June 17, 1930. R. V. UHRIG 1,763,872

SLIP

Filed April 4, 1929

Fig. 1.

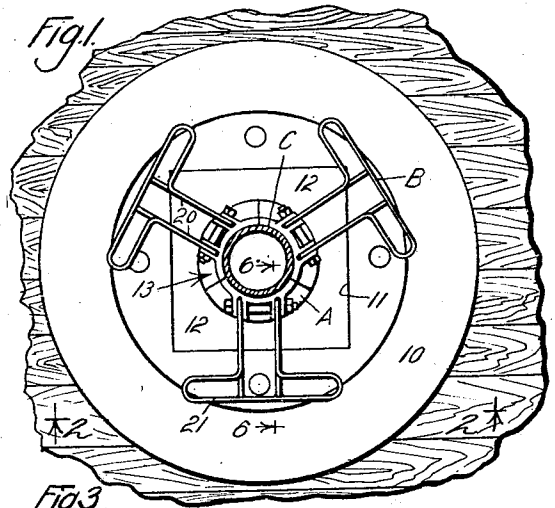


Fig. 2.

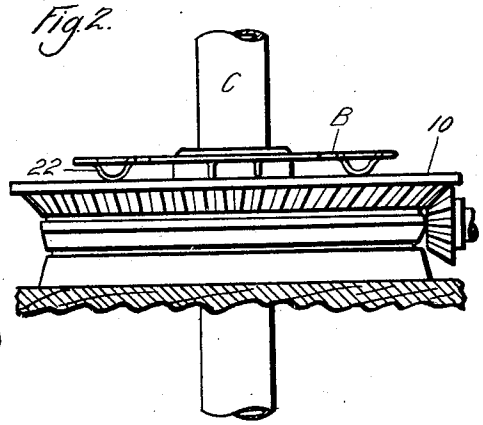


Fig. 3.

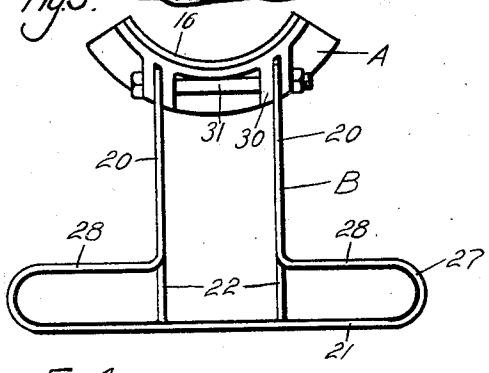


Fig. 5.

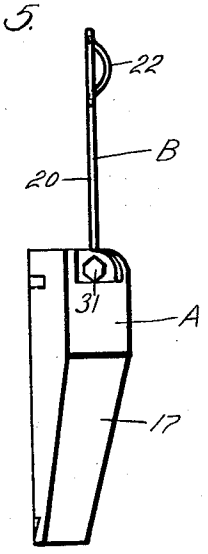


Fig. 4.

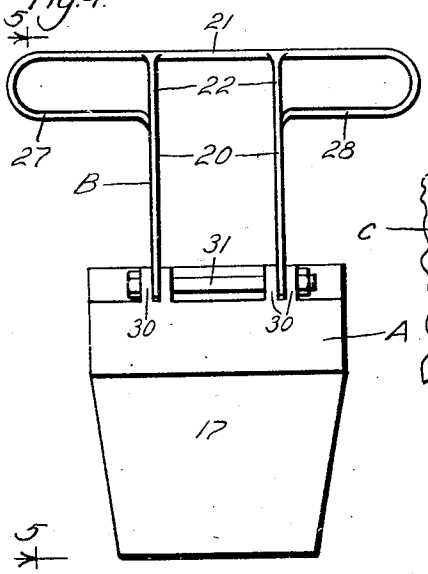
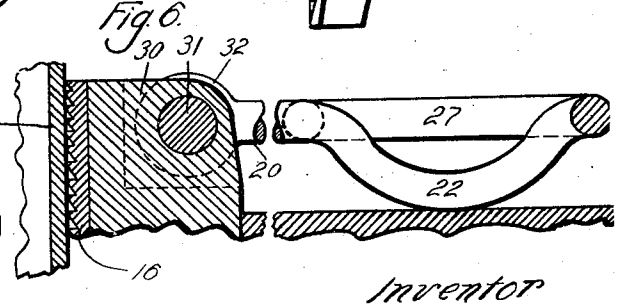


Fig. 6.



Inventor
Richard V. Uhrig
by J. Allen Howell
his Attorney

Patented June 17, 1930 1,763,872

UNITED STATES PATENT OFFICE

RICHARD V. UHRIG, OF ALHAMBRA, CALIFORNIA

SLIP

Application filed April 4, 1929. Serial No. 352,351.

This invention has to do with a slip for use in a rotary table, or the like, and it is a general object of the invention to provide a slip that is easily handled and cannot fall into the well.

In the rotary method of drilling wells it is common to use slips in combination with rotary tables for the purpose of holding or engaging various parts such as casings, tubing, etc. The slips used are segmental wedge members, and are generally used in sets of three or more. The handles provided on the slips are generally either cables or other flexible parts or U-shaped metal bails. In handling the slips it is often very difficult for the operator, usually wearing gloves, to engage or grasp the handles when they rest on the rotary table as the table is often covered with mud, oil, or other material, making the handles slippery. Further, a slip is often accidentally allowed to fall through the rotary table and into the well, in which case it becomes necessary to fish the slips out of the well, an operation which is usually more or less difficult and expensive.

It is an object of the invention to provide a slip having a handle with gripping parts which are free of the rotary table or other supports and always in position to be grasped by the operator.

It is another object of the invention to provide a slip of the character mentioned that cannot be passed or lost through the opening in a rotary table.

Another object of the invention is to provide a slip having an improved, braced handle which is durable and inexpensive of manufacture.

It is a further object of the invention to provide an improved slip that is suitable for use, generally, in rotary tables, spiders, etc., for handling casing, pipe, or the like.

The various objects and features of my invention will be best and more fully understood from the following detailed description of a typical preferred form of the invention, throughout with description reference is had to the accompanying drawings, in which:

Fig. 1 is a plan view of a rotary table showing slips provided by this invention in operating position thereon. Fig. 2 is a side elevation of the rotary table taken as indicated by line 2—2 of Fig. 1 showing the handles of the slips resting on the table. Fig. 3 is a top or plan view of a slip showing the handle in an out, or horizontal position. Fig. 4 is a view of a slip showing the handle in an up, or vertical position. Fig. 5 is a view taken on line 5—5 on Fig. 4. Fig. 6 is an enlarged detailed sectional view taken as indicated by line 6—6 on Fig. 1.

The present invention is particularly useful as applied to or in connection with slips such as are used with rotary tables used in the rotary method of drilling wells. It is to be understood that the invention is also applicable to slips used in connection with spiders for handling pipe, and the like. For purpose of example, I have shown the slips embodying the present invention in operating positions in a typical rotary table 10 having the usual opening 11 to carry bushings. In Figs. 1 and 2 of the drawings I have shown slip bushings 12 in the opening 11 of the table and have shown the slips 13 embodying the invention in position in the bushings 12 to hold a casing C. In the drawings I have shown three slips arranged in the bushings. It is to be understood, however, that the invention can be applied to slips of various sizes and shapes.

The present invention is an improvement in the device described in my co-pending application, Serial No. 289,736, filed July 2, 1928, entitled Slips for rotary table and spiders for handling pipe.

Each slip 13 embodying the present invention includes a main part or slip body A and a handle B. The present invention is concerned primarily with the handle and the combination of slip body and handle. The slip body may be of any suitable form. For convenience, I have shown a popular type of slip in which the body is provided with a detachable inner face 16 to engage a casing, or the like. The outer part or exterior 17 of the body A is formed to seat or bear in the opening in the bushing 12.

The handle B provided by this invention is

attached to the upper end portion of the slip body A and is pivotally mounted to be movable to various positions. In the preferred form of the invention illustrated in the drawings, the handle includes spaced legs 20 pivotally attached to the upper end portion of the body and extending a substantial distance from the body, a transverse or laterally disposed head 21 carried by the legs 20, and supports 22 connecting and bracing the head and legs and adapted to support the head from the rotary table so that it is accessible and in position to be readily gripped.

The legs 20 may be attached to the body A at spaced points and may extend in parallel relation from the body as shown in the drawings. The legs 20 are pivotally connected to the body and may be carried in a single pivot pin 31. In the drawings I have shown the legs 20 carried on a single pivot pin 31 passing through lugs 30 provided at the upper end portion of the body. The pivot pin 31 extends through eyes 32 formed in the inner end portions of the legs 20 and carries the legs so that the handle is movable between an up or vertical position shown in Figs. 4 and 5 and a down or horizontal position shown in Figs. 1, 2, and 6.

The head 21 is carried at the outer ends of the legs 20 and is transversely disposed or arranged at right angles to the legs. The head projects in either direction beyond the legs so that it is wider than the slip body. In practice the extent of the head is considerably greater than the smallest diameter of the opening in the bushing 12 so that the slip cannot possibly pass through the bushing. The head 21 is connected to the legs by connecting parts or extensions 27 of the legs joining the legs with the ends of the head. The head 21 extends laterally in opposite directions beyond the straight parallel portions of the legs 20 and is located outward beyond the ends of said portions of the legs, and therefore the leg extensions 27 are curved and extend laterally from the legs to connect the ends of the head and the ends of the parallel portions of the legs. The leg extensions 27 may have main portions 28 spaced from the head and extending parallel to the head as shown in the drawings. The legs 20, the leg extensions 27, and the head 21 may be formed of a single bar or body of metal, it being obvious how these parts can be easily bent or forged from plain bar stock. It is also obvious that as the head is formed longer than the greatest diameter of the opening in the bushing, that the combination of the slip body and the handle cannot possibly pass through the opening in the bushing.

The supports 22, provided to lend rigidity to the handle construction and to support the head 21 so that it is at all times free of the rotary table, consist of parts formed to project downwardly from or beyond the head, and in the preferred form of the invention they connect the head with other parts of the handle. In the preferred form of the invention illustrated in the drawings, the supports 22 extend between the head 21 and outer ends of the parallel portions of the legs 20. The supports are shown attached to the legs 20 at the points of joinder of the legs and the leg extensions 27. It will be obvious that the supports might extend from the head to other parts of the handle or other parts of the legs including the leg extensions. In the drawings I have illustrated two supports extending from points intermediate the ends of the head to the outer ends of the leg parts 20, and I have shown the supports in parallel alignment with the parallel portions of the legs. There may be any number of supports 22 and they may be otherwise arranged without departing from the broader aspects of the invention. The supports are shown curved downwardly, that is, they extend downwardly when the handle is in the position shown in Fig. 2 of the drawings. It is desirable that the supports be formed so that they support or carry the handle in such a way that the head 21 is a substantial distance above the rotary table when the handle is in the down, or horizontal position shown in Fig. 2 of the drawings. This is governed by the extent to which the supports extend downwardly from the head. The supports 22 are preferably rigidly attached to the head and legs, for instance, they are preferably integral with the head and legs, so that they brace and lend rigidity to the handle construction as well as act as props or rests for the handle when it is in the horizontal position.

From the foregoing description it is apparent that the slip construction provided by my invention is practical and of great utility. The supports 22 not only brace and lend rigidity to the handle, but also act to support or prop the handle so that the head 21 is readily accessible and can be easily gripped by the person handling the slips. The handle is proportioned so that the slip cannot fall through the opening in the rotary table. Further, it is to be noted that the handle is not only safe and convenient to use, but is simple and inexpensive of manufacture.

Having described only a typical, preferred form of my invention, I do not wish to limit myself to the specific details set forth, but wish to reserve to myself any changes or variations that may appear to those skilled in the art or fall within the scope of the following claims.

Having described my invention, I claim:

1. A slip for use in the slip carrying opening of a rotary table including, a body to fit the opening, and a handle on the body including a support for holding it in position to be gripped, the handle having a part

wider than the greatest dimension of the opening.

2. A slip for use in a table including, a body to extend into the table, a handle on the body, and a downwardly projecting member on the handle removed from the body to engage the table to hold a part of the handle away from the table in position to be gripped.

3. A slip for use in a table including, a body to extend into the table, and a handle on the body having a head wider than the body and a support for engaging the table to hold the head spaced above the table.

4. A slip for use in a table including, a body to extend into the table, and a handle on the body having a head wider than the body and spaced supports for engaging the table to hold the head spaced above the table.

5. A slip for use in a table including, a body to extend into the table, and a handle on the body having a head wider than the body and a support attached to the head and engaging the table to hold the head spaced above the table.

6. An integral slip handle including, a leg for connection with a slip, a head, and a downwardly projecting member for holding the head in position to be gripped.

7. A slip handle including, a leg, a head connected with the leg, and a support extending between the leg and head independent of the connection of the leg and head.

8. A slip handle including, legs having parallel portions, a head connected with the legs, and a downwardly projecting support between the head and said leg portions.

9. A slip handle including, legs having parallel portions, a head connected with said leg portions and projecting a substantial distance laterally from said leg portions, and a downwardly projecting support between the head and one of the legs.

10. A slip handle including, legs having parallel portions, a head, extensions on the legs connecting the parallel portions and head, and downwardly extending supports between the legs and the head.

11. A slip handle including, legs having parallel portions, a head, extensions on the legs connecting the parallel portions and the head, and downwardly projecting members extending between the legs and the head in alignment with the said parallel portions.

12. A slip to operate in an opening in a rotary table including, a body to operate in the opening, and a handle on the body including, legs pivotally connected to the body and extending in spaced relation therefrom, a head at the outer ends of the legs disposed transversely thereof and extending in either direction beyond the legs, extensions connecting the legs and the head, and a support extending between the head and the outer end of one leg, there being a portion of said support projecting below the head, the head being wider than the body and wider than the opening in the table.

In witness that I claim the foregoing I have hereunto subscribed my name this 16th day of March, 1929.

RICHARD V. UHRIG.