

No. 764,616.

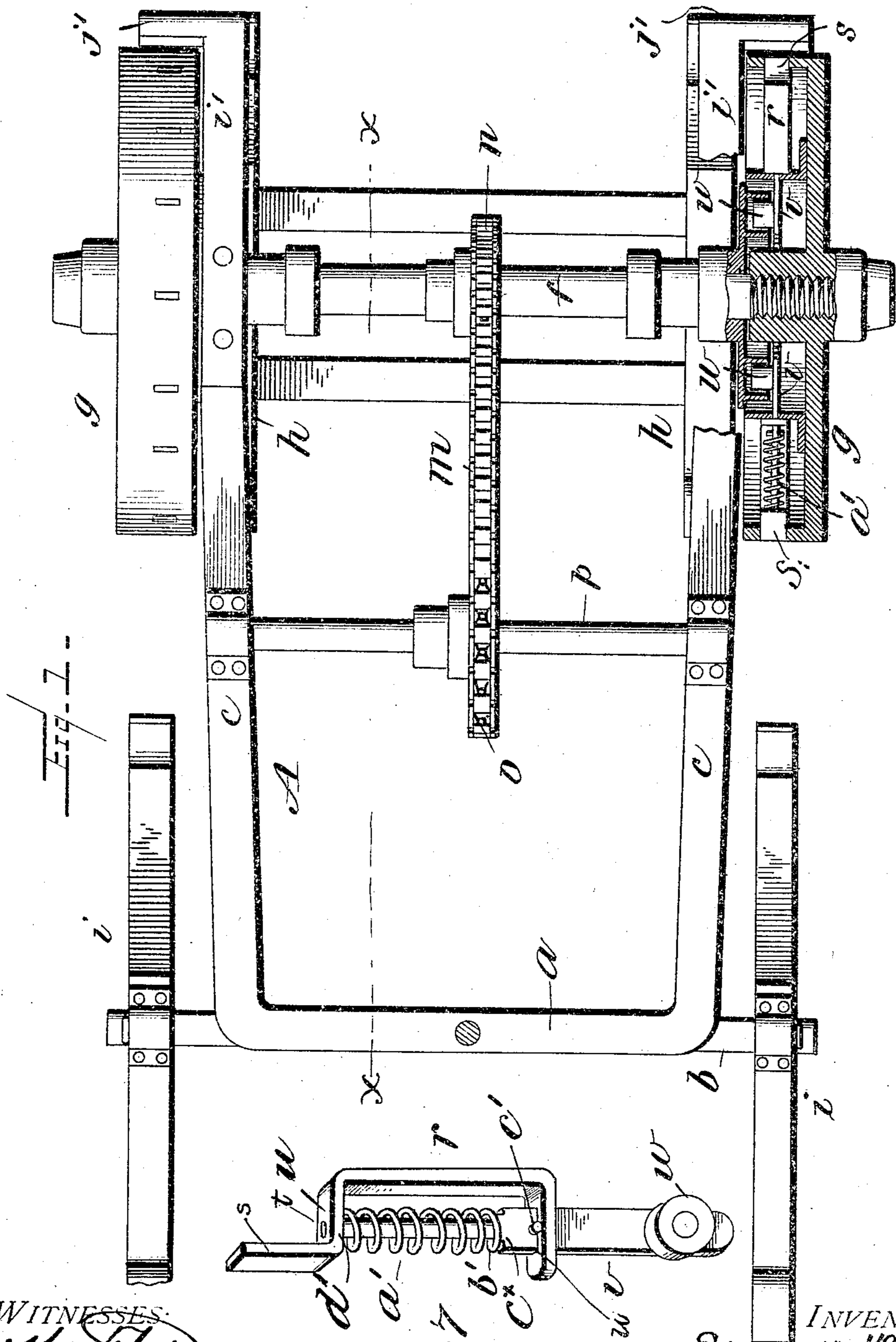
PATENTED JULY 12, 1904.

E. F. McINTIRE.
TRACTION ENGINE.

APPLICATION FILED MAR. 7, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

Wm. F. Koyle.
Wm. H. Nicholls

Fig 7

INVENTOR
Edward F. McIntire
BY *Saml. Bates*

Attorney

No. 764,616.

PATENTED JULY 12, 1904.

E. F. McINTIRE.
TRACTION ENGINE.

APPLICATION FILED MAR. 7, 1904.

NO MODEL.

3 SHEETS—SHEET 2.

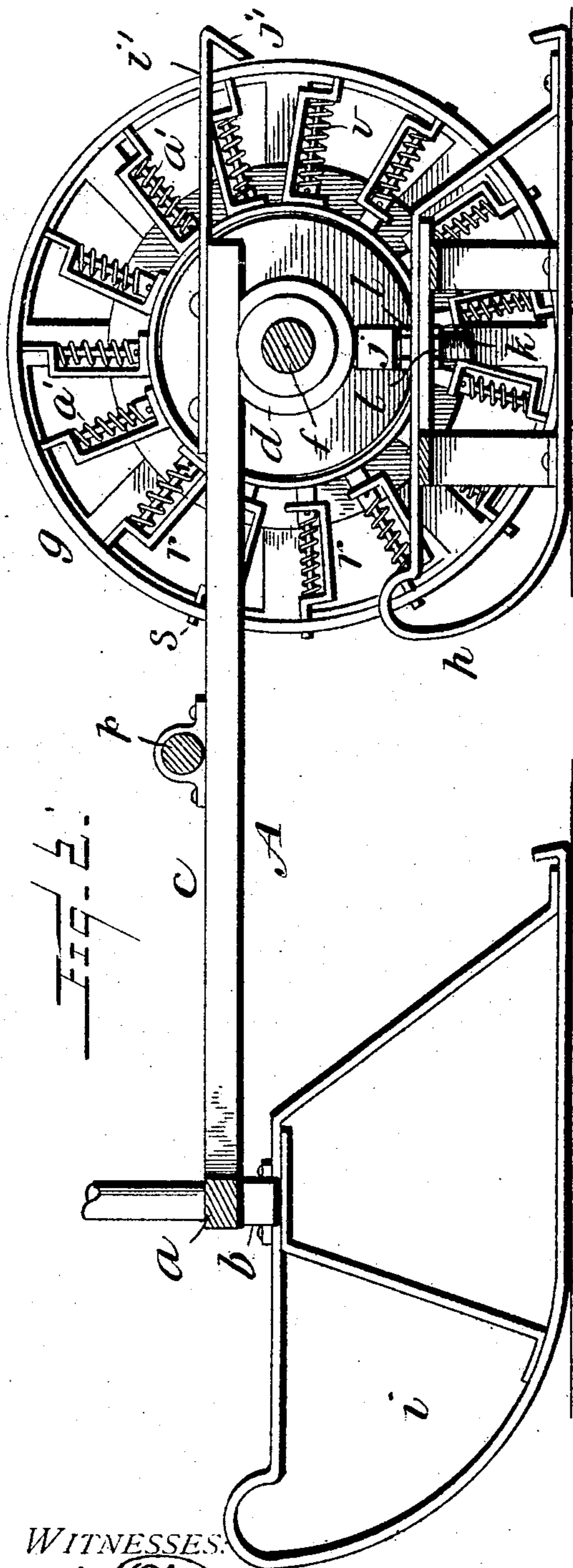


Fig. 2.

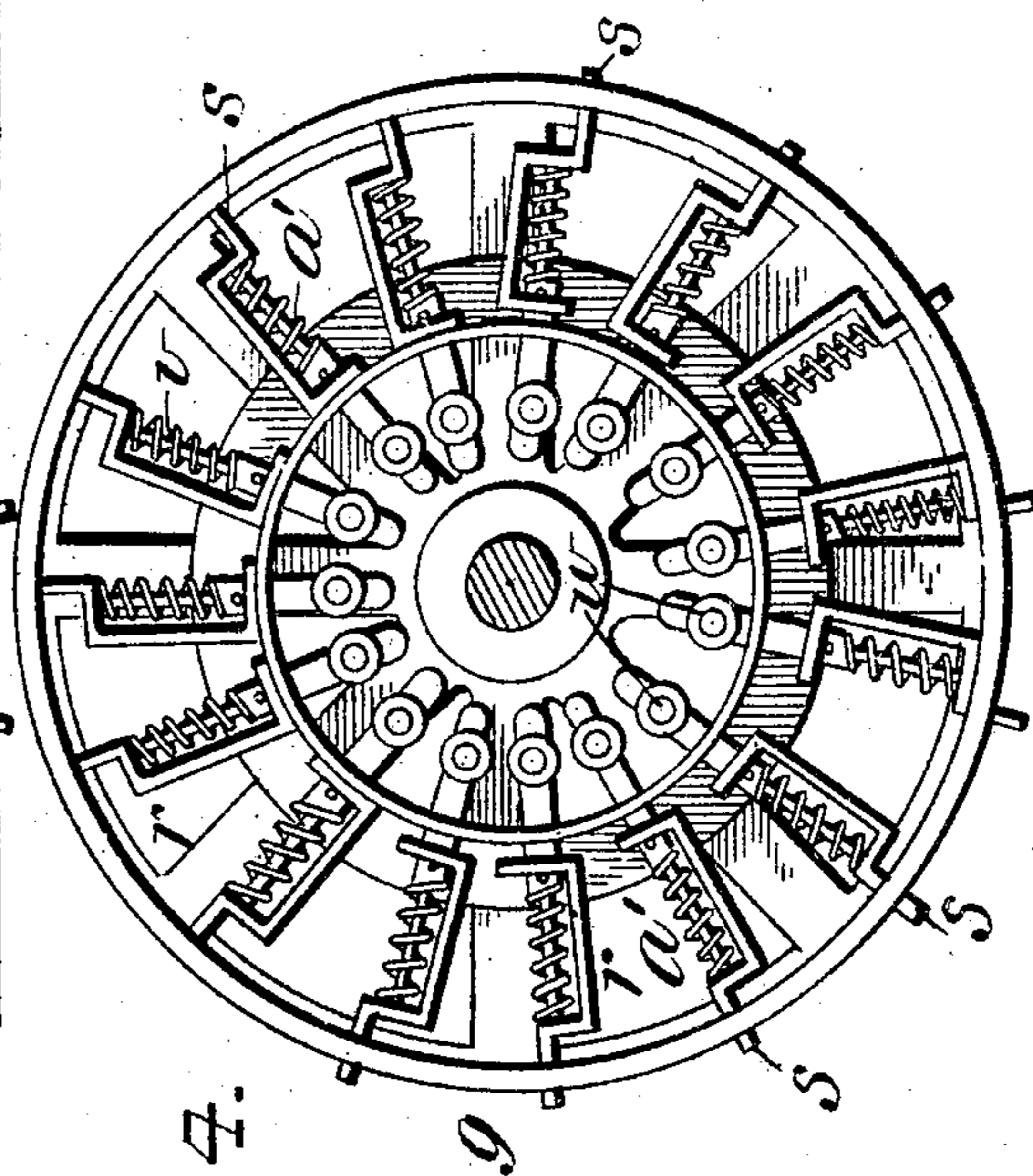


Fig. 3.

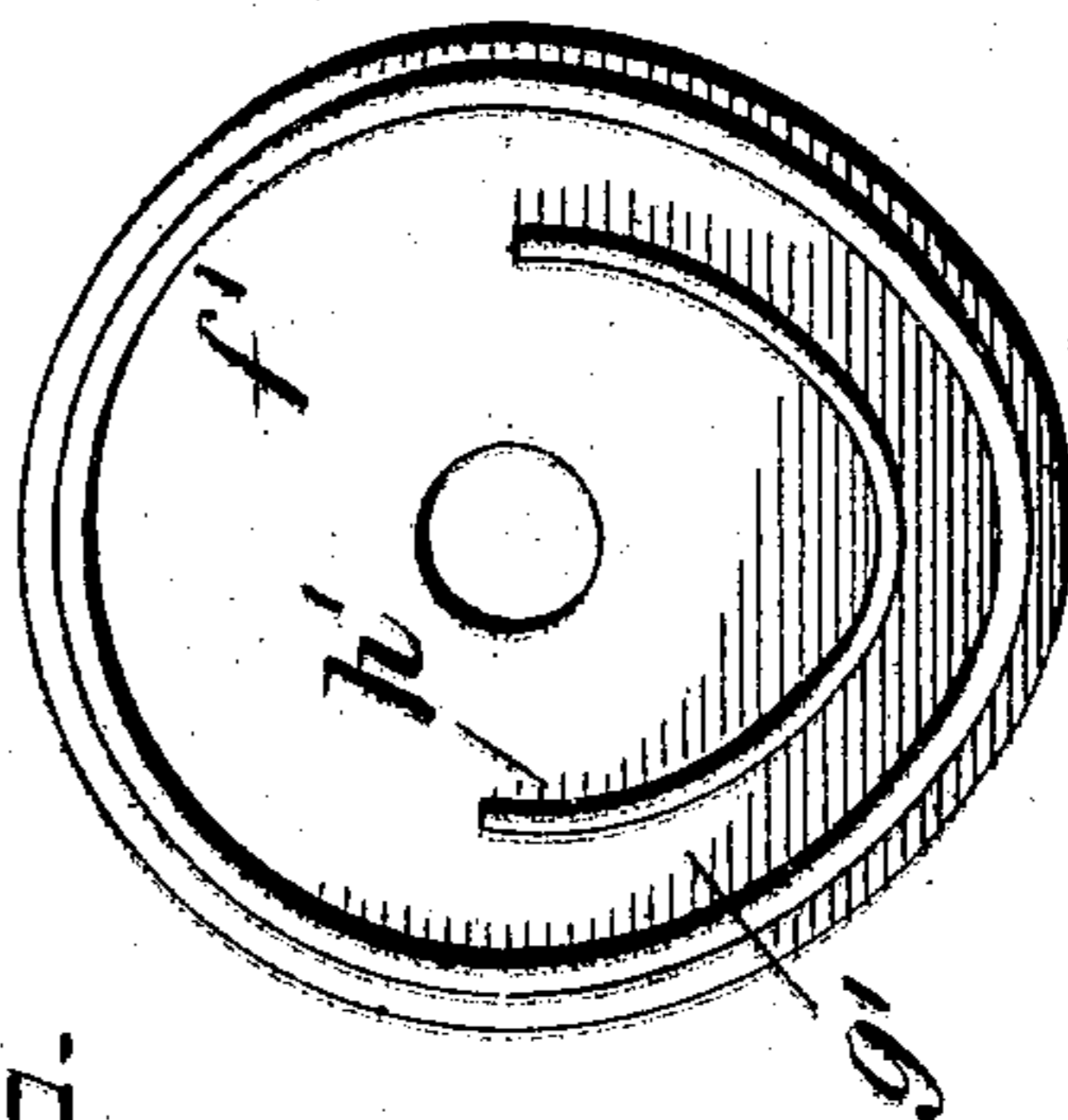


Fig. 4.

WITNESSES.

Wm. F. Doyle
Wm. Nicholls

INVENTOR
Edward F. McIntire
BY *Wm. H. Bates*

Attorney

No. 764,616.

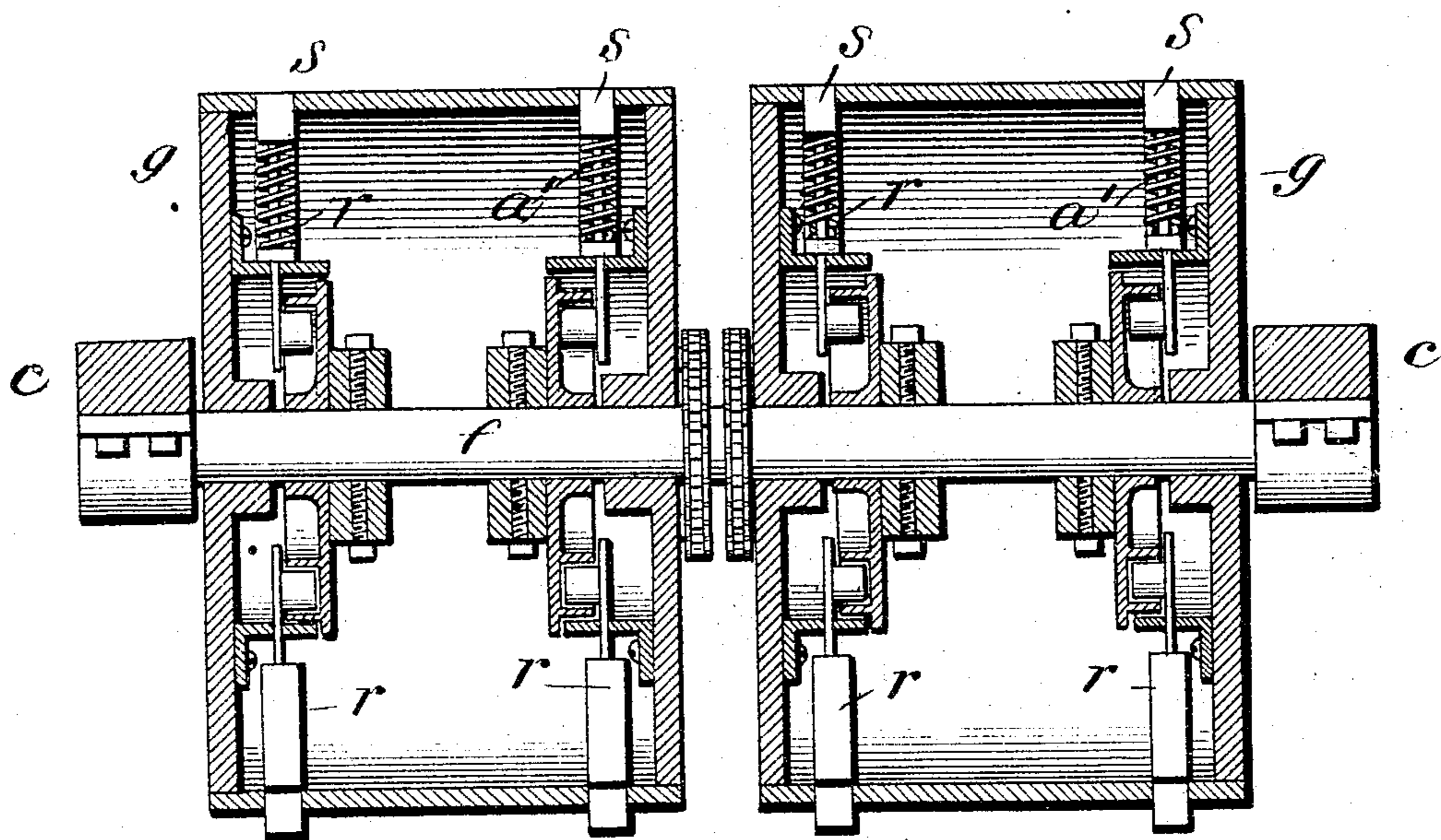
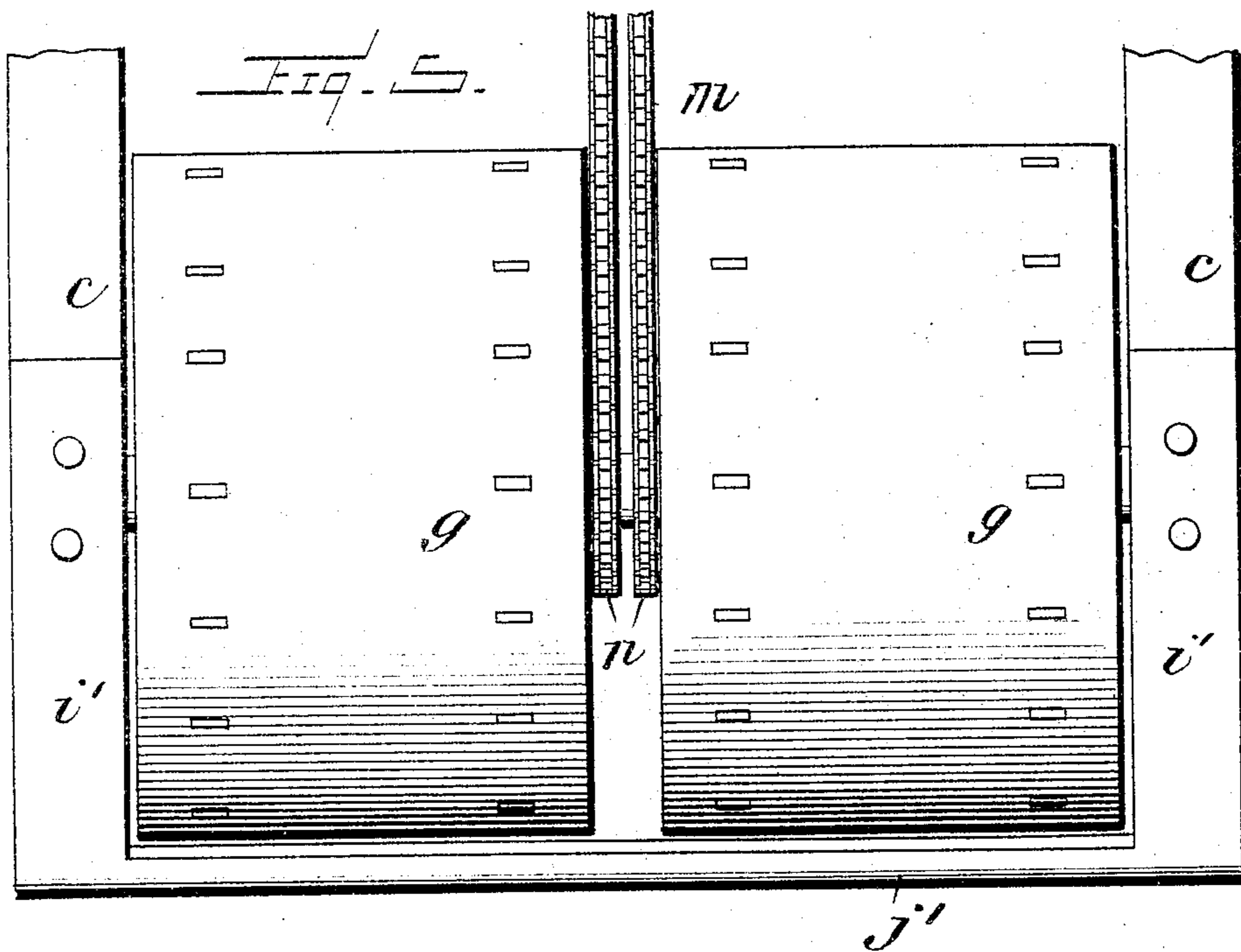
PATENTED JULY 12, 1904.

E. F. McINTIRE.
TRACTION ENGINE.

APPLICATION FILED MAR. 7, 1904

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES:

Wm. F. Doyle.
Wm. H. Nichols

Fig. 6.

INVENTOR
Edward F. McIntire
BY *Geo. W. Bates*
Attorney

UNITED STATES PATENT OFFICE.

EDWARD F. McINTIRE, OF FRYEBURG, MAINE.

TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 764,616, dated July 12, 1904.

Application filed March 7, 1904. Serial No. 196,908. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. McINTIRE, a citizen of the United States, residing at Fryeburg, in the county of Oxford and State of Maine, have invented new and useful Improvements in Traction-Engines, of which the following is a specification.

This invention has relation to improvements in traction-engines; and it consists in the novel construction, combination, and arrangement of parts of which it is composed, all as will be hereinafter more fully explained, and particularly pointed out in the appended claims.

The annexed drawings, to which reference is made, fully illustrate my invention, in which—

Figure 1 represents a top or plan view of my device, partly in section. Fig. 2 is a vertical longitudinal sectional view of the same, taken on line *xx*, Fig. 1. Fig. 3 is a face view of the operating-cam detached from the drive-wheel. Fig. 4 is an inner face view of one of the drive-wheels. Fig. 5 is a plan view of a pair of road-rollers, showing my device applied thereto. Fig. 6 is a vertical transverse sectional view of the same, and Fig. 7 is a perspective view of one of the operating spur-rods detached from the machine.

Referring by letter to the accompanying drawings, A designates the frame of the machine, comprising the front cross-bar *a*, to which the front axle *b* is pivoted, and two parallel side bars *cc*, which are secured at their rear ends to bearings *d* on the revolving rear axle *f*, that carries the transporting-wheels *g g*. To this bearing on either side of the frame the hind runners *h* of bob-sled are secured, and the front runners *i* are secured to the front axle. The connection between the rear sled and the bearing on the rear axle is by means of a vertical bolt or bar *j*, the lower end *k* of which is screw-threaded and passes through an opening in the top rail of the runner and is held fast thereto by the upper and lower nuts *l l*.

The transporting-wheels are made fast with the hind axle and revolve therewith through the medium of the chain *m*, which engages a sprocket-wheel *n* on said axle and a sprocket-

wheel *o* on the transverse driving-shaft *p*, journaled on the main frame. The tire or periphery of these transporting-wheels is perforated, through which the gripping or spur ends of a series of spring-actuated arms have their place. These arms comprise an angular bar *r*, having the extension or spur *s* and an opening *t* at one end and an opening *u* at the opposite end, and in which openings plays a rod *v*, having at one end a guide-roller *w*; and at the other a coiled spring *a'*, having one end bearing at *b'* against the shoulder *c'* of the bar and at the other against the angle-iron, as at *d'*, said bar *v* having a pin *e'*, which forms a stop in limiting the outward movement of the angle-iron.

The roller *w* engages a cam *f'*, that is secured to the under side of the frame and through which the hind axle *f* passes. Said cam being stationary permits the rollers of the angular gripping-arms to travel around the inner face of the cam, and as the sled moves forward the rollers of the lower and forward gripping-arms pass within the space *g'* between the inner cam *h'* and the outer cam *f'*, thus projecting the outer or gripping end of the angular rod, thereby causing the ends or spur-points to grip the ice, snow, or ground in the forward movement of the machine. At the same time the upper and rear gripping-arms are withdrawn within the wheel by the rollers *w* engaging the flange *f'*. To the rear end of the side rails of the frame are secured arms *i' i'*, having bent ends *j' j'*, that bear against the outer surface of the wheels and serve as scrapers therefor.

It will be observed that when power is applied to the driving-shaft *p* (by any suitable motor) the rear axle is revolved through the medium of the drive-chain and the machine is moved forward, and by means of the cam operating on the rollers of the angular arms the same are projected and caused to grip or bite the ice, snow, or earth. At the same time those arms not contacting with the ice are withdrawn within the wheel, and it will be further seen that when the arms are in contact with the ice or ground they have a yielding or spring pressure thereon.

In Figs. 5 and 6 I show my device applied

to the rollers of an ordinary steam-roller, the construction and operation of the cams and spring-actuated gripping-arms being the same as in the construction above described.

5 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the main frame, transporting-wheels secured to the axle and
10 carrying said frame, cams secured to the under side of the frame through which the axle is passed, spring-actuated gripping angular arms composed of the angular perforated portion, shouldered rods secured in the slotted
15 and perforated horizontal portions of the spring-actuated gripping angular arms, coiled springs encircling the outer portion of the shouldered rods, stop-pins secured to the shouldered rods and bearing against the lower
20 horizontal portion of the spring-actuated gripping angular arms, antifriction-rollers secured to the lower ends of the shouldered rods.

2. The combination with the main frame, transporting-wheels secured to the axle and
25 carrying said frame, cams secured to the under side of the frame through which the axle is passed, spring-actuated gripping angular

arms composed of the angular perforated portion, and shouldered rods operatively secured in the slotted and perforated horizontal portions, of the spring-actuated gripping angular arms, coiled springs encircling the outer portion of the shouldered rods, stop-pins secured to the shouldered rods and bearing against the lower horizontal portion of the
35 spring-actuated gripping angular arms, antifriction-rollers secured to the lower ends of the shouldered rods; of the hind runners secured to the screw-threaded depending bolts depending from the bearing of the axle and
40 passing through the opening in the top rails of the runners, and upper and lower nuts located on the bolts for securing the runners to the depending bolts and the front runners secured to the front end of the frame, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD F. McINTIRE.

Witnesses:

C. T. LADD,

C. A. ABBOTT.