

April 18, 1944.

W. H. KUSTER ET AL

2,346,973

KETTLE MOUNTING AND CONTROL MEANS

Filed Aug. 7, 1942

2 Sheets-Sheet 1

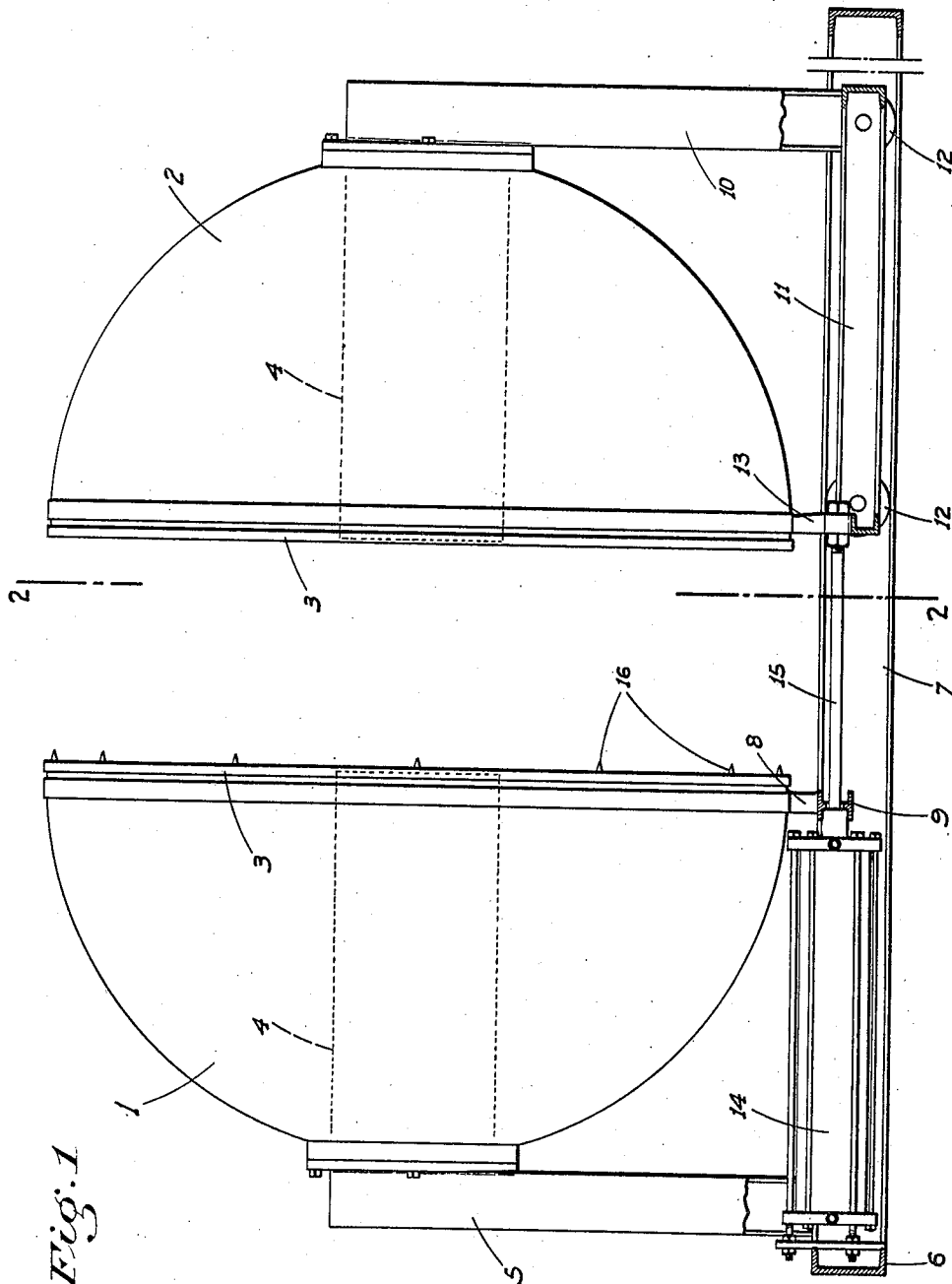


Fig. 1

INVENTORS
Wm H. Kuster
Edwin A. Glynn

Herbert Herbert
ATTORNEYS

April 18, 1944.

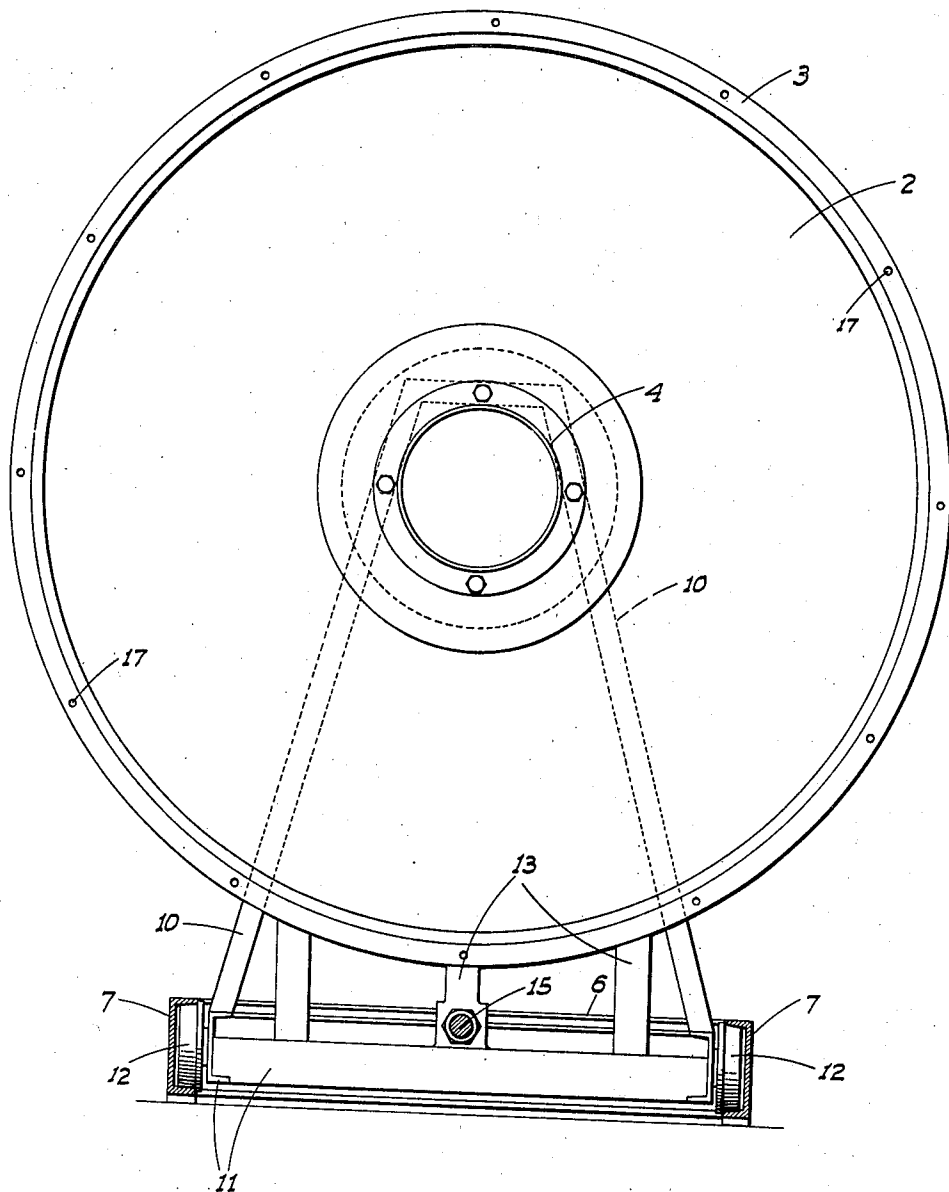
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2 Sheets-Sheet 2

Fig. 2



INVENTORS
Wm H. Kuster
Edwin A. Glynn
BY
Wm H. Kuster
ATTORNEYS

UNITED STATES PATENT OFFICE

2,346,973

KETTLE MOUNTING AND CONTROL MEANS

William H. Kuster, San Francisco, and Edwin A. Glynn, Lodi, Calif.

Application August 7, 1942, Serial No. 454,058

1 Claim. (Cl. 18—6)

This invention relates to vulcanizing apparatus of that type which includes a pressure-tight drum or kettle in which the goods to be vulcanized are placed; vulcanizing being effected by a heated gas circulated under considerable pressure through the kettle.

The present invention deals with apparatus of this character of large size and capacity for vulcanizing tires, so that a number of tires may be vulcanized at one time, and the main object of the present invention is to construct the kettle in the form of two separate sections, to mount these sections for relative movement to and from each other, and to provide power means for controlling such movement, which—due to the large size of the kettle and its consequent weight—would be hard to quickly and efficiently perform by manual means.

A further object is to construct the kettle sections of such form that they may readily withstand high pressure without necessitating that they may be made of very heavy material and without the necessity of internal bracing.

A further object of the invention is to provide a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects we accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation partly in section of my improved vulcanizing kettle and its mounting means, the kettle sections being shown separated.

Figure 2 is a transverse section on the line 2—2 of Fig. 1.

Referring now more particularly to the characters of reference on the drawings, the kettle comprises a pair of separate shell sections 1 and 2 disposed in open facing relation with each other and with their line of separation in a vertical plane, and here shown as being substantially semi-spherical. The sections at adjacent ends are provided with flanges 3 adapted to abut when the kettle is closed and to be then locked against separation by the unit shown in our copending application, Serial No. 454,060, filed August 7, 1942. Each section has a horizontal axial tubular member 4 secured therein from which tires to be vulcanized may be supported in any suitable manner.

The section 1 is mounted in a fixed position by means of standards 5 secured on and depending in diverging relation from the outer end of the section to and rigid with a base frame 6 below the kettle. This frame includes longitudinal inwardly facing side channels 7 of considerably greater length than the kettle and extending from the section 1 in the direction of separating movement of the section 2 relative to said section 1. At its open end the section 1 is supported from the base by one or more depending posts 8 disposed just back of the flange 3 and mounted on a cross beam 9 extending between the channels 7. The shell, however, merely rests on and is not connected to the posts.

Depending from the outer closed end of the section 2 is a standard 10 having diverging legs which at their lower end are secured on the side rails of a rectangular carriage 11 which is disposed between the channels 7 and is provided with longitudinally spaced rollers 12 on each side riding in said channels. The section 2 is also supported at its open end from the carriage 11 by a central depending post 13 disposed back of the corresponding flange 3 so as not to interfere with the operation of the locking unit.

Movement of the section 2 toward and from the section 1 is controlled by a power mechanism, here shown as being a hydraulic or air unit which comprises a cylinder 14 extending lengthwise of the frame 6 centrally between the channels 7 or directly below and parallel to the axis of the kettle. This cylinder is supported against movement from the outer end of the frame 6 and also from the cross beam 9, the cylinder terminating adjacent said beam. The piston rod 15 of the cylinder projects therefrom and extends through and is secured in the post 13, so that the moving pressure is distributed evenly to the carriage 11 and to the section 2.

By reason of this arrangement therefore it will be seen that the section 2 may be moved away from the section 1 any necessary distance, depending on the length of the cylinder and the carriage guiding channels or rails 7, in order to provide an unobstructed space for the ready moving of tires into and out of the kettle.

The use of a power unit also enables the sections to be brought and held together with the flanges 3 in close engagement so as to facilitate the operation of the device employed to then lock the flanges together.

In order to centralize the flanges 3 when brought together, the flange 3 of one section has tapered locating pins 16 adapted to engage simi-

larly shaped sockets 17 in the flange 3 of the other section. This arrangement assures proper alining of the flanges with each other and counteracts any possible sag or distortion of the flange out of round, due to its own weight and other factors, when made relatively light and incorporated in a large diameter kettle.

From the foregoing description it will be readily seen that we have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

Having thus described our invention, what we claim as new and useful and desire to secure by Letters Patent is:

A vulcanizing kettle structure comprising a

horizontal base which includes spaced side channels, a pair of hollow substantially semispherical kettle sections above and close to the base, and disposed with their open ends in vertically facing relation, a carriage supported by and movable along the channels, rigid connections between the carriage and one section at both ends of the latter, a power cylinder fixed with the base under the other kettle section, a piston rod projecting from the cylinder and connected to the carriage, standards secured on said other section at its outer end centrally thereof and diverging to the base in straddling relation to the cylinder, a cross beam on the base in front of the cylinder and under the inner end of the other section and transversely spaced posts upstanding from the cross beam and supporting said other section adjacent its inner end.

WILLIAM H. KUSTER.
EDWIN A. GLYNN.