bar, a removable and replaceable handle-bar arranged at the opposite side of said guide-rings, connected to the end portions of the rings formed by the slots or splits therein and serving to maintain such end portions in correct alignment or coincidence, and twister-heads movable around the guide-rings when the latter are operated by the handle-bars, substantially as described.

3. A hand machine for twisting picket holding wires, consisting of a plurality of slotted or split guide-rings having pairs of oppositely projecting arms 2 and 4, and 5 and 6, and lugs 8 and 9 extending from the ends of the rings formed by the slots or splits, a handle-bar secured to the arms at one side of the ring, a removable and replaceable handle-bar secured to the arms at the opposite side of the ring and bearing against the said lugs which extend from the ends of the rings, and twister-heads movable around the rings when the latter are operated by the handle-bars, substantially as described.

4. In a hand machine for twisting picket-holding wires, a guide-ring having at one side the pair of arms 2 and 4, and at the opposite side the slot or split 7, arms 5 and 6, and lugs 8 and 9 extending from the ends of the ring formed by the slot or split, a handle-bar secured to the arms at one side of the guide-ring, a handle-bar detachably secured to the arms at the opposite side of the guide-ring for maintaining the ends of the ring formed by the slot or split in correct alignment or coincidence, and a twister-head movable around the ring when the handle-bars are operated, substantially as described.

5. In a hand machine for twisting picket-holding wires, the combination with a guide-ring, of a twister-head movable around the guide-ring and composed of two similar plates 10 and 12 having eyes 13 and 14, entrance slots 15 and 16 to said eyes, one of the plates having sockets 18 and the other provided with studs 17 which enter the sockets, and a bolt 21 connecting the two plates together and holding the studs in the sockets, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

T. B. FERGUSON, JR.

Witnesses:

ALBERT H. NORRIS,
NATHAN H. ROBBINS.