

UNITED STATES PATENT OFFICE.

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BELL-HAMMER.

No. 855,701.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES E. GIERDING, a citizen of the United States of America, and a resident of Newark, in the State of New Jersey, have invented a new and useful Improvement in Bell-Hammers, of which the following is a specification.

This invention relates to the bell mechanism or alarm mechanism of registers or recorders or combined registers and recorders in general herein referred to in common as "registers," and consists in certain novel combinations of parts hereinafter described and claimed.

The objects of the present invention are to render a face part of the bell-hammer independently spring retracted and at the same time tight as against rattling, so as to insure sharp and well defined strokes of the bell, however rapid the registering movement may be, and to accomplish this important result without sacrificing the form of the swinging hammer of any required leverage, which is almost universally preferred.

A sheet of drawings accompanies this specification as part thereof.

Figures 1 and 2 are side elevations, showing one and the same side of the bell hammer; Fig. 1 showing the bell hammer at rest, and Fig. 2 illustrating its operation by full and dotted lines as hereinafter described. Fig. 3 is a view of the bell hammer from the left-hand side of Fig. 1.

Like reference characters refer to like parts in all the figures.

The improved bell hammer, *a*, is of the swinging type, and is pivotally supported in proper relation to a bell, *b*, Figs. 1 and 2, and external thereto, in any position that may best accommodate it to the other parts of the register, as, for example, by means of a rock shaft, *c*, the bearings of which include a bracket, *d*; and a tensile striking spring, *e*, is stretched from an arm, 1, of said rock shaft to a relatively fixed stud, 2; said rock shaft *c* carrying the bell hammer *a*. This bell hammer is characterized by an attached and spring retracted face part, 3, which is projected into contact with the bell *b* by momentum when a pair of stop shoulders, 4 and 4', Figs. 1 and 2, on the bell hammer *a* and

a relatively fixed part, preferably said bracket *d* come in contact; the instantaneous retraction of said face part 3 by its spring, *f*, insuring clear and sharply defined strokes of the bell. Said face part 3 is constructed with a central stem, 3', perpendicular to its back, extending rearwardly through the body part of the bell hammer, *a*, by which said stem is adequately supported and guided, and headed at its rear end, and the spring *f* is in the form of a helical coil inclosing said stem between its head and the back of the hammer body.

When the bell hammer *a* is at rest the parts occupy the positions in which they are shown in Fig. 1 and Fig. 3. When the register of which the bell-hammer forms a part is actuated, motion is imparted to the bell-hammer, as, for example, by the interaction of a moving part of the register mechanism with a stud, 5, on the bell hammer *a*, and the bell hammer is turned against the resistance of the striking spring *e*, into the position in which it is shown in full lines in Fig. 2. Upon the completion of this movement the bell hammer *a* is tripped or freed, so as to permit the face part 3 of the bell hammer to strike the bell *b* under the impulse of the spring *f* as in dotted lines in Fig. 2. The face part 3 reaches the bell *b* in such movement after the stop shoulders 4 and 4' come in contact, by the momentum of the face part 3 overcoming its retracting spring *f* as above described, and the face part is immediately restored to its normal retracted position, shown in Fig. 1.

Suitable means for so moving the bell hammer *a* against the resistance of the striking spring *e*, and for tripping the same, are shown in Figs. 1 and 2 mainly in dotted lines; the parts being located behind the bell *b*. A working pawl *g* rotates step by step a ratchet wheel *h* concentric with the bell; and a detent pawl *i*, interacting with such ratchet wheel, is constructed with an extension 6 to contact with said stud 5 on the bell hammer. This detent pawl has a fixed pivot 7, and may be suitably spring-pressed in any known or improved manner.

For the purposes of this invention the accessories of the bell hammer may be of any known or improved description.

Having thus described said improvement, I claim as my invention, and desire to patent under this specification:

In combination with the bell of a register, 5 a swinging bell hammer and a relatively fixed pivotal support for the same provided respectively with stop shoulders normally in contact with each other, a tensile spring connected with the bell hammer and tending to 10 hold the same in its normal position, means whereby said bell hammer is adapted to be moved against the tension of said spring and tripped for its effective return movement, a movable face part provided with a stem ex-

tending through the body part of the bell 15 hammer and having a head at its rear end, and a helical spring surrounding said stem between its head and the body of the hammer, said spring interacting with said stem to permit said face part to be projected into con- 20 tact with the bell by momentum and to instantaneously retract said face part out of contact with the bell, substantially as hereinbefore specified.

CHAS. E. GIERDING.

Witnesses:

WALTER BEYERS,
GEORGE E. WILLIS.