

(No Model.)

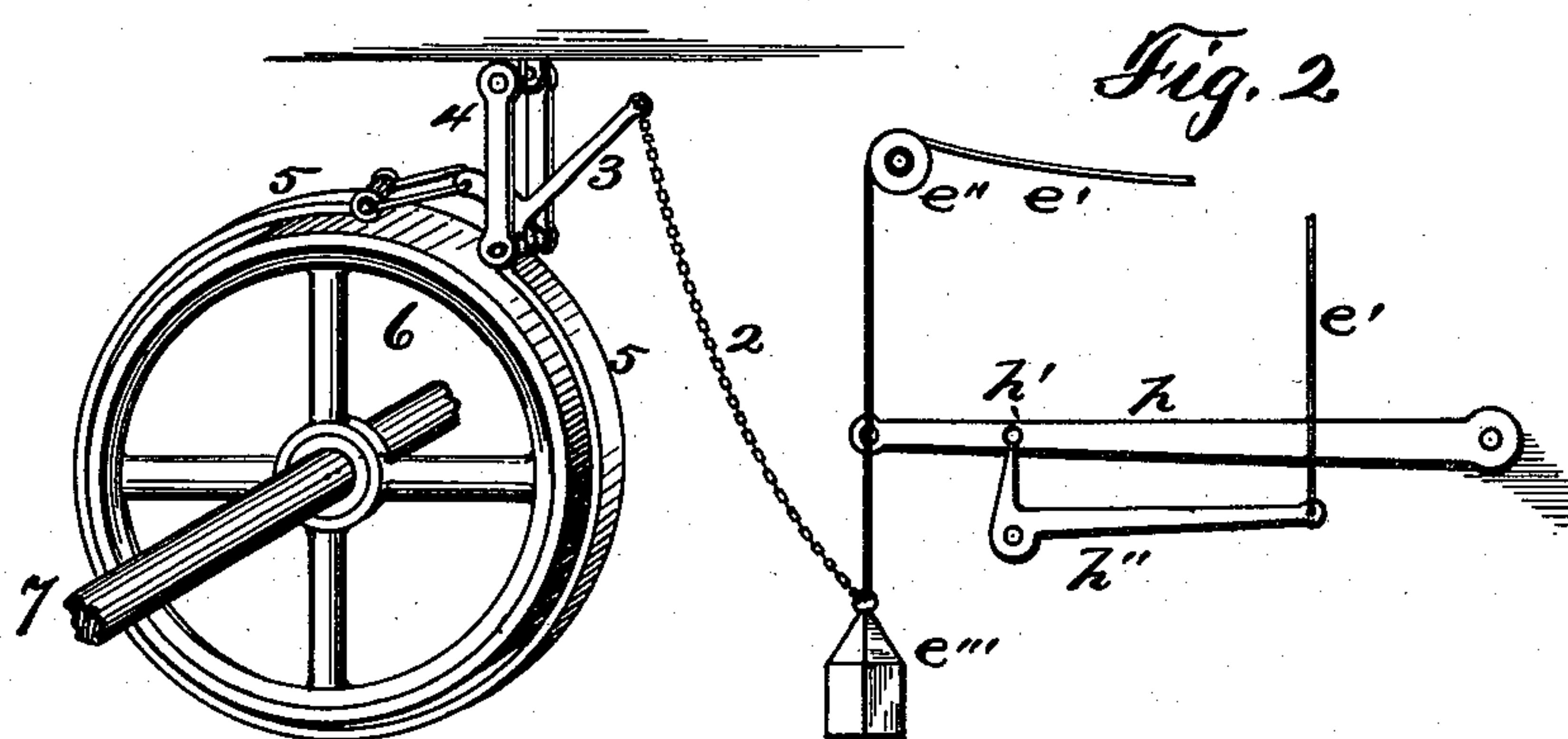
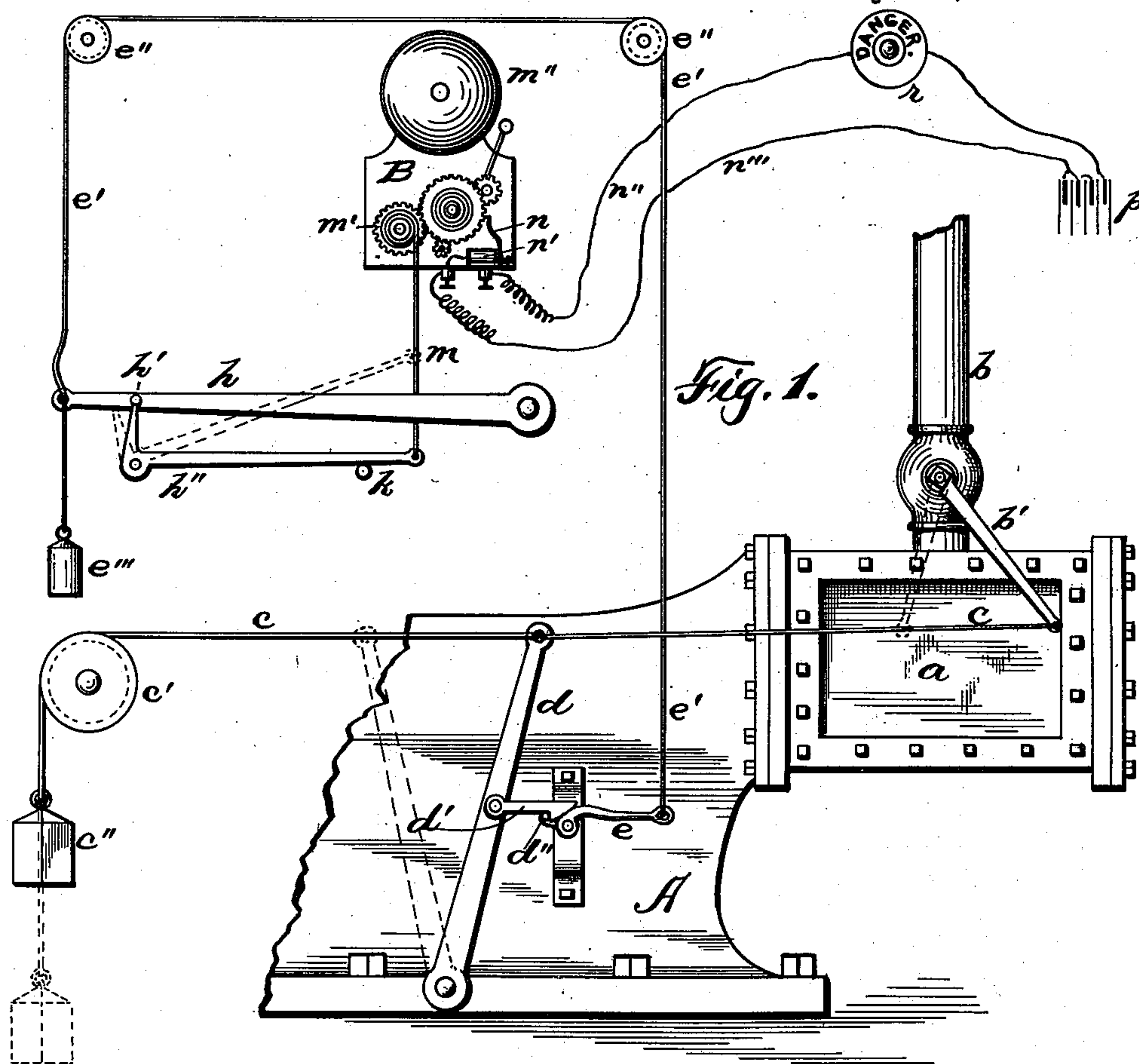
2 Sheets—Sheet 1.

W. M. WOOD.

STOP MECHANISM FOR STEAM ENGINES.

No. 497,529.

Patented May 16, 1893.



WITNESSES:

H. A. Carhart.
Geo. M. B. Lovers.

INVENTOR.

WILLIAM M. WOOD INVENTOR.

BY

BY
Smith & Benson

ATTORNEY. 3

(No Model.)

2 Sheets—Sheet 2.

W. M. WOOD.
STOP MECHANISM FOR STEAM ENGINES.

No. 497,529.

Patented May 16, 1893.

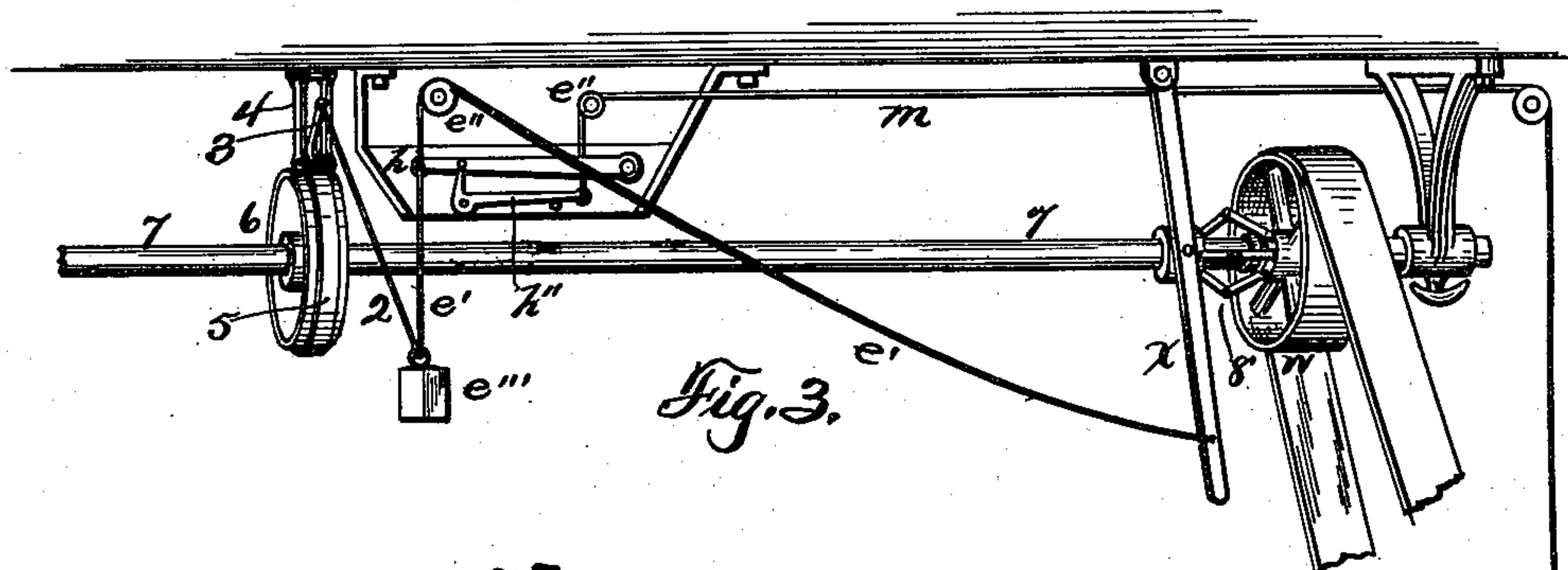


Fig. 3.

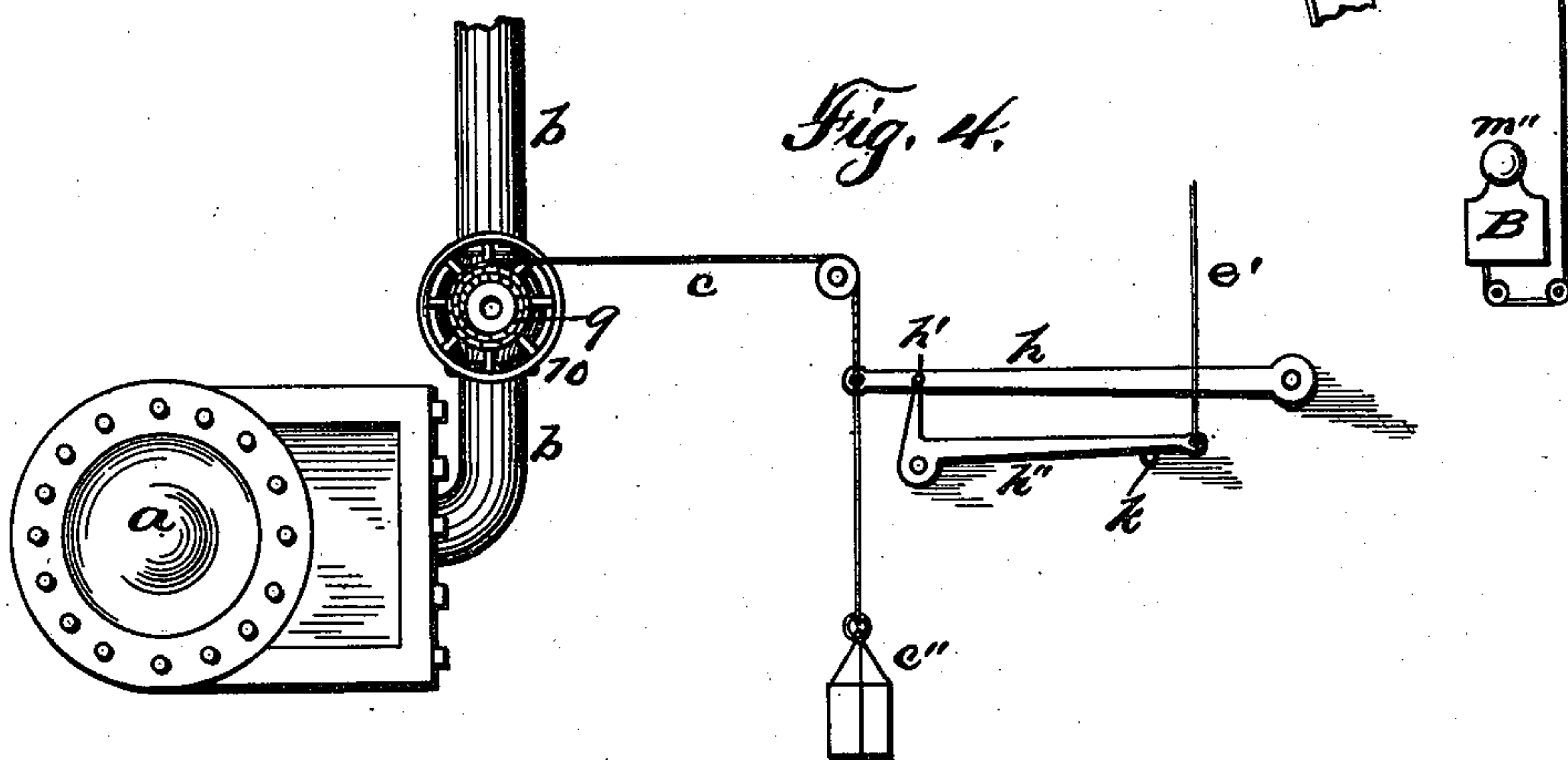


Fig. 4.

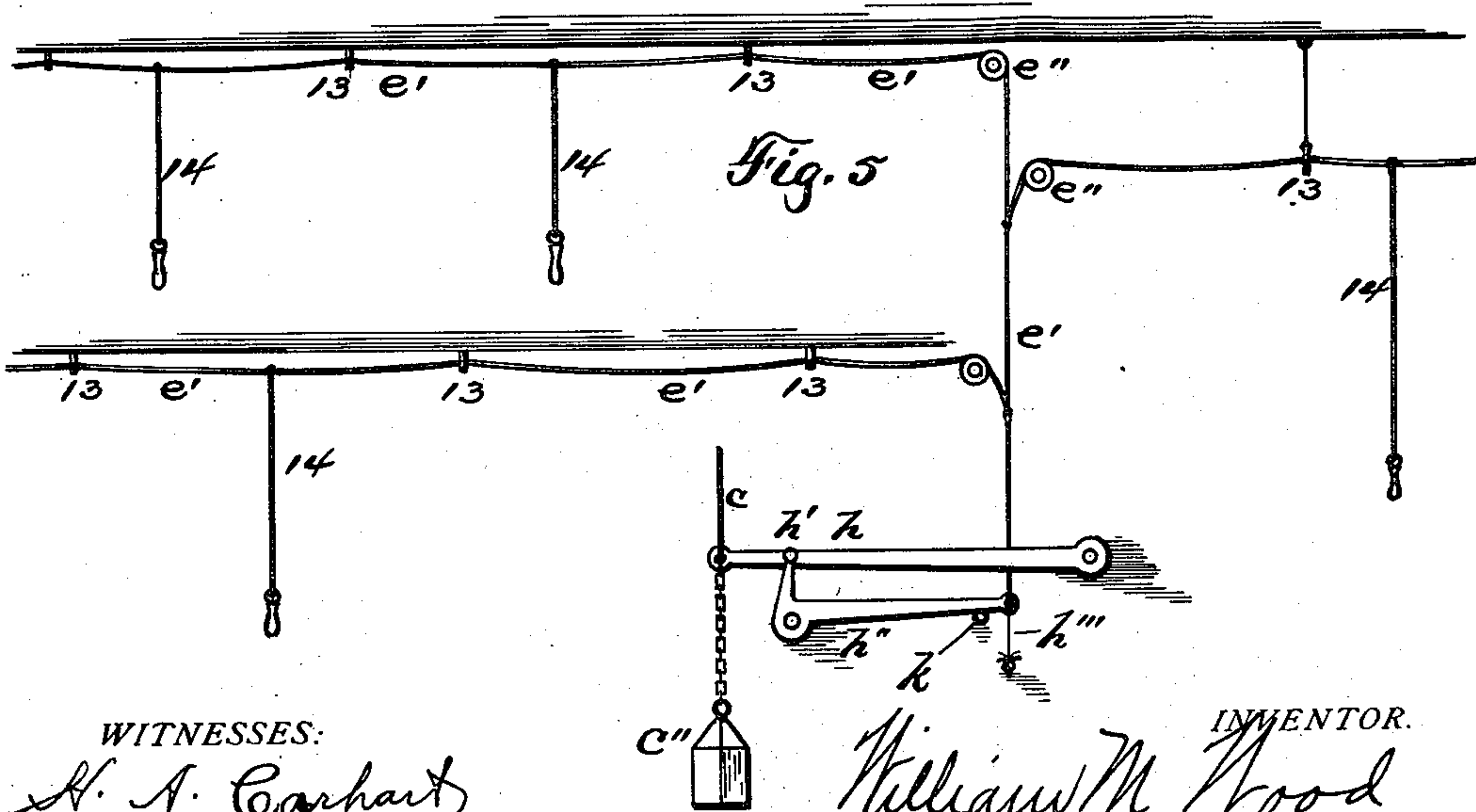


Fig. 5

WITNESSES:

H. A. Carhart
J. M. Blowers

INVENTOR.

William M. Wood

BY

Smith & Biribow

ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM M. WOOD, OF ELMIRA, NEW YORK.

STOP MECHANISM FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 497,529, dated May 16, 1893.

Application filed June 20, 1892. Serial No. 437,260. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. WOOD, of Elmira, in the county of Chemung, in the State of New York, have invented new and
5 useful Improvements in Stop Mechanism for Steam-Engines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to stop mechanism
10 for steam engines, and particularly to that class in which either the throttle valve is automatically closed by the tripping of a weight supporting mechanism, connected to the valve lever, and in which a friction brake is simul-
15 taneously applied to the main-line or other shaft; and in which the valve only is closed; said trip being tripped either by an electro-magnet connected to the trip lever, or by a motor connected thereto; or by a cord con-
20 nected to it and extending to different parts of the building, with suitable pulls, connected to the cord, or a push button connected to the electro-magnet, or to the motor when elec-
25 tricity is used; said motor being either an electric motor; or a geared and spring actuated one; and by which whole mechanism the steam can be shut off and the engine stopped from any part of the shop, as in case of an
30 accident, and saving the time and delay usually necessary to notify the engineer and for him to stop the engine.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically
35 set forth in the claims hereto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is a side elevation of my invention applied to a lever connected to the stem
40 of a valve and adapted to rotate it part way to open or close it, said valve being mounted in the steam induction pipe of the cylinder of an engine. Fig. 2, is a plan perspective of a pulley upon a shaft, and a friction brake con-
45 nected to and set by the valve tripping mechanism. Fig. 3, is a plan perspective of my tripping mechanism connected to a clutch mechanism in engagement with a drive-pulley loose upon a shaft, and also to a friction-
50 brake-pulley upon the same shaft, and also connected to a motor. Fig. 4, is an elevation of my trip mechanism connected to a drum

upon the stem of the valve in the induction pipe connected to a steam-chest. Fig. 5, is a view of an engagement of multiple hand pulls 55 connected to the trip mechanism, by either of which it can be operated.

A—, is part of an engine frame, and —a— is a cylinder mounted thereon, and —b— is the steam induction pipe, provided with a 60 valve, upon the stem of which a lever —b'— —b'— is secured and by which the valve, by semi-rotation, is opened or closed. A cord —c— is connected to said lever, passes over a pulley —c'— and carries a weight —c''— 65 This cord is also connected to a lever —d—, provided with a latch-pawl —d'— adapted to engage with a pin —d''— upon the pivotally mounted dog —e—, to which the cord —e'— is connected, and which passes over the pul- 70 lies —e''— and is connected to the lever —h— and also carries the weight —e'''— as shown. This lever is provided with a pin —h'— with which one arm of the angular lever —h''— engages in such a manner that said lever be- 75 ing pivoted at the angle, its other arm is held down upon the stop pin —k— by the weight —e'''— or else is so held by a fragile or easily broken cord —h'''— (Fig. 5). A cord —m— leads from the latter arm of the lever —h''— 80 over the drum —m'— mounted in the motor —B— and rotated by the spring actuated train of clock-work gearing, which is also adapted to sound an alarm upon the gong 85 —m''— whenever said gearing is released from the dog —n— connected to the armature of the electro-magnet —n'— from which the wires —n''— and —n'''— lead to the bat- 90 tery —p—, a circuit-closing push button —r— being mounted upon the wire —n''—.

In Fig. 2 a slack chain —2— is connected to the weight —e'''— and to a crank lever —3— pivoted upon a swinging frame —4— to which one end of the friction brake band —5— is connected, the other end of said le- 95 ver being connected by a link to the other end of said band —5—, so that when said weight is released it will exert a pull upon both ends of said band, to grip it around the pulley —6— mounted upon the shaft —7—. 100 In Fig. 3 I also show a loose drive pulley —w— mounted upon said shaft, and —8— is an ordinary clutch mechanism adapted to engage with said pulley to rotate said shaft;

and a lever —*x*— connected to said clutch and a cord connected to said lever and leading to the weight —*e*'— and connected to the lever —*h*—.

5 In Fig. 4 I show the cord —*c*— wound around a drum —9— upon the valve-stem, and a band-wheel —10— secured upon said valve-stem.

In Fig. 5, 11 and 12 represent two floors of a building, and the cord —*e*'— led along or supported from the ceilings by pulleys or other suitable supports —13—, hand pulls —14— being also connected to the cord, in such positions as may be most convenient for thereby operating the trip mechanism from any part of either floor.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A stop mechanism comprising a steam engine cylinder, an induction pipe, a valve therein a cord operatively connected to rotate said valve to close it, a weight upon said cord, a lever to which the cord is connected, a pawl upon said lever adapted to engage with a dog, and means to disengage said pawl, in combination as set forth.

2. A stop mechanism comprising a steam engine cylinder, an induction pipe, a valve therein, a cord operatively connected to ro-

tate said valve to close it, a weight upon said cord, a lever to which the cord is connected, a pawl upon said lever adapted to engage with a dog, a cord connected to said dog, and leading to a lever and a weight carried thereby, an angular lever engaging with the other lever, a cord leading from the angular lever to a motor, and means to actuate said motor in combination as set forth.

3. A stop mechanism comprising a steam engine cylinder, an induction pipe, a valve therein, a cord operatively connected to rotate said valve to close it, a weight upon said cord, a lever to which the cord is connected, a pawl upon said lever adapted to engage with a dog, a cord connected to said dog, and leading to a lever and a weight carried thereby, an angular lever engaging with the other lever, a cord leading from the angular lever to a motor, and means to actuate said motor, a friction brake, and a pulley clutch operatively connected to the mechanisms hereinbefore specified, in combination as set forth.

In witness whereof I have hereunto set my hand this 9th day of June, 1892.

WILLIAM M. WOOD.

In presence of—

WILLIAM H. LONGSTREET,
JOHN C. GALLAGHER.