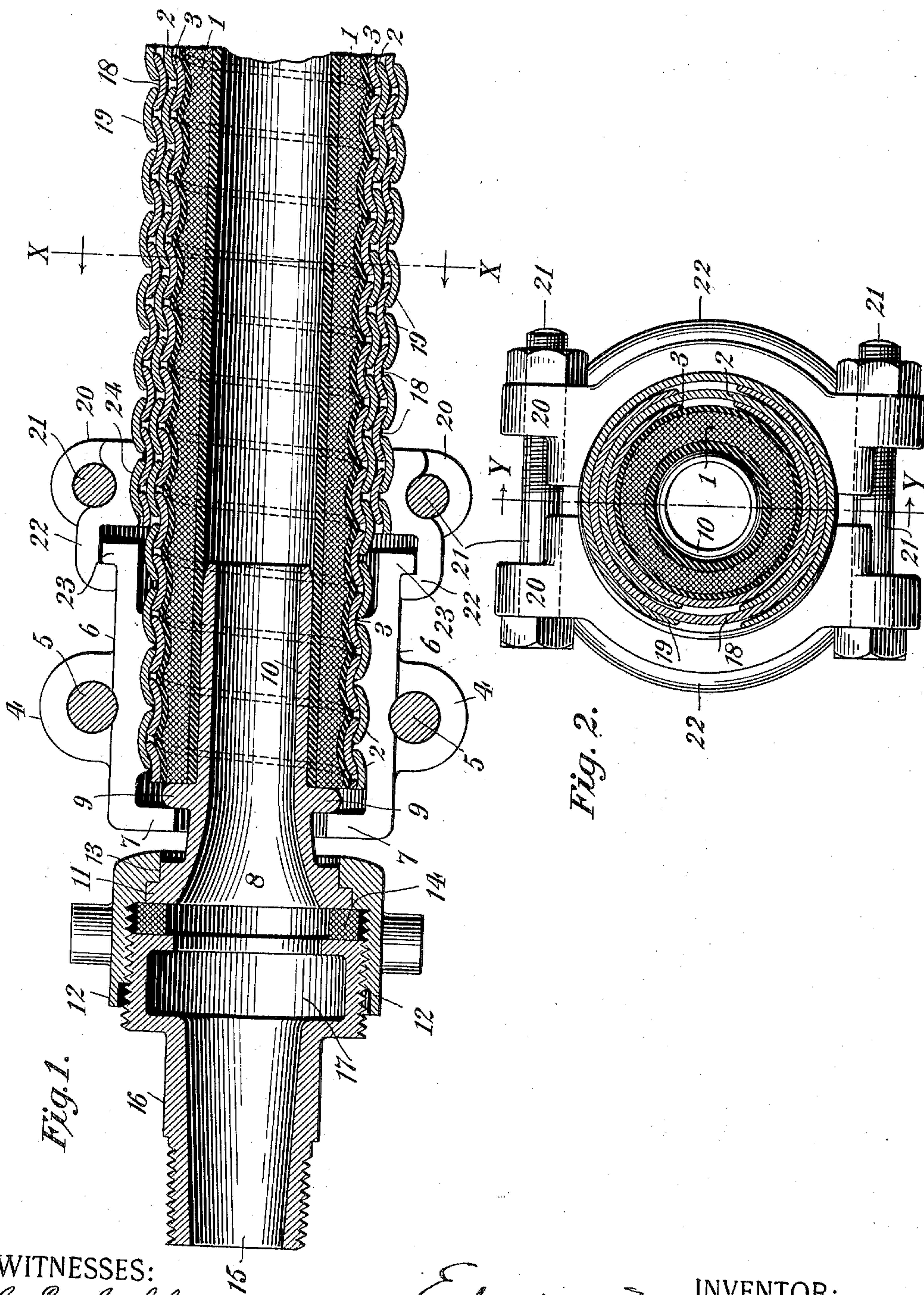


No. 817,060.

PATENTED APR. 3, 1906.

E. T. GREENFIELD.  
HOSE.

APPLICATION FILED APR. 24, 1905.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

EDWIN T. GREENFIELD, OF MONTICELLO, NEW YORK.

## HOSE.

No. 817,060.

Specification of Letters Patent.

Patented April 3, 1096.

Application filed April 24, 1905. Serial No. 257,071.

*To all whom it may concern:*

Be it known that I, EDWIN T. GREENFIELD, a citizen of the United States, residing at Monticello, county of Sullivan, and State of New York, have made a new and useful Invention in Hose, of which the following is a specification.

My invention is directed particularly to an improvement in means for giving increased strength to such parts of a hose as are subjected to extreme bending effects, and especially at points where the same is connected to a coupler, and therefore necessarily subjected to great strain, and will be fully understood by referring to the accompanying drawings, in which—

Figure 1 illustrates a longitudinal sectional view of a flexible armored hose and a coupling connection, such as is disclosed in a prior application filed by me on the 12th day of January, 1905, and bearing Serial No. 240,722, my improvement being applied thereto. Fig. 2 is a transverse sectional view taken through Fig. 1 on the line X X and as seen looking thereat from right to left in the direction of the arrows.

Referring to the drawings in detail, in which like numerals represent like parts wherever used, 1 2 3 represent a flexible hose and the interlocking armor therefor of what is known in the art as the "Greenfield armored hose," disclosed in a prior patent granted to me by the United States Patent Office on the 8th day of December, 1903, and numbered 746,630.

6 6 represent half or two-part coupling-rings which are screw-threaded internally to conform to the spiral or screw-threaded conformation of the armor-strips 2 3, said rings being provided with a pair of lugs or ears 4 4, adapted to receive bolts 5 5. Each half or two-part coupling-ring is provided at one end with an internally-projecting shoulder 7, adapted to bear when in locked position against a ring-shaped part 9, integral with a connecting-sleeve 10, bell-mouthed, as shown at 8, and provided with cylindrical shoulders 11 and 13, 12 being a connecting-ring screw-threaded internally and provided externally with radially-disposed integral lugs or pins for effecting the manipulation of the ring by a pipe-wrench.

14 is a water-tight gasket adapted to make a water-tight joint between the inner end of the cylindrical shoulder 11 and the abutting end of the coupling connection 16 of a hy-

drant, said connection being screw-threaded at its exterior end and cone-shaped interiorly, as shown at 15, 17 being an enlarged chamber near the outer end of the coupling connection.

The parts so far described constitute the subject-matter of the before-mentioned application and are simply shown and described here for the purpose of illustrating the improved means of strengthening a hose at the point where it is secured to a coupler or at such point as may be subjected to frequent great bending strain. This means constitutes in the present instance a flexible sleeve composed of interlocking metal strips 18 19, similar in all respects to the armor composed of the two strips 2 3, except that of course this sleeve is of proper diameter to fit snugly about the entire armored hose in the manner shown. This two-part coupling-sleeve is provided with externally-disposed shoulders 23.

20 20 represents a second or supplemental two-part coupling-ring screw-threaded internally with one or more threads 24, having the pitch of the spirally-disposed interlocking metal strips 18 19 and provided each with internally-projecting shoulders 22, adapted to grip the corresponding externally-projecting shoulders 23 of the two-part coupling-ring 6. 21 21 are bolts extending through the bolt-holes in lugs or ears of this second two-part coupling-ring, said bolts being provided with nuts, as clearly shown in Fig. 2.

The parts of the structure are put together as follows: The strengthening-sleeve composed of the interlocking metal strips 18 19 is first screwed into position over the end of the hose a distance substantially equal to the length of the two-part coupling-sleeve. The end of the hose is then forced over the connecting-sleeve 10 until the lined portion thereof abuts firmly against the ring-shaped part 9, after which the two-part coupling-ring is locked in position through the agency of bolts 5 5 in the manner disclosed in the before-mentioned application and as is perfectly obvious on inspection of the drawings. The second pair of two-part coupling-rings is then secured in place, with the internally-projecting shoulders 22 locking against the externally-projecting shoulders 23 of the first pair of two-part coupling-rings and with the corresponding screw-threads 24 thereof firmly secured against the outer surface of the flexible strengthening-sleeve through the agency of the bolts 21 21 and a corresponding pair of



nuts, as clearly shown in Fig. 2 of the drawings. Such a strengthening-sleeve by reason of its interlocking relation to the interlocking armor and the hose gives material strength to the same at the point of connection with the coupler, and to such an extent that as I have ascertained there is never any rupture at this point no matter what may be the bending stress put upon the parts.

10 Although I have shown and described my improvement as applicable to armored hose, I do not limit it specifically to this use, as obviously it may be used with flexible hose generally, the essence of my invention lying in the provision of a flexible metallic strengthening-sleeve constructed of spirally-disposed interlocking strips secured about a flexible hose through the agency of interlocking or clamping parts, and my claims are designed 20 to be of such scope as to include such structural devices, although the preferred form is that which is hereinbefore described, and illustrated in the accompanying drawings.

25 Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A flexible armored hose provided with coupling means for securing it to a point of

attachment; in combination with a flexible metal sleeve surrounding the armor and a second coupler which binds the sleeve to the armor and connects it to the first-named coupler.

2. A hose having an armor of interlocking flexible metallic strips; in combination with a strengthening-sleeve composed of similar surrounding interlocking metallic strips, said sleeve being located at a point where the hose is subjected to frequent severe bending strain.

3. A flexible hose having a spirally-disposed armor; in combination with a coupler embracing a connecting-sleeve and a two-part coupling-ring screw-threaded internally; together with a spirally-disposed strengthening-sleeve surrounding the armor and a second two-part coupler adapted to secure the sleeve around the armor and to the first-named coupler.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN T. GREENFIELD.

Witnesses:

C. J. KINTNER,  
M. T. KEATING.