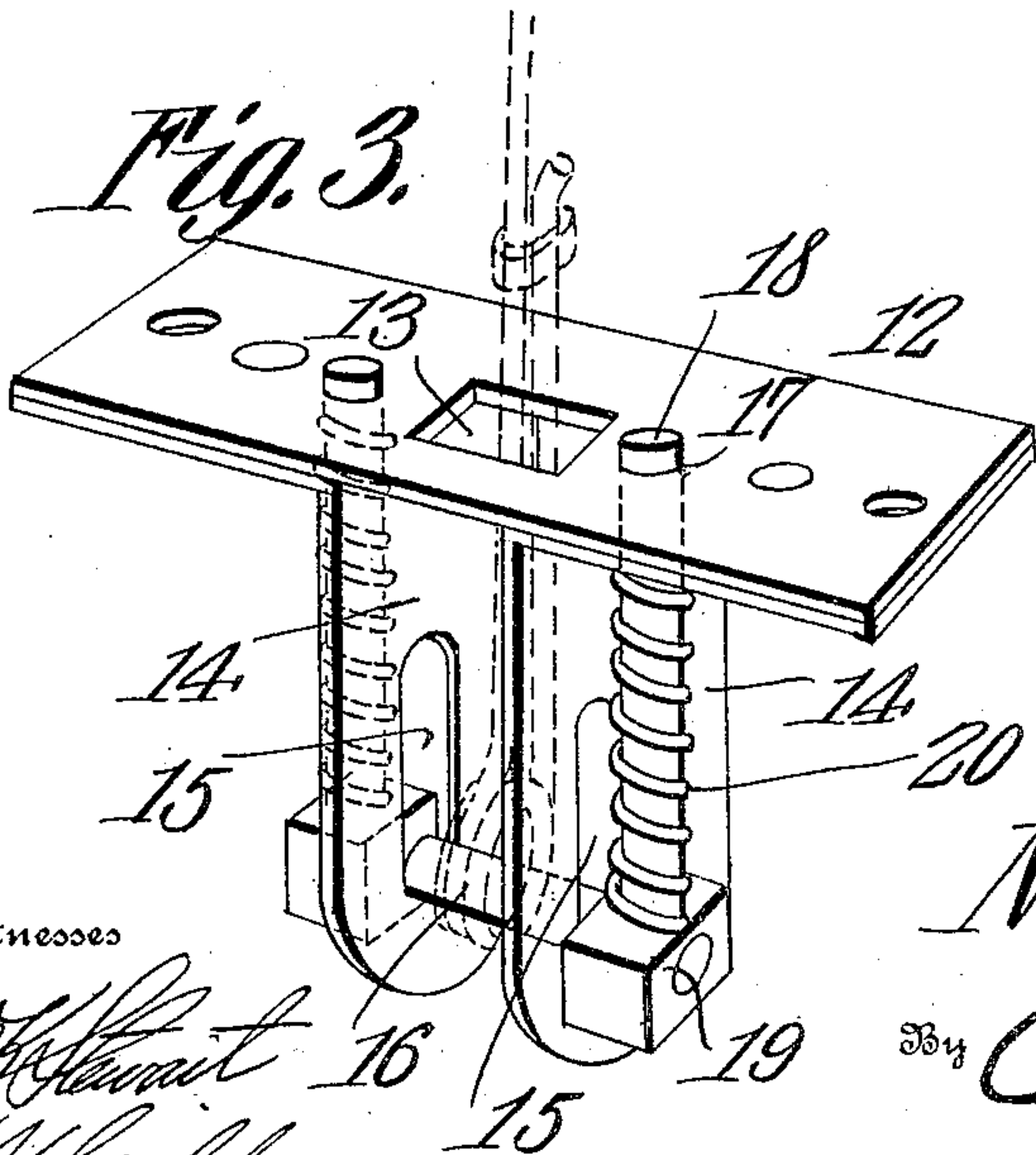
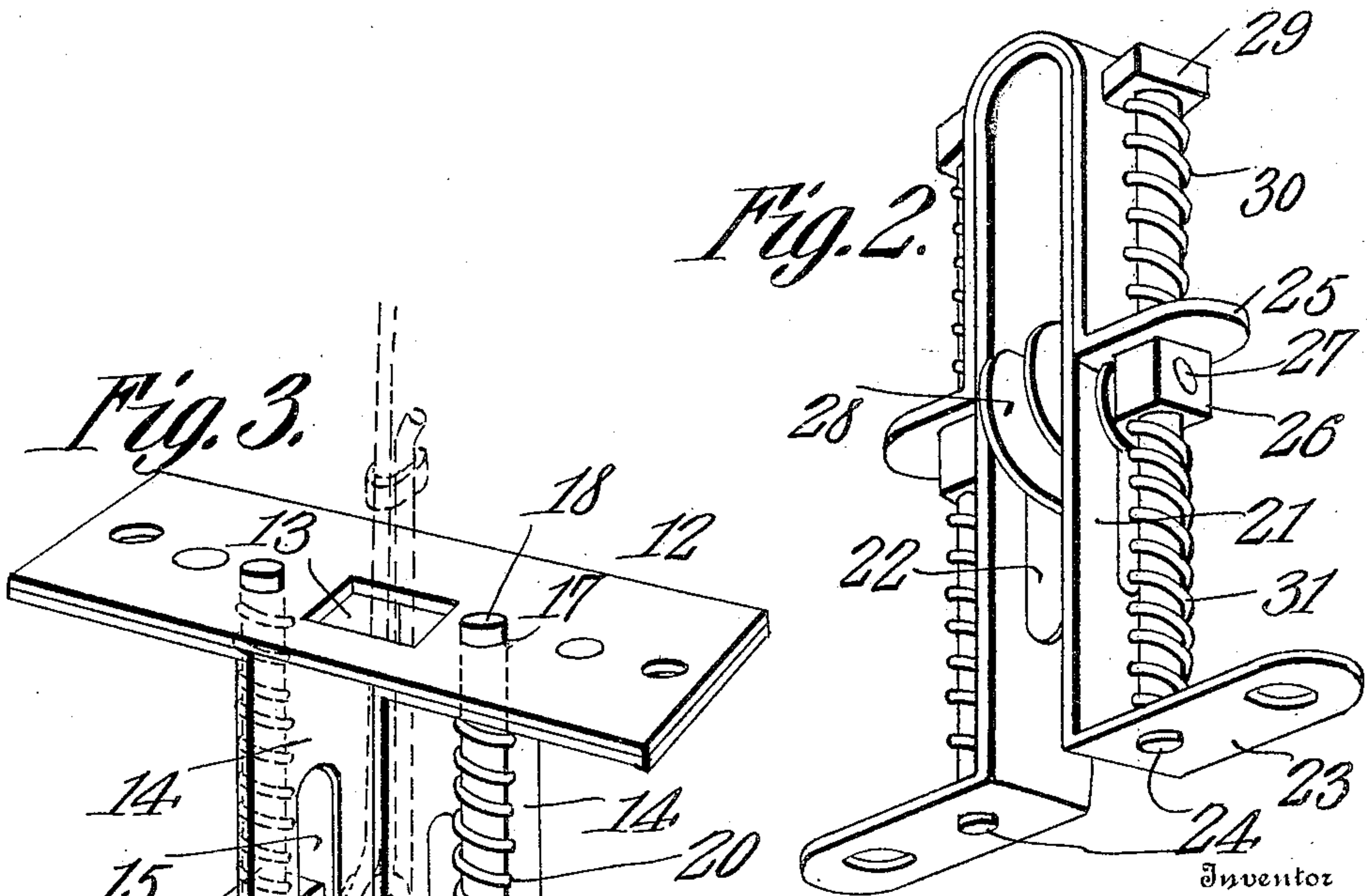
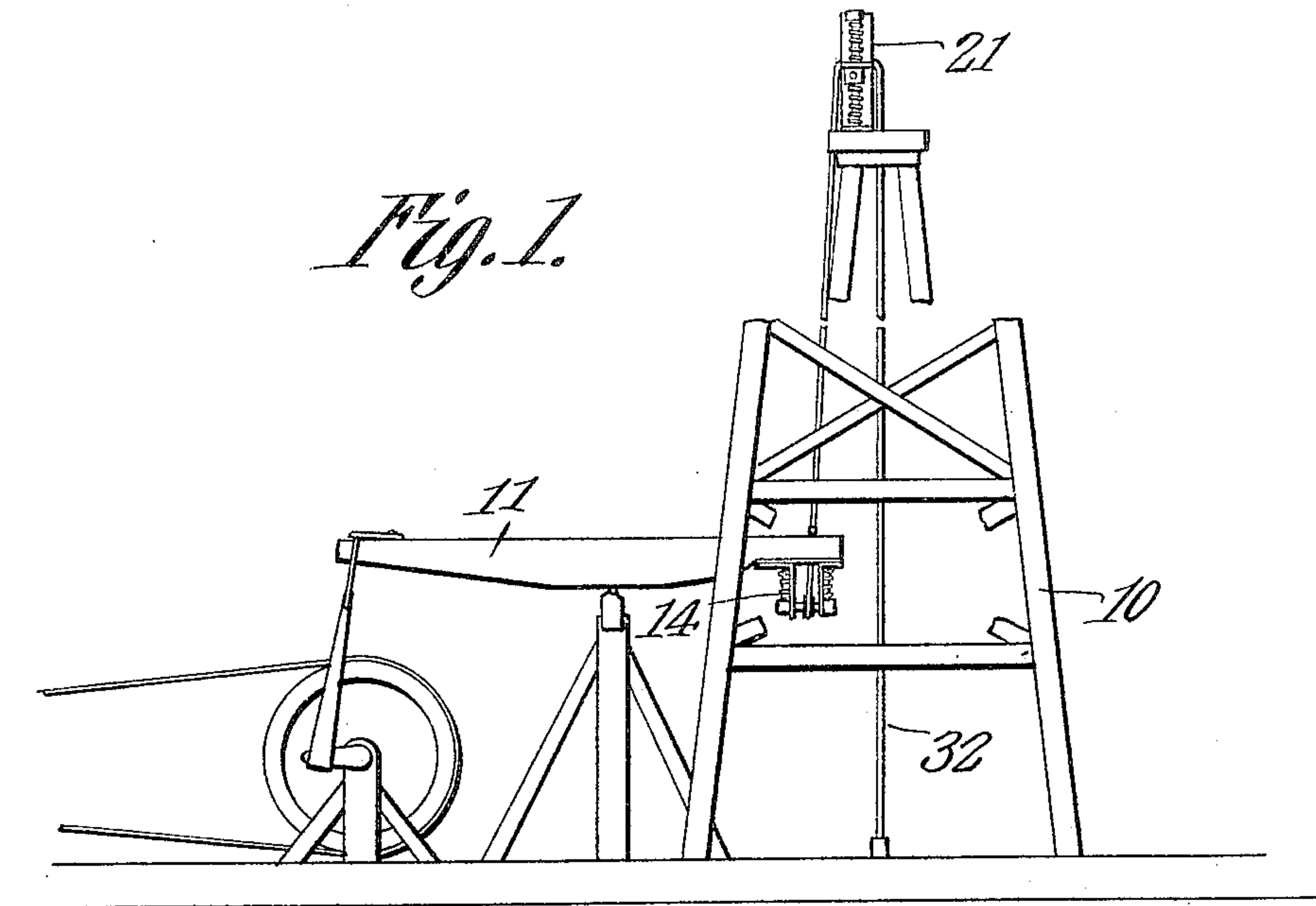


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ATTACHMENT FOR WELL DRILLING DERRICKS.
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914,579.

Patented Mar. 9, 1909.



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UNITED STATES PATENT OFFICE.

NEWTON J. JONES, OF WATERVILLE, WASHINGTON.

ATTACHMENT FOR WELL-DRILLING DERRICKS.

No. 914,579.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, NEWTON J. JONES, a citizen of the United States, residing at Waterville, in the county of Douglas and State of Washington, have invented a new and useful Attachment for Well-Drilling Derrick, of which the following is a specification.

This invention relates to apparatus such as is used for drilling or boring deep wells, as for instance petroleum or gas wells, and the invention has special reference to an attachment for use in connection with the ordinary derrick and drill rope commonly found in mechanism of this class.

It is a well known fact that in the drilling of deep wells it is necessary to use, on account of the comparative inelasticity of steel cable in short lengths, a hemp cable until the well has been drilled for several hundred feet. This is not only a great inconvenience on account of the necessity of changing from a hemp cable to a steel cable after several hundred feet have been drilled, but is also a source of considerable expense, inasmuch as the hemp cable is frequently broken, with the result of delaying the operation, and making expensive renewals and splices necessary.

The object of the present invention is to provide an attachment for derricks and walking-beams for well drills of the class described which will obviate the necessity of using a hemp cable with the consequent delays and expense above noted.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

The invention consists in general of a frame adapted for attachment to a walking-beam provided with a bar or axle to receive the eye at the end of the cable, a second frame carrying a sheave at the top of the derrick over which the cable runs, an axle for said sheave, and yieldable means for holding said axle in said frame.

The invention further consists in certain novel details of construction and combination of parts, hereinafter fully described, illustrated in the accompanying drawings, and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the

several views, and;—Figure 1 is a side elevation of a derrick equipped with this invention. Fig. 2 is a perspective view of the frame for attachment to the walking-beam. Fig. 3 is a similar view of the derrick supported frame.

The numeral 10 indicates a well-drilling derrick of the ordinary construction, and 11 indicates the walking beam of such a derrick.

Upon the walking beam 11 is mounted a frame comprising a base 12, having an aperture 13 substantially central thereof and a pair of arms 14 extending downward therefrom. These arms 14 are rigidly attached to the base and are provided with slots 15 oppositely disposed. Through the slots 15 extends an axle or bar 16. Apertures 17 are formed in the base. These apertures are preferably circular in plan and are positioned exterior of the arms 14. Bars 18 of similar cross-sections to the apertures 17, are held to slide in these apertures longitudinally of the arms 14. Each of these bars is provided with an apertured head 19, adapted to receive the ends of the shaft 16. These heads are preferably made of greater cross sections than the bars 18, and between the heads 19 and the base 12 is mounted a pair of compression springs 20, one of these springs being positioned on each of the bars 18. The axle or shaft 16 is for the purpose of carrying the cringle at the end of the pumping rope. This axle 16 may also be used for holding the middle or bight of the well-drilling rope, the same preferably passing around a thimble held on the axle and secured by an ordinary wire rope clip.

Upon the top or head of the derrick 10 is mounted a frame 21. This frame is preferably U shaped and is provided with oppositely disposed slots 22. The lower ends of the legs of the frame are bent outward and form a pair of apertured ears 23 for the purpose of attaching the frame to the derrick as well as to act as guides for bars 24. Toward the upper end of the frame is provided a pair of apertured ears 25, the apertures of which are in alinement with the apertures of the lower ears through which the bars 24 pass. The bars 24 are provided intermediate their ends each with an enlarged portion 26, having suitable apertures to receive a shaft 27 which passes through the slots 22, and carries a sheave or pulley 28. These bars are continued beyond the enlarged portion 26, and pass through the upper apertured ears

25, being thus guided by the two sets of ears. At the upper end of each of these bars there is provided a head 29, in the form of a nut or the like, and springs 30 are held between the 5 upper ears and the heads or nuts 29. Similar springs 31 are held between the enlarged portion 26 and the lower ears 23.

The well-drilling rope is indicated at 32, and, as previously described, is attached to 10 the axle or shaft 16, thence passing upward over the sheave 28, and thence downward into the well. By reason of this peculiar construction, taken in combination with the position of the two frames, the rope will 15 be held in such a manner as to have a certain amount of give or yielding upon the weight of the well-drilling tools or boring bars, being brought thereon by the movement of the walking-beam 11. In this manner a steel 20 rope may be used in place of an ordinary hemp rope, as with the yieldable support on the walking-beam and yieldable sheave on the head frame, no danger will exist of the rope being snapped by the sudden jerk of 25 the walking-beam.

It will of course be understood that when the drill rope is in engagement with the sheave or pulley 28 the frame on the walking beam may be dispensed with and the rope 30 attached directly to the adjacent end of the walking-beam, the springs on the derrick frame 21 being sufficient to form a yieldable support for the drill rope. It will also be understood that when the drill rope is em- 35 ployed for hoisting a drill or bucket the upper or derrick frame 21 will not be used and the lower frame 10 will be attached to the upper longitudinal edge of the walking-beam with the drill rope extended over the

sheave in said frame and thence connected 40 direct with the drill or bucket.

It will thus be seen that there is provided a comparatively simple and thoroughly efficient well drilling machine attachment 45 that will not only effect a saving in the rope but the springs being much quicker than the stretch in the rope, the machine can be run much faster.

Having thus described the invention, what is claimed as new, is;— 50

1. In a device of the kind described, a frame provided with a pair of arms having oppositely disposed slots, guides on said frames, a pair of bars held in said guides to move longitudinally of said arms, shaft- 55 supporting bearings formed on said bars, a shaft passing through said slots and supported in said bearings, and springs mounted on said bars to normally force said shaft toward one end of said slots. 60

2. In a device of the kind described, a frame provided with a pair of apertured ears and a pair of oppositely disposed slots, an apertured base for said frame, a pair of bars held to slide in the apertures of said ears and 65 base, a pair of shaft bearings each formed on one of said bars, a shaft passing through said slots and carried in said bearings, heads formed on the upper ends of said bars, springs held between said heads and ears, and other 70 springs held between said bearings and base.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

NEWTON J. JONES.

Witnesses:

G. G. HANNAN,
T. C. HARTLEY.