

(No Model.)

2 Sheets—Sheet 1.

F. H. WARNE.
WIRE FENCE MACHINE.

No. 547,945.

Patented Oct. 15, 1895.

FIG. 1.

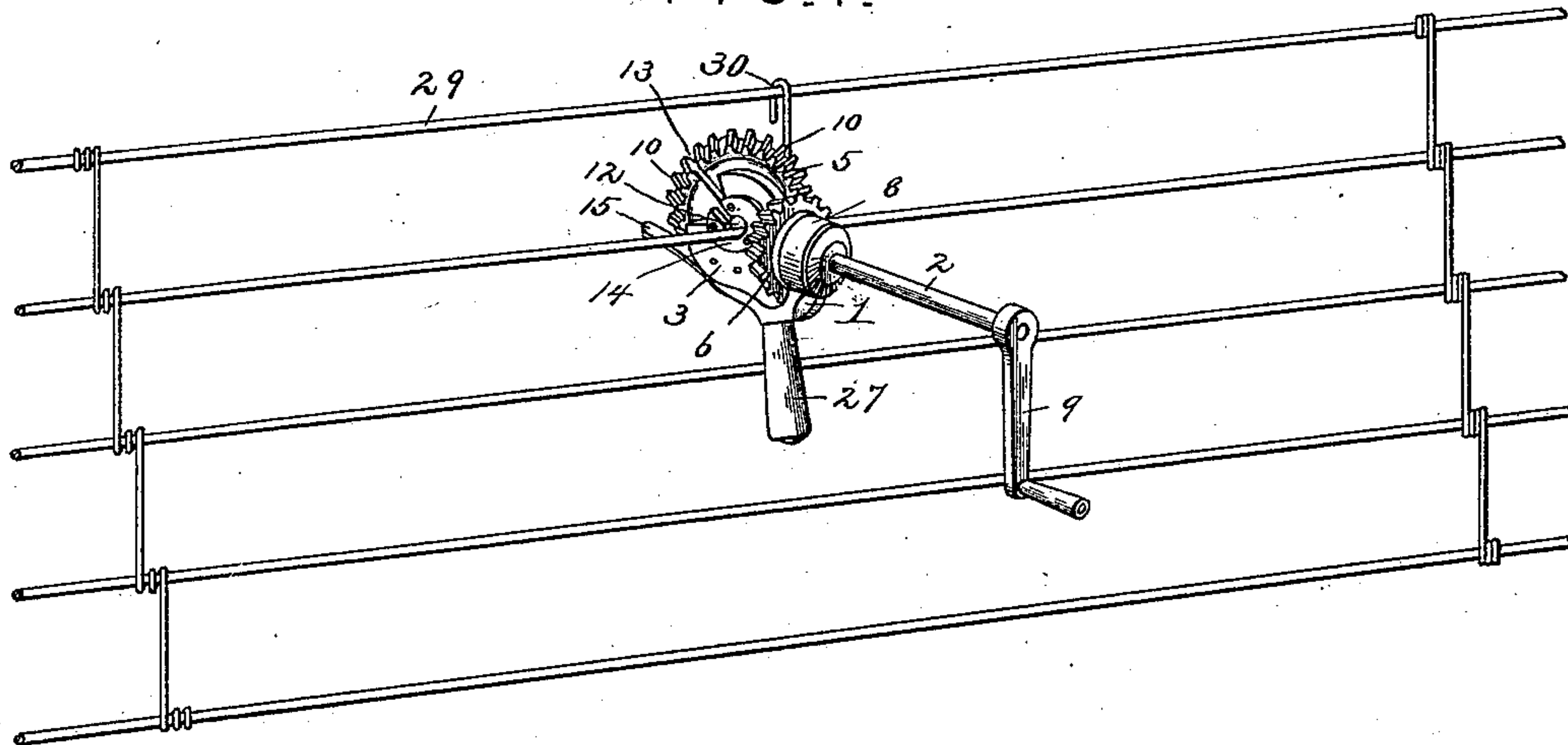


FIG. 5.

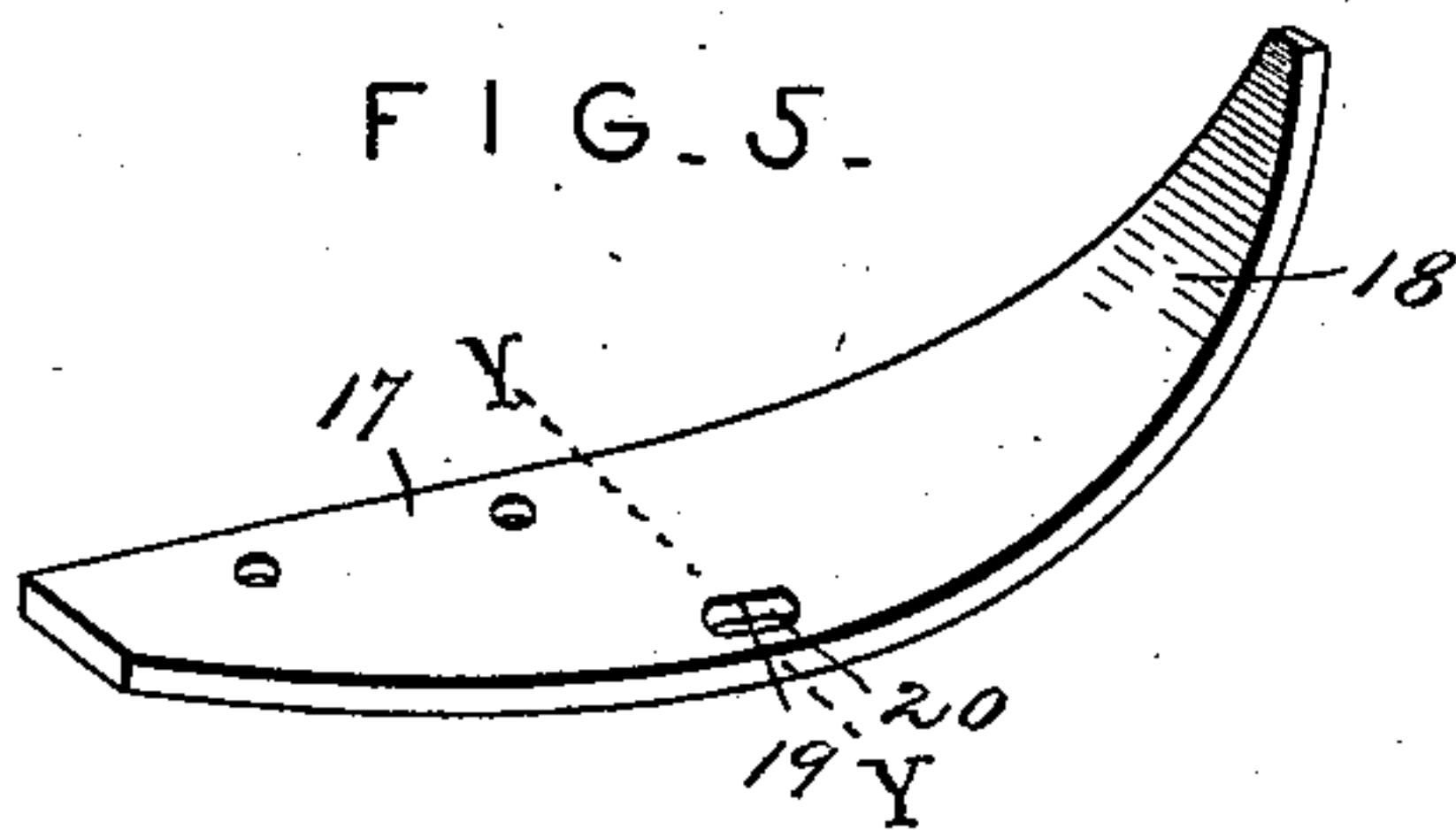


FIG. 6.

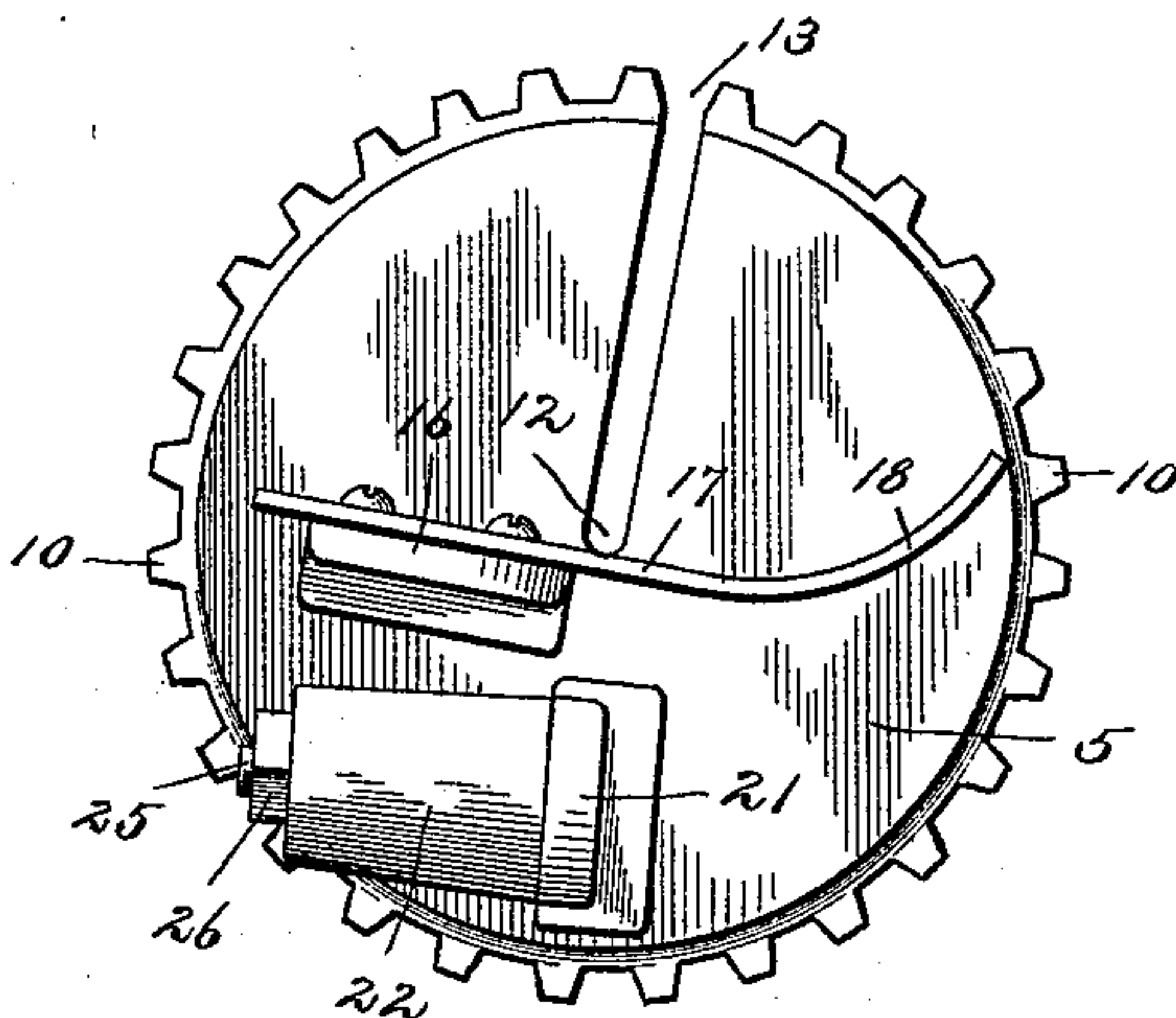


FIG. 7.

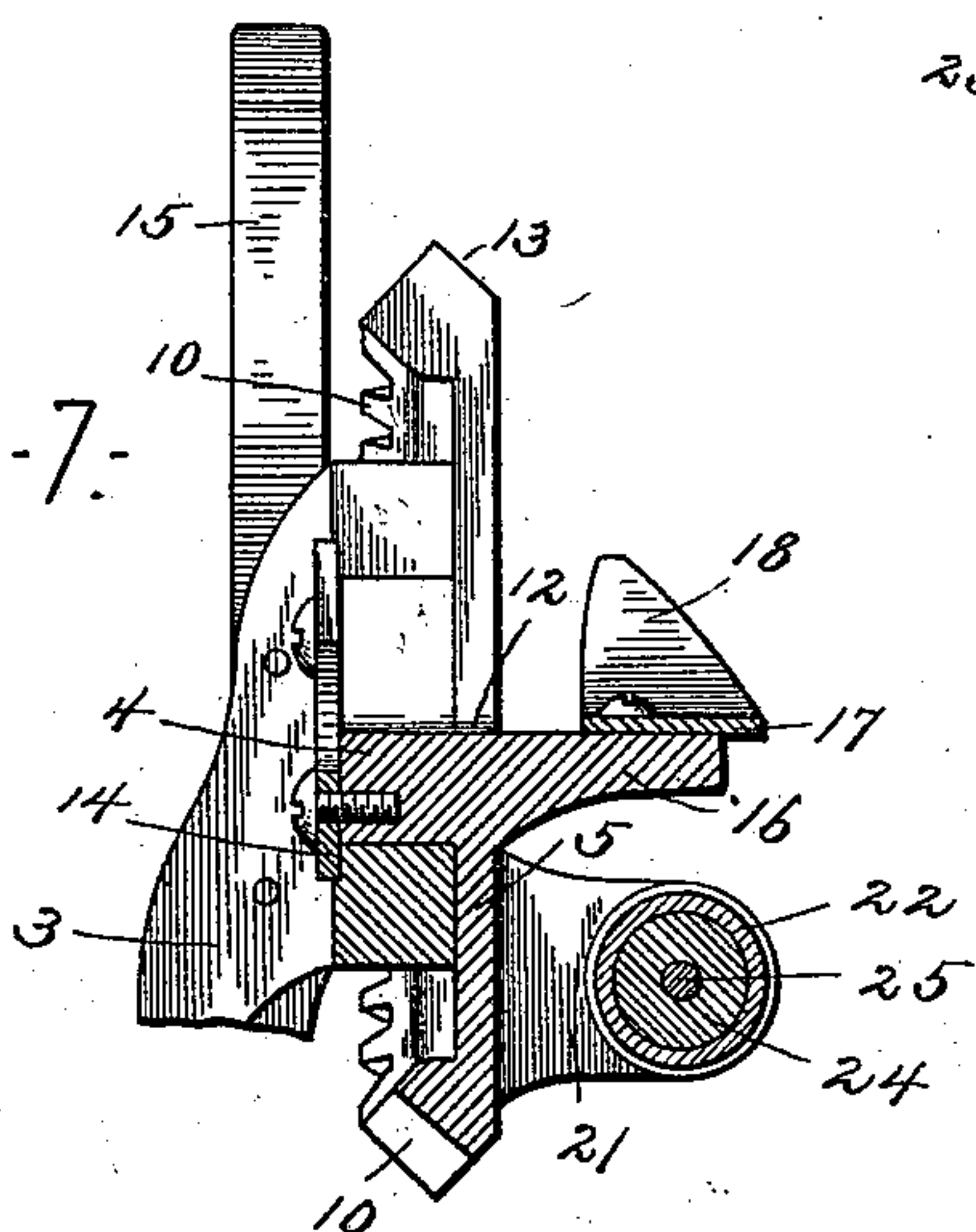


FIG. 8.



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Witnesses

Harry L. Ames.

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By his Attorneys.

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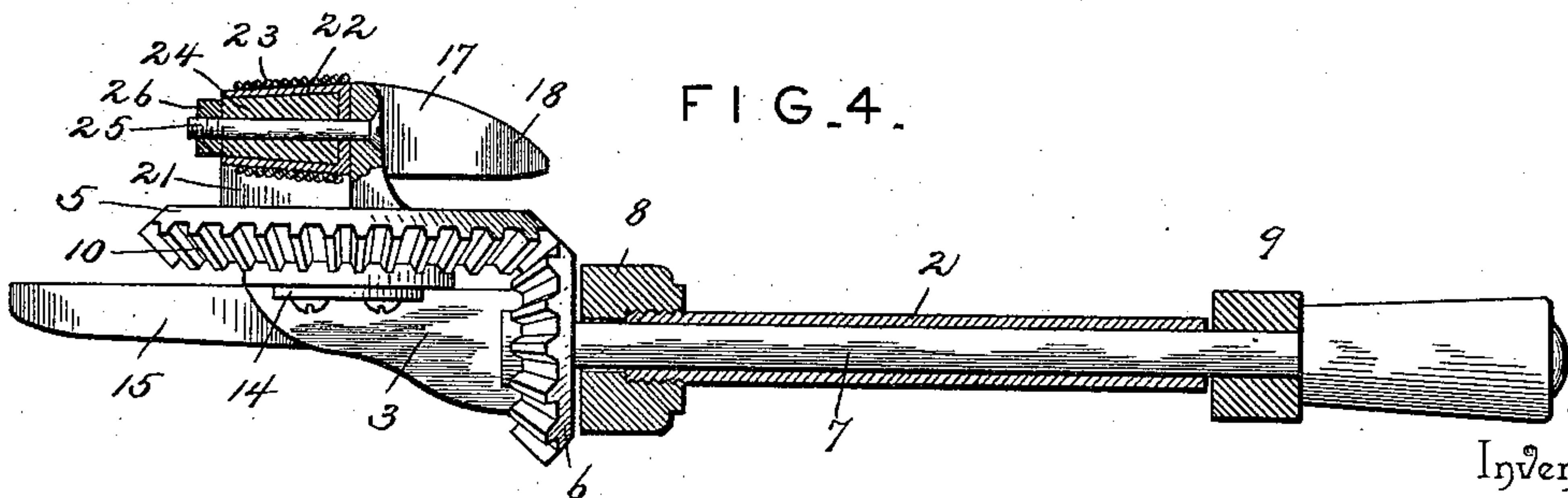
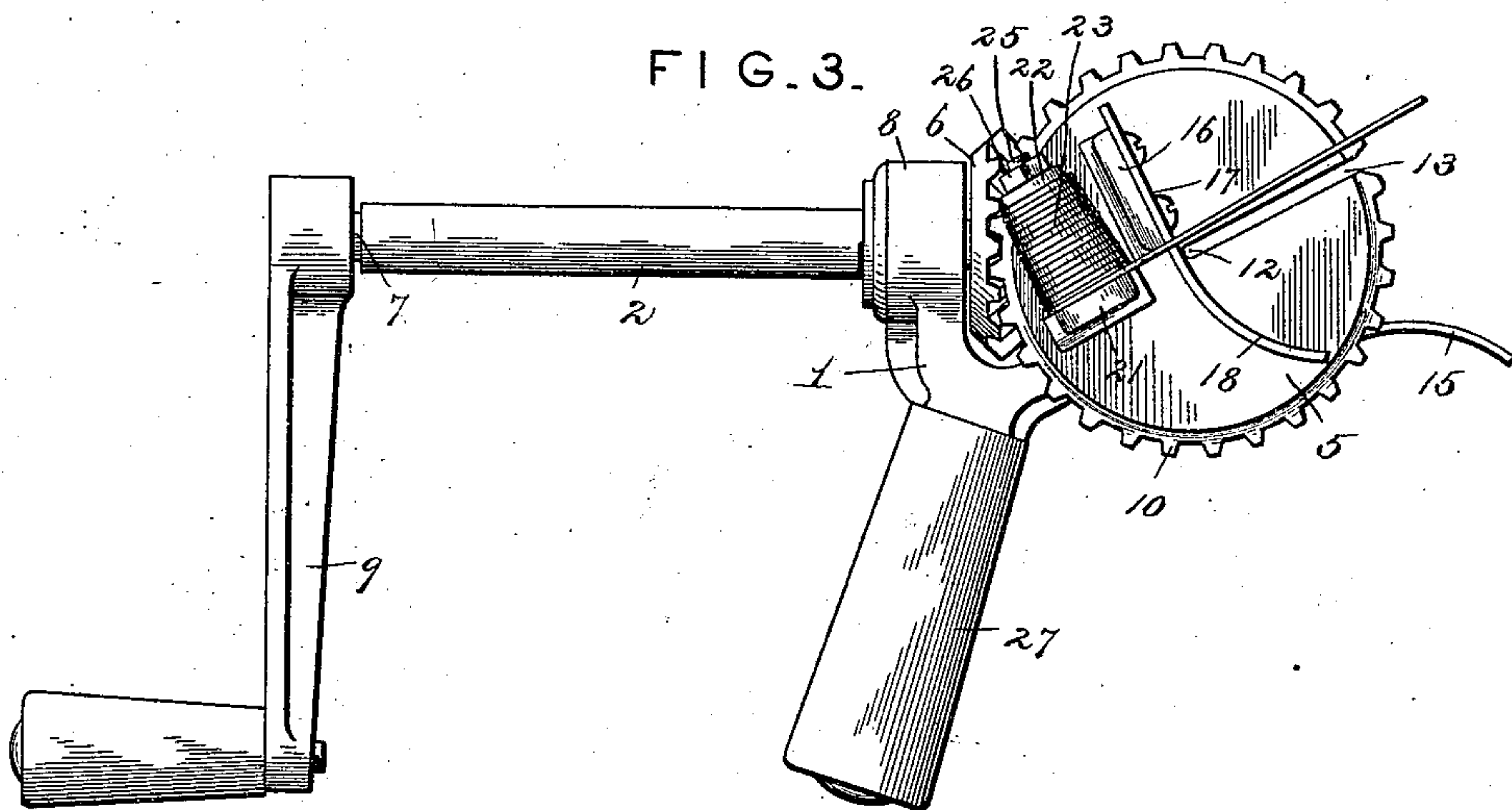
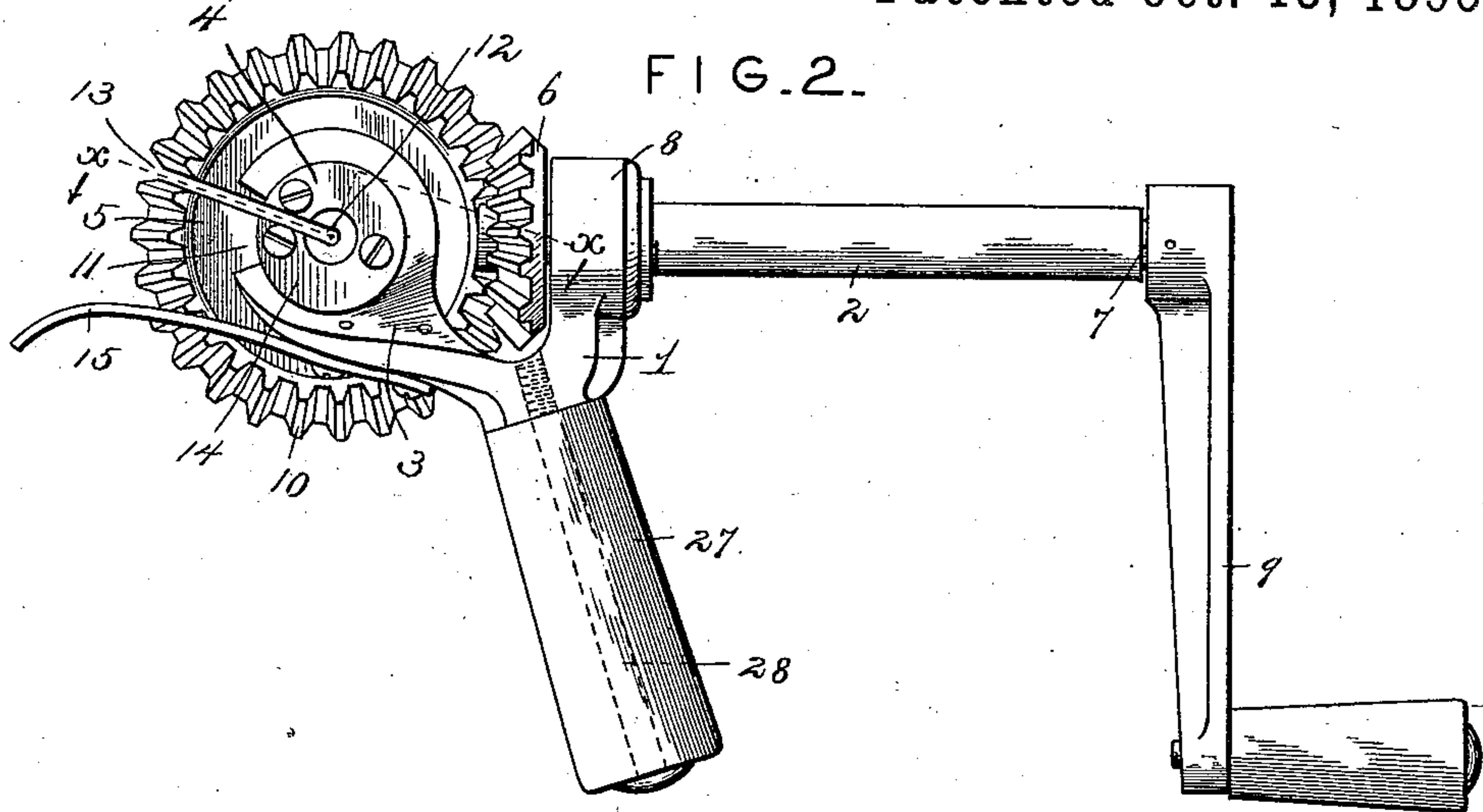
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2 Sheets—Sheet 2.

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Inventor

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By his Attorneys,

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Witnesses

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UNITED STATES PATENT OFFICE.

FRANK H. WARNE, OF CHESTERFIELD, OHIO.

WIRE-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 547,945, dated October 15, 1895.

Application filed June 11, 1895. Serial No. 552,461. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. WARNE, a citizen of the United States, residing in Chesterfield township, in the county of Fulton and State of Ohio, have invented a new and useful Wire-Fence Machine, of which the following is a specification.

This invention relates to that class of machines which are designed to apply vertical stay-wires to the line-wires in the construction of wire-fencing, and has for its object the provision of a machine which will be compact in its organization, so as to be stored in a small compass, and which will be comparatively light, so as to be conveniently carried about the person, and which will be capable of performing the required work in a rapid and satisfactory manner.

Other objects and advantages of the invention will become manifest as the nature of the invention is understood from the following description and the accompanying drawings.

Figure 1 is a perspective view showing the application of the invention. Figs. 2 and 3 are respectively an obverse and a reverse side elevation of the machine. Fig. 4 is a top plan view thereof, partly in section. Fig. 5 is a detail view of the needle. Fig. 6 is a detail view of the twisting-wheel detached from the frame or stock. Fig. 7 is a detail section on the line X X of Fig. 2, looking in the direction of the arrow. Fig. 8 is a cross-section of the needle on the line Y Y of Fig. 5.

The frame or stock 1 of the machine is formed at one end with a bearing-sleeve 2 and at its opposite end with a bearing 3, in which is journaled the hub 4 of the twisting-wheel 5, the said bearings 2 and 3 being right-angularly disposed, so that the twisting-wheel 5 occurs in a plane at right angles to the driving-pinion 6, which is keyed to the inner end of a shaft 7, journaled in the bearing-sleeve 2 and in a tubular extension 8, extending outwardly from the said bearing-sleeve 2. The outer end of the shaft 7 has a crank-handle 9 fitted thereto to serve as a convenient means of applying manual power for the rotation of the shaft 7 and the twisting-wheel 5 through the driving-pinion 6, meshing therewith. The driving-pinion 6 has beveled cog-teeth, which mesh with corresponding beveled cog-teeth 10, disposed around the peripheral edge of

the twisting-wheel 5. The bearing 3 is cut away for a short distance on its upper front side to provide a space 11 to facilitate the entrance of the line-wire into the central opening 12 of the twisting-wheel 5. A radial slot 13 extends outwardly from the opening 12 through the edge of the twisting-wheel 5 and admits of the line-wire passing readily to the said central opening 12. This slot 13 also extends through the hub 4 and the plate or collar 14, attached to the end of the hub 4, and by means of which the twisting-wheel is held in the bearing 3, the latter being confined between the side of the twisting-wheel and the projecting edge portion of the plate or collar 14, as will be readily comprehended. By having the plate or collar 14 detachably connected with the hub 4 the twisting-wheel can be readily removed from the stock or frame for cleaning, repairing, or for any other required purpose. A gage or stop 15 is attached at one end to the frame or stock 1, and its opposite end projects a short distance beyond the twisting-wheel and is adapted to engage with the line or fence wire and to properly position the machine when the latter is in effective service. This gage or stop consists of a strip or bar of metal of proper length and is attached to the frame or stock 1 by machine-screws or in any convenient manner, and its outer portion curves downwardly, so as to engage with the line or fence wire when moving the machine from an upper to a lower wire, thereby making it possible to properly position the machine with reference to the fence-wires without any special care on the part of the operator. A stud 16 projects laterally from the outer face of the twisting-wheel 5 and is intended to form a support for the needle 17, which is removably attached thereto by machine-screws or similar fastenings. The needle 17 is a plate or thin bar, preferably of steel, and its front end 18 curves upwardly and its outer edge curves inwardly from about a point midway of the length of the said needle. The inner portion of the needle is straight, and its outer edge curves slightly, so as to prevent any possible interference of the needle with the free movements of the twisting-wheel. The eye 19 is located in proximate relation to the outer edge of the needle and is oblong and occurs about opposite the

opening 12 of the twisting-wheel. The bridge 20 of the eye is thin on the inner edge and is thickened at the opposite edge, thereby admitting of the coils in the stay-wire being
 5 formed in close relation or spaced apart, as desired. A second stud 21 is located on the same side of the twisting-wheel with the stud 16 and occurs at about right angles thereto, and this stud forms a support for a spindle
 10 22, upon which is mounted the coil 23 of the stay-wire. This spindle 22 is formed of a short length of tubing and is filled with a wooden plug 24, which is held in place by means of a bolt 25 passing longitudinally
 15 through the short tubing and through the stud 21, the nut 26 on the threaded end of the bolt 25 overlapping the edge of the said tubing and retaining the parts in proper position. The spindle 22 tapers slightly, so as to facilitate the removal and the placing of the coil 23
 20 thereon.

For convenience in manipulating the machine the stock or frame 1 is provided with a handle 27, preferably of wood, and which is
 25 attached to the frame or stock in any convenient manner, a long bolt 28 being provided for the purpose and passing through the handle 27 and screwing into the frame or stock 1.

When it is required to use the machine for
 30 applying stay-wires to the fence or line wires, the said stay-wires are coiled for the greater portion of their length and in the use of the machine have the coiled portion mounted upon the spindle 22, the straight portion being threaded through the eye of the needle
 35 and having its end portion bent and hooked over the topmost line-wire 29, as shown at 30, and the machine is fitted to the line or fence wire immediately below the top wire by having the said line-wire passing through the radial slot 13 into the central opening 12 of the
 40 twisting-wheel, and by operating the crank-handle 9 the twisting-wheel will be rotated and twist or coil the stay-wire 23 about the line-wire, as will be readily understood. After the stay-wire has been twisted the required
 45 number of times about the line-wire the machine is detached from the said line-wire and moved to the next lower line-wire, and is fitted thereto by having the said line-wire enter the
 50 radial slot 13, the downward movement of the machine being limited by the gage or stop 15 engaging with the said wire. By operating the crank-handle 9 the stay-wire will be
 55 twisted or coiled about the line-wire, and this operation is repeated for each line-wire of the series. After the stay-wire has been twisted or coiled around the lower fence or line wires the machine is applied to the topmost line-
 60 wire and the bent or hooked end 30 of the stay-wire is passed through the eye of the needle and the machine operated, so as to twist the said end about the top line or fence wire. By a proper manipulation of the machine the coils may be caused to touch or they
 65 may be spaced apart, as desired, this operation resulting from the bridge 20, which is

thin at the inner edge and thickened at the opposite edge. For black or the ordinary iron wire it is desirable to space the coils, 70 thereby providing for the escape of wet and moisture, which if retained would soon result in the complete destruction of the stay-wires by the corrosive action of the moisture, as will be readily understood. 75

The machine may be provided in a variety of styles, according to the design of the maker. Therefore it is to be understood that in the embodiment of the same various changes in the form, proportion, and the minor details of 80 construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is— 85

1. A wire fence machine comprising a frame, a twisting wheel journaled in the frame and having a central opening and a slot leading outwardly from the said opening, actuating mechanism for the twisting wheel, and a 90 spindle and a needle attached to the same side of the twisting wheel and carried directly thereby, substantially as set forth.

2. In a wire fence machine, a twisting wheel having formed therewith on one face two right- 95 angularly-disposed studs, a needle secured to one of the studs, and a spindle supported by the opposite stud, substantially as set forth.

3. In a wire fence machine, the combination with a twisting wheel, of a needle attached 100 directly to and carried by the twisting wheel and having an eye in proximate relation to its outer edge, which edge is inwardly curved from a point opposite the said eye, and the bridge of the eye being thinner on the inner 105 side of the needle than on the opposite side, whereby the coils may be closely related or spaced apart as required, substantially as set forth.

4. In a wire fence machine, the combination 110 with a twisting wheel, of a needle attached to one face of the twisting wheel and occupying a central position, the outer end of the needle curving upwardly and the edge being oppositely curved from a middle point and having 115 an eye formed in the needle in proximate relation thereto, substantially as set forth.

5. In a wire fence machine, the combination with a frame or stock, and the wire-twisting mechanism, of a gage or stop for arresting and 120 properly positioning the machine when moving it from one line wire to another, the same consisting of a bar secured at one end to the stock and having its outer end projecting beyond the wire-twisting mechanism and 125 curved, substantially as set forth for the purpose described.

6. A wire fence machine comprising a stock formed at one end with a bearing sleeve and having a corresponding bearing at the oppo- 130 site end formed with a clearance space, a shaft journaled in the bearing sleeve and having a driving pinion, a twisting wheel having a hub portion journaled in the said bearing and op-

erated by means of the said driving pinion, a collar applied to the end of the hub to secure the twisting wheel in its bearing, a needle attached directly to the twisting wheel, and a spindle for supporting the coil of wire provided on the same side of the twisting wheel with the needle, substantially as set forth for the purpose described.

7. The herein-specified fence machine, comprising a stock having a bearing sleeve at one end and a bearing at the opposite end formed with a clearance space, a tubular extension projecting from the said bearing sleeve, a shaft journaled in the tubular extension and bearing sleeve and having a crank at its outer end and a driving pinion at its inner end, a gage projecting outwardly from the stock, a twisting wheel operated from the driving pinion and having a hub on one face which is

journaled in the said bearing, and having right-angularly-disposed studs on its opposite face, a collar attached to the inner end of the hub for securing the twisting wheel in its bearing, a needle secured to one stud, and having its outer end oppositely curved, and having one end curved away from the plane of the needle, the eye in the latter being formed in proximate relation to the outer edge of the needle, and a spindle secured to the other stud and extending parallel with the needle, substantially as set forth.

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

FRANK H. WARNE.

Witnesses:

FRANK E. CAWLEY,
JAMES N. CHOPPELL.