

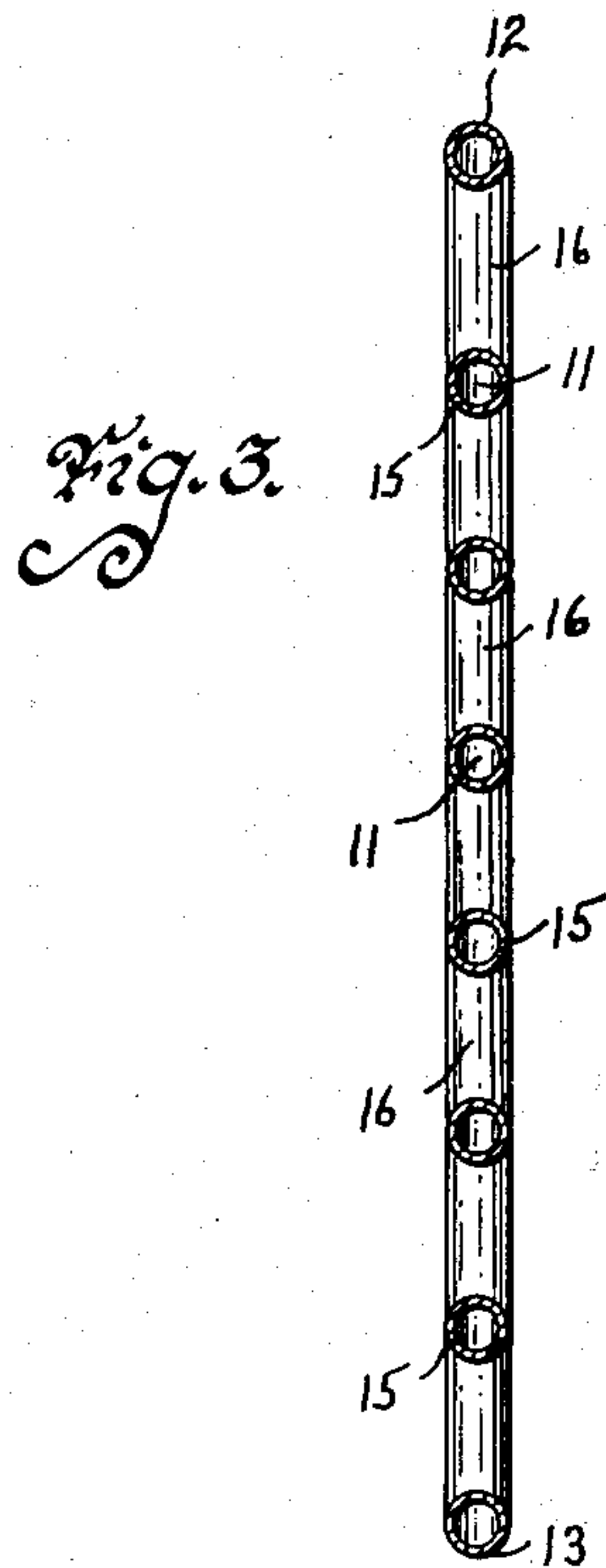
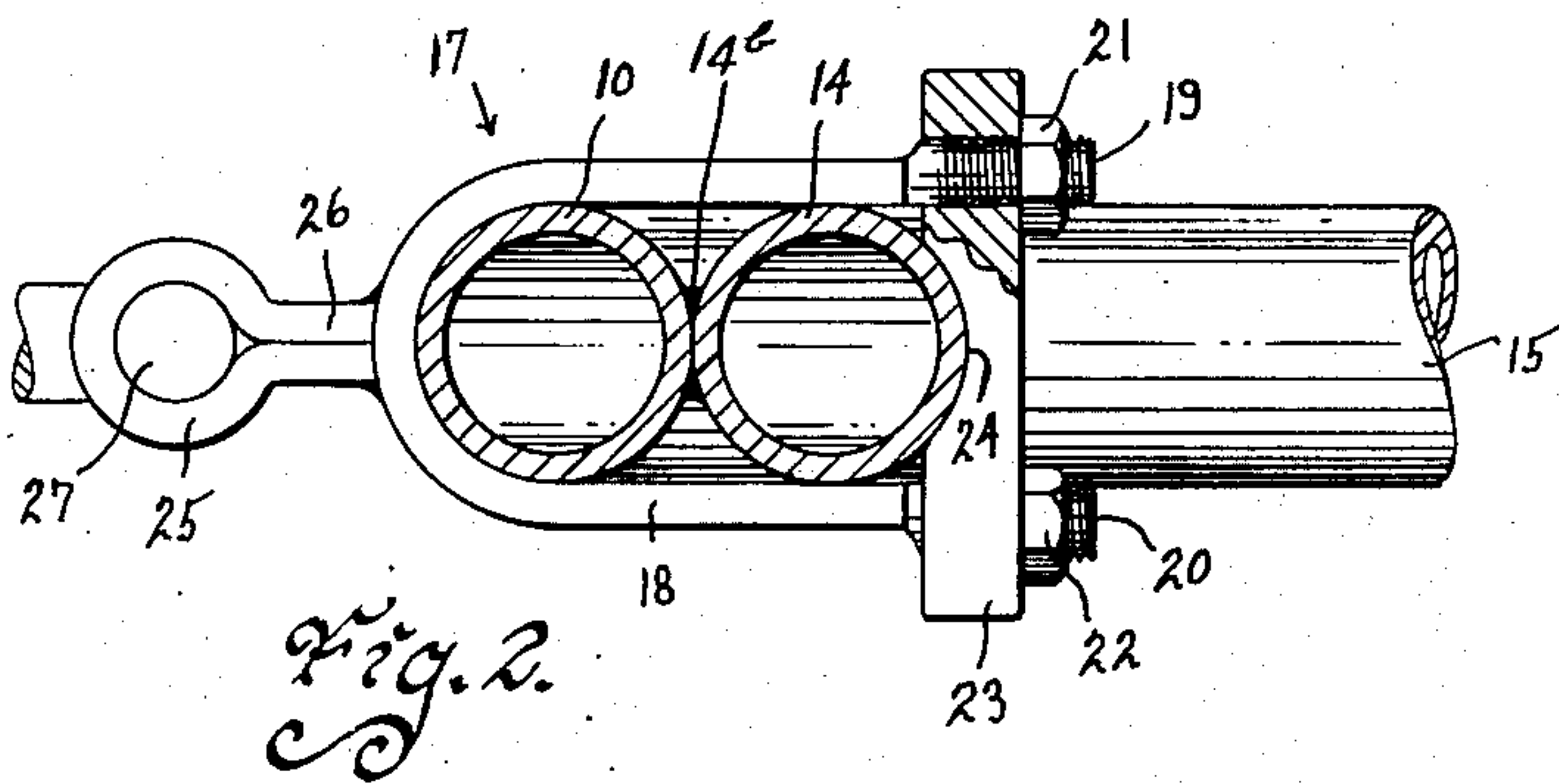
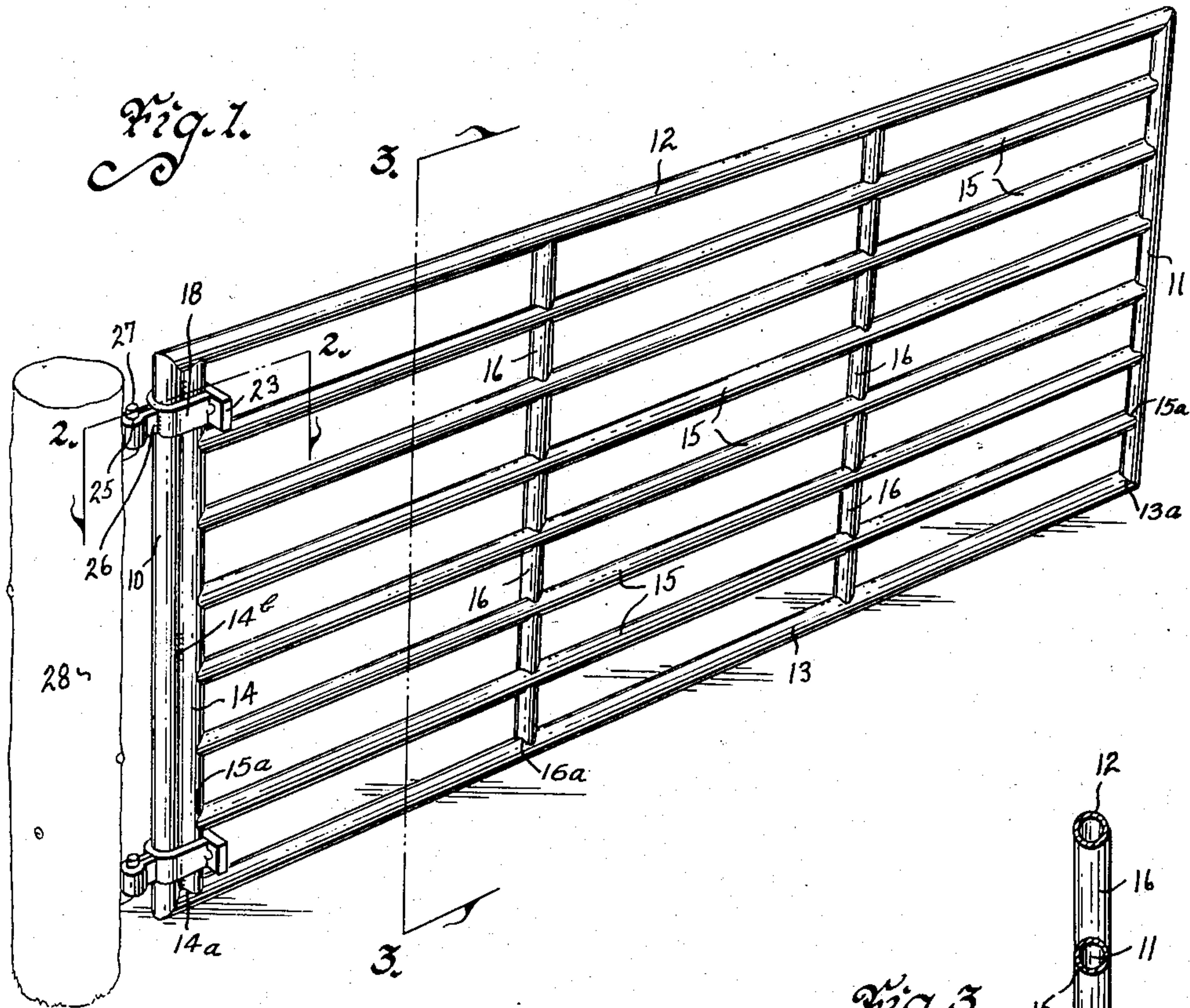
Nov. 17, 1953

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2,659,168

TUBULAR GATE

Filed Feb. 16, 1951



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2,659,168

TUBULAR GATE

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Application February 16, 1951, Serial No. 211,409

8 Claims. (Cl. 39-87)

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My invention relates to gates and while it was designed more particularly for use in cattle yards, pastures and the like it can be used to close any passageway through a walled or fenced-in area.

Gates for cattle enclosures are usually considerably longer than their height dimension and this obviously puts a substantial strain on the hinged end when the gate is opened and closed. Because of this, these type gates will usually sag out of alignment and become very difficult to manipulate. Likewise any latch devices used thereon will soon become useless.

With this problem in mind, it is the aim of my invention in general to provide a gate having a new type of structure on the end to receive the hinges so that it will be capable of being adequately and properly supported at all times.

More particularly my new gate structure is especially adapted for use on gates having a horizontal length substantially greater than its vertical dimensions.

A further object of my invention is to provide a gate of the above class having a new hinge means designed for use thereon.

Still another object of my invention is to provide a gate having the above characteristics which is of all metal construction welded into a single rigid unit requiring no repairs or maintenance.

Still another object of this invention is to provide a gate as above described that is light in weight and durable in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of my gate showing the hinges in place and pivotally mounted on a supporting post,

Fig. 2 is an enlarged cross-sectional view of this gate taken on the line 2-2 of Fig. 1 and showing one of the hinges mounted thereon, and

Fig. 3, is an enlarged longitudinal sectional view of my gate taken on the line 3-3 of Fig. 1.

Referring to the drawings I provide a rectangular gate frame comprising the end members 10 and 11, the side members formed by the top rail 12 and the bottom rail 13 as shown in Fig. 1. While any suitable material may be used for this gate, I preferably use aluminum tubing and integrally connect the sides and ends at the respective corners by the welds 13a as illustrated. This provides a lightweight frame and the welded connections give added rigidity. Within the gate frame I place the reinforcing tubular support member 14 which is mounted adjacent the side 10 and extends between the top 12 and bottom 13 as shown in Fig. 1. The respective opposite ends of the member 14 are integrally connected by welding 14a to the side members 12 and 13 and integrally connected by welds 14b between its ends to the end member 10 as illustrated. This

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makes an extremely strong gate end upon which to mount the hinges which I will later describe.

The numeral 15 designates a plurality of tubular reinforcing members arranged in relatively closely spaced parallel relationship and integrally connected as by welding 15a or the like at their respective opposite ends to the members 11 and 14. The spacer support members 16 are placed in alignment between the members 15 and substantially parallel to the end members 10 and 11 and are each integrally joined at their respective opposite ends by welds 16a to the reinforcing members 15. Each of the members 15 and supports 16 are preferably made from aluminum tubing the same as the gate frame. For purpose of illustration I show two rows of supports 16 but the number of rows will of course vary with the length of the gate. Thus constructed the gate is ready for use and is a rigid and sturdy unit that is light in weight and will not require any maintenance such as tightening or replacing bolts or the like.

The double tubular gate end provided by the end 10 and tubular support member 14 furnishes a much wider bearing surface for receiving a hinge than other gates of similar character. To get the most benefit from this innovation I have made for use with this gate the hinge which is shown generally at 17 in Fig. 2 and which I will now describe. The body portion 18 of the hinge is U-shaped and preferably made from flat metal bar or strap material with its free end portions 19 and 20 shaped in the form of a bolt and being threaded to receive the nuts 21 and 22. A bar member 23 having a depression or concave surface 24 on one side is designed to be mounted on the bolt-like ends 19 and 20 and to be secured thereon by the nuts 21 and 22 as shown in Fig. 2.

The numeral 25 designates an eye bearing member having a reduced neck portion 26 which is welded to the U-portion of the bolt on the outer side thereof and extending perpendicularly therefrom.

In mounting this hinge, its respective U-sides are designed to embrace both the end 10 and member 14 so that the bolt ends project outwardly therefrom. The bar member 23 is then placed on the bolt ends so that the depression 24 engages and conforms to the perimeter of the member 14. Then by applying the nuts 21 and 22 and tightening them in the usual manner, the hinge is securely mounted. Usually one such hinge is used at the upper portion of the gate and one at the lower portion although more than two can obviously be used if necessary. Thus constructed and arranged the eye bearing members 25 can be pivotally mounted on the lugs 27 or the like secured to a supporting member which I have illustrated by the post 28.

It is pointed out that the hinge 17 embraces and engages not only one-half of the end member 10 but together with the bar member 23 it embraces and engages substantially one-half of the member 14 so that a maximum bearing surface is utilized on the tubular structure used for this gate. No holes are drilled in the gate

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itself for bolts or the like nor are screws placed therein so that the full strength of the gate is unimpaired. The gate with hinges mounted may be completely removed for transportation or storage, if desired, without disassembly of any portion and without the use of any tools.

Some changes may be made in the construction and arrangements of my gate without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. A gate of substantially rectangular form composed of a pair of tubular end members and a pair of tubular side members integrally connected at the respective corners, a plurality of relatively closely spaced parallel tubular reinforcing members integrally joined at their respective opposite ends to said end members, and a plurality of tubular spacer support members arranged between said reinforcing members in alignment and substantially parallel to said end members and each integrally joined at their respective ends to said reinforcing members.

2. A gate of substantially rectangular form composed of a pair of tubular end members and a pair of tubular side members integrally connected at the respective corners, a plurality of relatively closely spaced parallel tubular reinforcing members integrally joined at their respective opposite ends to said end members, and a plurality of tubular spacer support members arranged between said reinforcing members in alignment and substantially parallel to said end members and each integrally joined at their respective ends to said reinforcing members; said integral connections of said reinforcing members comprising welds extending throughout the substantially entire cross sectional area of the member to which it is attached.

3. A gate of substantially rectangular form composed of a pair of tubular end members and a pair of tubular side members integrally connected at the respective corners, a plurality of relatively closely spaced parallel tubular reinforcing members integrally joined at their respective opposite ends to said end members, and a plurality of tubular spacer support members arranged between said reinforcing members in alignment and substantially parallel to said end members and each integrally joined at their respective ends to said reinforcing members; said integral connections of said spacer support members comprising welds extending throughout the substantially entire cross sectional area of the member to which they are attached.

4. A gate of substantially rectangular form composed of a pair of tubular end members and a pair of tubular side members integrally connected at the respective corners, a plurality of relatively closely spaced parallel tubular reinforcing members integrally joined at their respective opposite ends to said end members, and a plurality of tubular spacer support members arranged between said reinforcing members in alignment and substantially parallel to said end members and each integrally joined at their respective ends to said reinforcing members; said integral connections of said reinforcing members and said spacer support members comprising welds extending throughout the substantially entire cross sectional area of the member to which they are attached.

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5. A gate as defined in claim 1 wherein said tubular members are formed from a non-ferrous material.

6. A gate as defined in claim 2 characterized by a support member and means on one of said end members for mounting said gate to said support member.

7. A gate of substantially rectangular form composed of a pair of tubular end members and a pair of tubular side members integrally connected at the respective corners, a tubular support member integrally connected at its respective opposite ends to said side members and similarly connected intermediate its ends to one of said end members, a plurality of relatively closely spaced parallel tubular reinforcing members integrally joined at their respective opposite ends to one of said end members and to said tubular support member, a plurality of tubular spacer support members arranged between said reinforcing members in alignment and substantially parallel to said end members and each integrally joined at their respective ends to said reinforcing members, a gate support member, and a hinge means carried by said tubular support member and its integrally connected end member pivotally mounted to said gate support member.

8. A gate of substantially rectangular form composed of a pair of tubular end members and a pair of tubular side members integrally connected at the respective corners, a tubular support member integrally connected at its respective opposite ends to said side members and similarly connected intermediate its ends to one of said end members, a plurality of relatively closely spaced parallel tubular reinforcing members integrally joined at their respective opposite ends to one of said end members and to said tubular support member, a plurality of tubular spacer support members arranged between said reinforcing members in alignment and substantially parallel to said end members and each integrally joined at their respective ends to said reinforcing members, a gate support member, and a hinge means carried by said tubular support member and its integrally connected end member pivotally mounted to said gate support member; said hinge means consisting of a U-shaped rigid strap member embracing said end member and said tubular support member secured thereto, a bar member arranged on the free ends of said U-shaped hinge member and detachably secured thereto so as to frictionally engage a portion of said tubular support member, and a bearing eye secured to and extending from said U-shaped strap member.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
113,998	Garrett	Apr. 25, 1871
895,462	Hoskins	Aug. 11, 1908
987,574	Heggen et al.	Mar. 21, 1911
1,101,547	Hofer	June 30, 1914
1,647,406	Henry	Nov. 1, 1927
1,656,127	Sargent	Jan. 10, 1928
1,847,822	Denton	Mar. 1, 1932
2,182,548	Bash	Dec. 5, 1939
2,529,008	Flory	Nov. 7, 1950

FOREIGN PATENTS

Number	Country	Date
23,203	Australia	Oct. 25, 1929