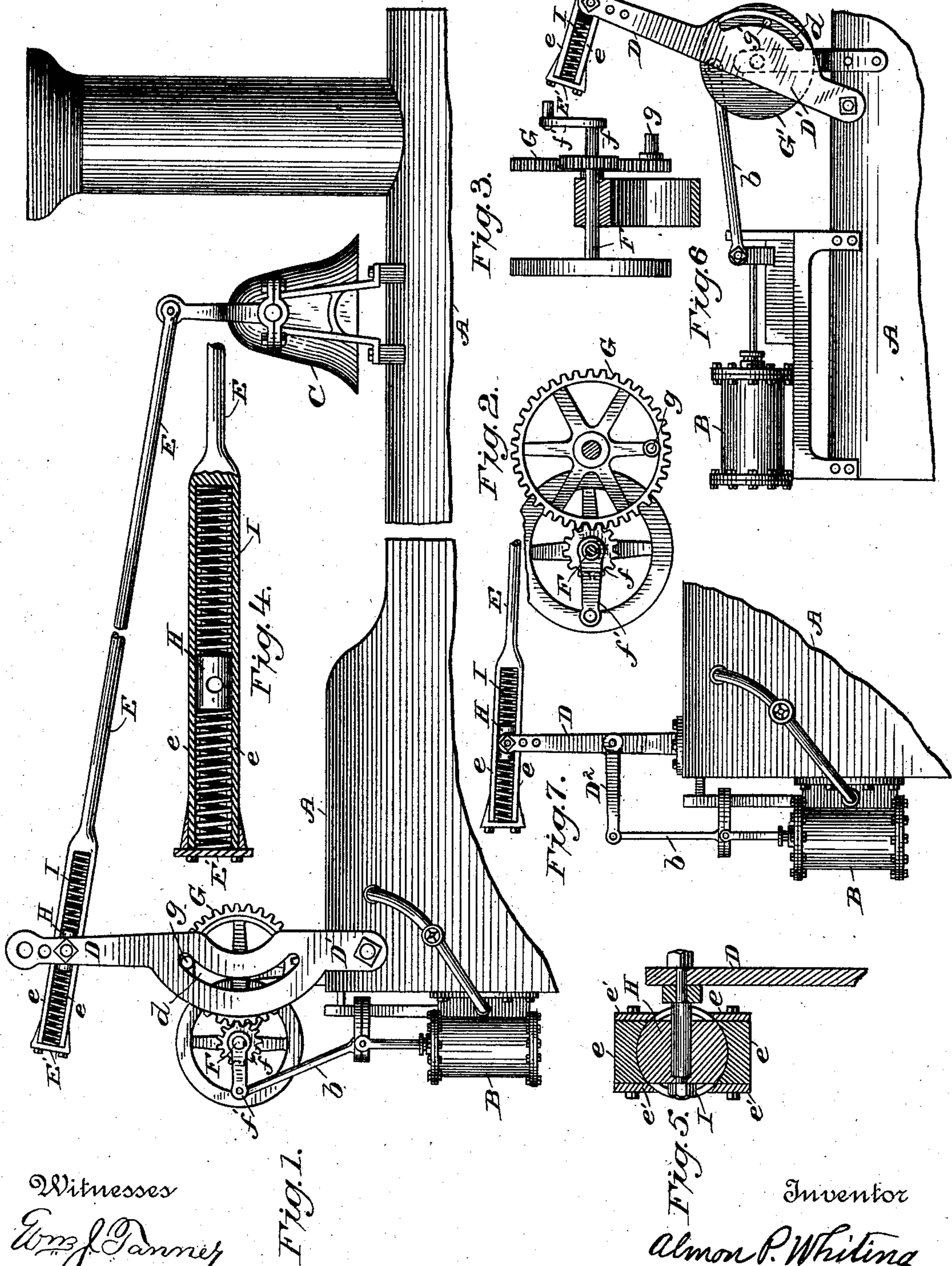


(No Model.)

A. P. WHITING.
AUTOMATIC SIGNAL BELL.

No. 373,115.

Patented Nov. 15, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

ALMON P. WHITING, OF PATERSON, NEW JERSEY.

AUTOMATIC SIGNAL-BELL.

SPECIFICATION forming part of Letters Patent No. 373,115, dated November 15, 1887.

Application filed May 7, 1887. Serial No. 237,441. (No model.)

To all whom it may concern:

Be it known that I, ALMON P. WHITING, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Automatic Signal-Bells; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to automatic signal-bell ringers, principally designed for locomotives and all places where a signal or fog bell is required on river, ocean, or harbor boats, and the application of the same to and for such purposes.

The object of the invention is to contrive a construction for automatically ringing the signal-bell of a locomotive, after the fashion of the engineer or fireman, giving to the bell that peculiar swaying motion and cushioning the same at the end of each stroke, which has only been attained heretofore by manual exertion and application.

A further object is to devise a simple, compact, economical, and efficient construction for accomplishing the foregoing results, which will be more fully hereinafter set forth.

In the drawings, Figure 1 is a side view of a locomotive, having the lower portion broken away, provided with my improvement; Fig. 2, a side view of the gearing, on an enlarged scale; Fig. 3, an end detail view of the gearing; Fig. 4, a detail view of the rear end of the connecting-rod interposed between the bell and the power-driven lever, on an enlarged scale; Fig. 5, an end view of the connecting-rod having the cap removed, and Figs. 6 and 7 are modified forms.

The body A of the locomotive forms a support for the small engine B, the bell C, and the bell-ringing mechanism, composed, essentially, of the power driven or actuated lever D and the connecting or bell rod E. The lever D may be directly connected with the engine B by pitman b, as shown in Figs. 6 and 7; or a multiple gearing may be interposed between the pitman b and the lever D, as shown

in Fig. 1, composed of the pinion f, mounted securely upon the outer end of the shaft F, having the crank f' upon its inner end, to which the pitman b is connected, and the gear-wheel G, meshing with the pinion, and having a wrist-pin, g, which is adapted to fit in the semicircular slot d in the lever D'. Instead of the gearing, a disk, G', driven from the engine B by pitman b, having a wrist-pin, g', fitted in the semicircular slot d of the lever D, may be employed, as shown in Fig. 6. To further simplify the construction, the power-driven lever may be bell-crank shaped, as shown by D² in Fig. 7.

The upper end of the power-driven lever is yieldingly united with the outer end of the connecting or bell rod E, and the opposite end of the bell-rod is connected with the bell C in the usual and well-known manner. The outer end of the bell-rod is bifurcated, forming arms e e, which extend parallel with each other for a considerable distance, and have their ends united by the cap E', bolted thereto. Between these arms e e is located the sliding box or head H, which is held from lateral displacement by the arms e', projecting inward from the sides of the arms e and embracing the head. These flanges may be integral with or separate from the arms and attached thereto in any approved way. Coil-springs I, located on each side of the head, are held in place by the flanges and cushion the thrust of the rod and the stroke of the bell at each movement.

The upper end of the power-driven lever D is pivotally connected with the sliding head, and the throw of the bell can be regulated by adjusting the connection between the lever and head, as will be readily understood.

In practice the engine is set in motion in the usual way, and through the means set forth imparts an oscillating movement to the lever D, which, through the bell-rod E, rings or tolls the bell C. The inertia of the bell at the end of each stroke is taken up by one or the other of the coil-springs I, which form a cushion and prevent undue wear and straining of the several joints. The lever D', with the semicircular slot d, is best adapted for the purpose, and by practical demonstration has been found to give the best results; hence is the preferable form.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

5 1. The combination, with the bell and power-driven lever, of a yielding connection interposed between and positively connecting the bell and lever for cushioning the stroke of the bell, substantially as described.

10 2. The combination, with the bell and power-driven lever, of the bell-rod connected at one end with the bell, a sliding head connected with the lever and located at the opposite end of the bell-rod, and the springs arranged on each side of the head for cushioning the stroke of the bell, substantially as set forth.

15 3. The combination, with the bell and the power-driven lever, of the bell-rod, the sliding head at one end thereof adjustably connected with the lever, and the springs on each side of the sliding head, substantially as described, and for the purpose specified.

20 4. The combination of the bell, the power-driven lever, the bell-rod connected at one end with the bell and bifurcated at the opposite end, forming arms which are flanged at their sides, the sliding head connected with the le-

ver placed between said arms and flanges, and the springs for cushioning the stroke of the bell, arranged on each side and held between the arms and flanges, substantially as set forth.

30 5. The combination of the bell, the lever having a semicircular slot, the driving-crank or wrist-pin fitted in said slot for vibrating the lever, and the bell-rod interposed between and connecting the bell with the lever, substantially as specified.

35 6. The combination of the bell, the lever having a semicircular slot, the bell-rod yieldingly connecting the bell with the lever for cushioning the stroke of the bell, the crank fitted in said semicircular slot for vibrating the lever, and the supplemental steam-engine for driving the crank, substantially as described.

40 In testimony whereof I affix my signature in presence of two witnesses.

ALMON P. WHITING.

Witnesses:

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M. L. OATMAN.