

A. W. STARCK.
AUTOMATIC REEL FOR WIRE, &c.
APPLICATION FILED JAN. 3, 1910.

988,905.

Patented Apr. 4, 1911.

3 SHEETS—SHEET 1.

Fig: 1

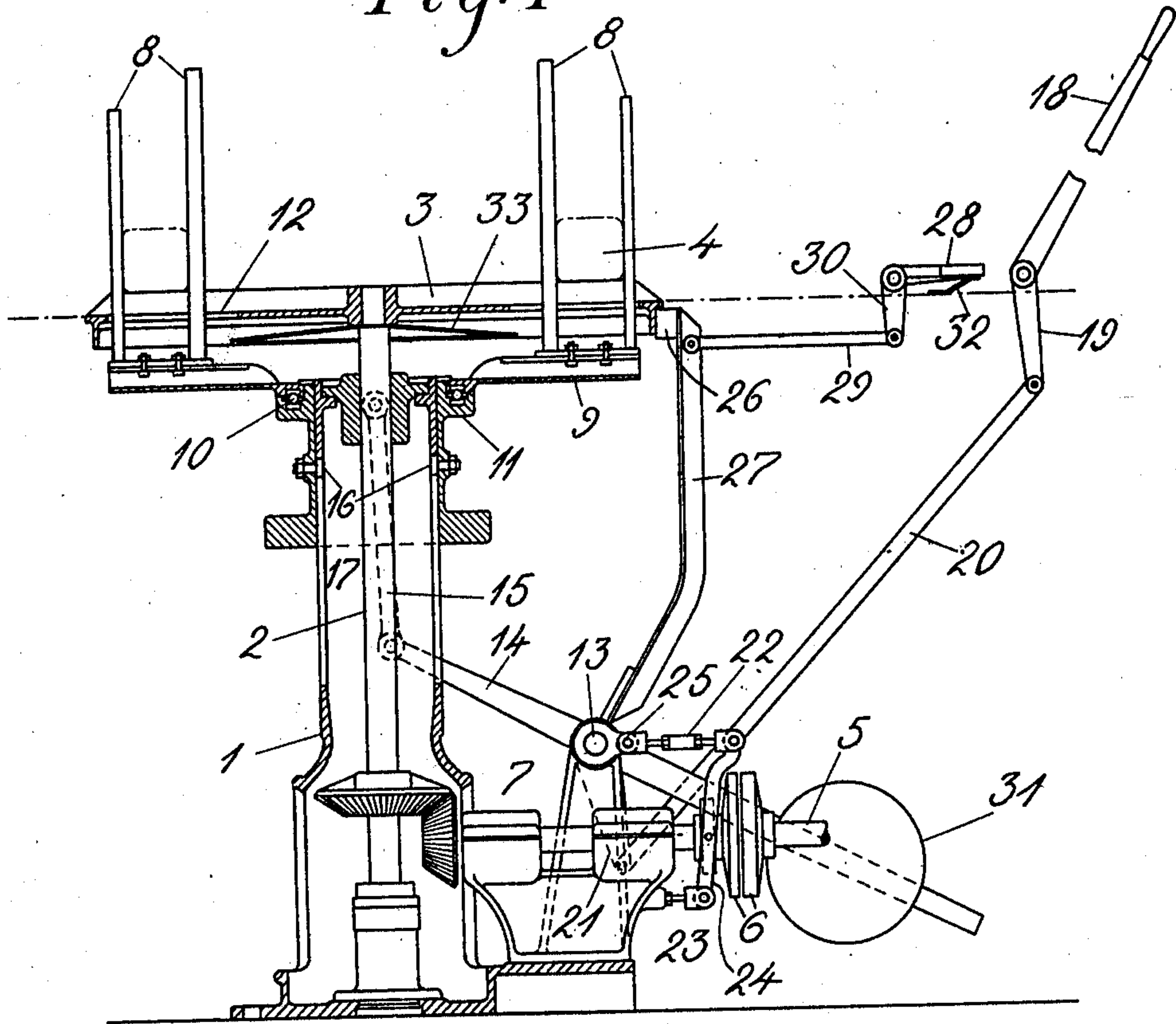
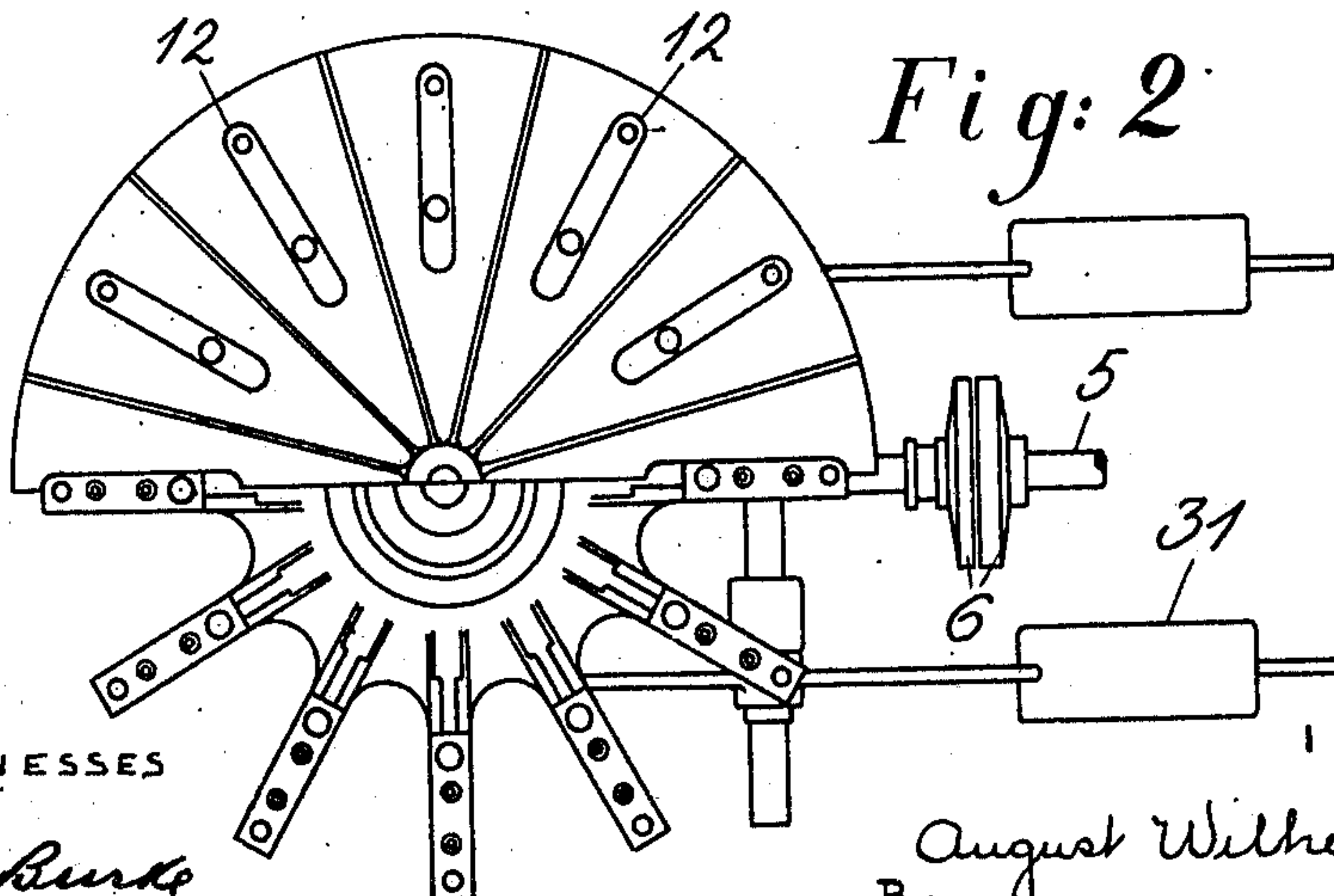


Fig: 2



WITNESSES

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INVENTOR

August Wilhelm Starck.
By *Wm. M. Sullivan*
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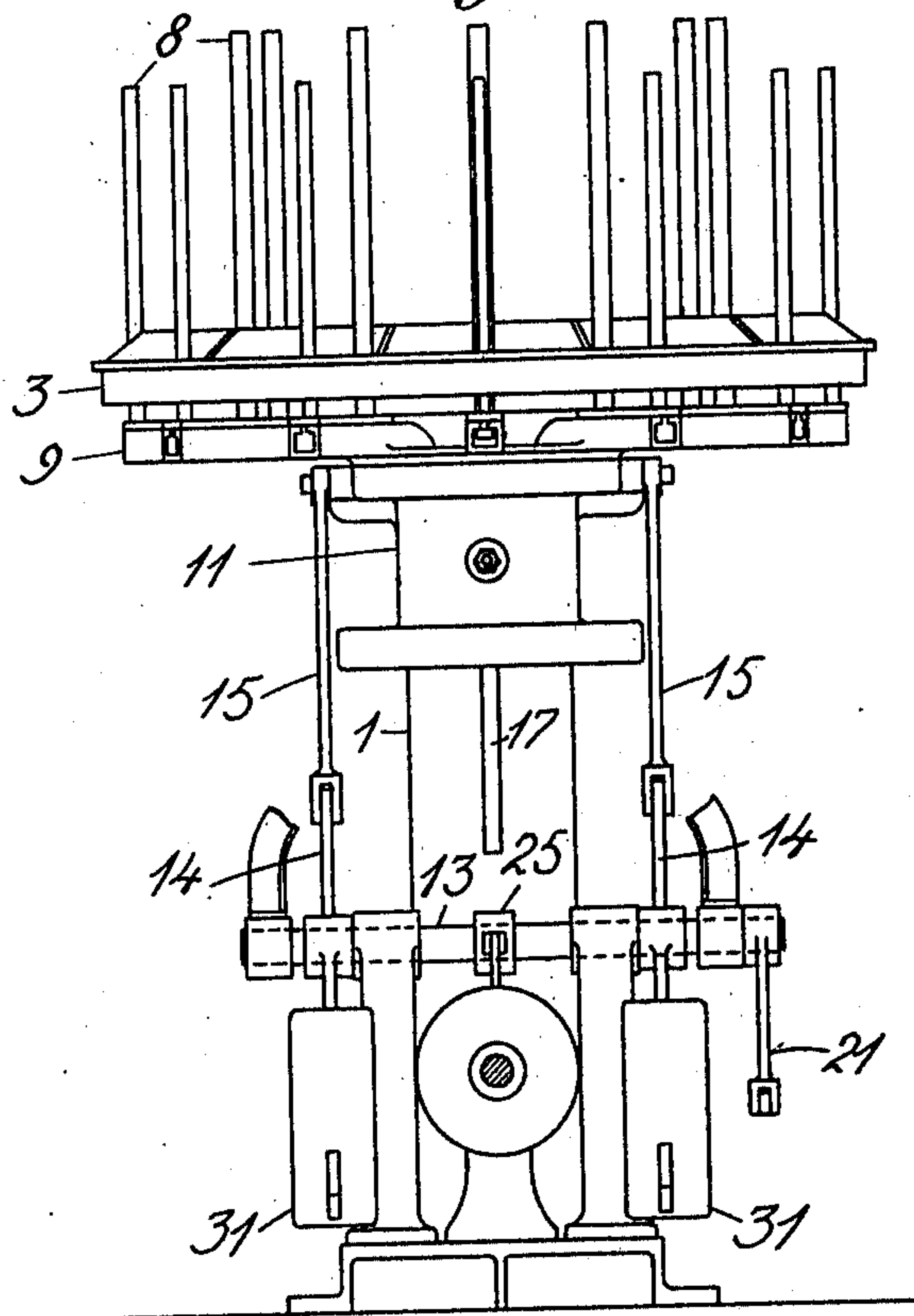
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2 SHEETS-SHEET 2.

Fig: 3



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UNITED STATES PATENT OFFICE.

AUGUST WILHELM STARCK, OF SKÖFDE, SWEDEN.

AUTOMATIC REEL FOR WIRE, &c.

988,905.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed January 3, 1910. Serial No. 536,190.

To all whom it may concern:

Be it known that I, AUGUST WILHELM STARCK, engineer, subject of the King of Sweden, residing in Skolgatan 14, at Sköfde, in the Kingdom of Sweden, have invented certain new and useful Improvements in Automatic Reels for Wire, &c., of which the following is a specification.

The present invention relates to an automatic reel for wire, etc., intended to be used in rolling mills or similar works.

Automatic reels of modern design are generally so constructed that the table which has to carry the reeled wire, by means of steam or hydraulic pressure is raised above the reel pins, when the wire ring is to be taken off. By the present invention, on the other hand, the reel pins are lowered, so that their upper ends are a little below the wire ring thus allowing the same to be freely removed. The present invention is consequently based upon an idea diametrically opposite to that one which characterizes earlier constructions.

The invention is illustrated on the accompanying drawings, on which a reel of this design is shown as an example.

Figure 1 shows a vertical section and Fig. 3 a side view of the reel. Fig. 2 shows the reel in plan looking from the top with one half of the wire carrying table removed.

In a support 1, a vertical shaft 2 carries a horizontal table 3, which is intended to carry the ring of reeled wire 4. The shaft and table mentioned are set into rotation from the driving shaft 5, by means of a friction clutch 6 and a pair of bevel gears 7. The reel pins 8 are fastened on the pin-carrying member 9 which can revolve on the ballbearing 10, arranged in the cylinder crosshead 11. The pin-carrying member 9 is set into rotation from the table 3 by means of the pins 8, which extend through the oblong holes 12 radially arranged in the table 3, and besides, the pin-carrying member 9 can be raised or lowered by means of the regulating shaft 13, the levers 14, the links 15 and the cylinder crosshead 11 which is slidably arranged on the support 1 but prevented from taking part in the rotation by the guiding bolts 16, which extend into the slots 17 in the support. The regulating shaft 13 is actuated by the handle 18 through the lever 19 and the link 20, which connects the lever 19 with the lever 21 on the shaft 13. On the same shaft, a crank 25 is fastened,

which by the link 22 is connected with an arm 24 movably fastened to the fork 23. This arm 24 is connected with the hub of the friction clutch 6 in such a way that the friction clutch can be engaged or disengaged by the arm 24. The lever 25 and the link 22 can be adjusted so that the clutch will be engaged, thus starting the reel, just when the pins 8 are raised to their highest position. When the wire ring 4 is completed, by turning the shaft 13, the pins 8 are lowered to their lowest position so that their upper ends are a little below the ring. Meantime, the friction clutch 6 is automatically disengaged by the action of the link 22 and the arm 24. The brake 26, which is carried by the fork lever 27, is pressed against the periphery of the table 3, by means of a treadle 28, which is repelled by a spring 32. The treadle is connected with the brake through the lever 30 and the link 29. By applying the brake, the table will stop almost instantaneously. The levers 14 are provided with extensions in opposite direction, upon which counterweights 31 are arranged, which serve to balance the constant weights of the link 15, the cylinder crosshead 11, the pin-carrying member 9 and the pins 8. Thus, the resistance which has to be overcome by the handle 18, is only the friction, and experience has proved this to be very little. The pins 8, which are fastened pairwise to an iron plate, can be adjusted radially to suit wire rings of different diameters. The plate 33 has to protect the sliding surfaces and the bearings from cinder and heavy dust.

Compared with other constructions, the present invention offers many considerable advantages. As mentioned before, other automatic rotatory reels of modern design necessitate the use of steam or hydraulic pressure. For this purpose, however, a special regulating cylinder with piston is required, and the whole machinery will be more complicated and expensive. The greatest difficulties with reels of that kind will, however, arise in plants where steam or hydraulic pressure does not exist, because such reels cannot work without arrangements for pressure of some kind, which makes the installment still more expensive. A reel of the present design can, however, be put up anywhere as a machine already mounted independently of steam and water. It works

more safely and can be manufactured at a lower price than any other automatic rotary reel of the same capacity.

It should be understood, that as well the
5 coupling arrangement for revolving the
table 3 as the regulating mechanism for
raising and lowering the pins 8 can be made
in different ways, and that the above de-
10 scription and the accompanying drawings
should only be considered as relating to an
example of the invention.

Having thus described my invention, I
declare that what I claim, is:—

1. In an automatic reel for wire and the
15 like, in combination, a shaft, means for
rotating the same, a vertical standard for
said shaft, a table secured to said shaft and
rotatable therewith, a bearing for said shaft
upon said standard and positioned adja-
20 cent said table, a pin-carrying member slid-
ably arranged on said vertical standard and
adapted to be moved relatively to said table,
and means for moving said member to cause
said pins to occupy alternately operative
25 and inoperative positions, the length of
travel of said member being greater than
the distance between said table and said
bearing.

2. In an automatic reel for wire and the
30 like, in combination, a shaft, means for ro-
tating the same, a vertical standard for
said shaft, a table secured to said shaft and
rotatable therewith, a bearing for said shaft
upon said standard and positioned adja-
35 cent said table, a pin-carrying member slid-
ably arranged on said vertical standard
and adapted to be moved relatively to said
table, means for moving said member to
cause said pins to occupy alternately oper-
40 ative and inoperative positions, the length
of travel of said member being greater than
the distance between said table and said
bearing, and means for automatically ren-
dering said shaft-rotating means inopera-
45 tive when said pins are moved into their
inoperative position.

3. In an automatic reel for wire and the
like, in combination, a vertical standard, a
shaft mounted therein, means for rotating
50 said shaft, a bearing for the upper end of
said shaft upon said standard adjacent the
upper end thereof, a table carried upon the
shaft at the upper end thereof, a pin-carry-
ing member slidably arranged on said ver-
55 tical standard and adapted to be raised and
lowered with respect to said table, said
member reciprocatingly engaging said stand-
ard below said bearing and means for recip-
rocating said member.

60 4. In an automatic reel for wire and the
like, in combination, a rotatable shaft, a

vertical standard for said shaft, a table sup-
ported thereby, driving means, a clutch in-
terposed between said driving means and
said shaft, a pin-carrying member slidably 65
arranged on said vertical standard and
adapted to be moved relatively to said table
to cause the pins alternately to occupy oper-
ative and inoperative positions and means
for moving said member and automatically 70
engaging and disengaging said clutch as the
pins occupy their operative and inoperative
positions respectively.

5. In an automatic reel for wire and the
like, in combination, a rotatable shaft, a 75
vertical standard for said shaft, a table sup-
ported thereon, driving means, a clutch in-
terposed between said driving means and
said shaft, a pin-carrying member slidably
arranged on said vertical standard and 80
adapted to be moved relatively to said table
to cause the pins alternately to occupy their
operative and inoperative positions with
respect to said table, means for moving said
member and a connection between said last- 85
mentioned means and said clutch for en-
gaging and disengaging the latter in ac-
cordance with the movement of the former.

6. In an automatic reel for wire and the
like, in combination, a rotatable shaft, a 90
vertical standard for said shaft, a table
supported thereon, driving means, a clutch
interposed between said driving means and
said shaft, a pin-carrying member slidably
arranged on said vertical standard and re- 95
ciprocatingly mounted with respect to said
table, and means for reciprocating said pin
carrying member, said means being oper-
atively connected to said clutch, the parts
being proportioned and arranged to dis- 100
engage said clutch when the pin-carrying
member is in its most distant position with
respect to the table and to engage the clutch
when the pin-carrying member is in its al-
ternate position. 105

7. In an automatic reel for wire and the
like, in combination, a vertical standard, a
shaft arranged within said standard, means
for rotating the shaft, a bearing for the
shaft located at the top of said standard, a 110
table secured to said shaft above the bearing,
a pin carrying member slidably mounted
on the outside of said standard and adapted
to be raised and lowered in relation to the
table and means for raising and lowering 115
said member.

In witness whereof I have hereunto set
my hand in presence of two witnesses.

AUGUST WILHELM STARCK.

Witnesses:

V. H. v. SCHAUTZ,

A. HARTWIG.