

N. M. BROWN.
EXPANSION HOOP.
APPLICATION FILED MAY 5, 1911.

1,028,325.

Patented June 4, 1912.

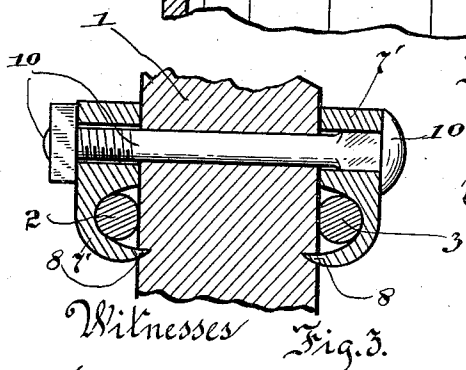
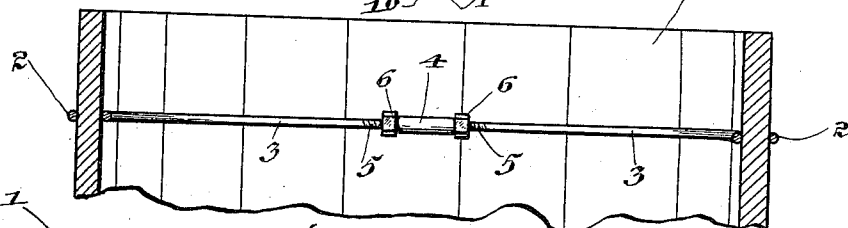
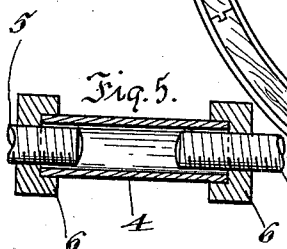
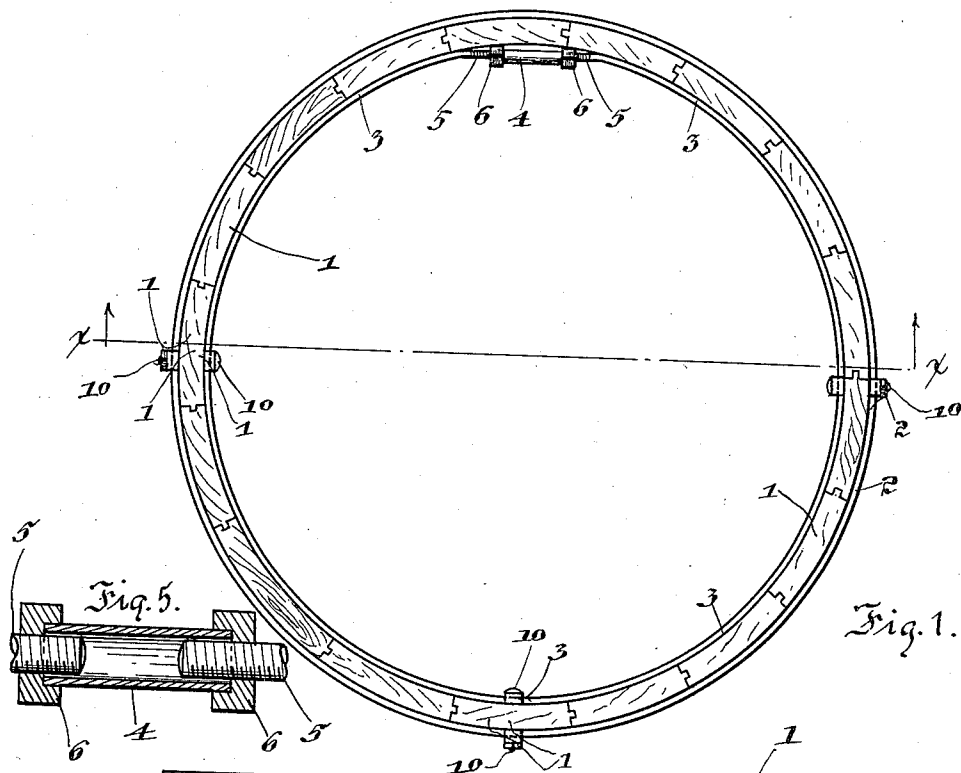


Fig. 2.

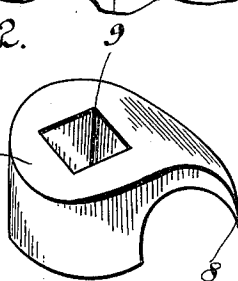


Fig. 4.

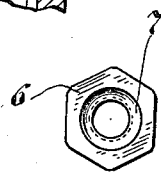


Fig. 6.

Witnesses
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UNITED STATES PATENT OFFICE.

NORTON M. BROWN, OF AURORA, ILLINOIS.

EXPANSION-HOOP.

1,028,325.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, NORTON M. BROWN, a citizen of the United States, and a resident of the city of Aurora, county of Kane, and State of Illinois, have invented certain new and useful Improvements in Expansion-Hoops, of which the following is a specification.

My invention relates to improvements in expansion internal hoops to be applied to the interior walls of tanks such as water reservoirs and silos, the object of the invention being to provide an expansion hoop which may be readily applied to the interior of a tank and expanded therein in an expeditious manner.

A further object of my invention is to provide means for retaining the expansion hoop in any position selected therefor within the tank.

Other objects will appear hereinafter.

With these objects in view my invention consists in an expansion hoop characterized as above mentioned and in certain details of construction and arrangement of parts all as will be hereinafter fully described and more particularly pointed out in the appended claims.

My invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which,

Figure 1 is a top plan view of a silo, tank or reservoir embodying my invention, Fig. 2 is a vertical section of said tank taken on line $x-x$ of Fig. 1, Fig. 3 is a detail vertical section showing the construction and application of the hoop retaining means, Fig. 4 is a detail perspective view of a hoop retainer, Fig. 5 is a central longitudinal section showing the expanding device of the hoop, and Fig. 6 is a detail elevation of an element of said expanding device.

The preferred form of construction of my invention as illustrated in the accompanying drawing comprises a cylindrical tank or silo 1 the walls of which are tongued and grooved together as shown in Fig. 1. Ordinary exterior hoops or bands 2 are provided on the tank and secured thereto in the ordinary manner, the usual tightening clamps therefor being omitted in the drawing. It sometimes occurs during the tightening of the exterior hoops 2 that the walls of the tank buckle or bend in-

wardly in certain places and to prevent this is the principal object of my invention. Expanding hoops 3 are arranged on the interior wall of the tank 1 directly opposite the exterior hoops 2 and when properly expanded effectually resists the tendency of buckling of the tank walls. The expanding device which is provided on each hoop 3 comprises a tubular member 4 which may be formed of ordinary gas pipe. The bore of the member 4 is sufficiently large to receive the threaded ends 5 of the hoop 3 as illustrated in Fig. 5. In order to force the adjacent ends 5 apart for expanding the hoop, a pair of nuts 6 are provided and rotatably mounted on the ends of the member 4, there being a circular recess 7 in each nut 6 whereby the same is easily turned on the ends of the member 4. The nuts 6 may be provided with either right or left hand threads to correspond with the threaded ends 5 and are screwed onto the latter in such a manner as to receive the ends of the member 4. From this construction it is apparent that the hoop 5 may be expanded by turning either one of the nuts 6 in the proper direction.

In order to retain the expanding hoops 3 in planes which coincide with the planes of the exterior hoops 2, a series of retainers 7' are provided which are formed as illustrated in Fig. 4. Each retainer 7' comprises a laterally extending pointed hook 8 which embraces the hoop 5 and penetrates the walls of the tank 1 as illustrated in Fig. 3. Each retainer 7' is preferably provided with a square aperture 9 for the reception of a carriage bolt 10 which secures the outer and inner retainers 7' as indicated in Fig. 3. The retainer 7' provided on the exterior hoops 2 may be omitted if desired, but when provided as shown in Fig. 3 forms a particularly rigid and substantial construction.

The mode of operation for applying and detaching the expanding hoop 5 is as follows: The nuts 6 are first screwed onto the threaded ends 5 a distance sufficient to permit of the positioning of the member 4 therebetween. Then the hoop is positioned on the interior walls of the tank 1 whereupon the nuts 6 are screwed toward the ends of their respective hoop-ends 5, thereby expanding the hoop and causing the same to securely engage the interior tank walls. The retainers 7' may now be applied

which as aforesaid retain or lock the expanding hoops in position.

A tank internal expanding hoop as set forth is simple of construction, strong and durable, and efficient in operation.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. An expanding hoop comprising a cir-

cular member having adjacent threaded ends, nuts on said ends, and a sleeve positioned loosely over said ends and between said nuts, said sleeve bearing at each end upon one of said nuts, substantially as described.

2. An expanding hoop comprising a circular rod having adjacent threaded ends, a sleeve positioned loosely over said ends, and nuts screwed onto said ends and having recesses for the reception of the ends of said sleeve, substantially as described.

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

NORTON M. BROWN.

Witnesses:

ARTHUR A. OLSON,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."