No. 680,831. Patented Aug. 20, 1901.

E. BACHELIER.

MEANS FOR PRESERVING RAILWAY CARRIAGES FROM INJURY IN CASE OF COLLISION.

(Application filed Oct. 4, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 2

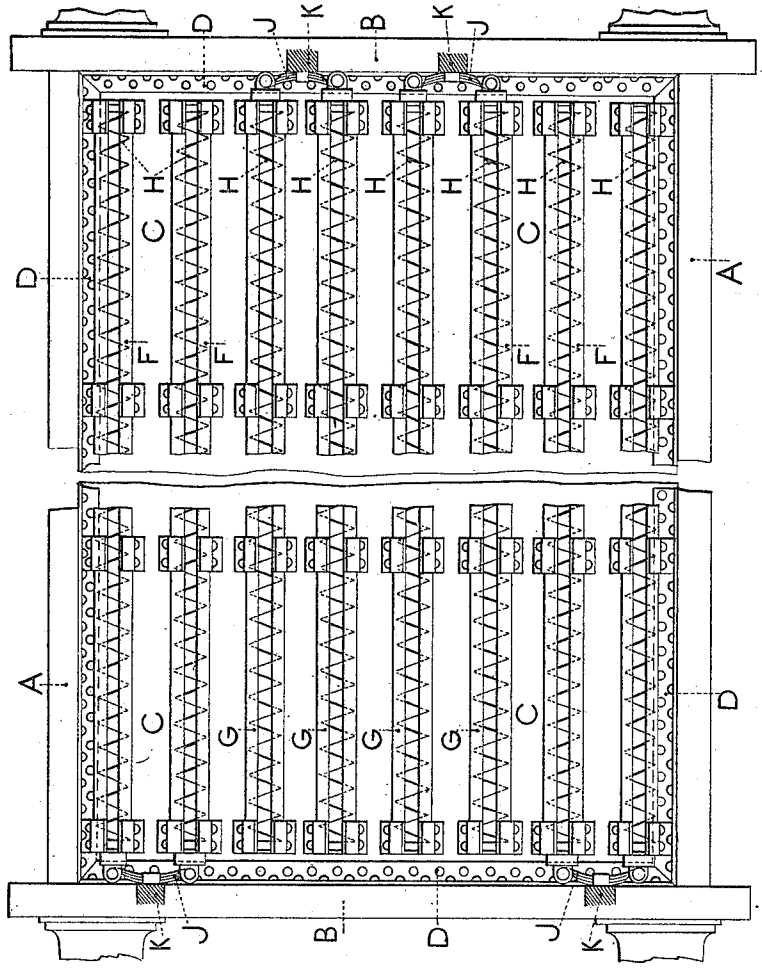
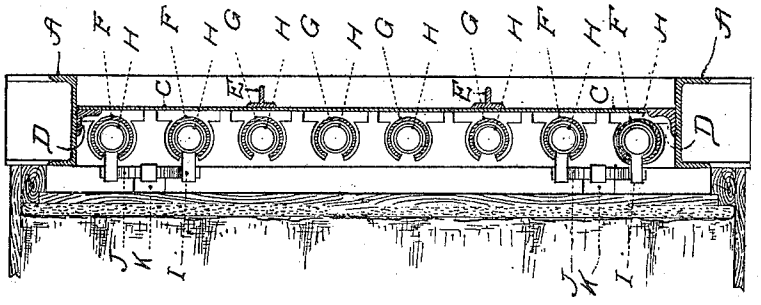


FIG. 1



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FIG. 3

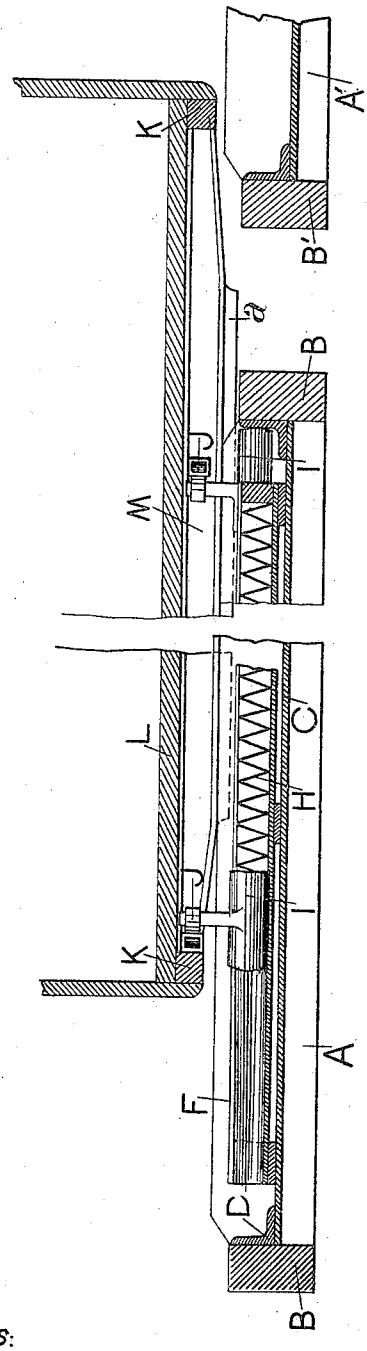
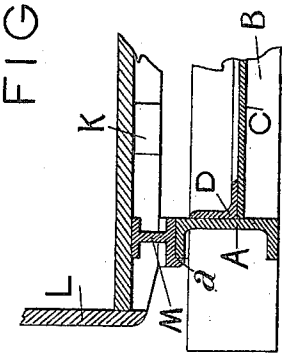


FIG. 4



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UNITED STATES PATENT OFFICE.

EUGÈNE BACHELIER, OF SERMERIEU, FRANCE.

MEANS FOR PRESERVING RAILWAY-CARRIAGES FROM INJURY IN CASE OF COLLISION.

SPECIFICATION forming part of Letters Patent No. 680,831, dated August 20, 1901.

Application filed October 4, 1900. Serial No. 32,013. (No model.)

To all whom it may concern:

Be it known that I, EUGÈNE BACHELIER, a citizen of France, residing at Sermerieu, (Isére,) France, have invented certain new and useful Means for Preserving Railway-Carriages from Injury or Destruction in Case of Collision Between Trains, of which the following is a full, clear, and exact description, and for which I have made application for patent in France, dated August 18, 1900.

The arrangement forming the subject of the present invention has for its object the prevention of injury and wrecking of railway-carriages in the event of a collision between two trains. It thereby prevents or at least reduces to a large extent accidents to persons and loss of material which are too often the consequences of collisions. This arrangement consists in principle, first, in preventing the distortion of the undercarriage carrying the carriage-body; second, in enabling the carriage-body to slide longitudinally on its undercarriage by compressing springs, the motion of which may extend to about half the length of the carriage.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a transverse section of parts of the carriage, and Fig. 2 is a plan of the undercarriage. Fig. 3 is a sectional elevation, and Fig. 4 a detail view showing the means of connection of the body of carriage to underframe.

The undercarriage, which is formed of longitudinal bars A A and cross-bars B B, is rendered secure against distortion by a sheet-iron platform C, connected together around its entire circumference by means of angle-iron D and strengthened below by T-irons E. On this platform are fixed tubes F G, parallel with the long sides of the undercarriage and slotted on their upper side along their entire length. In each of these tubes is placed a coiled spring H, pressing at one end against the fixed end of the tube and at the other end against an abutment I, which can slide within the tube, thus compressing the spring. In one half F of the tubes the springs are compressed in one direction and in the other half G they are compressed in the reverse direction. The abutments I are connected together in pairs by plate-springs J, the clip of which bears against brackets K, solidly fixed to the frame of the carriage-body. The body L of the carriage, Figs. 3 and 4, rests upon the frame-plate A by means of two flanged sleepers M for the purpose of preventing transverse movement. These sleepers are tapered at their ends, so as to enable them to pass easily over the frame A B of the following carriage. The springs J, fixed in the slots I, are independent of the body of the carriage and are in contact only with the stays K as long as the running is normal. In case of collision, Fig. 3, the body of the carriage draws with it the springs J at one end of the frame, while those placed at the other end remain in position, the slot-holes I abutting upon the cross-piece B. By these arrangements when the carriage is at rest or is running normally the carriage-body is maintained in its position on the undercarriage by the equal exertion in contrary direction of the springs; but as soon as a collision arrests the undercarriage the carriage-body continues to advance and in doing so compresses half of the springs by a length of four to five meters, according to its length and that of the undercarriage.

At the rear of the luggage or guard's van a free space would be reserved, or a compartment of bellows form, offering no resistance to the forward motion of the first carriage-body, would be provided. This latter would make place for the second, and so on. They would then return to their position on the undercarriage as soon as their momentum had been absorbed by the compression of the springs. These latter will be calculated according to the speed of the train and the weight of the carriage-body to enable them to resist ordinary or foreseen shocks.

The carriage-bodies not coming into collision with each other and stopping gradually will not be broken to pieces, and passengers will be preserved from accidents resulting from a collision.

The details of construction above described, by way of example, may be varied without departing from the peculiar character of my invention.

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

1. In railway-carriages, an arrangement

adapted to attenuate the consequences of collisions, consisting of the combination of an undercarriage rendered secure against distortion by a platform of sheet metal and springs, carried by the undercarriage, located in longitudinal tubes, with a carriage-body capable of sliding longitudinally in either direction on the undercarriage and compressing the said springs in such motion, substantially as herein set forth.

2. In railway-carriages, the combination of an undercarriage formed of longitudinal and transverse bars and a platform of sheet-iron connected all round to the bars by angle-iron and strengthened longitudinally by T-irons, longitudinal tubes, slotted along their upper side, fixed in said undercarriage, coiled springs placed in said tubes and pressing at one end against the fixed ends of the tubes, abutments capable of sliding within the tubes against which press the other ends of the springs, said springs being compressed half in one direction and the other half in the contrary direction, plate-springs connecting the abutments together in pairs, and brackets fixed solidly to the frame of the carriage-body against which the clips of the said springs bear, substantially as herein set forth.

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

EUGÈNE BACHELIER.

Witnesses:

GASTON JEAUNIAUX,

MARIN VACHON.