

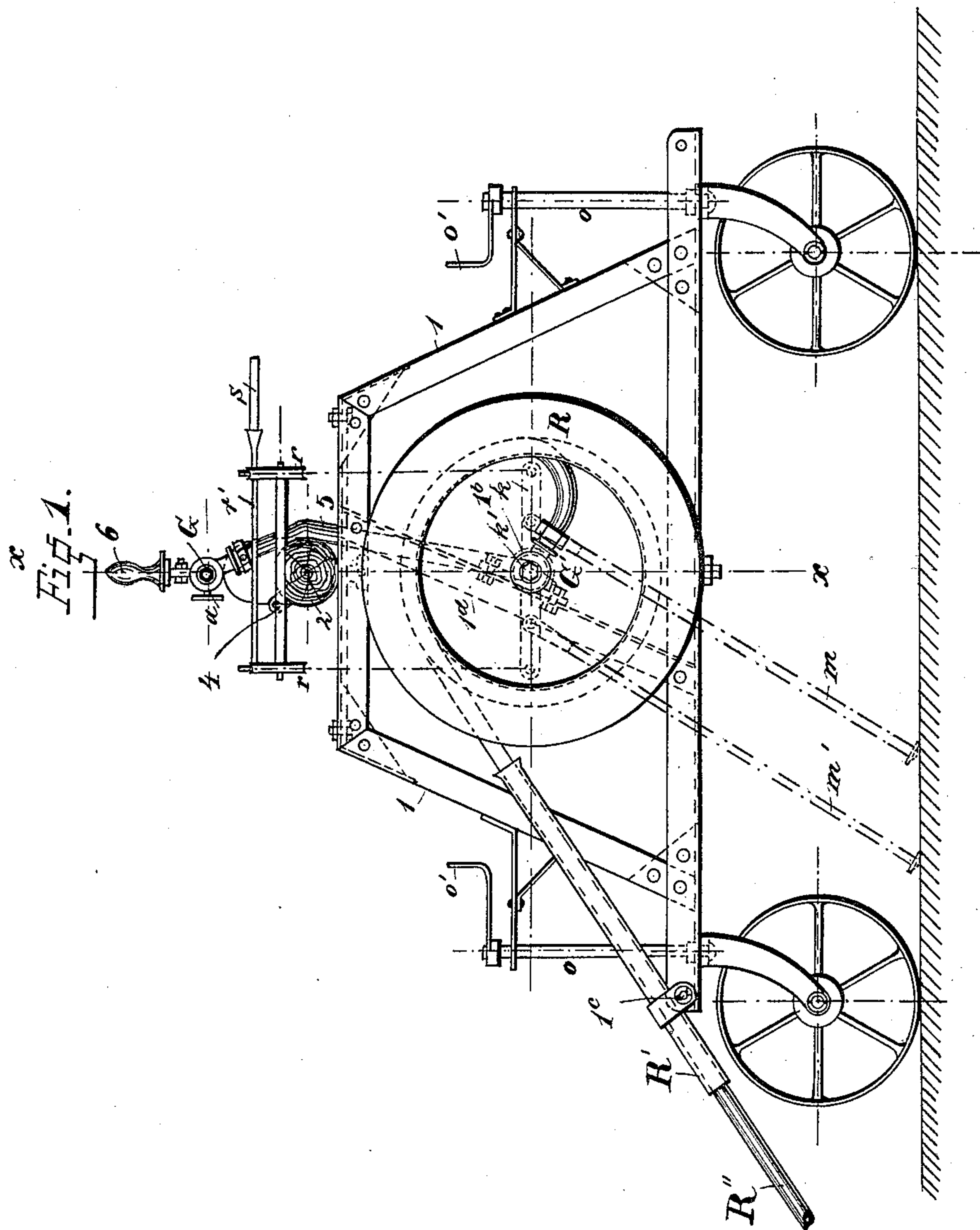
(No Model.)

4 Sheets—Sheet 1.

J. SAUER.
WATERING APPARATUS.

No. 466,187.

Patented Dec. 29, 1891.



Witnesses:
J. A. Rutherford
Geo. H. Rea.

Inventor:
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By James L. Norris.
Attorney.

4 Sheets--Sheet 2.

No. 466,187.

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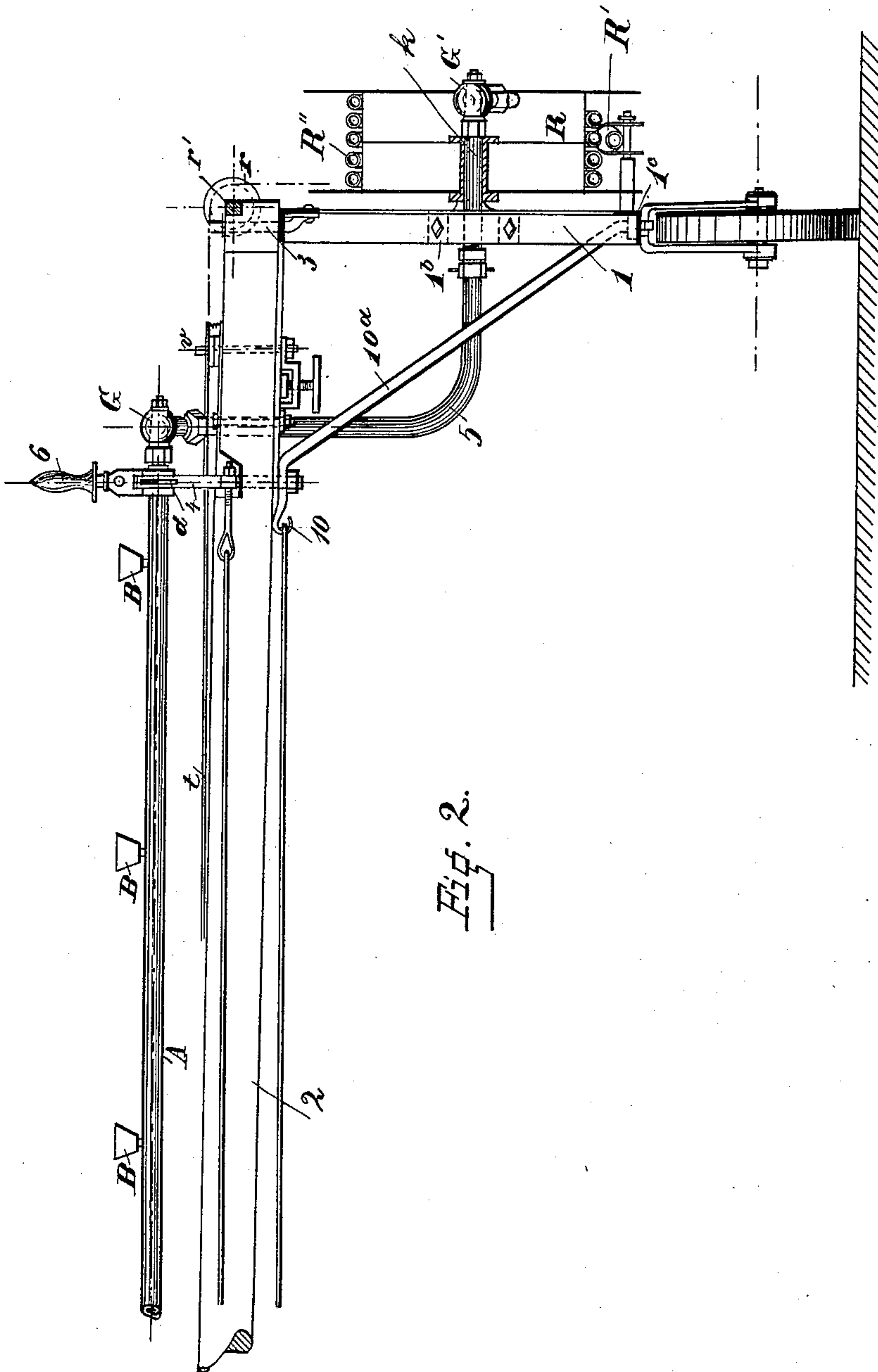


Fig. 2.

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FIG. 3.

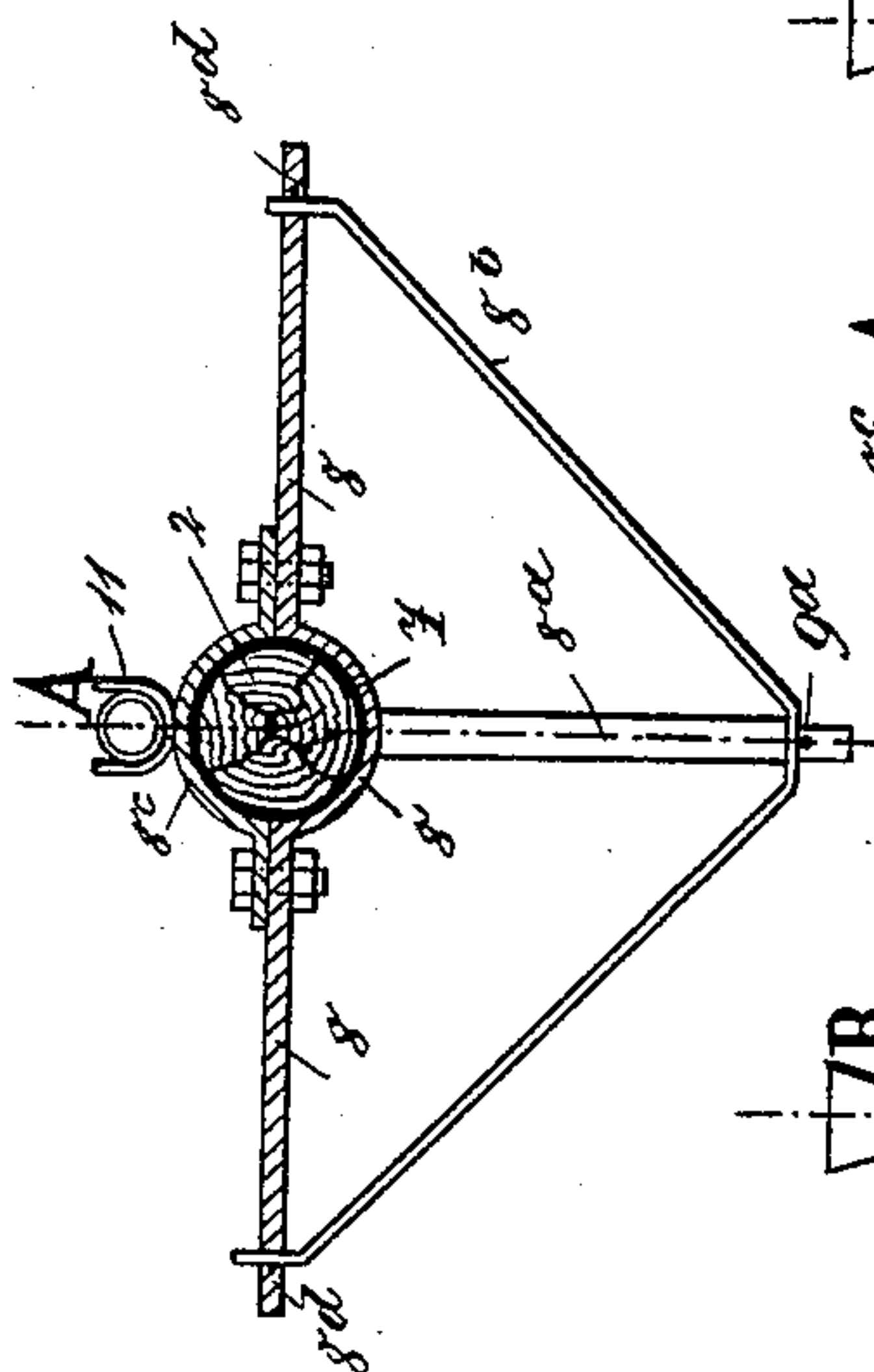


FIG. 4.

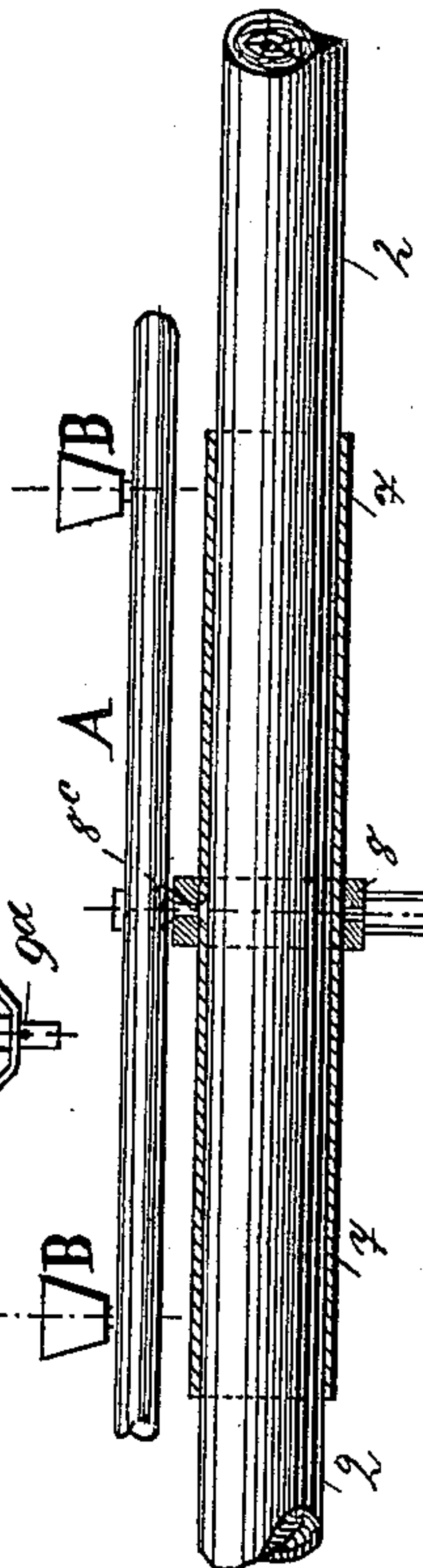


FIG. 6.

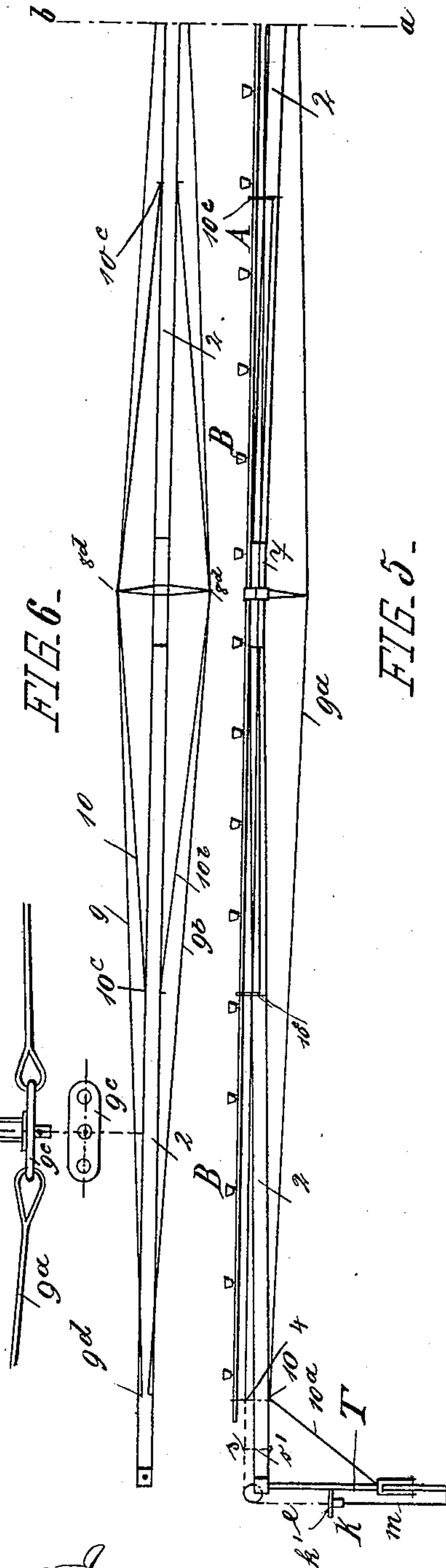


FIG. 5.

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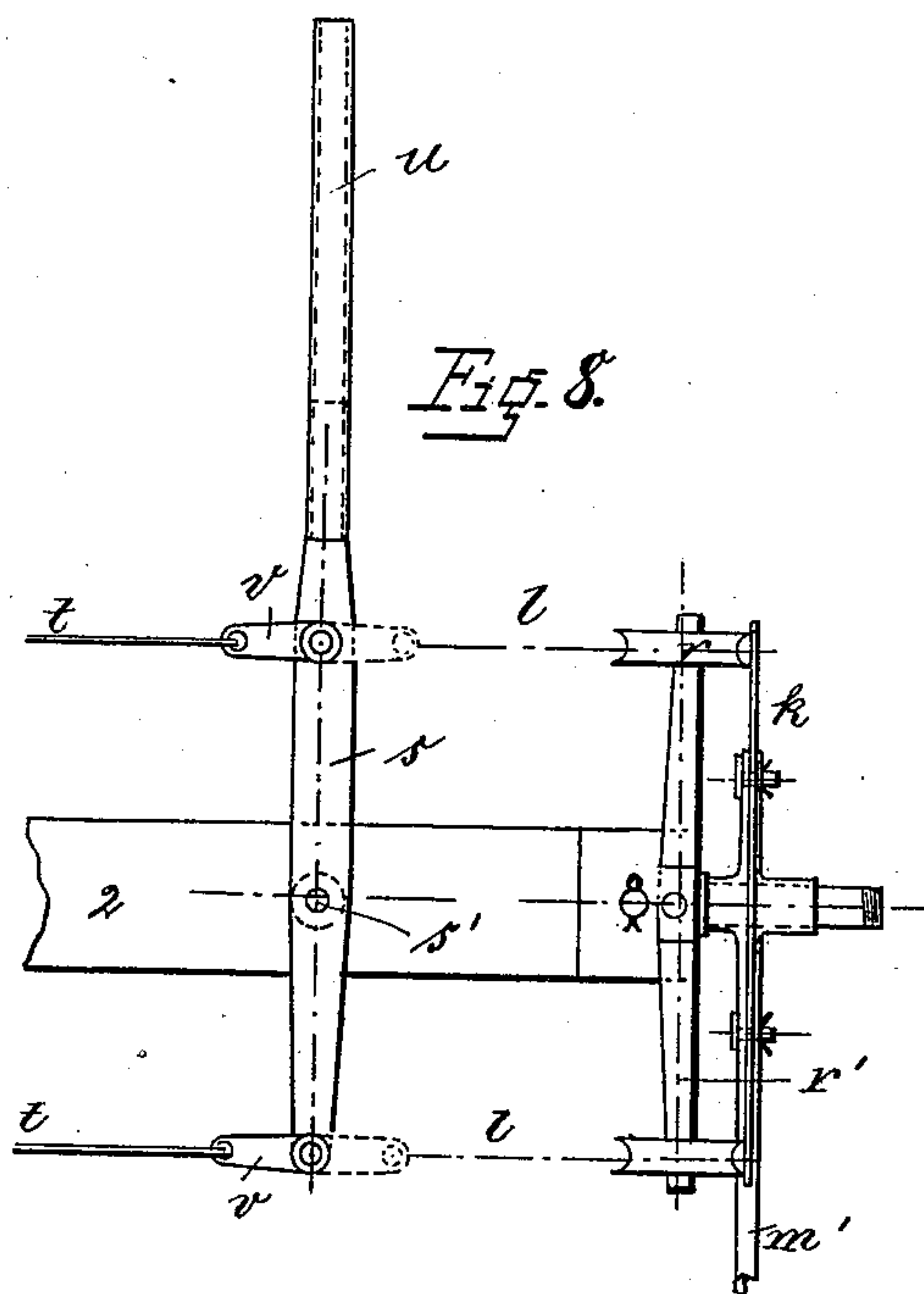
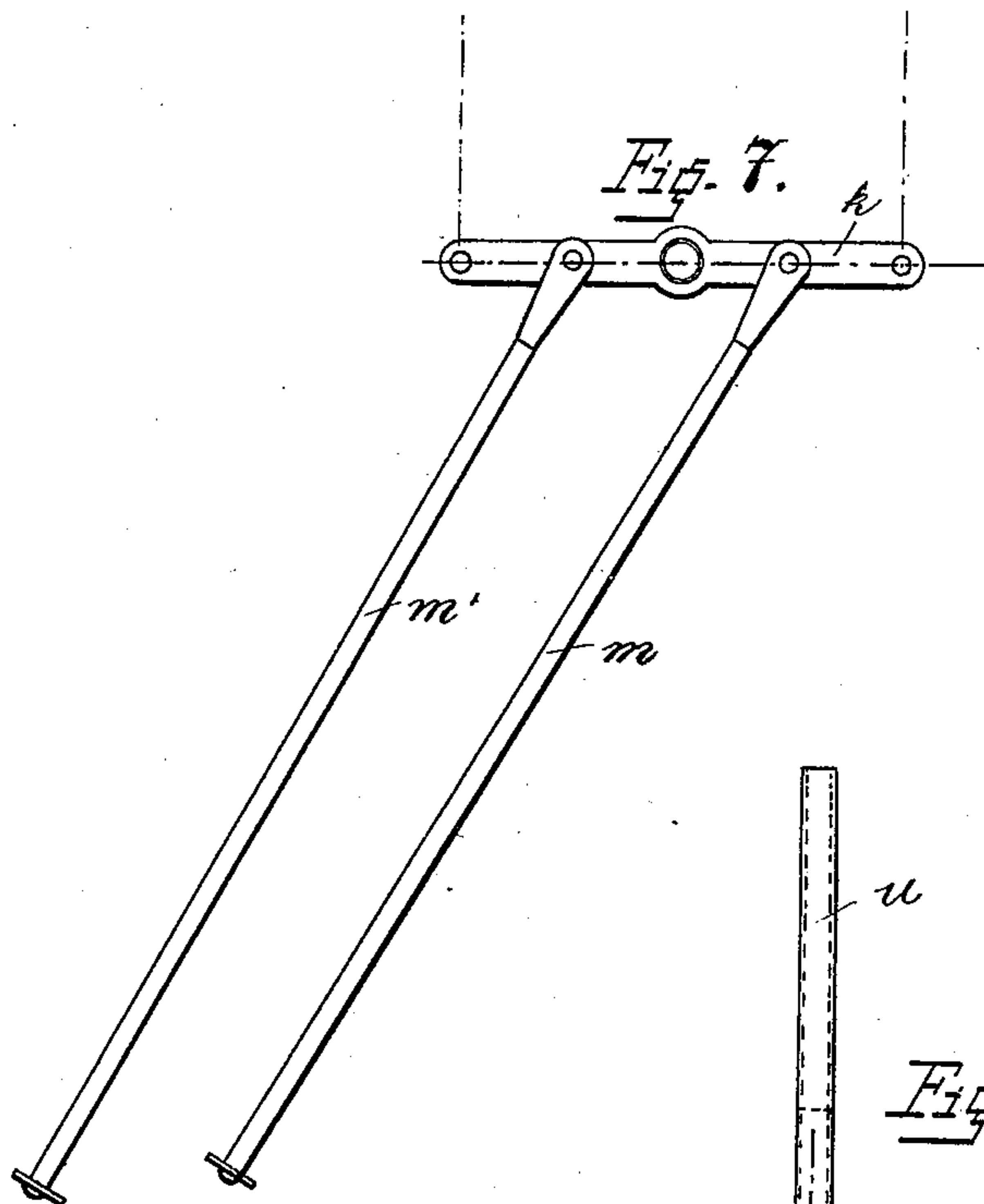
(No Model.)

4 Sheets—Sheet 4.

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No. 466,187.

Patented Dec. 29, 1891.



Witnesses:-
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UNITED STATES PATENT OFFICE.

JOSEF SAUER, OF HEDDES DORF, GERMANY.

WATERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 466,187, dated December 29, 1891.

Application filed December 30, 1890. Serial No. 376,273. (No model.) Patented in Germany June 4, 1890, No. 52,740; in Belgium November 13, 1890, No. 92,697, and in England November 17, 1890, No. 18,494.

To all whom it may concern:

Be it known that I, JOSEF SAUER, of Heddesdorf, Rhineland, Prussia, Germany, have invented certain new and useful Improvements in Watering Apparatus, (for which I have obtained a patent in Germany dated June 4, 1890, No. 52,740; in Great Britain, No. 18,494, dated November 17, 1890, and in Belgium, No. 92,697, dated November 13, 1890,) of which the following is a full, clear, and exact specification.

This invention has for its object to provide a new and improved apparatus for watering gardens, orchards, fields, and other places; and it consists in the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of a watering-machine embodying my invention. Fig. 2 is a section of part of the machine on the line $x x$, Fig. 1. In this view only one-half of the watering-machine is shown—namely, the head end of it with the roller for tubing. Figs. 3 and 4 show as details in front elevation and cross-section the connection and joint of beam 2, Figs. 1 and 2. Fig. 5 is a front elevation of the apparatus with parts left out for clearness. Fig. 6 is a plan view of the cross-beam 2 and its wire connections, Figs. 5 and 6 are partly shifted out of position where the line $a b$ intersects the upper parts, being a continuation of the figures. Fig. 7 is a side elevation, and Fig. 8 a plan, of the forward-moving or propelling appliance of machine.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The letter R'' indicates a rubber or other hose carried by a reel or drum R, mounted on a hollow axle k' . One extremity of the hose R'' is connected with one end of the hollow axle by a swivel or ball joint G', and the other end of such axle is attached to a curved tube 5, which connects with a horizontal axially rotatable water-distributing pipe

A through the medium of a swivel or ball-joint G.

The wheeled frame of the apparatus comprises side frames 1, which connect with the extremities of a horizontal beam 2 by means of screws 3 or other suitable fastening devices. The framing runs on four wheels, which are each carried in forks, the perpendicular shafts or connections o of which go loosely through the bottom bar of the side frames 1 T, so that the wheels can be turned round by means of the handles o' and the whole apparatus be thus driven in any desired direction. Over the beam 2 is fitted the water-distributing pipe A, which is turnable on its axis. The end of the pipe A is by means of the swivel or ball joint G, rubber tube 5, and with swivel or ball joint G', connected with the hose-carrying reel or drum R, whose hollow axle or trunnion k' rests in a bearing which may be fixed on the beam 1^a, (shown dotted at Fig. 1,) fastened on both side frames 1 T of the framing. The water-pipe A, which has at certain distances in its length discharge or efflux tubes or cups B, is carried in bearings and can be turned around its horizontal axis by means of the handle 6. It is clamped in position by a clamping-screw a . At the joint in the center of the beam 2 both parts are surrounded by a ferrule or shell 7 and fitted with a connection-holder. (See Fig. 3.) This holder consists of the bent pillow-bar 8, the cap 8^c and the support 8^a, which latter is at its upper end screwed into the part 8, and at the lower end is inserted through a hole in the tie-arched bar 8^b, which connects the bars 8 and 8^a. The connection-holder is held in position by an arrangement of wires, the wires 9 9^b 10 10^b being led through the holes 8^d in the pillow-bar 8, while the wires 9^a are united by means of the link 9^c (see Fig. 4 and also small plan view of link) on the lower end of the support 8^a. The connecting-wires 10 10^b are at the points 10^c of the beam 2, and the connecting-wires 9 9^b at the points 9^d of it fastened to rings or holders 4 in any suitable way. The wire 9^a is at each end connected

by a hook 10 to the supports or struts 10^a of the framing. The water-pipe A is supported by a bracket 11, (see Fig. 3,) which is fitted on the cap 8^c. The hose or tube unrolled from the reel R is led into a cylindrical shell or tube R', fitted at 1° to the bottom of the side frame 1. The reel or drum R may be arranged at the right-hand side of the framing, if so desired, just as well as on the left, so that by means of a tube connection 5 the machine may be supplied with water on either side. The end of the water-pipe lying opposite the reel or drum R is closed up.

The discharge or efflux tubes or cups B of the water-pipe A (see Figs. 12 and 13) consist each of a tube B', having screw-threaded extremities, one of which is screwed into a screw-socket in the water-distributing pipe A and the other into the small end of a cup B, the space or chamber in which is conical or diverges outwardly from the tube B'. To one of the side walls of the cup B is bolted or otherwise attached an inclined spray-plate F, which acts to deflect the water laterally in a thin sheet.

The apparatus which has on the right-hand side of its framing the hose or tube R, has on the other side the removable apparatus, Figs. 7 and 8, for moving it forward.

The moving appliance is constructed as follows: On both ends of the cross-beam 2 and on a right angle with it is fitted a spindle *r'*, which carries at each end a wheel *r*. At each end *s* of the beam (see Figs. 5 and 8) is fitted a movable lever *s*, which lever carries two links *v v*. The wires *t t* join the levers *s s* on the ends of the beam 2. On the pulleys *r r* run chains or equivalents *l l*, which are connected with the lever *k* of the propelling appliance proper. The lever *k* is, when the reel or drum R is on the side frame 1, fulcrumed on the end of the axle *k'*, fitted to the beam 1^a of the side frame T. (See Fig. 5.) The lever *k* is arranged to be removable, so that it can be put on either the side frame 1 or T, according as to whether the reel or drum R is at the one side or the other. When the reel or drum is at one side, the lever *k* and appurtenances is preferably fitted on the opposite side. The lever *k* has the moving bars or legs *m m'* pinned to it. The legs *m m'* take (when out of action) an inclination to the ground, as shown. On the levers *s* may be slipped pieces of metal tubing *u* for the purpose of lengthening them and thus giving greater leverage.

The mode of operating the apparatus is as follows: Water is conducted from a hydrant or other suitable source by the tube R' to the roll of hose R'' on the reel or drum R, and from thence through the ball-joint G', hollow axle or trunnions *k'*, and connecting-tube 5 by ball-joint G into the water-pipe A, from whence it passes out through the efflux tubes or cups B in a broad stream over the land to be watered. To regulate this stream (which

depends on the pressure of the water) the lever or handle 6 is used, by means of which the water-pipe A is turned round into a position to give the water an upward or downward direction. When turned round into proper position, the pipe is fixed by means of the clamping-screw *a*. (See Fig. 2.) Should it be desired to move the apparatus to another place, use the lever *s*, swinging it sidewise in a horizontal direction. At the movement of the lever *s* to the right, the chain *l* going over the pulley *r* draws up one end of the lever *k*, turning on the fulcrum *k'*, and lifts up the leg *m*, which latter is in consequence brought from an inclined position to a more perpendicular one. If the lever *s* is now swung in the opposite direction, then the other arm of the lever *k* with its leg *m'* is lifted up. This causes the watering-machine to move forward, inasmuch as the leg *m*, supporting itself on and pushing against the ground, moves forward the lever *k*, and in consequence also the framing. With this arrangement it becomes possible for only one person to move the machine.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a watering apparatus, of a wheeled frame, a pillow-bar 8, having a vertical support 8^a, an arched bar 8^b, engaged with the support and attached to the pillow-bar, a horizontal beam 2, engaged with the wheeled frame and supported by the pillow-bar, an axially-rotatable water-distributing pipe A, extending and supported parallel with the beam and having a series of water-distributing cups B, and means for supplying water to the distributing-pipe, substantially as described.

2. The combination, in a watering apparatus, of a wheeled frame, a pillow-bar 8, having a vertical support 8^a, a bar 8^b, engaging the support and connected with the pillow-bar, a horizontal beam 2, engaged with the wheeled frame and supported by the pillow-bar, an axially-rotatable water-distributing pipe A, supported parallel with the beam and having a series of water-distributing cups B, a hollow reel-axle carried by the wheeled frame, a reel mounted on the axle and provided with hose connected with such axle, and a tube connecting the axle with the water-distributing pipe, substantially as described.

3. The combination, in a watering-machine, of a wheeled frame, a pillow-bar 8, having a cap 8^c and a support 8^a, a ferrule or shell 7, extending through the pillow-bar, a beam 2, extending through the ferrule or shell, an axially-rotatable water-distributing pipe A, supported parallel with the beam and having a series of water-distributing cups B, and means for supplying water to the distributing-pipe, substantially as described.

4. The combination, in a watering-machine, of a wheeled frame, a lever fulcrumed to the

frame and having walking-legs m m' , the
spindles r' , provided with pulleys r , the chains
 l , passing over the pulleys and connected
with the ends of the lever, and the lever s for
5 operating the chains to oscillate the levers
and impart a walking motion to the walking-
legs, substantially as described.

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

JOSEF SAUER.

Witnesses:

GUSTAVE OELRICHS,
WILLIAM D. WAMER.