

A. WALKER.

Damper.

No. 105,525.

Patented July 19, 1870

Fig. 1

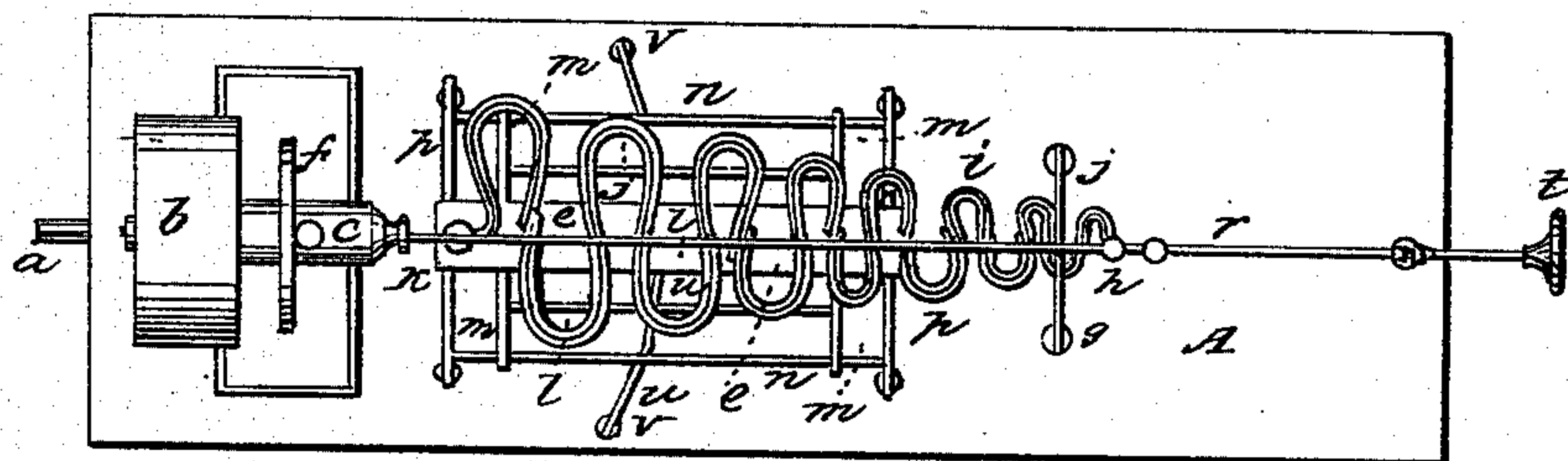
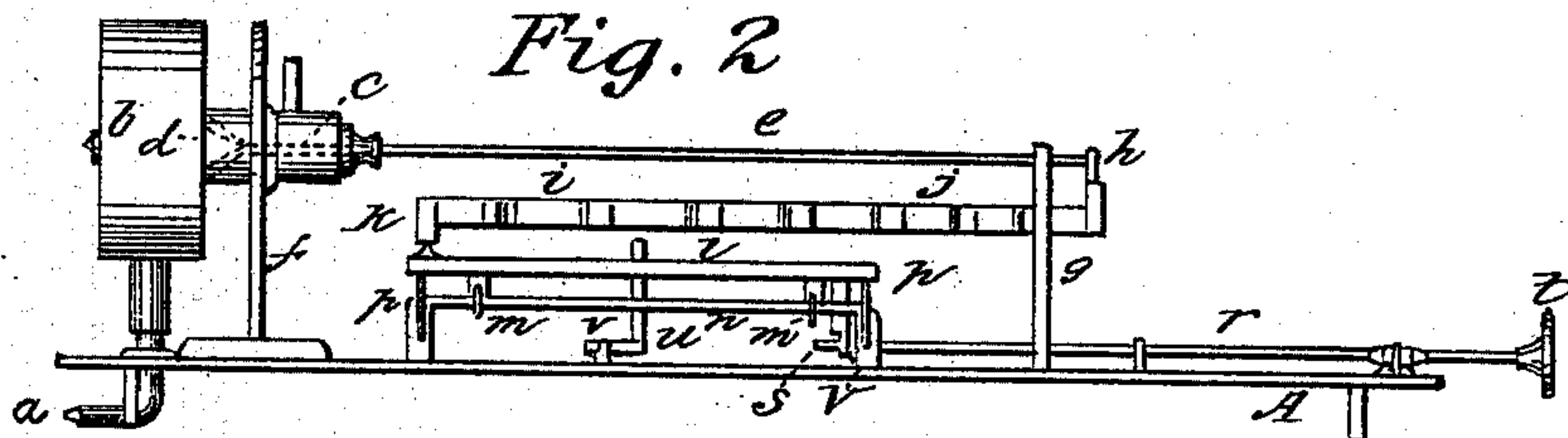


Fig. 2



Witnesses:

Henry C Houston
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Inventor:

Alfred Walker.

United States Patent Office.

ALFRED WALKER, OF PORTLAND, MAINE.

Letters Patent No. 105,525, dated July 19, 1870.

REGULATOR FOR STEAM HEATING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, ALFRED WALKER, of Portland, in the county of Cumberland and State of Maine, have invented a new and useful Improved Regulator for Steam Heating Apparatus; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others to make and use my invention, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 shows a top plan;

Figure 2, a side elevation.

My invention has for its object the production of an apparatus for governing the passage of steam from a boiler to a coil or radiator, or any heating receptacle for steam, in a steam heating apparatus, and has a further purpose of rendering such device, in a measure, automatic in its operation.

I do not propose to claim a regulator or governor broadly, whose operation is governed by the amount of heat evolved from the boiler or steam, but a particular description of the drawings will clearly illustrate my invention.

My device rests upon any convenient frame or support, as A.

a shows the pipe connected with the boiler, and through which the steam is conducted into my regulator on its way to the radiator, or other device by which rooms are warmed.

This pipe *a* conducts into the receiver *b*, which communicates with the cylinder *c*, as illustrated.

In this cylinder *c* is a conical valve, *d*, attached to the horizontal rod or piston *e*. The cylinder rests on a support, *f*.

The rod *e* extends to the support *g*, and is there set into and attached to the piece *h*. This piece *h* is attached to the end of the serpentine coils *i j*. The other end of the serpentine coil is attached to a small upright, *k*, which is attached or set on a plate, *l*. This plate *l* is attached to a small carriage, *m*, moving on rods or tracks, *n*.

This device is to be located at a point where the serpentine coils will be affected by the heat or temperature of the room to be warmed.

The serpentine coils are made as follows:

First, a continuous piece of steel, *i*, bent as illustrated; then, in each of the bends or curves, 1, 2, 3, 4, &c., is attached to the steel a piece of brass, *j*, which expands more readily with heat than the steel. This lining of brass is shown in the drawings.

As the temperature of the room increases the serpentine coils *i j* will expand by the influence of the brass linings *j*. This expansion will carry outwardly the rod *e*, and bring up the valve *d* onto its seat, and thus check the entrance of the steam along the pipe

a, through the cylinder *c*, through the pipe *o*, into the radiator, &c., in the room.

When the room cools the serpentine coil will contract again, thus opening the valve *d*, and thus again open the passage of the steam to the radiator in the room.

The carriage *m*, before alluded to, slides backward or forward on the tracks or rods *n*, in the frame *p*. Attached to this carriage, at *q*, is the rod *r*, which has a screw at *s*, to work in a female screw in *q*. The rod *r* has a thumb-piece, *t*.

By screwing the rod outwardly, or toward the thumb-piece *t*, it is apparent that the carriage *m* will be also carried toward *t*, and thus the rod *e* drawn forward, the effect of which will be to bring the valve *d* nearer to closing the cylinder *c*. Thus it will be understood that the combination of the rod *r*, the carriage *m*, the serpentine coils, and the rod *e*, with the valve *d*, and cylinder, serve as a regulator to the amount of heat necessary to close the valve *d* in the cylinder *c*.

For example, if a certain number of degrees of heat are necessary to close the valve *d*, and cut off the admission of the steam into the radiator, then the carriage *m* can be drawn outwardly toward *t*, and the number of degrees necessary to close the valve proportionately diminished, so that the regulator can be gauged to suit the varying degrees of natural temperature, and the amount of heat required to warm a room or house under any given circumstances.

A gauge upon the rod *r* can be made to indicate the number of degrees of heat with accuracy.

u is a spring, set on uprights, *v*, to carry back the carriage as it is released by the rod *r*.

The method of connecting this device with a steam-heating apparatus is evident, as it is placed between the steam-generating apparatus and the radiator. It is apparent that the serpentine coil may expand or contract independent of the carriage *m*, as said coil is attached at *k*, which is stationary, except when moved by rod *r*, in order to alter the degree of heat requisite to close the valve *d*.

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

1. The regulator coil, consisting of a serpentine piece of steel, *i*, in combination with a series of brass lining pieces, *j*, the two combined and operating together substantially as herein described.

2. The screw-rod *r s*, and carriage *m*, in combination with the coil *i j*, rod *e*, valve *d*, cylinder *c*, and receiver *b*, substantially as and for the purpose described.

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Witnesses:

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