

J. ERICKSON.
GOVERNING DEVICE FOR ESCAPEMENT MECHANISM.
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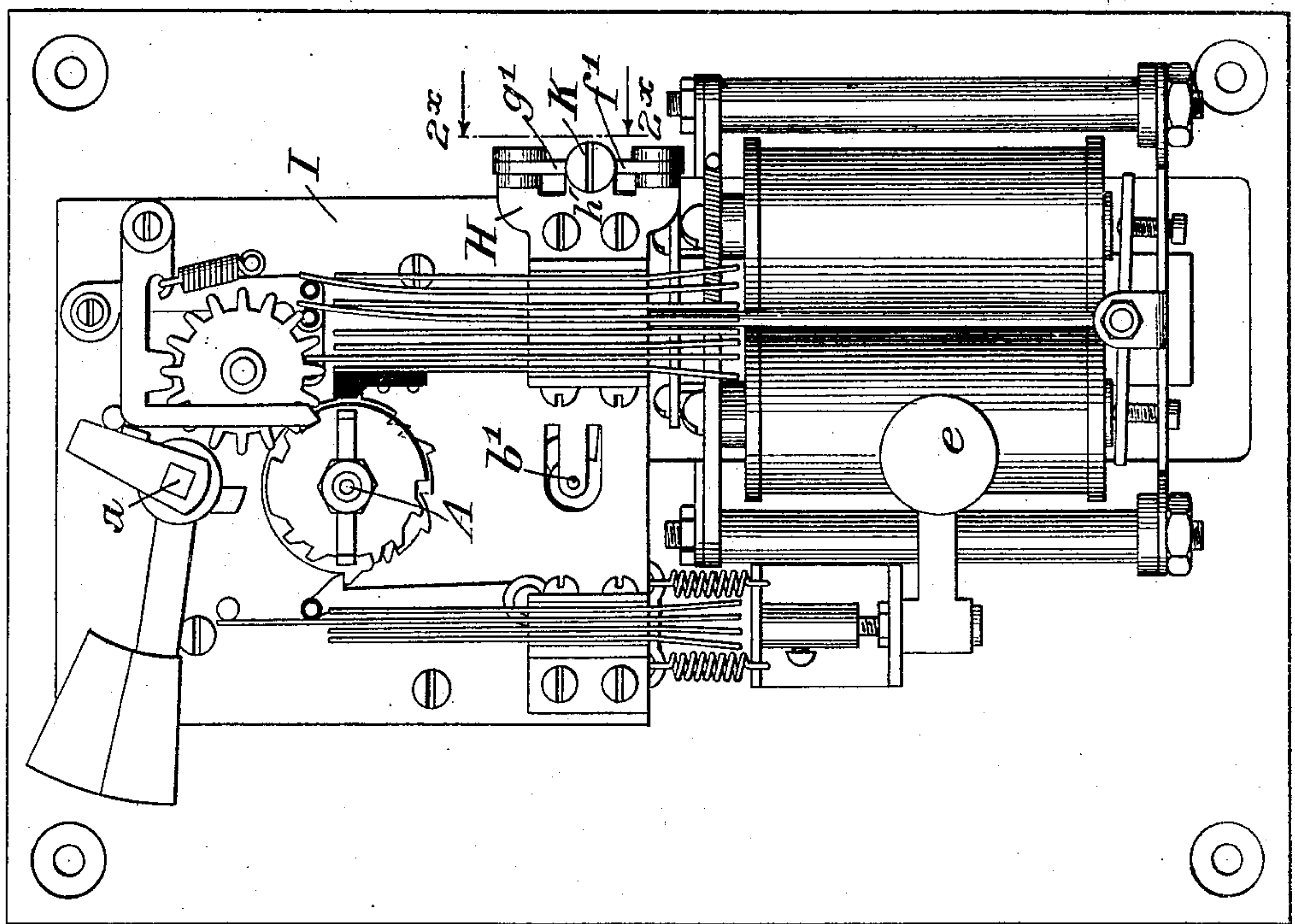
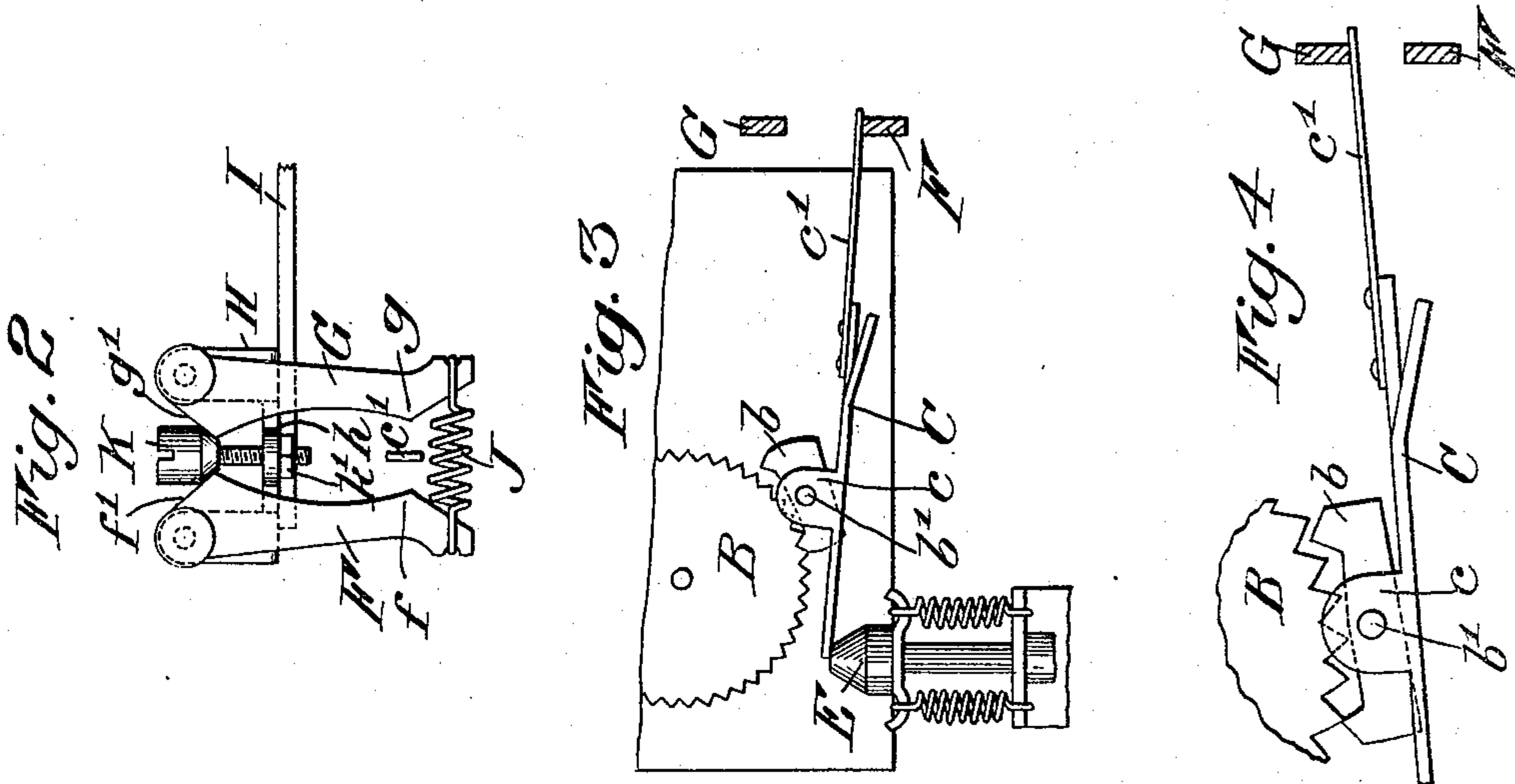


Fig. 1

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UNITED STATES PATENT OFFICE.

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GOVERNING DEVICE FOR ESCAPEMENT MECHANISM.

1,200,822.

Specification of Letters Patent.

Patented Oct. 10, 1916.

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To all whom it may concern:

Be it known that I, JOHN ERICKSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Governing Devices for Escapement Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide a governor for controlling the speed of movement of escapement mechanisms, which is adjustable so that said speed may be increased or lessened according to the service conditions under which the apparatus to which the governor is applied is to be operated.

To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a front elevation of a fire alarm box mechanism illustrating the application thereto of a governor embodying my present invention; Fig. 2 is an enlarged detail side elevation of the governor looking in the direction of the arrows indicated on the section line 2*-2* in Fig. 1; Fig. 3 is a detail view showing the escapement mechanism, as would appear if the front plate of the mechanism, shown in Fig. 1, were removed, and Fig. 4 is an enlarged detail view.

Similar reference numerals throughout the several figures indicate the same parts.

In order to illustrate the operation of a governor embodying my invention I have shown, as a type of apparatus to which it may be applied, a fire alarm signal box comprising a main arbor A, or member to be driven, which is rotated by a clock train driven by a coil spring, or other form of motor mechanism, which may be wound up by a key applied to the stud α . The speed of rotation of the arbor A is controlled by an escapement mechanism comprising in the train of the driving gears a tooth wheel B with which coöperates the pallet b , carried by the pivot b' and having projections at its two ends coöperating with the teeth of the wheel B and serving to alternately enter

the spaces between said teeth at separated points on the wheel. In order to control the speed of vibration of the pallet b I also secure rigidly to said pallet on the pivot b' an arm C having ears c by means of which it is held in position.

In the fire alarm box mechanism I also utilize the arm C as a means of restraining the operation of the box until it is desired to despatch a signal. The movement of the arm is prevented by a plug E which is spring retracted when released and is withdrawn out of the path of movement of the arm. The operator desiring to despatch an alarm signal pushes the disk e , which releases and permits the movement of the plug.

The governing device shown in Fig. 2 coöperates with one end of the arm C, during its vibratory movement, and to this end it comprises two pivoted arms F and G supported on the bracket piece H secured to the front plate I of the frame supporting the gear train. These arms are connected at their lower ends by a contractile spring J, and upon their inner faces they are provided with inwardly projecting points f and g which lie at opposite sides of the end of the arm C. At their upper ends the arms F and G are provided respectively with the converging cam surfaces f' and g' with which coöperates the bevel edge of an adjusting screw K having a threaded stem arranged in the plane of the arms F and G, and adjustable downwardly in a laterally extending ear h on the bracket H. It is preferable to make a portion of the arm C yielding and to accomplish this I attach a piece of light spring metal, as indicated by c' , which will provide a certain amount of elasticity to absorb the shock occurring when the arm engages the projections f and g . An advantage in this arrangement is also found in that the yielding portion of the arm permits the pallet to yield in starting whether the governor is adjusted for slow or fast speed and after the box mechanism is in operation it reduces the force of the impact due to the strain which ensues in arresting the arm at each end of its movement. It will be seen that the adjustment of the screw K in a downward direction serves to separate the lower ends of the arm while its adjustment in the opposite direction permits them to be drawn together to contract the space in

which the arm C is permitted to vibrate. The set screw K is held in its adjusted position by the lock nut *k'*.

It will be readily appreciated that the governing mechanism embodying my invention is applicable generally to any escapement mechanism having a vibrating member, and that the apparatus which I have shown is typical only of the general form of mechanism with which the invention is particularly adapted to be used.

The mechanism recommends itself because of its simple arrangement of parts and the capability of the simultaneous adjustment of the stop arms at opposite sides of the path of movement of the vibrating member, whereby the two stops are always accurately positioned in reference to the mean point between the extremes of the amplitude of movement permitted the member.

I claim as my invention:

1. The combination with an escapement including a vibrating member of a governor therefor comprising two stop members on opposite sides of said vibrating member, and means arranged to enter between said stop members to spread them one from the other.

2. The combination with an escapement including a vibrating member, of a pair of pivoted arms, arranged so that their free terminals embrace the vibrating member aforesaid, and an adjusting device adapted to enter between the pivoted ends of said arms to force the free ends thereof one from the other.

3. The combination with an escapement comprising a vibrating member, of two arms pivoted at opposite sides of the path of

movement of said member and having ends extending beyond the latter, of a spring yieldingly connecting the arms, cam surfaces on the latter and an adjusting screw engaging said surfaces and simultaneously moving the arms.

4. The combination with an escapement comprising a vibrating member, of arms pivoted at the opposite sides of the path of movement of said member, means for normally drawing said arms together, and means cooperating with said arms for moving them from their normal positions.

5. The combination with an escapement including a vibrating member, of arms pivotally mounted upon each side of the vibrating member, a retractile spring connected to the free terminals of said arms to limit the path of movement of said vibrating member, and means cooperating with the opposite ends of said arms for moving said arms against the action of the spring aforesaid to increase the path of movement of the said member.

6. The combination with an escapement including a vibrating member, of arms pivotally mounted upon each side of the vibrating member, a retractile spring connected to the free terminals of said arms to limit the path of movement of said vibrating member, and a beveled screw cooperating with said arms adapted to move the same against the action of the spring thereby increasing the path of movement of said member.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."