Aug. 21, 1945. F. MAURER ET AL 2,383,402

APPARATUS FOR RUST-PROOFING THE INSIDE OF GASOMETER BELLS

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Fig. 1.

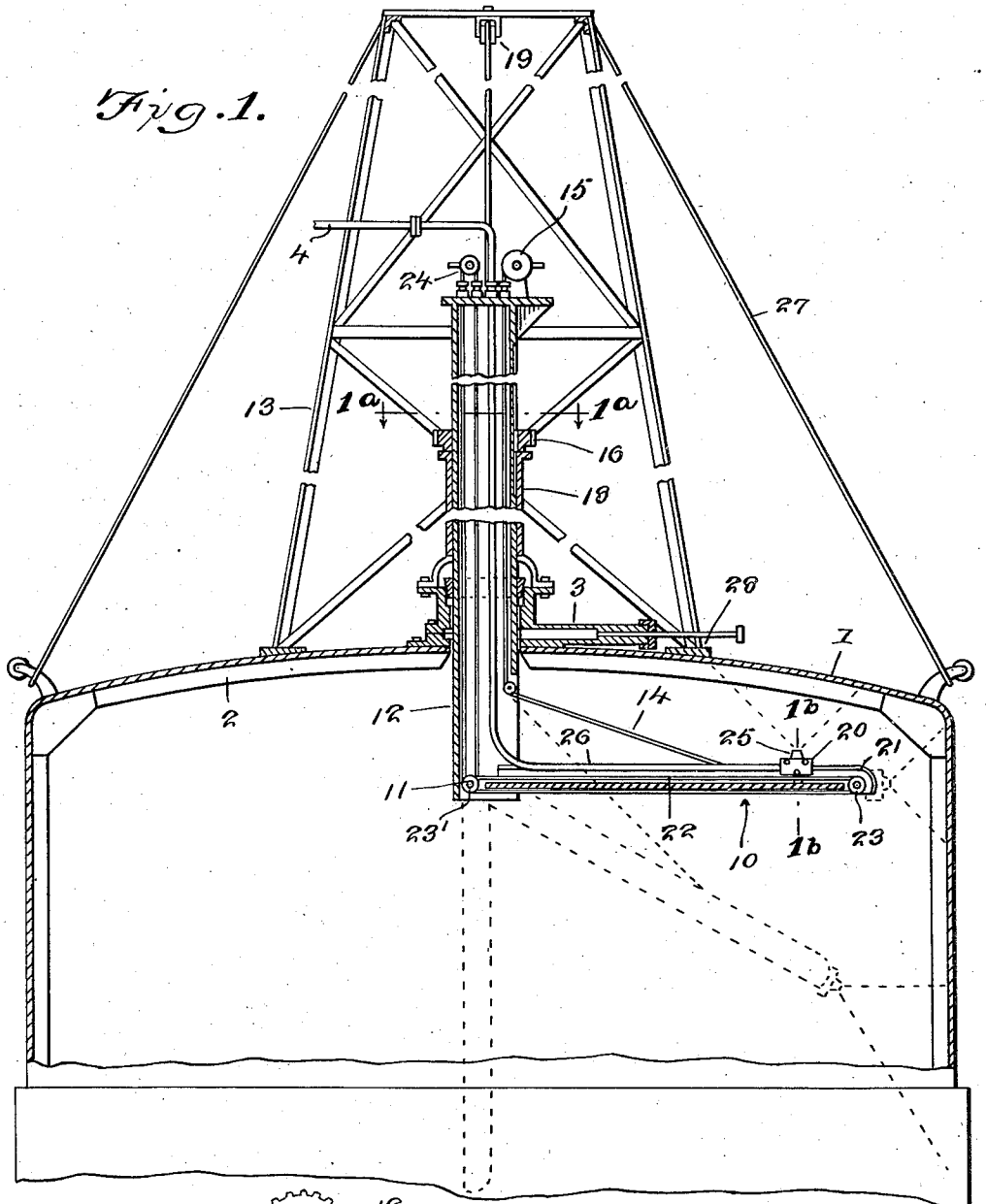
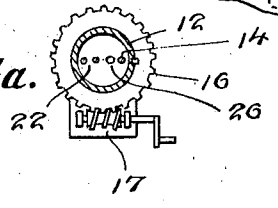



Fig. 1a.



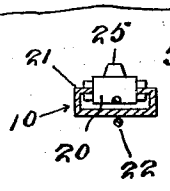




Fig. 1b.

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Fig. 2.

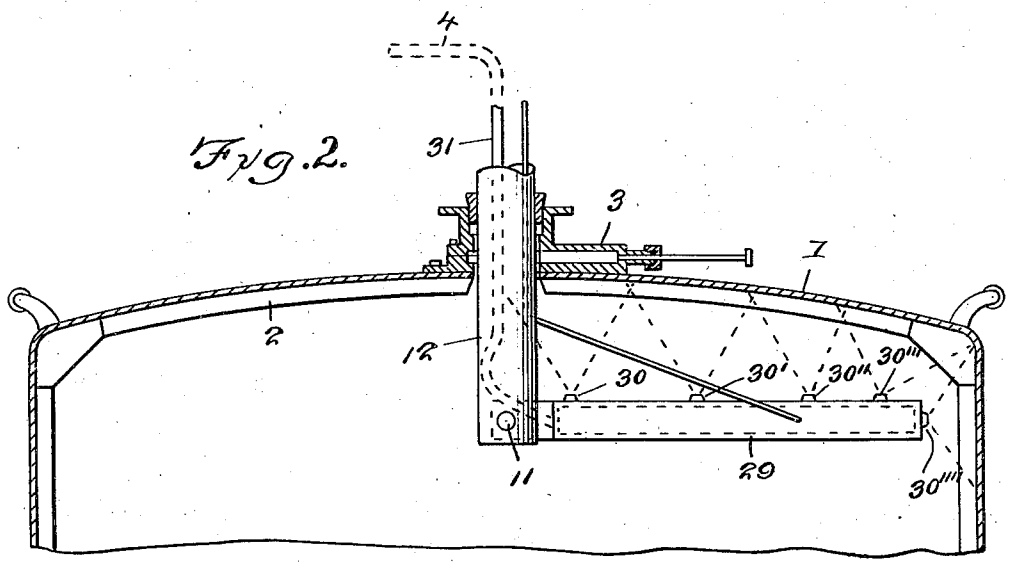
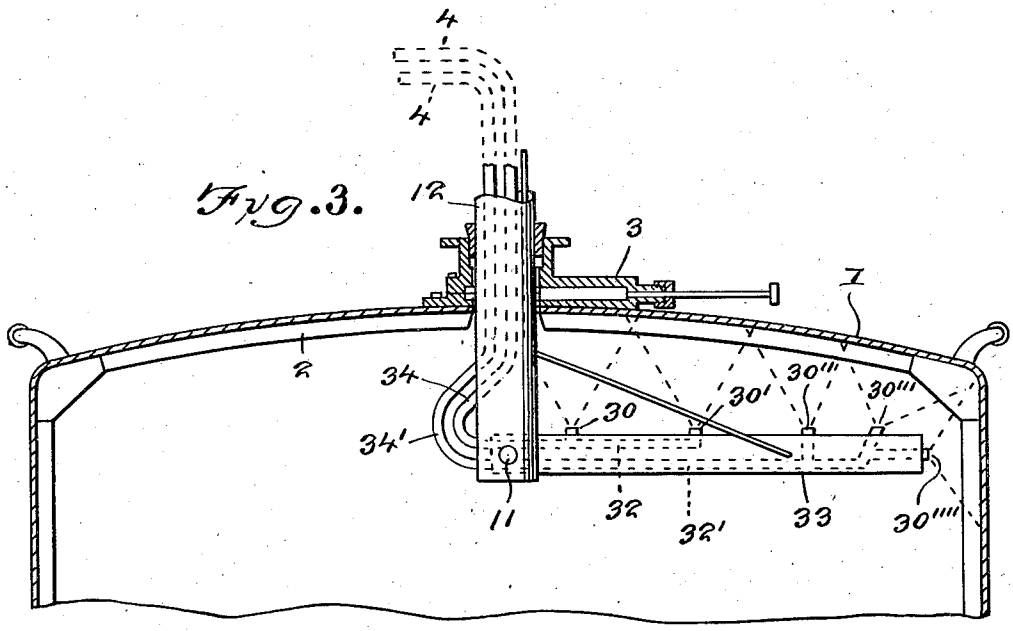



Fig. 3.




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2,383,402

## APPARATUS FOR RUSTPROOFING THE INSIDE OF GASOMETER BELLS

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Application September 28, 1938, Serial No. 232,172
In Germany October 1, 1937

2 Claims. (Cl. 91—44)

Gasometers in which a bell filled with a gas is closed at the bottom by means of a water seal are subjected in a high degree to the risk of rusting, and, therefore, need careful rust protection. Since it is very troublesome and can cause considerable operating loss when a gasometer must be placed out of operation, it was not formerly as a rule possible to renew with rust preventing coating the entire inner side of the gasometer bell, which from the moisture in the gas is especially strongly exposed to rusting. If leaks occur at the seams or rivets between the several sheets from rust or deterioration of the packing strips, then gas losses arise by way of the covering or bell, which can become important in extent.

By the following described process and apparatus a rotatory spraying apparatus with one or more nozzles is introduced through a slide valve or short piece of tube attached to the gasometer bell and communicating with the interior of the bell, through which apparatus the rust preventing liquid can be applied to the inner surfaces of the bell even during the use or operation of the gasometer.

In the drawings forming part of this description of the invention, four modifications of apparatus embodying the invention are illustrated. In these drawings

Fig. 1 illustrates one embodiment of our invention with a hinged or jointed spraying apparatus applied to a gasometer, said spraying apparatus comprising a movable spraying nozzle.

Figs. 1*a* and 1*b* are detail views showing the boom rotating means and the nozzle support, respectively, the same being taken sectionally along section lines 1*a*—1*a* and 1*b*—1*b*, respectively.

Figures 2 and 3 illustrate respectively two other forms of the invention having jointed or hinged spraying apparatus with spraying nozzle in fixed position in the spraying apparatus.

In Fig. 1 we have illustrated a sprayer adapted for use in a large gasometer.

This apparatus consists essentially of the rocking boom 10 with hinge or pivotal connection 11 on the rotatable column 12 which is suspended from the towerlike superstructure 13 resting upon the container bell 1.

By means of the pivotal connection 11 and the steel-wire rope or cable 14 the boom 10 can be placed in any position from a vertical position directly below the column 12, in which position the boom 10 and the column 12 are introduced into the gasometer, to almost a vertical position above the lower end of the column 12, as shown in broken lines in Figure 2. The adjustment of the boom 10 is effected by means of cable 14 wound upon a winch 15 of usual construction. The winch 15 is attached on the end of the part of the rotatable column 12 which projects out of the container. The wheeling around of the boom 10 takes place by a suitable known driving gear, the wheel 16 of which sits slidingly on the rotatable column 12 and the worm 17 of which is fast upon the bearing column 18 screwed to the gas holder bell. Owing to the wheel 16 of the driving gear being slidably attached upon the column 12, the lowering or raising of the apparatus in the working position is rendered possible by means of the block and tackle 19 suspended on the towerlike superstructure 13.

The boom 10 serves for the reception of a sliding carriage 20 movable longitudinally thereof in track 21, said carriage being provided with a spraying nozzle 25. The carriage 20 can be moved from the middle to the ends of the boom 10 or inversely by an endless towing line 22 which passes over the guiding roller 23 and roller 23′, and rising in the column 12 is wound upon or off of a drum 24.

The free end of the boom 10 is so formed that the sliding carriage 20 can be tilted from a horizontal to a vertical position, whereby the device may also be used to spray the vertical walls. The position of the sliding carriage 20, the inclination of the boom 10 and its position upon rotation, as well as the depth of the apparatus are indicated in known manner by apparatus corresponding to the object in view.

By this regulation of the different movements an exact, uniform and economical distribution of the rust preventing agent in all corners and joints of the bell 1 and of the rafters 2 is effected. The supply of the working material to the nozzle 25 built in the sliding carriage 20 takes place through a flexible pipe or hose 26 situated on the boom 10 between the sliding carriage tracks 21. This hose extends upwardly in the column 12, connecting with the inlet pipe 4, and contains enough slack to follow the motion of the carriage 20 to the free end of the boom 10.

By means of the guys 27 the stability of the superstructure 13 and of the whole apparatus is made certain.

In order not to call excessively upon the covering 1 of the gas holder, the load of the superstructure 13 and of the apparatus proper is distributed uniformly by a stiff carrying frame 28 upon the rafters 2 of the bell 1.

A further possibility of the modification of the spraying apparatus illustrated in Figure 1 is shown in Figure 2. Instead of a boom **10** for receiving a movable nozzle **25** there is a tube **29** along the length of which at certain distances several nozzles **30**, **30'**, **30''**, etc., are built in, which can be set in operation either all simultaneously, according to Figure 2, or in groups of 2 of 3 of the row as illustrated in Figure 3. In the case of simultaneous connection of all the nozzles **30**, **30'**, etc., the working material is led to them through the interior of the tube **29**, which is connected with the inlet pipe **4** by a hose **31** rising in the columns **12**. In the case of connecting the nozzles in groups, as shown in Figure 4, as many small conducting tubes **32**, **32'**, etc., are disposed inside of the boom **33** formed as a tube as there are groups of nozzles present. The connection between the individual conducting tubes **32**, **32'**, etc., built in the boom **33**, and the inlet pipe **4** outside of the container is established by as many hoses **34** and **34'**, etc., rising in the column **12** as there are conducting tubes **32**, **32'**, etc., present. The tubular booms **29** and **33**, shown respectively in Figures 2 and 3, are hinged or pivotally connected to the rotatable column **12** in the same manner as boom **10** in Figure 2 is connected to the column **12**.

The mode of operation of the spraying apparatus illustrated in Figure 1 is as follows:

If the guiding tower **13** and the carrying frame **28** are erected upon the moving bell **1** of the gasometer, and the spraying apparatus with the aid of the block and tackle **19** suspended from the tower **13**, either in folded up or extended condition, is introduced into the bell **1** through the valve **3** and the bearing column **18**, then the boom **10** is brought into working position by the winch **15** and the cable **14**. If the rust preventing liquid is pumped under pressure through the inlet pipe **4** and the hose **26** to the nozzle **25**, which in its initial position is at the middle of the boom **10**, then by simultaneous rotation of the column **12** the rust preventing material is distributed uniformly upon the inner surface of the gasometer bell **1** in a circular ring surface. This process with displacement of the nozzle **25** is repeated until the roof as well as the cylindrical portion or vertical wall portion of the bell **1** is treated with a plurality of annular coatings lapping over one upon the other. By using the boom shown in Figures 3 and 4 the entire inner surface is treated in one or two operations.

Any of the known rust preventing or inhibiting liquids can be used for coating of the gas holder bells so long as they can be sprayed.

We claim:

1. In an apparatus for coating the inside of a gasometer bell, having a substantially central opening in its top, means at said opening forming a sealed bearing, means for spraying liquid onto the inner wall of the bell, said spraying means including a tubular support extending through said bearing into said bell, means for rotatably and slidably mounting said support in said bearing, a boom pivotally mounted at the inner end of said support for swinging movement in a plane passing through the longitudinal axis of said support, said boom being formed with a longitudinal guide, piping extending through said support and along said boom, jet means carried by said boom in communication with said piping for forming a spraying jet directed toward the wall of said bell, said jet means comprising a nozzle slidable along said guide, and means for swinging said boom about its pivotal support.

2. The combination as set forth in claim 1 wherein said last named means is a flexible cord extending from said boom through said tubular support to a point outside said gasometer bell.

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