To all whom it may concern:

Be it known that I, Joseph J. Elms, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Automatic Ball-Jointed Trip Posts for Well Equipment, of which the following is a specification.

This invention relates to trip make up posts for oil or water well equipment and refers more specifically to an automatic ball jointed trip up post for such wells.

An object of the invention is to provide a device of this character which will effectively trip and allow the pipe tongs to pass over in the pipe assembling operation and prevent thread stripping in the pipes or joints due to overstrain.

A feature of the invention lies in the ball joint arrangement and the associated elements and the facilities provided for the proper adjustment of the various parts of the invention, as the same is adapted to be used in connection to a rotary table of the ordinary type.

A further feature of the invention is the simplicity thereof, being constructed of but few and simple working parts and with a view of economy.

Other objects and features as well as those above mentioned will be set forth and described in the course of the following description, in which the annexed drawings form a part, wherein:

Figure 1 represents a cross-sectional view of the invention showing the interior construction thereof, and to illustrate clearly the tension means comprising the adjusting principles of the invention.

Figure 2 represents the adjusting rod and chain providing for the necessary tension on the ball joint.

Figure 3 is a side elevational view of the invention assembled for use.

Figure 4 represents the invention as it is used in connection with a pipe tongs attachment, showing the same as it is applied thereto.

Figure 5 is a view of the upper portion of the invention showing the ball joint as it appears when broken over.

In the course of the following description, similar characters of reference are used to indicate various new and novel features of the invention, throughout the different views, wherein 1 denotes the body of the invention comprising a hollow metal tube, provided on its inner surface with an offset 2, the purpose of which will be described more fully hereinafter.

The tool is placed vertically in the rotary table 3, and spaced apart from the casing, as clearly illustrated in Figure 4 of the drawings. The lower element 3 is adapted to be inserted in this hole. This lower element, it will be observed, may be detached from the body 1 being held thereon by the small set screw indicated by the numeral 5, this detachable feature is for the purpose of adjusting the tension on the ball joint by a suitable wrench, such as an ordinary socket wrench.

Situated on the upper portion of the body 1 of the device is a ball jointed trip post 4, which is adapted to operate in a seat provided for this purpose and indicated by the numeral 8, and is held in position thereon under tension by a length of steel chain 9 secured thereto and upon the lower end of which is connected a rod 5. This rod is provided with threads 6 to accommodate an adjusting nut 7.

Around the base of the ball of the ball joint 4, is tooled an annular groove 9, also illustrated in Figures 1 and 5. When the joint 4 is tripped, this groove is engaged by the edge of the seat 8 in the body of the device, thereby preventing the joint from going too far over the side and catching thereon.

In operation, the device is placed in the rotary table of the ordinary type as illustrated in Figure 4, the table revolves carrying the post around with the trip post ball joint 4 against the tongs 9, which effectively screws the pipe joint into place. When the operation is completed and the pipe joint is substantially screwed into place, the ball joint 4 trips over, allowing the tongs to pass freely over, after which the ball joint returns to its normal position as shown in Figure 3.

The device is provided with a handle 10, in order that the same may be more efficaciously handled.

It is obvious therefore, in view of the above, that the pipe joint may be substantially screwed into place without danger of stripping the threads in either the joint or on the casing, which disadvantage is often encountered in other types of trip posts wherein the automatic releasing principle,
brought out as features of this present invention are not made use of.

It should be understood that minor changes in the arrangement and construction of the invention may be made without departing from the spirit and intent of the invention and in keeping with the scope and meaning of the following claims:

1. In combination with the rotary of well drilling apparatus, a trip make-up post including a hollow post having a socket in its upper end; tension means within the hollow portion of said post; a ball being engaged by said tension means and having a tong engaging extension thereon, disposed in said socket; means for holding said ball in the socket under tension by said tension means, and means for adjusting the latter to vary the said tension on the tong engaging means.

2. In combination with the rotary of a well drilling apparatus, a trip make-up post comprising a hollow post having a ball jointed tong engaging extension thereon; a rod within the post having flexible connection with said tong engaging extension; a spring surrounding the rod and engaging shoulders within the post, and means on the rod to adjust the tension of the spring to effect the resisting force of said tong engaging extension.

In testimony whereof I have signed my name to this specification.

JOSEPH J. ELMS.