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Patented Aug. 5, 1902.

G. E. ARCHER.
TIME DAMPER MECHANISM.

(Application filed Mar. 4, 1902.)

(No Model.)

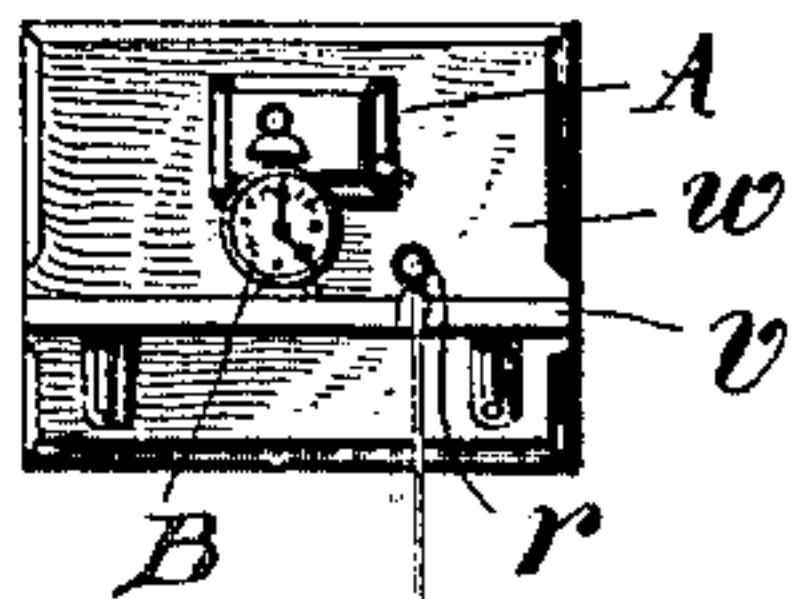


Fig. 2.

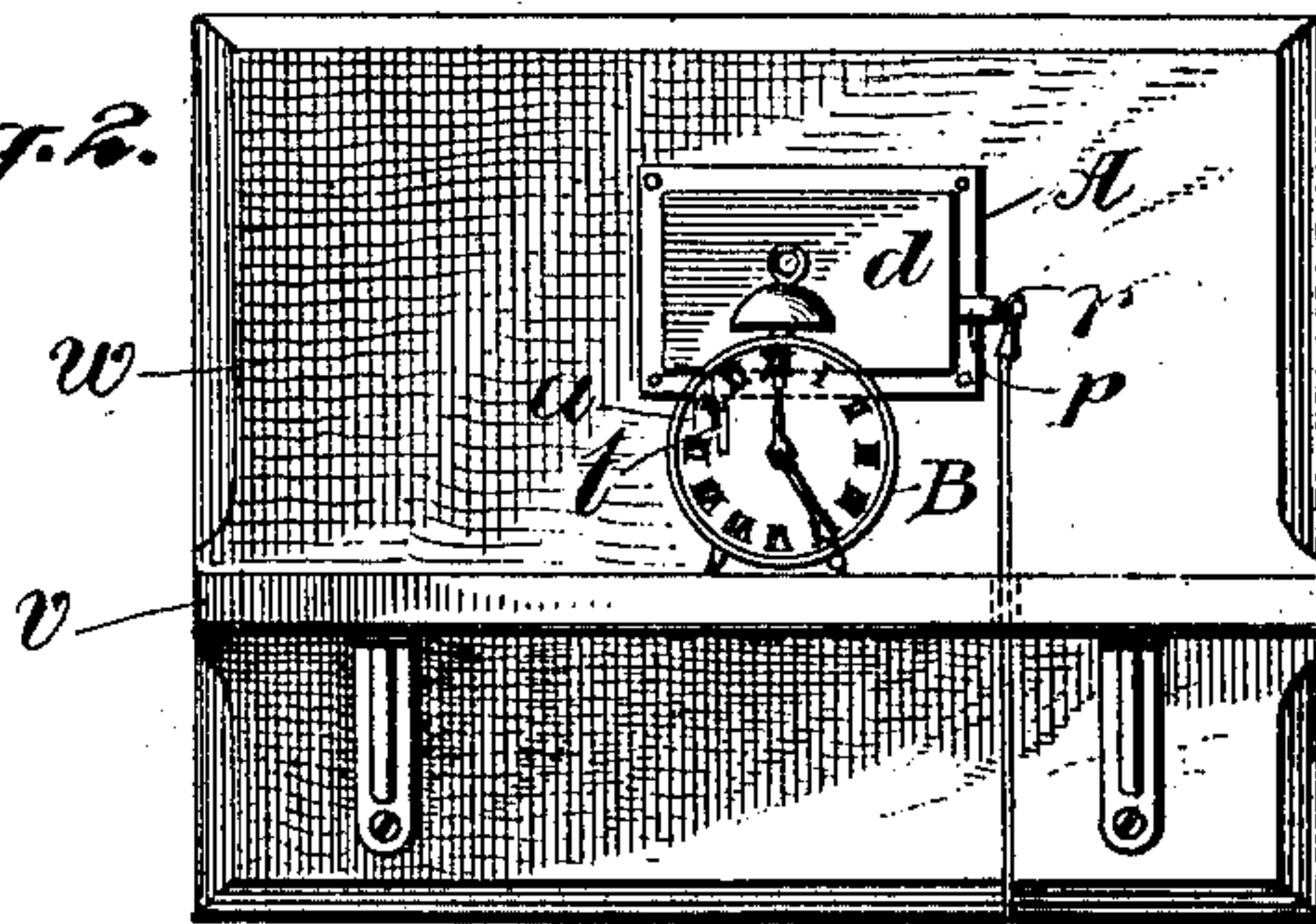


Fig. 1.

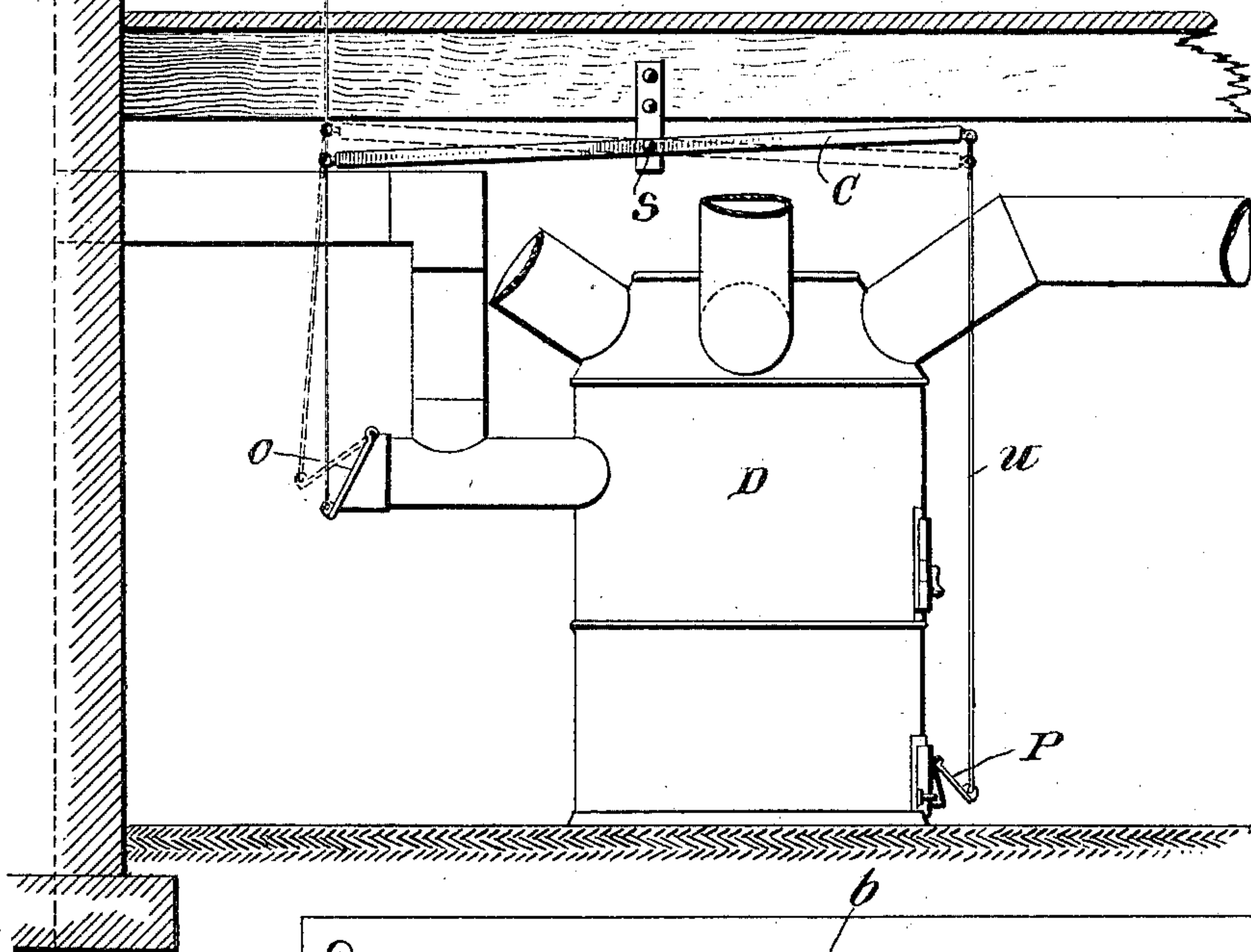
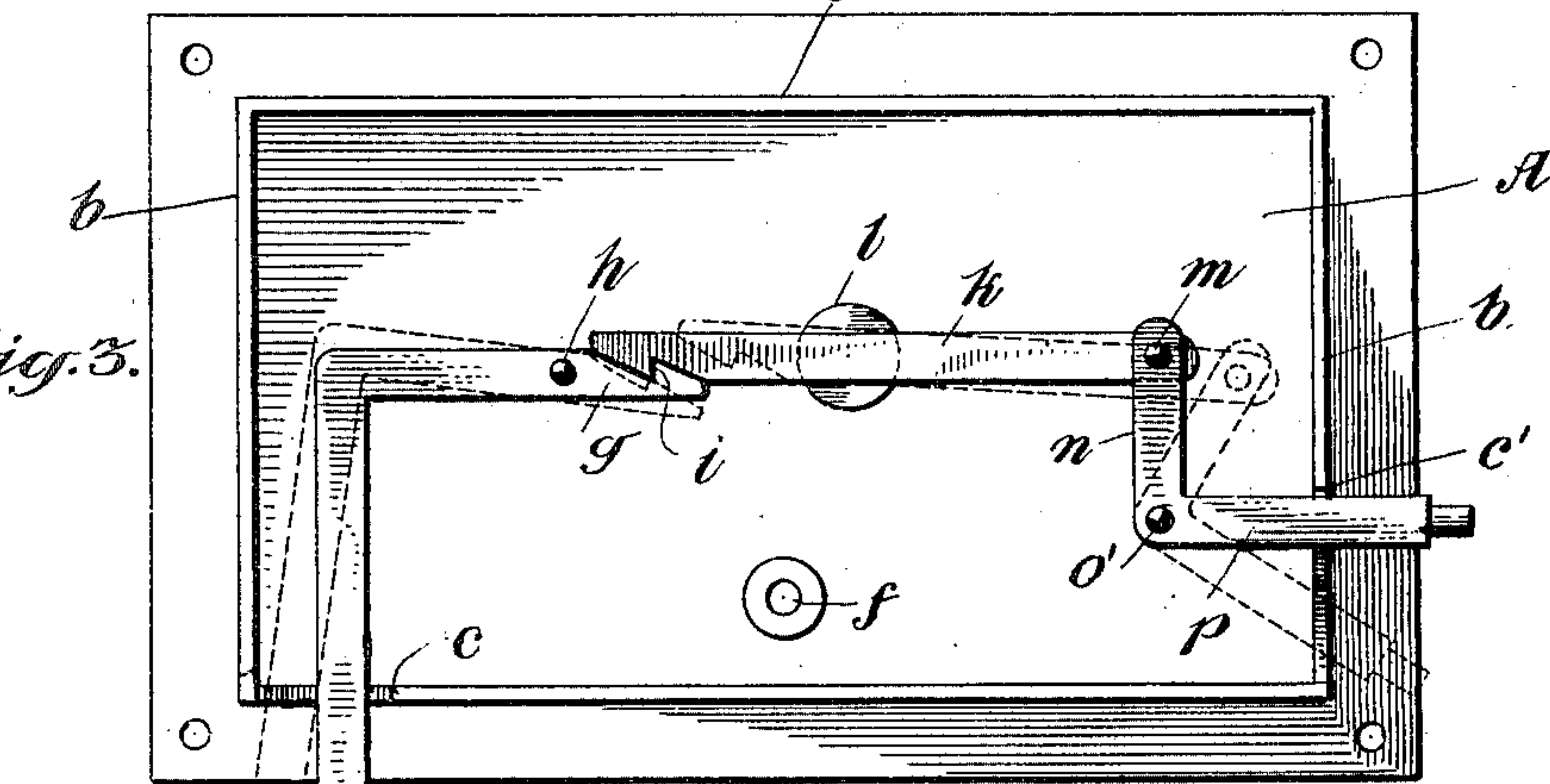


Fig. 3.



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TIME DAMPER MECHANISM.

SPECIFICATION forming part of Letters Patent No. 796,373, dated August 5, 1902.

Application filed March 4, 1902. Serial No. 96,637. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. ARCHER, of Nutley, in the county of Essex and State of New Jersey, have made certain new and useful Improvements in Automatic Releasing Devices or Time Operating Mechanism; and I hereby declare the following to be a full and clear description thereof.

My invention relates to that class of releasing device which is used in combination with a clock adapted to be set to operate the releasing mechanism at a certain hour, such as is usually termed an "alarm-clock," although it is not necessary as part of my invention to have an alarm-bell.

The invention also comprises mechanism in combination with the releasing device by means of which the dampers and drafts of furnaces and stoves may be automatically operated upon and the fires started up at a set time. Other useful purposes may also be accomplished by my invention.

One of the principal objects of my invention is to provide convenient and efficient means of automatically operating furnace and other drafts at a given time without the use of springs or weights.

In the drawings, Figure 1 is a diagrammatic view showing my improved device arranged to operate the drafts of a furnace. Fig. 2 is an enlarged view of the clock and tripping device, and Fig. 3 is a detached view of the tripping mechanism.

In the drawings, A indicates the case containing the tripping device.

B is the clock, which may be of the usual alarm-clock pattern adapted to act on the tripping device and, if desired, may also ring the usual alarm-bell.

C is a rocker-arm to be hereinafter more particularly described.

D represents the furnace or heater, O the draft in the smoke-pipe, and P the ash-pit door.

As shown in the drawings, the clock and tripping device are located on the first floor of a house and the heater in the cellar below.

The case A is secured in position adjacent to the clock, either to a backing *w*, to which the shelf *v* is attached, or to the wall. The clock is preferably placed fixedly on the shelf *v* and has a trippet *t*, connected with its

alarm mechanism, adjusted to strike or lift the arm *a* of the tripping mechanism.

The tripping mechanism is preferably inclosed in a case A, so that it may be free from dust or accidental disturbance. This inclosure is obtained preferably by having the case A cast with a back plate having flanges *b b* extending around it, with recesses *c* and *c'* for the projection of the arms of the tripping mechanism. A covering-plate *d*, being laid on the flanges, is secured by means of a screw passing through it and taking in the screw-hole *f*.

In the tripping mechanism I employ a right-angled lever, one arm *a* of which extends through the opening *c* in the flange *b* and is adapted to be acted upon by the trippet of the alarm-clock. *g* is the other arm of the angled bar, which is pivoted at *h* to the back of the casing A. The end of the arm *g* is notched on its upper side at *i* to take into a similar notch on the lower side of the arm *k*. The arm *k* rests in a supporting projection *l*, in which it freely slides, and is loosely pivoted at its end by a pin *m* to the end of the vertical arm *n* of a right-angled lever-bar. This right-angled lever-bar is fulcrumed at its elbow by a pin *o* and has its other arm *p* projecting through the flange of the case at *c'*.

It will be observed that my tripping mechanism provides a horizontally-projecting arm at *p* and a vertically-projecting arm at *a*.

Extending from the draft or damper *o* is a wire or cord *y*, which passes through and is also secured to one end of the rocker-arm C and terminates in a ring *r* at a point near and vertically below the projecting end of the arm *p* of the right-angled lever of the tripping device.

The rocking arm C is pivoted at *s* to a support descending from the ceiling of the cellar sufficient to allow a certain amount of play to the rocking arm, as shown in dotted lines, and is connected with the ash-pit door P by a wire *u*, secured to one of its ends.

The ash-pit door and smoke-pipe draft are balanced with the rocker-arm, so that the smoke-pipe draft overweights the ash-pit door and will open it and close the pipe-draft when not affected by any other means.

In order to set the device for automatic operation at a desired time in the future, the

notched arm *k* is locked in contact with the notched arm *g*. This is done by the simple operation of pushing up the horizontal arm *p*, which causes the arm *k* to slide over the
 5 arm *g* until the corresponding notches in each coincide and drop into a locked position. The fulcrum of the arm *g* should be so located that the notched end *i* swings upward until the lower arm *a* contacts with the side
 10 of the opening *c* or brings the arm *g* into a horizontal position. The under side of the notched end of the bar *k* is beveled, so that it will cause the bar *g* to give way as it is slid along it by the action of raising the end
 15 of the arm *p*. Care should be taken to adjust the levers so that *k* will always slide over *g*. The arm *p* when pushed up will remain in that position until unlocked from *k*. By pulling on the ring *r* the ash-pit door will
 20 close and the damper in the smoke-pipe be opened. The ring is then slipped on the end of the arm *p*.

The alarm-clock is set at any hour when it is desired to have the fire burn more rapidly.
 25 The trippet pushing over the arm *a* releases the locking of the arms *k* and *g* and drops the arm *p*, from which the ring *r* slips with the desired result. By simply throwing up the arm *p* the device is again set for use.

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

1. In an automatic furnace-draft-controlling apparatus of the class herein described

the tripping device comprising the fulcrumed angle-lever with arms *a* and *g*, sliding arm *k*, 35 and a fulcrumed angle-lever having arms *n* and *p*; the said arms *g* and *k* being beveled and notched and adapted to slide over each other and interlock, in combination with a balanced rocker *C* connected at one end with 40 the smoke-pipe draft and at the opposite end with the ash-pit door, a cord attached at its lower end to one end of the balanced rocker and having a ring at the upper end adapted to rest on and readily slip from the horizontal 45 tipping arm *p* of the tripping device, and a clock mechanism adapted to be set to actuate the tripping device at a given time and cause the tipping arm *p* to drop, substantially as and for the purpose shown and de- 50 scribed.

2. The combination with a clock mechanism of a tripping device comprising a lever with an operating-arm *a* connected with the clock, and a locking-arm *g* having a notch *i* 55 and beveled tip, a slidably-mounted arm *k* having a notch to engage the notch *i*, the guide for said arm, and a lever having arms *n* and *p*, one of which is coupled to the sliding arm *k*, substantially as shown and de- 60 scribed.

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Witnesses:

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