This invention relates to pipe spiders for oil wells and the like, and particularly represents an improvement over the structure shown in my previous patent, No. 2,053,378, dated December 8, 1936, although its usefulness is by no means limited to that particular spider.

In pulling pipe from a well, the slips are necessarily spread to allow the sections of pipe and their coupling collars to pass through the slips. Under certain conditions, however, as when uncoupling sections above the spider, (with the slips again closed about the pipe) the uncoupled stands when elevated is liable to momentarily lift the whole string below. This causes the slips to spread, and the string is apt to then drop through the spider to the bottom of the well. This, of course, is a highly undesirable occurrence, as those in the industry well know.

It is therefore the principal object of the present invention to eliminate the possibility of such occurrences by the provision of spring means applied to the slips in such a manner that the slips will automatically tend to move to and remain in a pipe clamping position so that slippage and loss of pipe is prevented. At the same time, there is no interference with any intentional raising or lowering of the slips.

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

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

The figure on the drawing is a transverse section of a spider showing my improved spring means applied thereto.

Referring now more particularly to the characters of reference on the drawing, the spider here illustrated is generally the same, both in construction and operation, as that shown and described in said aforementioned patent. It comprises essentially a body I, upstanding from a flat base 2 and having a taper bore 3 in which the segmental slips 4 slidably fit.

The slips are raised and lowered by means of a substantially horizontal V-shaped lever overhanging the slips from the back of the body. This lever comprises the spaced slip engaging legs 5 and a handle 6 projecting from their point of junction. A boss 7 rigid with the body projects between the legs and supports the pivot pin 8 of the lever. The manner in which the lever is connected to the slips is clearly shown and described in my previous patent, so that further showing and description is unnecessary here.

When the lever handle is depressed to a predetermined point, the slips are fully spread. When the lever is in such position, a catch notch 9 on a hand released catch arm 10 engages over a catch lug 11 on the lever. The arm is pivoted at its lower end in connection with the body just back of boss 7, and projecting between the legs of the lever just in front of their junction with the handle.

Thus far, the structure described is substantially the same as that of the aforementioned patent.

The improved slip closing feature of the invention comprises a compression spring 12. The upper end of this spring is supported by and rocks on a round-edged crossbar 14 on the under side of the handle near the adjacent end of leg and is located against displacement from the member by a boss 15 depending centrally from the crossbar. The lower portion of the spring is surrounded by a sleeve or socket 16 mounted on and upstanding from an extension 17 of the base 2, the spring at the bottom resting on said extension. The sleeve at the bottom is provided with drain openings 18 for sand, oil, etc. The purpose of the sleeve is to enable a relatively long spring to be used without danger of the spring buckling when compressed by depression of the lever. It also serves as a protector for the major portion of the spring.

By reason of this spring, arranged as described, a constant but yieldable closing pressure is always exerted on the slips as soon as the catch arm 10 is released from the lever. At the same time it obviously does not prevent upward and spreading movement of the slips due to frictional engagement of the slips with a pipe string being pulled.

In addition to the above function, the spring attachment prevents rebound of the slips and pipe when the pipe has been accidentally dropped into the spider. The slips, being always engaged with the pipe, form a wiper for fluid adhering to the pipe, thus keeping any such fluid below the floor level.

Also, the spring instantly arrests downward movement of the pipe if the truck and pulling machine ascend and the clutch is released. The human element of possible inefficiency or carelessness is thus entirely eliminated, and the spring acts as a safeguard in one way or another the entire time the rig is being operated.

From the foregoing description it will be readily seen that I have produced such a device as sub-
stantially 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 claims.

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

1. A pipe spider comprising a body having a bore, slips movable vertically in the bore, a lever, means pivoting the lever intermediate its ends on the body, one arm of the lever being applied to the slips to raise and lower the same, a helical compression spring disposed in the plane of movement of the lever and engaged at one end with the other arm thereof, a support on the body for the other end of the spring said spring being relatively long and acting on said other arm to move the lever in a slip lowering direction, and a sleeve fixed on the support and surrounding the spring for a distance sufficient to prevent lateral buckling thereof when under maximum compression.

2. A structure as in claim 1 including a cross bar on said other arm of the lever and engaging said one end of the spring in relative rocking relation; there being a boss depending from the cross bar and into said end of the spring to locate the same on the cross bar.

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