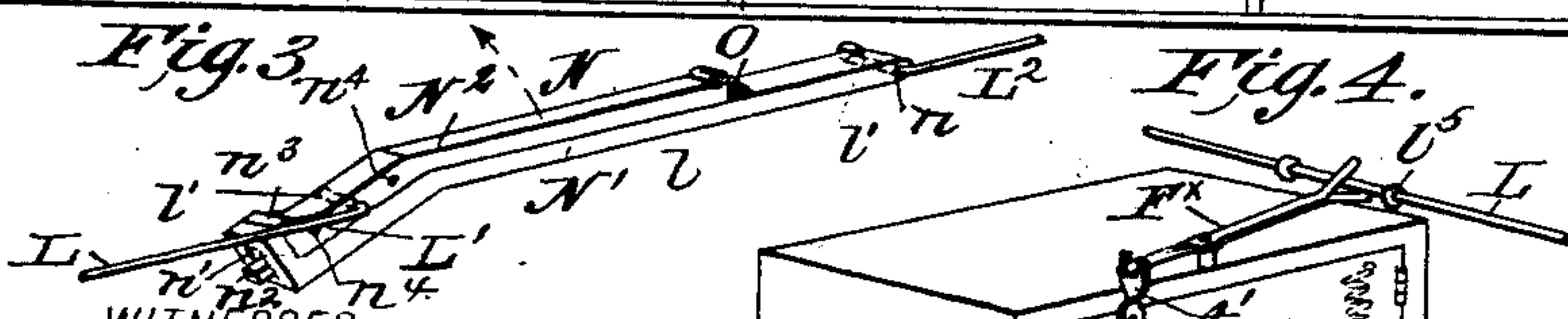
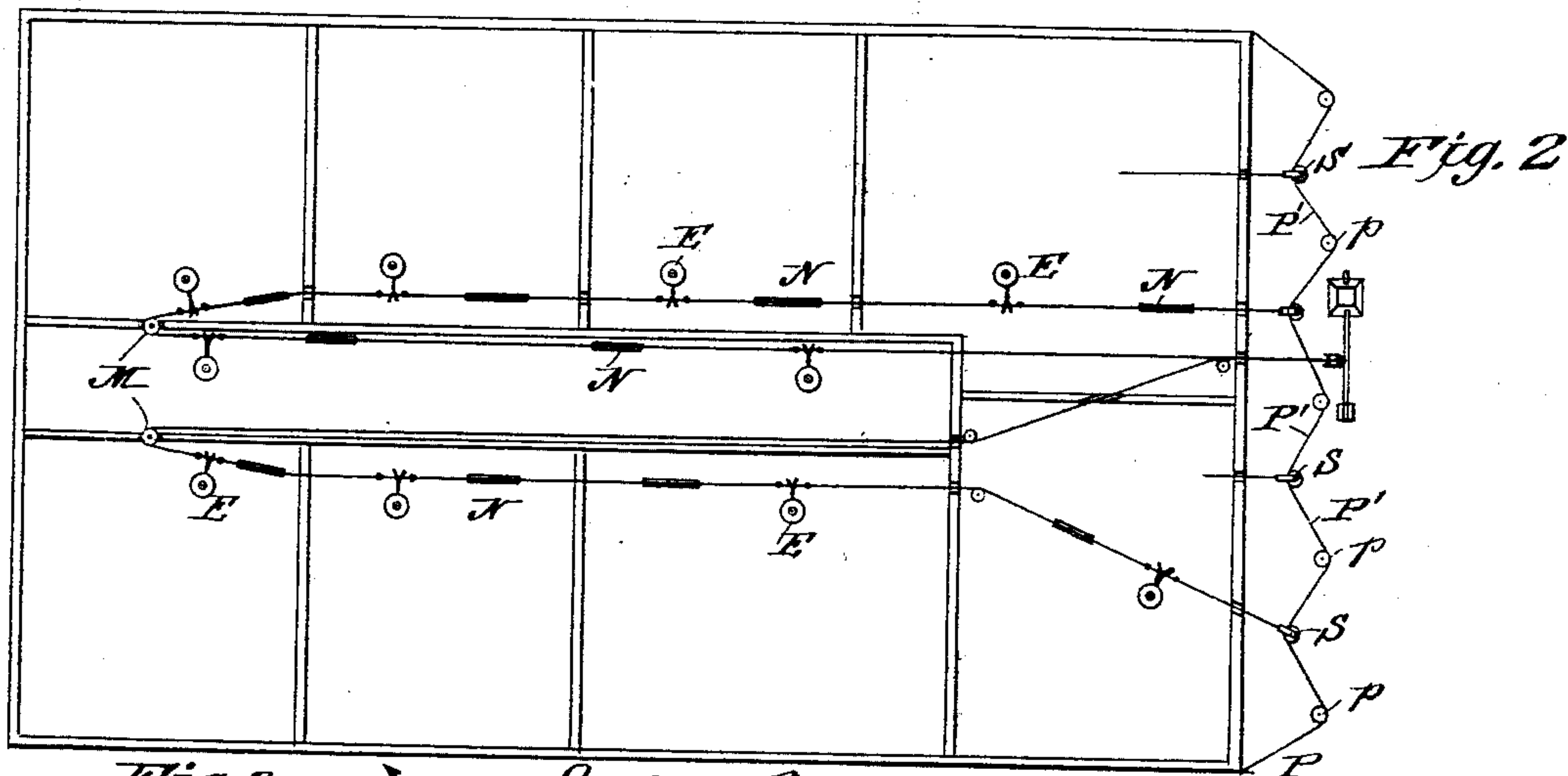
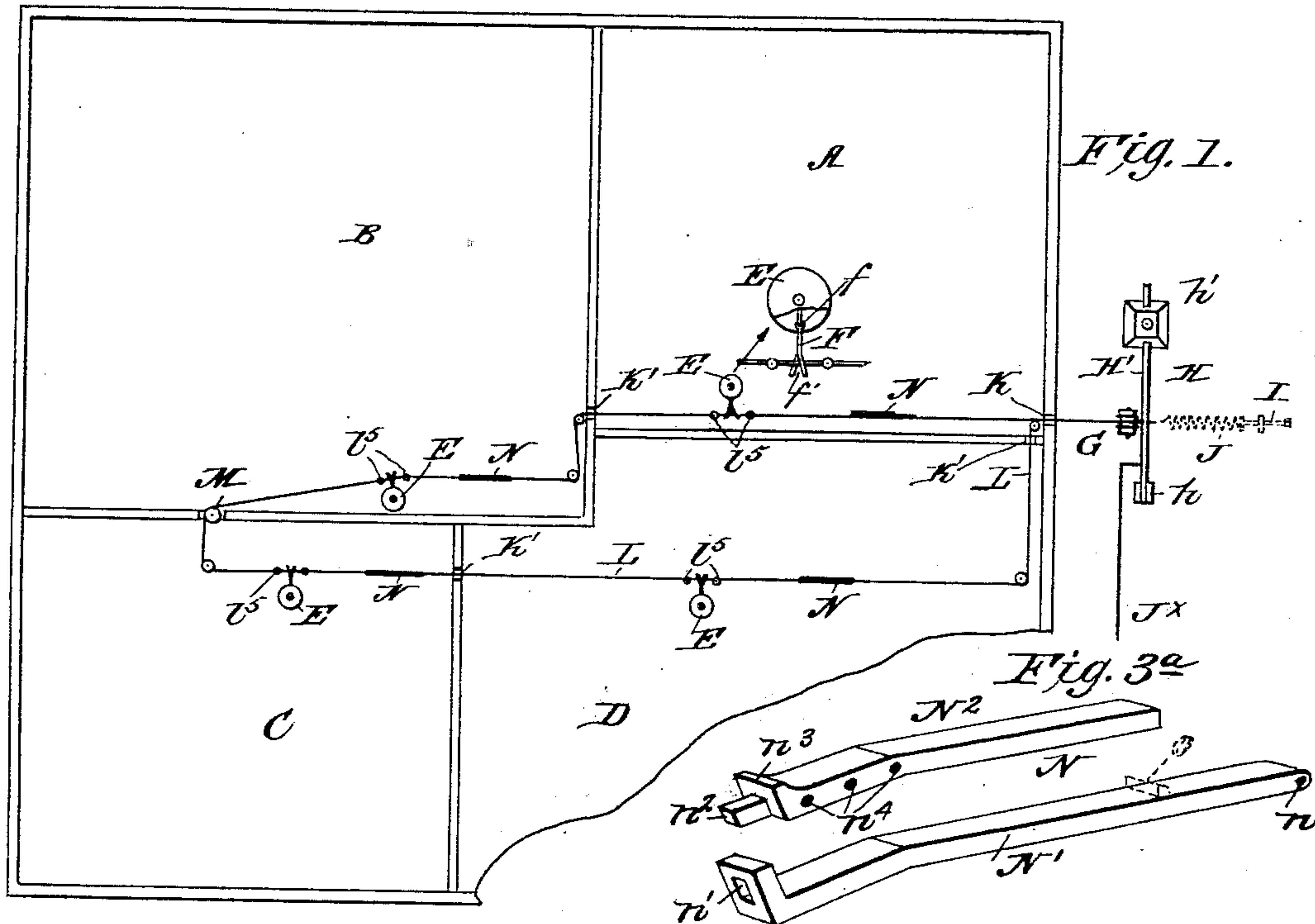


(No Model.)

E. A. WRIGHT.
FIRE ALARM.

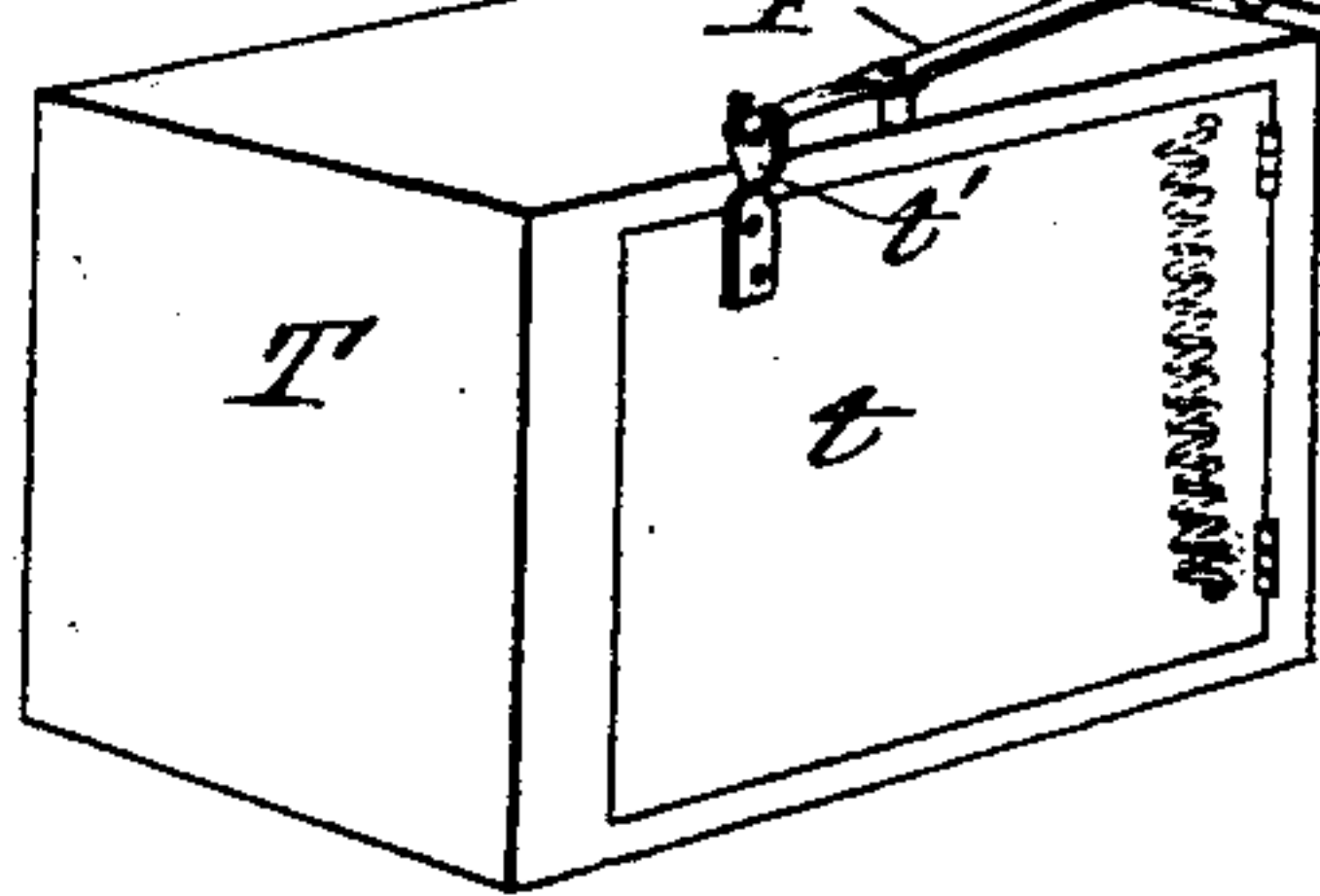
No. 520,348.

Patented May 22, 1894.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 520,348, dated May 22, 1894.

Application filed November 23, 1893. Serial No. 491,785. (No model.)

To all whom it may concern:

Be it known that I, ELMER A. WRIGHT, residing at Monrovia, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Fire-Alarms, of which the following is a specification.

My invention relates more especially to automatic fire alarm systems for buildings, and it has for its object to provide a simple and inexpensive alarm system of this kind which will effectively and positively operate to give the alarm in all parts of the building, when a fire occurs in any room or portion thereof, and whereby the alarm can also be transmitted to the fire or police station.

To these ends my invention consists in such peculiar combination and novel arrangement of parts as will hereinafter be first described in detail and then be particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view indicating the arrangement of the several parts of my automatic alarm mechanism as applied for use in a dwelling or small building. Fig. 2 is a similar view showing the arrangement of the several parts when applied for use in a large building. Fig. 3 is a detail view of one of the coupling members hereinafter referred to, and Fig. 3^a is a similar view of the coupling members detached. Fig. 4 illustrates a bell holding box adapted to be used in connection with the operating wires.

Referring to the accompanying drawings, it will be noticed in Fig. 1, I have shown a diagrammatic representation of a dwelling, in which A, B, C, and D represent different rooms, in each of which is disposed an alarm bell E, which may be of any well known construction, but preferably, however, one in which is employed a tripper arm capable of setting in operation the bell by movements in reverse direction, such, for instance, as shown, in which F indicates the tripper arm, pivoted at *f* and projected beyond the bell and formed with a forked member *f'*.

G indicates a main operating wire which may be disposed outside the building or extended down into a cellar, to be connected with a tension device H which may be in the nature of a weighted lever arm H', hinged to

a post at one end *h*, and provided with an adjusting weight *h'* as shown in full lines in the drawings; or it may be in the nature of a coiled spring J, shown in dotted lines which has an adjusting screw I whereby the tension thereof can be regulated. The main wire passes into the building through a tubular metallic guard K at one side and connects with the opposite ends of a house wire L or cable, which passes through the several rooms A, B, C and D, in close proximity to the annunciator bells, it passing through guards K' in the different partition walls; and at the end of the building opposite its entrance such wire is passed over a guide and supporting pulley M.

It will be noticed that in each room the wire proper is separated as at *l*, and that the separated ends terminate in hook like portions *l'* *l''*, which ends are connected by a connecting member N formed with a fusible lock portion, whereby it will be automatically unlocked or be disconnected by the heat. The connecting members N are each formed of a gun shaped base portion N' provided at one end with an aperture *n* and at the opposite end with an apertured guide *n'*, and on such base N' is held the lock member proper N² which is somewhat shorter than the base N', and has at one end a finger portion *n*² and a lug *n*³; it also having a series of apertures *n*⁴.

To set the several parts in an operative condition, the ends of the several wire sections in each room are connected by the members N by hooking them to the said members, as shown most clearly in Fig. 3, by reference to which it will be seen that the front end L' of the wire L passes rearward and hooks into one of the apertures *n*⁴ in the short member N² while the other end L² connects with aperture *n* in the long member N'. The short member N² is then moved in the direction of the guide *n'* until its finger *n*² passes into it, its outward movement being limited by the lug *n*³, whereby a short lock or restraining member is provided, and whereby a quicker disconnection of the parts can be attained, as will presently appear. After the said members N' N² have been adjusted as described, a stop O of wax or other fusible material is secured on the longer member in front of the free end of the short member, which will nor-

mally hold such members to their locked position, and against the tension devices. The tension on the weighted arm or spring is then adjusted to keep the main and house wires to a taut condition and such adjustment may be varied to suit any temperature, by fastening the end L' of the wire into the different apertures n^4 and by adjusting the weight on the lever H.

It will be noticed by reference to Fig. 1 the house wires are held to pass between the forks of the arms f' and at each side thereof the wires have tappets l^5 whereby the movement of the wire in either direction will serve to operate on the trigger arms to set the bells in operation.

It will be manifestly understood from the drawings, that should a fire occur in room D the heat would melt the stop O and thereby unlock the members $N' N^2$, and as they are thus released the counterweight on the arm J will draw on the freed ends of the house wire and pull such wires in the direction indicated by the arrows and thereby set in operation the bells in all the rooms A, B, C and D. If desired a cable J^x can be connected to the weighted arm H, passed over a pulley and carried to a fire or police station; or it can be connected with a contact maker in an electrically operated fire alarm.

When my improved devices are to be applied to a very large building, where it would be impracticable to use a single operating cord as shown in Fig. 1, I provide a series of house wires one end of which connects with the main wire, while the other ends have guides or rollers S which engage a supplemental wire P having a series of fixed guides $p p'$, arranged at each side of the rollers S, whereby loop portions P' are formed. By this arrangement it will be seen that should any one of the connections in one of the house wires be burned out, the tension devices would serve to pull on the main wire and in so doing, it, the main wire will also draw upon the inner member of the other non separated wire or wires, and in thus pulling on it or them, they pull upon the looped wire P and draw it in a direction to its point of connection, thereby pulling the other loop portions taut and in consequence draw upon the other house wires including the separated one, and as the several wires are thus moved it follows that all the bells will be put into operation.

From the foregoing description taken in connection with the drawings the complete operation of my improvements will be readily understood. The same provides a simple and inexpensive means for automatically ringing an alarm in all the rooms, such means being entirely mechanical, no electrical devices such as are usually employed in connection with such alarm mechanisms being employed.

Instead of operating the annunciator bells direct as before stated they may be incased in a box T which may have a spring actuated

door t see Fig. 4, the closing of which will normally hold the bells to their quiet position and which when opened will serve to release the hammer holding devices to allow the bell to ring. In the use of such box, the door is provided with a lug t' with which engages a pivoted tripper arm F^x the forked free end of which receives the operating wire and is operated thereby the same as tripper F in the other construction. It is also obvious that the main wire can be set on the outside of the building, or in the cellar as most convenient, and the house wire may be fastened to the chimneys and the roof.

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

1. A fire alarm mechanism or system for buildings, comprising a single house wire passed through a number of rooms in one direction, then looped and extended in a reverse direction, a fixed guide for such looped end, said wire passed through one or more rooms as it passes in a reverse direction, a single tension device connected with the ends of such looped wire, to normally keep it taut, fusible joints in the wire, and alarm devices connected with and adapted to be operated by the separation of the wire, located in the several rooms, all arranged substantially as shown, whereby as any one of the fusible joints is separated, the tension device will serve to draw on both of the separated wire sections and thereby operate all the alarms connected therewith as set forth.

2. A fire alarm mechanism or system for dwellings comprising a plurality of house wires, each of which consists of a loop member passed through one or more rooms, a fixed or loop guide for same at one end of the building, a tension device having a single pull member, connected to one end of each of the house wire sections, a supplemental wire having fixed connections at its ends and intermediate guides to form loop portions, each of such loop sections being connected with the free end of one of the house wire sections, said house wire sections having each a series of fusible joints, and alarm mechanism connected with and adapted to be all operated by the separation of any one of the house wires, as set forth.

3. In an automatic fire alarm mechanism substantially as described, the combination with the main wire G having an adjustable tension H, connected therewith, the house wire L having cut outs and formed in a loop, the support or guide M therefor, the bells having pivoted trigger members and the tappets on the house wire, of the connecting members N, formed each of a base member N' and a shorter member N^2 , said member N' having an aperture n at one end, and a loop or guide at the other, the member N^2 having a finger and shoulder at one end adapted to engage such loop, and apertures n^4 at such end, and the fusible plug or stop O secured to the lower

plate all arranged substantially as shown and for the purposes described.

4. In an automatic fire alarm mechanism for buildings, a series of looped house wires
5 having one end connected with a main wire, the guide pulleys forming supports for the looped ends of such wires, a supplemental wire having intermediate supports or guides whereby it is formed into loop like sections,
10 the free ends of the house wires having connections with such looped sections of the

supplemental wire, a tension device connected to the main wire, said wire having a series of fusible joints, and tappets, and alarm bells, having oscillating trigger arms projected be- 15
tween such tappets to be operated thereby all substantially as shown and for the purposes described.

ELMER A. WRIGHT.

Witnesses:

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O. A. WHEELER.