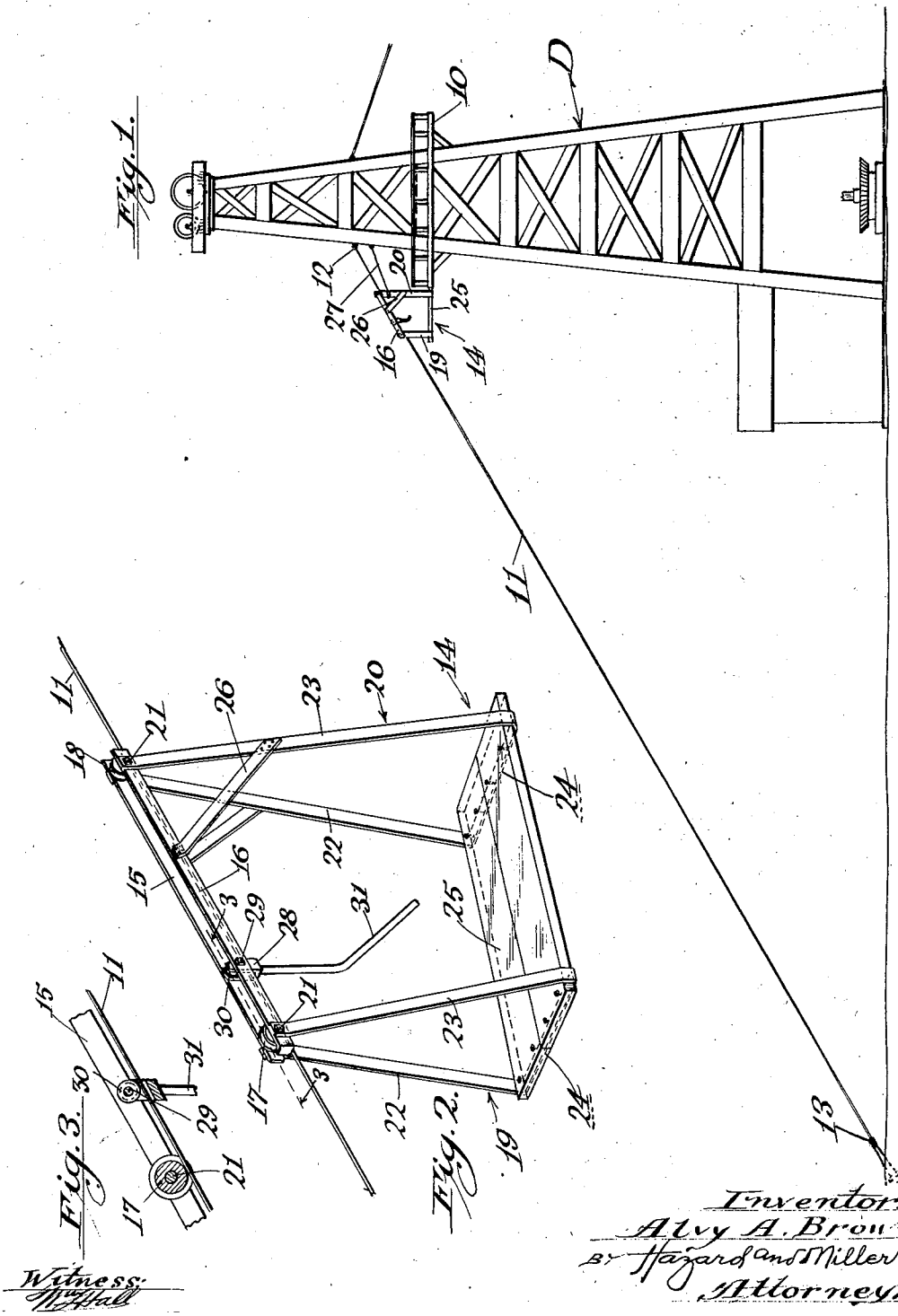
Oct. 6, 1925. 1,556,555

A. A. BROWN

SAFETY DEVICE FOR DRILLING DERRICKS

Filed April 30, 1925



Witness:

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UNITED STATES PATENT OFFICE.

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SAFETY DEVICE FOR DRILLING DERRICKS.

Application filed April 30, 1925. Serial No. 27,119.

To all whom it may concern:

Be it known that I, ALVY ADELBERT BROWN, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Safety Devices for Drilling Derricks, of which the following is a specification.

This invention relates to improvements in safety devices for drilling derricks used in drilling oil wells and the like.

An object of this invention is to provide a safety device for the man working in the top of the derrick.

A great danger has been experienced for the derrick man or the man working in the top of a drilling derrick when oil wells come in as "gushers" or "gasers". The oil or gas streams upwardly through the well casing in such cases and gushes up through the derrick and frequently catches fire for any one of a number of reasons. It frequently happens that the boiler for supplying steam to the drilling machinery is arranged too close to the well hole and sometimes the gas or oil catches fire because of this. It also happens that rocks or sand striking the derrick, especially in the case where a steel derrick is used, produces a spark which ignites the oil or gas. When the gas or oil gushes out of the well hole with considerable pressure, it not infrequently happens that the drilling tube is thrown out of the well, smashing into the derrick. At all events the position of the derrick man, that is the man working at the top of the derrick, is a very dangerous one when the well comes in as a gaser or a gusher, and in such cases it seldom happens that the derrick man is able to get down out of the derrick alive.

Some of the wooden derricks are provided with guy wires or guy cables, and it has been my experience that, when a well comes in as a gaser or a gusher, the derrick man leaps for the guy wire to slide down it and thus get out of the derrick. In nearly all cases sliding down the guy cable cuts the flesh upon his hands and the pain is such that as a last resort, he will let himself drop from the guy wire, resulting in his getting killed or sustaining a serious injury.

The primary object of this invention is to provide a safety appliance or device for a drilling derrick, which will enable the derrick man working at the top of the derrick to easily and quickly get out of the derrick with some degree of safety.

Another object of this invention is to provide a device which can be easily and quickly constructed and which will not require changing any construction upon the derrick, and which consists essentially of a cable fastened to the derrick at one end and anchored to the ground at a location remote from the base of the derrick. This cable has a carriage movable thereon which is releasably maintained adjacent the derrick, so that the derrick man can readily place himself upon it and be carried to the ground at a location remote from the base of the derrick.

A further object of this invention is to provide an efficient braking device for the carriage so that the derrick man on traveling down the cable can stop himself on reaching the bottom without such jerks as will throw him out of the carriage and result in his injuring himself.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a side elevation of a drilling derrick to which my improved safety device has been applied,

Fig. 2 is a perspective view of the carriage, and

Fig. 3 is a vertical section taken substantially on the line 3—3 of Fig. 2.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the derrick is generally designated at D, which is of conventional construction and which has a platform 10 arranged thereabout somewhat adjacent its top. This platform is conventionally known as the "run-around" and is used so that the derrick man working within the derrick adjacent the top can easily walk about the derrick during his work.

My safety device consists of a cable 11 which has its upper end secured, as at 12, to the derrick above the run-around 10. The lower end of the cable is anchored, as at 13, to the ground or to any other suitable support at a location remote from the base of the derrick. The cable 11 may constitute one of the guy cables for the derrick or may

be a separate cable attached to it. Upon the cable there is movable a carriage, generally designated at 14. This carriage consists of a pair of members 15 and 16 which are arranged above the cable 11 upon opposite sides thereof. Grooved wheels 17 and 18 are rotatably mounted between the members 15 and 16 at the ends thereof, and suspending members 19 and 20 are secured to the ends of the members 15 and 16. In the preferred form of construction, bolts 21, which fasten the suspending members to the members 15 and 16, also serve as spindles for the grooved wheels 17 and 18. The suspending members may be formed of strap iron and are bent to provide converging parts 22 and 23 which converge upwardly. The parts 22 and 23 are connected as by a part 24, and a platform 25, which may be formed of boards, is bolted upon the parts 24 of the suspending members 19 and 20. It will be noted that the suspending member 20 is somewhat longer than the suspending member 19, so that when the carriage is placed upon the inclined track formed by the cable 11, the platform 25 will assume a horizontal position. If desired, suitable braces 26 may connect the members 15 and 16 to the converging parts 22 and 23 of the suspending members 19 and 20. The cable 11 has its upper end so arranged that when the carriage 14 is adjacent the derrick, the platform 25 is approximately even with the run-around 10. A breakable string or cord 27 is fastened to the carriage and to the derrick for releasably maintaining the carriage 14 adjacent the derrick.

It will be readily appreciated that the derrick man, if the well should come in as a gaser or gusher, can step out on to the run-around 10 from within the derrick, can place himself upon the carriage 14, and when his weight is placed thereon, the breakable string 27 will break, allowing the carriage with the derrick man thereon to coast down the cable 11 toward the anchor 13, so that in this manner he can be easily and quickly taken out of the derrick and carried to a location remote from its base.

As previously stated, another object of this invention is to provide an improved braking means for the carriage. It will be readily appreciated that the carriage upon moving down so steep an incline will gather considerable speed. The brake must be of such a nature that the carriage will not stop with a jerk, which would throw the derrick man out of the carriage. My improved brake, which I have found works very efficiently, consists of a yoke 28 pivoted as upon a bolt 29 which extends between the members 15 and 16. A small grooved wheel 30 is mounted upon the bolt 29 between the arms of the yoke and is so arranged as to provide a small clearance between its peripheral surface and the cable 11. If a half inch cable is used, this clearance is preferably about five-eighths of an inch. The The yoke 28 carries a depending handle 31, which can be brought forwardly so as to cause the bottom of the yoke to engage the under side of the cable 11. In this manner the bottom of the yoke cooperates with the wheel 30 to form a kink or bend in the cable which frictionally causes the carriage to slow down as it nears the anchor 13. The amount of friction depends upon the magnitude of the force applied to the handle 31 by the derrick man resting upon the platform 25.

From the above it will be appreciated that an improved safety device is provided for drilling derricks which will greatly eliminate the loss of life of derrick men working at the top of the derrick.

It will be understood that various changes in the detail of construction may be made without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. A safety device for drilling derricks comprising a cable having an end secured to a derrick a substantial distance above the ground and the other end anchored to the ground remote from the base of the derrick, a carriage movable upon the cable, said carriage comprising a pair of grooved wheels, suspending members on which said grooved wheels are rotatably mounted, a platform supported upon said suspending members, one of the suspending members being longer than the other, whereby the platform of the carriage will assume an approximately horizontal position while the carriage is on the inclined cable, and a breakable cord for releasably holding the carriage upon the cable adjacent the derrick.

2. A safety device for drilling derricks comprising a cable having one end secured to a derrick a substantial distance above the ground and the other end anchored to the ground remote from the base of the derrick, a carriage movable upon the cable, said carriage comprising a pair of members disposed above the cable upon opposite sides thereof, a pair of grooved wheels rotatably mounted between said members, suspending members secured to said members, and a platform supported upon said suspending members, means for releasably maintaining the carriage adjacent the derrick, and braking means comprising a yoke pivoted between the first mentioned members, and a handle for the yoke for swinging it into frictional engagement with the cable.

3. A safety device for drilling derricks comprising a cable having one end secured to a derrick a substantial distance above the ground and the other end anchored to the

ground remote from the base of the derrick, a carriage movable upon the cable, said carriage comprising a pair of members disposed above the cable upon opposite sides thereof, a pair of grooved wheels rotatably mounted between said members, suspending members secured to said members, and a platform supported upon said suspending members, means for releasably maintaining the carriage adjacent the derrick, and braking means comprising a spindle extending between the first mentioned members, a roller rotatable upon said spindle, a yoke pivoted upon the spindle, a handle secured to the yoke, the cable passing between the yoke and roller whereby upon swinging the handle, the yoke will be caused to lift the cable against the roller and to cooperate with the roller to kink or bend the cable.

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

ALVY ADELBERT BROWN.