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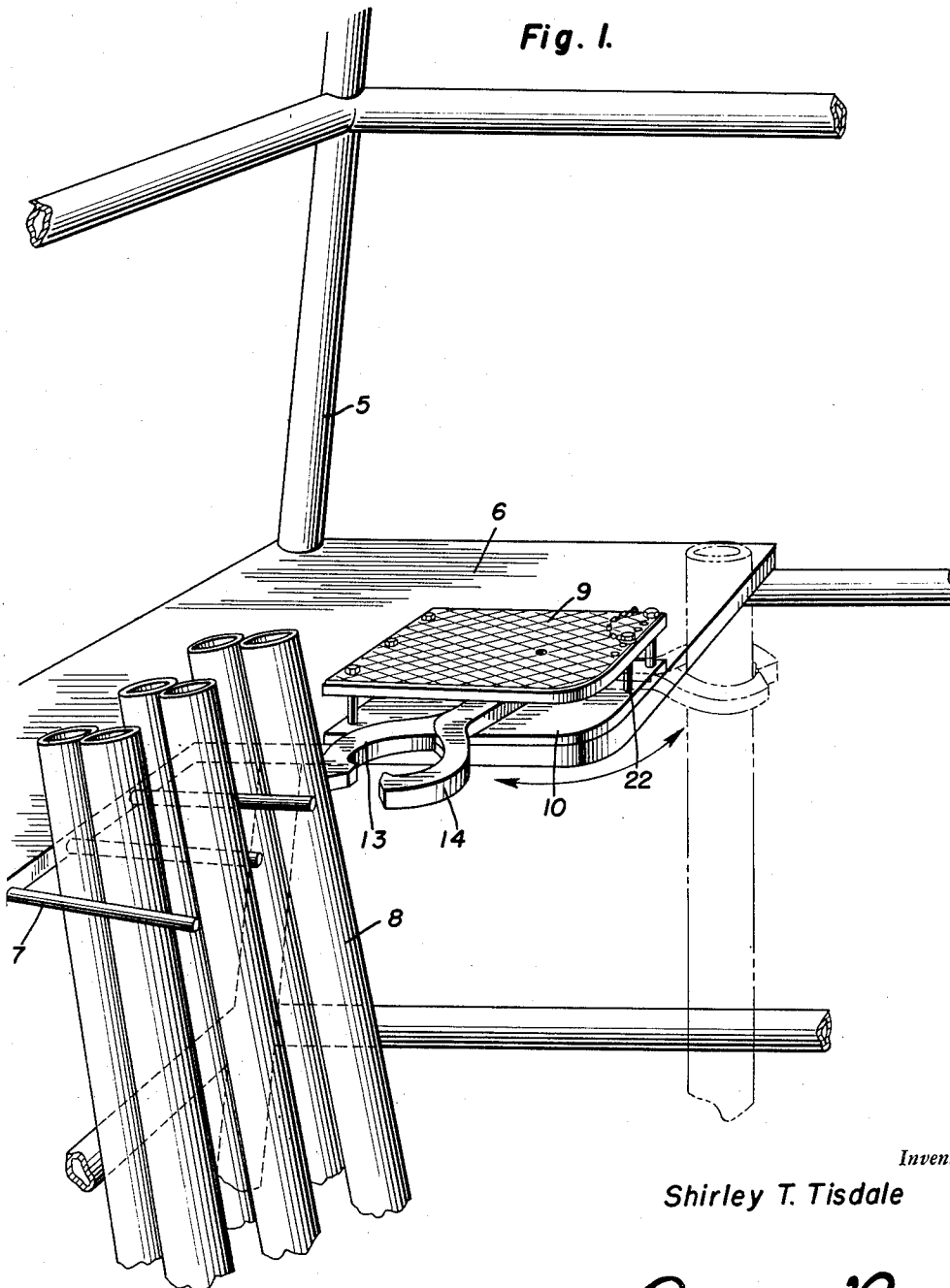
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2,535,464

AUTOMATIC ROTARY DRILL PIPE HOLDER

Filed April 7, 1947

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

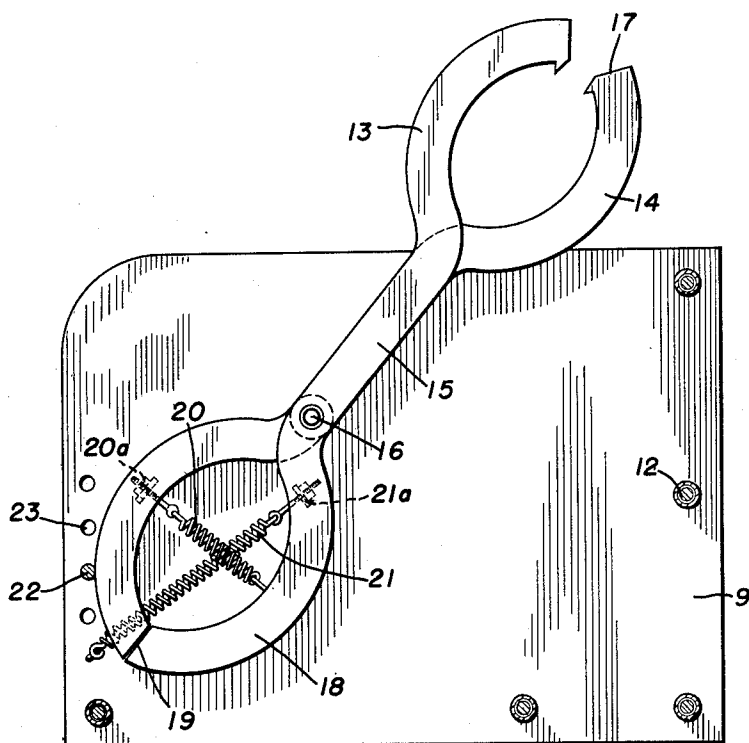


Fig. 3.

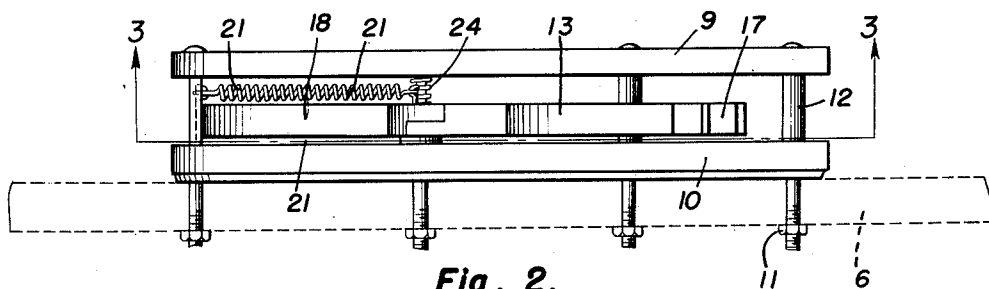


Fig. 2.

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## UNITED STATES PATENT OFFICE

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## AUTOMATIC ROTARY DRILL PIPE HOLDER

Shirley T. Tisdale, Ada, Okla., assignor, by mesne assignments, of five per cent to Claude V. Thompson, and five per cent to Mack M. Braly, both of Ada, Okla.

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3 Claims. (Cl. 214—1)

1

The present invention relates to new and useful improvements in automatic rotary drill pipe holders for use in well drilling operations and more particularly to a device of this character whereby the drill pipe sections may be easily and conveniently moved from a pipe rack to a position for clamping in the elevator in a manner to relieve the operator of the manual effort usually required for this purpose and whereby the hands of the operator are free for other purposes.

A further object of the invention is to provide a device of this character whereby the drill pipe is held in place and is automatically released from the pipe after the elevators are latched around the pipe.

A still further object is to provide a device of this character which may be easily and quickly secured in position on the platform of a derrick without necessitating any changes or alterations in the construction thereof and which at the same time is simple and practical in construction, efficient and reliable in use, strong and durable, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view showing the drill pipe holder in position on the platform.

Figure 2 is a side elevational view of the holder, and

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Referring now to the drawings in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention the numeral 5 designates a conventional type of well-drilling derrick provided at one corner thereof with a platform 6. Adjacent the platform is a pipe rack 7 in which the sections of drill pipe 8 are stacked in the usual manner.

In order to easily and quickly transfer the pipe from the rack 7 to a position for engagement by the usual elevator and with a minimum of manual effort on the part of the operator, I provide a pipe holder which comprises upper and lower plates 9 and 10 secured in position on the upper surface of the platform 6 adjacent its inner edge by means of bolts or the like 11 having spacing sleeves 12 thereon to support the

2

upper plate 9 in vertically spaced relation above the lower plate 10 as shown in Figures 1 and 2 of the drawings.

A pair of arcuate jaws 13 and 14 have inwardly projecting shanks 15 which are pivoted at their inner ends on a pin 16 extending vertically through the plates, the jaws projecting outwardly at one edge of the plate and are formed with diverging outer ends 17 to guide one of the pipes 8 inwardly of the jaws for gripping engagement thereby.

The inner ends of the shanks 15 are curved to form arcuate extensions 18 having opposed extremities 19 normally held in engagement with each other by a transversely extending coil spring 20 connected to the extensions 18 to hold the outer ends 17 of the jaws in slightly spaced apart relation as shown in Figure 3 of the drawings, to facilitate the entry of the pipe into the jaws.

The jaws 13 and 14 are held in position at one side edge of the plates 9 and 10 adjacent the pipe rack 7 by means of a coil spring 21 having one end connected to the extension 18 of one of the jaws adjacent its pivoted end and having its other end suitably secured to one of the plates, the spring 21 permitting the horizontal swinging movement of the jaws from the side edge of the plates as shown by the full lines in Figure 1 of the drawings to the front edge of the plates as shown by the dotted lines for transferring one of the pipes 8 from the rack 7 into a position for engagement by the elevator (not shown). The springs 20 and 21 are provided with adjusting screws 20a and 21a respectively to adjust the extension of the springs.

The jaws 13 and 14 with the pipe held therein are limited in their swinging movement and held in position at the front edge of the plates 9 and 10 by a stop pin 22 selectively engaged in aligned openings 23 in the upper and lower plates, the stop 22 being placed in position before the jaws have been swung at the front edge of the plates to hold the pipe in substantial alignment with the usual elevator for gripping of the pipe thereby. After the pipe has been clamped in the elevator the movement of the elevator will pull the pipe from the jaws and the spring 21 then returns the jaws to the side of the platform for engaging another pipe section.

The pipe is automatically engaged in the jaws 13 and 14 by tilting the pipe toward the platform 6 and guiding the pipe through the diverging extremities 17 of the jaws and the pipe is then swung by the operator toward the front edge

3

of the platform for engagement by the elevator in the usual manner.

A coil spring 24 is mounted on the pivot pin 16 above the shanks 15 to hold the jaws in cooperating relation against the lower plate 10.

I claim:

1. A drill pipe holder comprising upper and lower spaced apart plates, a pair of jaws pivoted to each other and also pivoted between the plates for swinging horizontally from a position at one side edge of the plates toward the front edge thereof, said jaws having diverging edges at their outer ends to automatically open and guide a pipe section into the jaws, spring means closing the jaws, a plurality of registering apertures in said plate, a stop receivable in selected of said apertures to limit forward swinging movement of the jaws, spring means returning the jaws to a position at the side of the plates, and resilient means urging said jaws in cooperative relation against said lower plate.

2. A drill pipe holder comprising upper and lower spaced apart plates, a pair of jaws pivoted to each other and also pivoted between the plates for swinging horizontally from a position at one side edge of the plates toward the front edge thereof, said jaws having guide means at their outer ends to automatically open and guide a pipe section into the jaws, said jaws having arcuate extensions at their inner ends, spring means connecting the arcuate extensions and

4

closing the jaws, and resilient means urging said jaws in cooperative relation against one of said plates.

3. A drill pipe holder comprising upper and lower spaced apart plates, a pair of jaws pivoted to each other and also pivoted between the plates for swinging horizontally from a position at one side edge of the plates toward the front edge thereof, said jaws having guide means at their outer ends to automatically open and guide a pipe section into the jaws, said jaws having arcuate extensions at their inner ends, spring means connecting said arcuate extensions and closing the jaws, additional spring means between one of said extensions and one of said plates for returning the jaws to a position at the side of the plates, and resilient means urging said jaws in cooperative relation against one of said plates.

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