

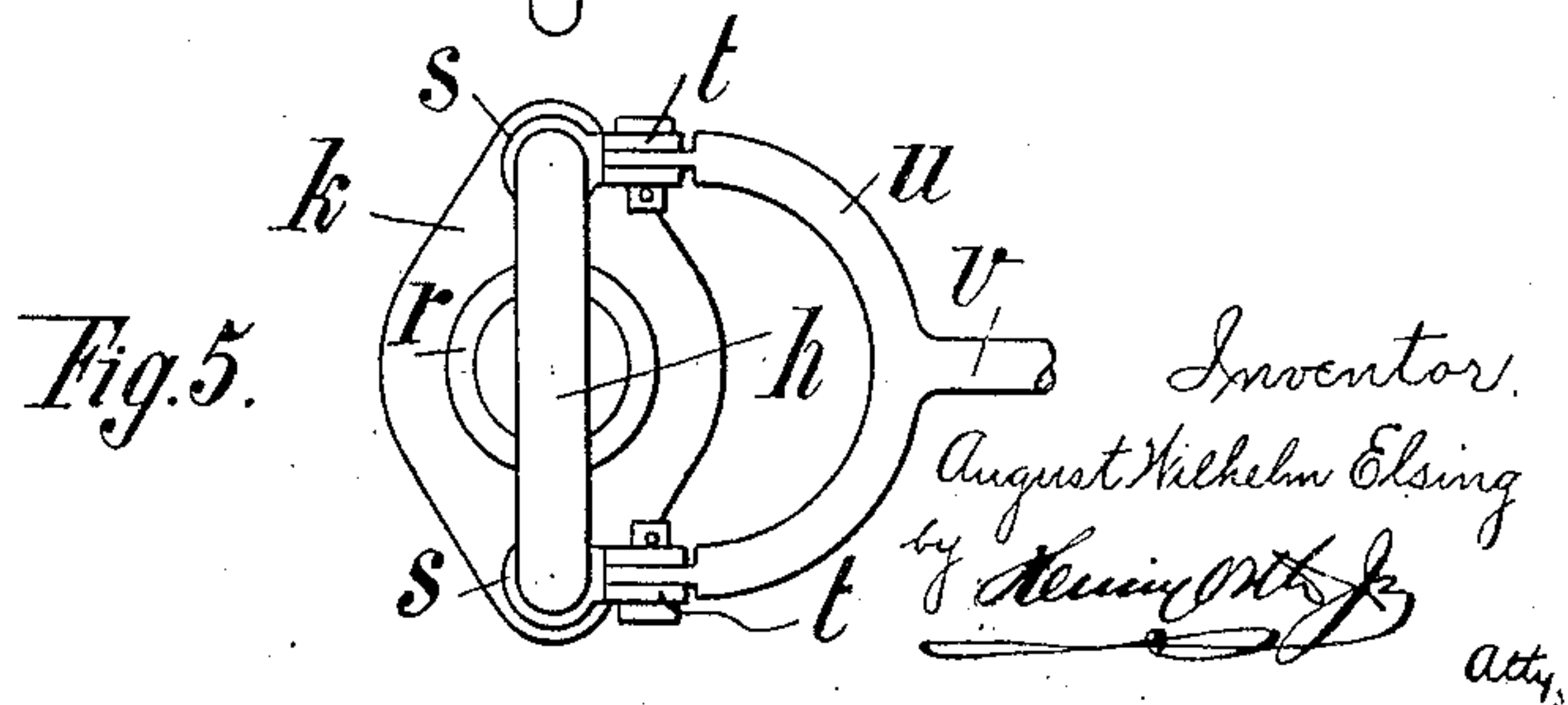
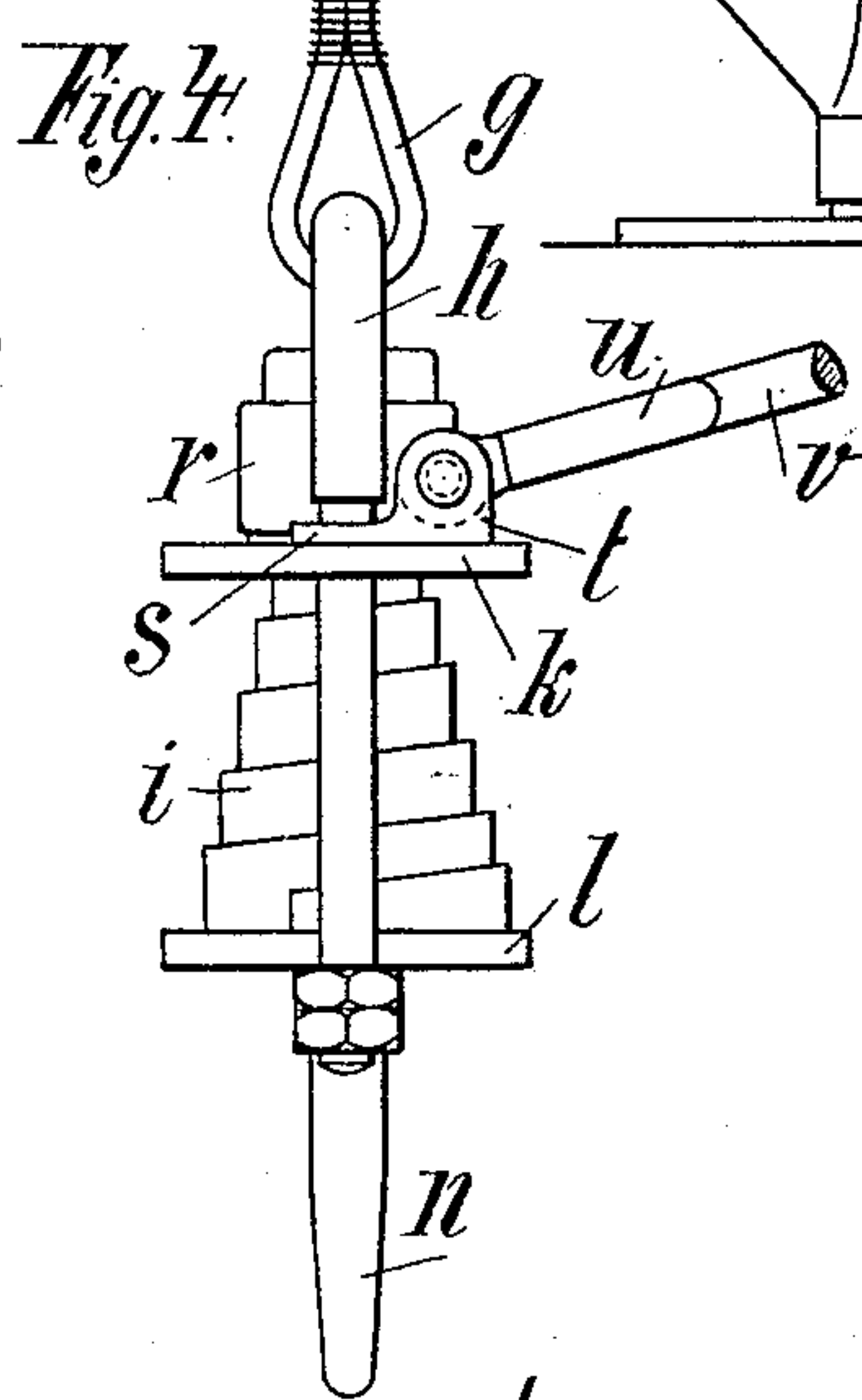
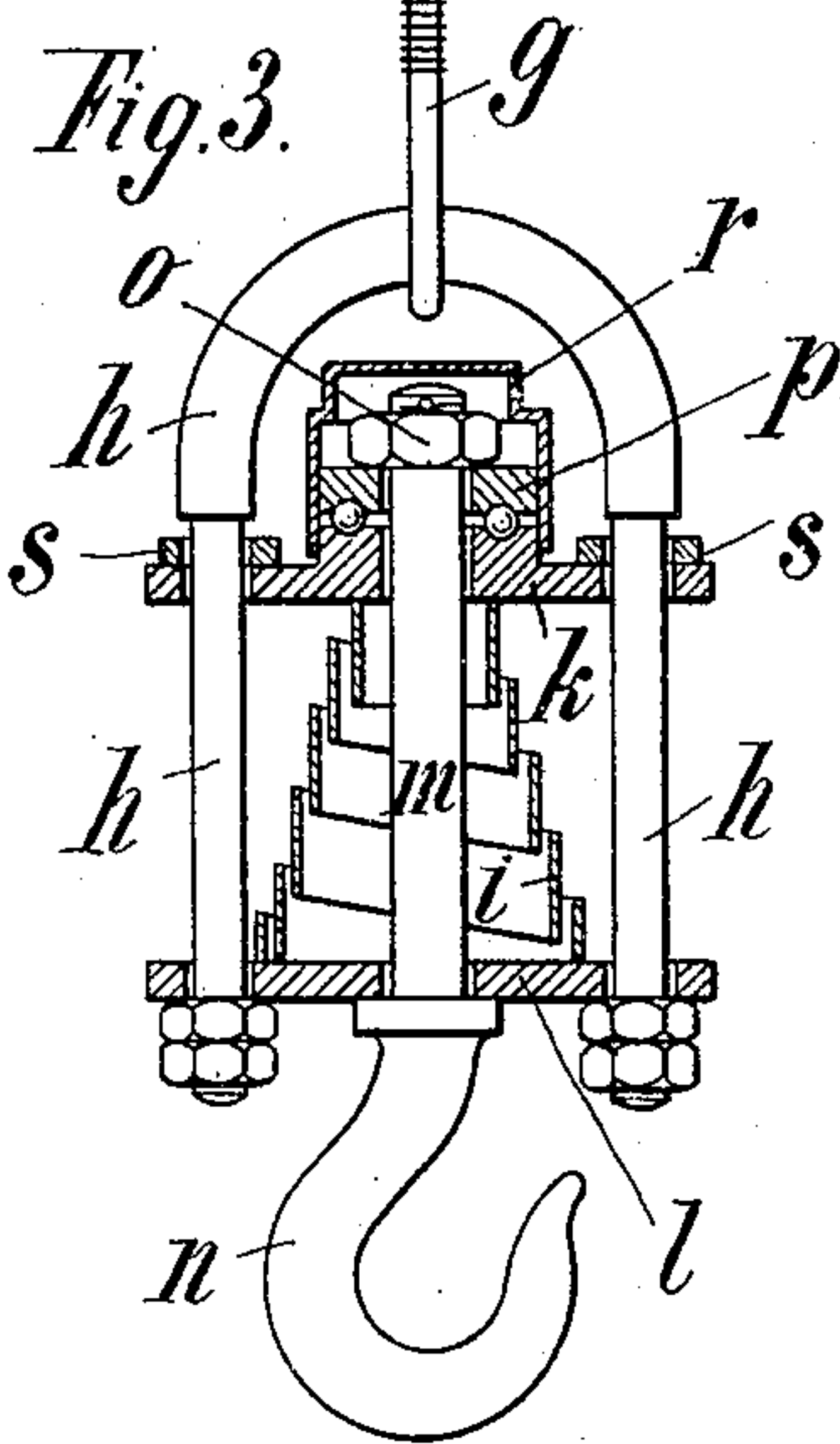
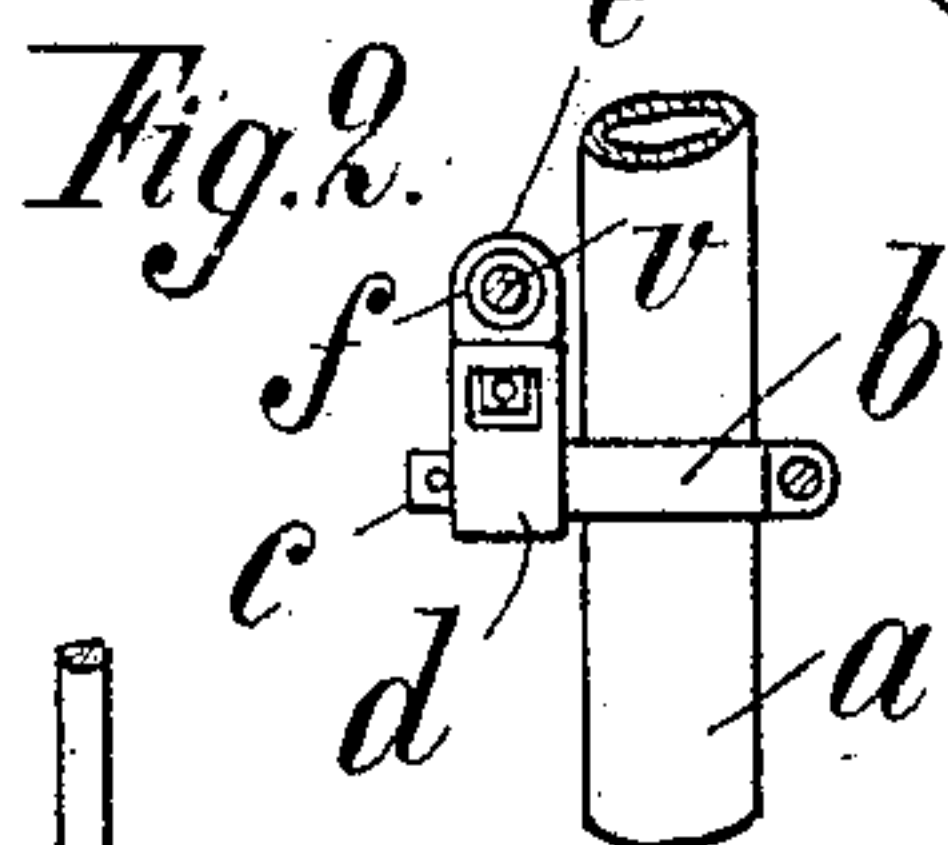
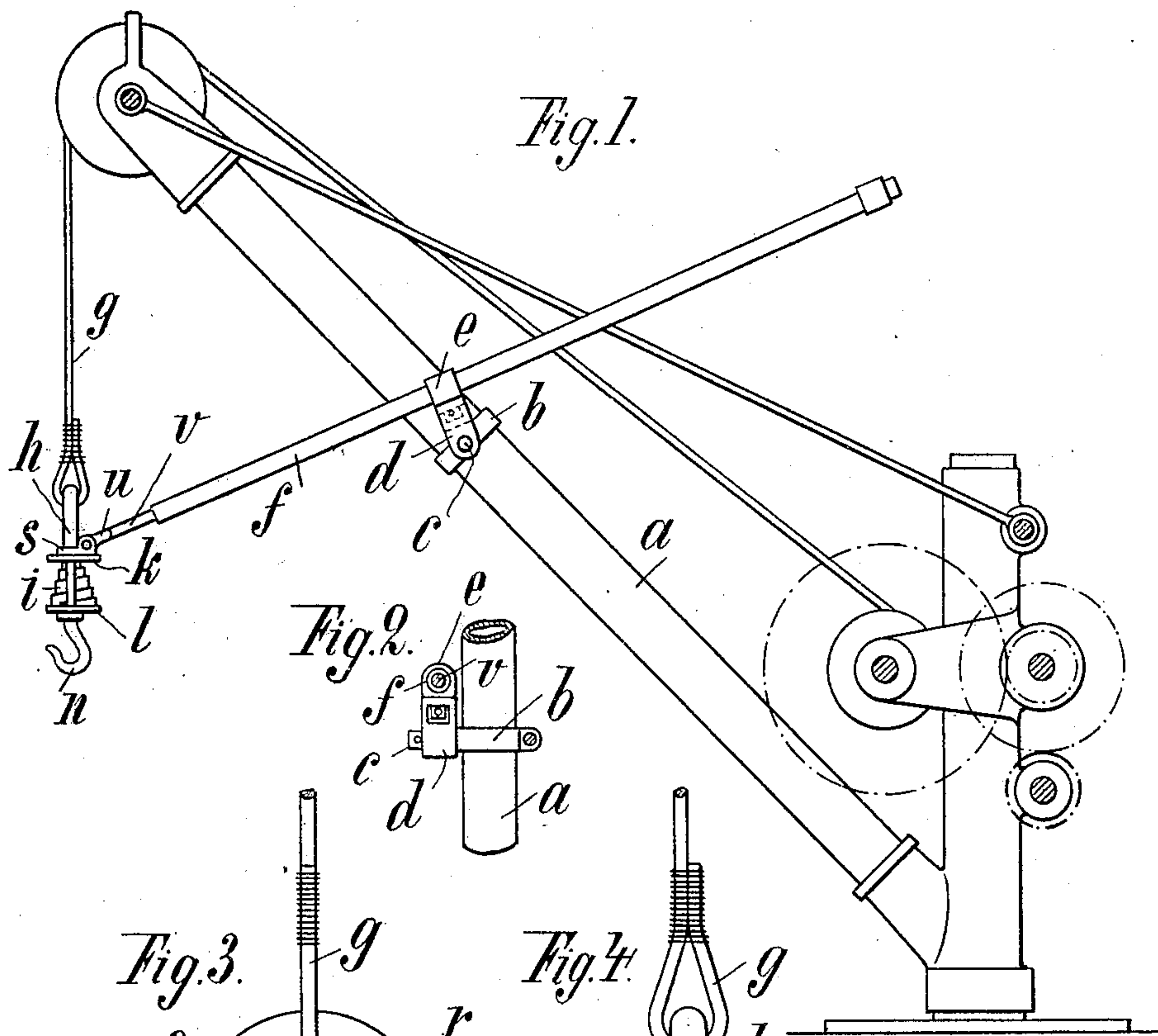
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PATENTED SEPT. 8, 1908.

A. W. ELSING.

GUIDING MEANS FOR LOAD SUPPORTING ROPES IN CRANES.

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Witnesses
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AUGUST WILHELM ELSING, OF LÜNEBURG, HANOVER, GERMANY.

GUIDING MEANS FOR LOAD-SUPPORTING ROPES IN CRANES.

No. 897,966.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed October 16, 1907. Serial No. 397,686.

To all whom it may concern:

Be it known that I, AUGUST WILHELM ELSING, a subject of the German Emperor, and resident of Lüneburg, Hanover, Prussia, Germany, have invented certain new and useful Improvements in Guiding Means for Load-Supporting Ropes in Cranes, of which the following is a specification.

In cranes or lifting devices in which the lifting and lowering of the load is effected by means of a rope, more particularly a wire rope, the suspended load is often caused to make a rotary or turning movement on account of the twisting of the rope, the consequence of which is that the rope is more or less turned or rotated at each manipulation of a load. The security of the rope is considerably diminished thereby so that such ropes are rendered useless after a comparatively short time, especially when the crane or the like is used for shifting coals, as the coal dust penetrating between the strands and wires opened up by the twisting of the rope in conjunction with the moisture that also penetrates, produces rapid deterioration of the wires.

According to the present invention the above disadvantages are obviated by so guiding the load-supporting rope that it cannot turn under the action of the load while it retains its movability in all directions.

The desired object is attained by hingedly connecting the carrying rope or the hook or a member interposed between these two members with the framework of the crane by an extensible rigid link so that the rotation of the rope is prevented while its freedom to move in all directions is maintained. In order, with such a guidance which prevents twisting of the rope, to permit turning of the load it is preferable to have the said rigid link engage an intermediate or carrying member secured to the rope in or to which the hook is pivotally and if desired resiliently connected in known manner.

One embodiment of the invention is illustrated in the accompanying drawing in which

Figure 1 is a side elevation of a crane constructed in accordance with the invention. Fig. 2 illustrates the fastening of the link to the jib of the crane. Fig. 3 shows to enlarged scale partly in section the carrying member suspended from the supporting rope, to which the said rigid link is engaged. Fig. 4 is a side elevation and Fig. 5 a plan of the construction shown in Fig. 3.

As shown, to the jib *a* of the crane is secured a ring *b* having a pin *c* on which is pivotally secured an arm *d* which at its free end carries an eye or socket bolt *e* by means of a gyratory connection or the like, which eye-bolt serves to receive a tube *f*. The ring with the pivot pin *c*, the arm *d* and the tube holder *e* form a kind of flexible joint which permits the tube *f* to be brought into any desired position.

To the load-supporting wire rope *g* is suspended a bow or clip *h* with two cross pieces *k* and *l* separated by a spring *i*, through the central openings in which cross pieces passes the shank *m* of the hook *n* proper, which latter with a disk or washer *p* secured by a nut *o* has its bearings on the upper cross piece *k*. Between the supporting surfaces is a ball bearing *q* which is covered by a protecting cap *r*. This arrangement which however forms no part of the invention insures for the hook not only a resilient movement in the clip or bow in the direction of tension but also enables the hook to be turned around its longitudinal axis without twisting the rope.

Above the cross bar *k* on each limb of the bow or clip *h* is a disk *s* (ring, sleeve or the like) to the flange of which or to a ring thereon are hinged the forked arms *u* of a rod *v*. This rod telescopes in the tube *f* so that it can be moved in either direction relative to the same, according as the rope is withdrawn from or brought nearer to the frame on shifting a load. The rod secured to the clip and slidable in the tube secured to the frame by means of a flexible joint forms a kind of link-system which prevents the twisting of the supporting rope while however giving the rope a perfectly free movement.

I claim:

1. In a rope guide, the combination with a rope-support, a rope adapted to travel thereon, a supporting member carried by the rope, of rigid members connecting the rope-support and supporting member extensible in the direction of and parallel to their longitudinal axes and capable of relative rotation about said axes.

2. The combination with a rope-support, a rope thereon, a supporting member carried by the rope and a carrying member rotatably mounted in the supporting member, of telescoping members connecting the rope support and supporting member.

3. In a rope guide, the combination with
a rope support, a rope adapted to travel
thereon, and a supporting member carried
by the rope, of a rigid member flexibly con-
5 nected with the rope-support and a rigid
member hinged to the supporting member
slidably connected with the aforesaid rigid
member.

4. In a rope-guide, the combination with
10 a jib, a rope adapted to travel thereon, and
a supporting member carried by the rope,
of a pin mounted on the jib, an arm pivoted
on the pin, a socket pivoted in the arm, a
tube carried by the socket, and a rod slid-
15 ably mounted in the tube hinged to the
supporting member.

5. In a rope guide, the combination with

a rope support, a rope adapted to travel
thereon, a supporting member carried by
the rope, and means to prevent the rota- 20
tion of the supporting member, of a carry-
ing member rotatably mounted in the latter.

6. In a rope guide, the combination with
a rope support, a rope adapted to travel
thereon, a supporting member carried by 25
the rope and means to prevent the rotation
of the supporting member, of a rotatable
carrying member and means to resiliently
connect the supporting and carrying mem-
bers.

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