

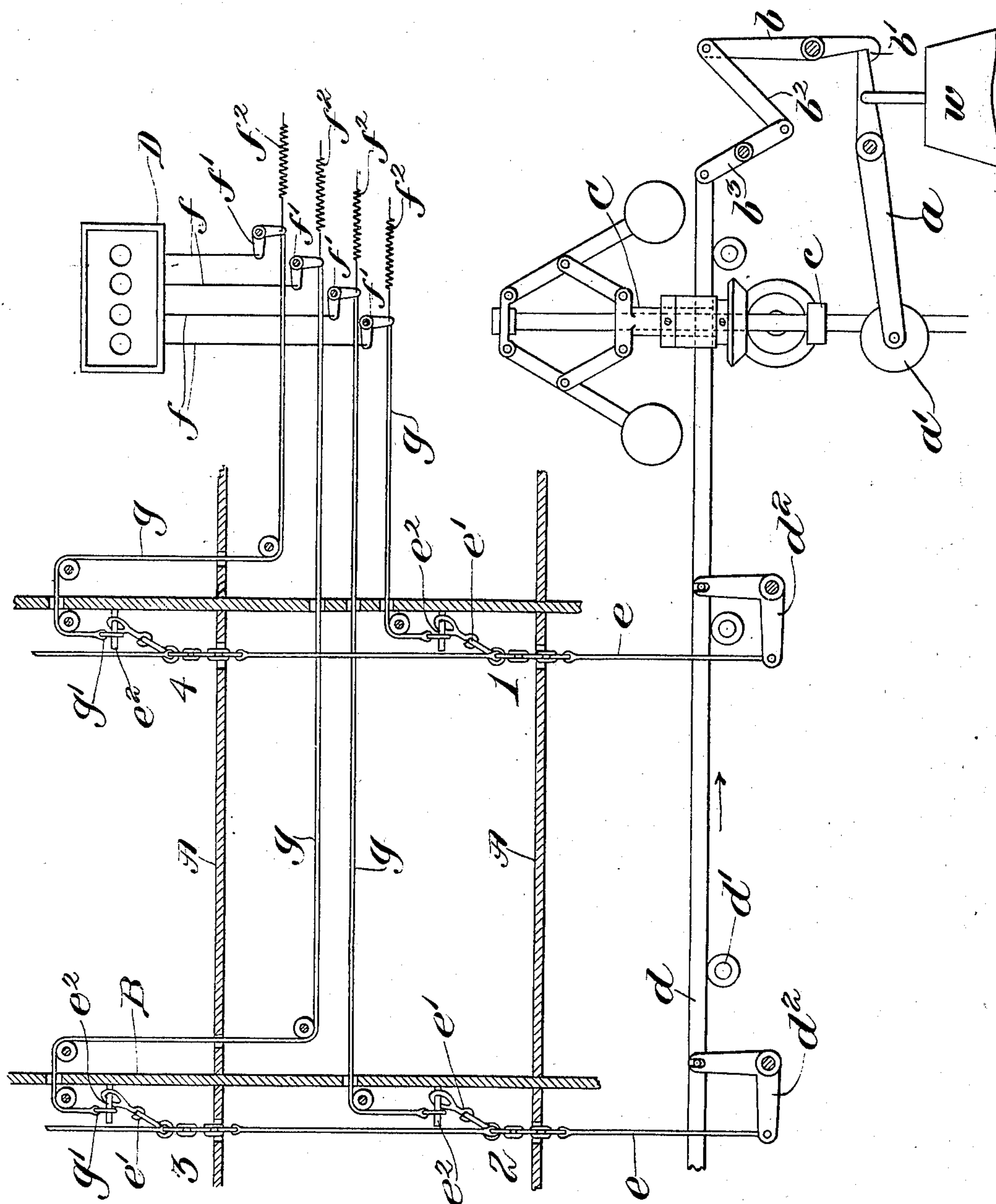
No. 707,888.

Patented Aug. 26, 1902.

O. WILLIAMS.
STOP MOTION FOR STEAM ENGINES.

(Application filed Nov. 30, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

OWEN WILLIAMS, OF FALL RIVER, MASSACHUSETTS.

STOP-MOTION FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 707,888, dated August 26, 1902.

Application filed November 30, 1900. Serial No. 38,102. (No model.)

To all whom it may concern:

Be it known that I, OWEN WILLIAMS, a citizen of the United States, and a resident of Fall River, county of Bristol, Massachusetts, have invented certain new and useful Improvements in Stop-Motions for Steam-Engines, of which the following is a specification.

My invention comprises certain improvements in stop-motions for steam-engines, and is intended to provide a simple, certain, and efficient device by means of which the engine may be quickly stopped from various points in the mill or factory in case of accident or other exigency requiring instant stopping of the engine.

To this end my invention consists in providing suitable means for cutting off a supply of steam from the engine in combination with suitable connecting devices running to any desired parts of the mill.

It also consists in the combination of such steam-controlling means and its connecting mechanism with an automatic-operated indicator, which serves to indicate the station or portion of the factory from which the stop-motion is operated.

Referring now to the drawings, I have shown a diagrammatic elevation illustrating the general arrangement and operation of one form of embodying the principles of my invention.

I have herein attempted to show and describe for the most part only such features as it is necessary to show to gain a complete understanding of my invention, and it will be understood that the construction and arrangement herein disclosed may be greatly varied without departing from the principle of my invention.

A designates the floors of a mill or factory which is to be equipped with my device, and B designates the vertical walls thereof.

In this form of my invention I have shown the stop-motion applied to control the supply of steam to the engine by operating upon the governor which throttles the steam; but it will be understood that the stop-motion may be applied to any kind of device which controls the steam-supply.

In the drawings, C designates a governor, which may be of usual or suitable construction

and which may operate in any well-known manner. Situated adjacent to the governor is a pivoted lever a , carrying a weight w at one end and an antifriction-roller a' at the other end. This antifriction-roller is so arranged that when it rises it will engage the sleeve c of the governor, thus raising the sleeve and cutting off the steam thereby, as will be readily understood by those skilled in the art.

In order to prevent the weight w from pressing the antifriction-roller against the sleeve c , I provide a detent or locking device b , which is provided with a hook or projection b' , adapted to engage and support the weighted end of the lever a . This latch or lever b is operated through the medium of suitable connecting links or levers b^2 b^3 by means of the reciprocating rod d , which extends throughout the length of the mill or such portion of the length as may be necessary to secure suitable connections with the various stations in the mill and which for convenience in operation is supported upon antifriction-rollers d' .

Any suitable means for actuating the connecting-rod d may be employed. In this instance I have shown a series of vertical connections e , comprised of rods or links or the like, which pass up through the various floors and are normally supported by means of hooks or handles e' , which are slipped over retaining-pegs e^2 . At their lower ends these vertical connections or pulling-rods e are attached to bell-crank levers d^2 , which engage the slide-rod d in order to reciprocate the same.

At any suitable portion of the building, preferably the engine-room itself, is placed any common form of indicator device D, provided with a series of numbered tubes to correspond with the number of the stations or points in the building at which the stop-motion may be operated. Each station is connected with its corresponding indicator tappet or blank by suitable connections, which are automatically operated from the station at the same time that the vertical line e is pulled. In this instance I have shown the various tappets or indicator-blanks connected by a series of wires f to a series of bell-cranks f' . These bell-cranks are held normally under

tension by springs f^2 , so that none of the tappets are released so as to be visible on the indicator. I provide also a series of lines or similar connecting means g , running to the
 5 various stations in the building, whose ends are provided with rings g' or the like adapted to engage the holding-pins e^2 . It will be noticed that these rings g' are placed over the pins or pegs e^2 outside of the pulling
 10 hooks or handles e' . The pulling hooks or handles e' are so arranged as to permit the vertical movements of the lines e without their becoming detached from the pins, the hooks in this instance being shown with elongated
 15 eyes at their upper end for this purpose in order to permit the requisite pull.

The operation of my device is as follows: Suppose it is desired to speedily stop the engine from station 3. (Shown at the upper left-hand corner of the figure.) The operator
 20 simply seizes the pulling hook or handle e' , pulls it off its peg, and pulls upward on it, thereby moving the main connecting-rod d in the direction of the arrow. As will be readily understood, this disengages the de-
 25 tent or latch b from its engagement with the lever a , thus allowing the weight w to descend and causing the sleeve of the governor to move upward until the steam is throttled. It will be noticed that in removing the pull-
 30 ing-hook e' the ring g' is necessarily thrown off the pin e^2 , thereby permitting one of the tension-springs f^2 to act upon the proper bell-crank lever f' to let fall the proper tappet,
 35 bringing out the number corresponding to the number of the station. Thus by a single act the engine is stopped and the indicator is made to show what point in the building the stop-
 40 page was caused.

For the sake of clearness I have omitted all boxing or other protecting means that may be employed to protect this mechanism from being operated accidentally or by those who are ignorant of its use.

Without attempting to set forth all the changes in form, construction, and arrangement that may be made in the application of my invention to various conditions of use and without indicating all the various modes of
 50 its use, what I claim is—

1. In a stop-motion for steam-engines the combination of the steam-controlling device,

the weighted lever arranged to engage and actuate the steam-controlling device to cut off the steam, a detent arranged to hold the
 55 weighted lever normally against movement, and actuating mechanism connecting said detent with various locations whereby the detent may be operated from different locations to release the weighted lever in order that it
 60 may act on the steam-controlling device, substantially as described.

2. In a stop-motion for steam-engines the combination of the steam-controlling device, means for actuating the same to cut off the
 65 steam, the main slide-rod having connection with the means for actuating the steam-controlling device, the bell-crank levers, the vertical connections for operating said bell-crank levers, the pulls or hooks arranged to form a
 70 supporting and lifting means for moving the vertical connecting-rods to actuate the slide-rod, substantially as described.

3. In a stop-motion for steam-engines the combination of the steam-controlling device, means for actuating it to cut off the steam,
 75 the slide-rod having connection with said actuating means, connecting-rods by which the slide-rod may be moved from different locations, the indicator and its actuating means
 80 arranged to be operated by devices connected with the vertical connecting-rods, substantially as described.

4. In a stop-motion for a steam-engine, the combination with a governor or steam-regulating device of a weighted lever arranged to
 85 engage and actuate said governor to cut off the steam, a detent arranged to engage said weighted lever, a longitudinal slide-rod having connection with said detent in order to
 90 release it from engagement with said weighted lever, means having engagement with said slide-rod at various points thereon for actuating the slide-rod, an indicator device so connected that the slide-rod-actuating means has
 95 to be operated by the operation of the actuating means at any point, substantially as described.

In witness whereof I have hereunto set my hand this 2d day of November, A. D. 1900. 100

OWEN WILLIAMS.

In presence of—

WILLIAM KEMP,
 ISAAC WHARMLY.