

T. F. ALLYN.

Car Spring.

No. 101,563.

Patented April 5, 1870.

Fig. 1.

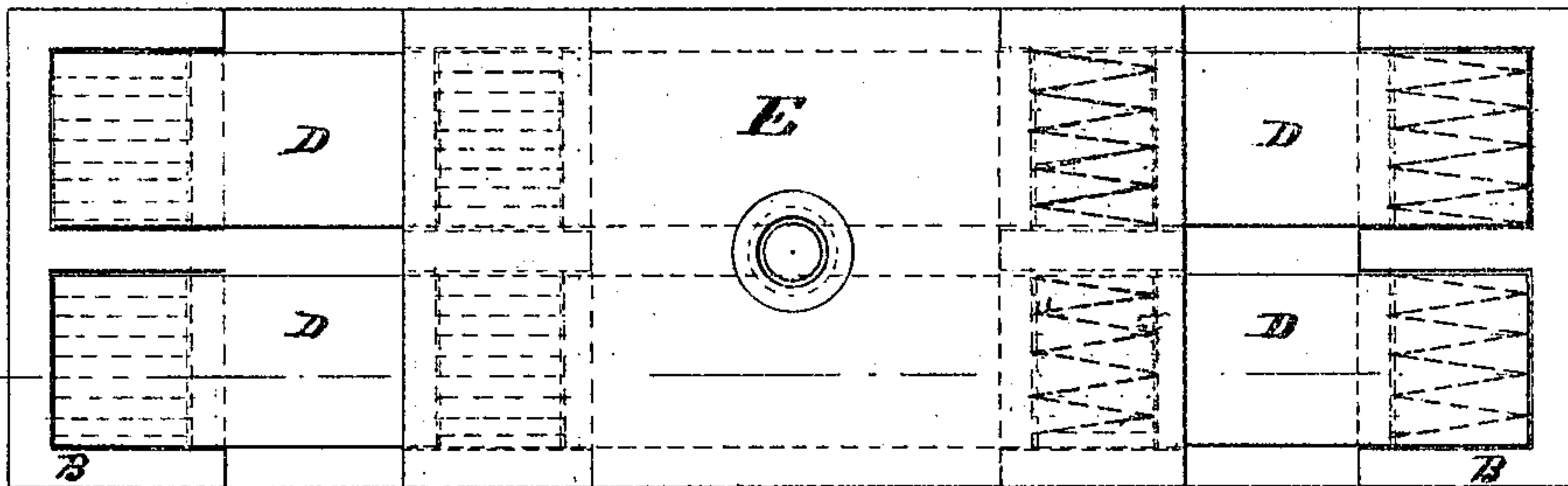


Fig. 2.

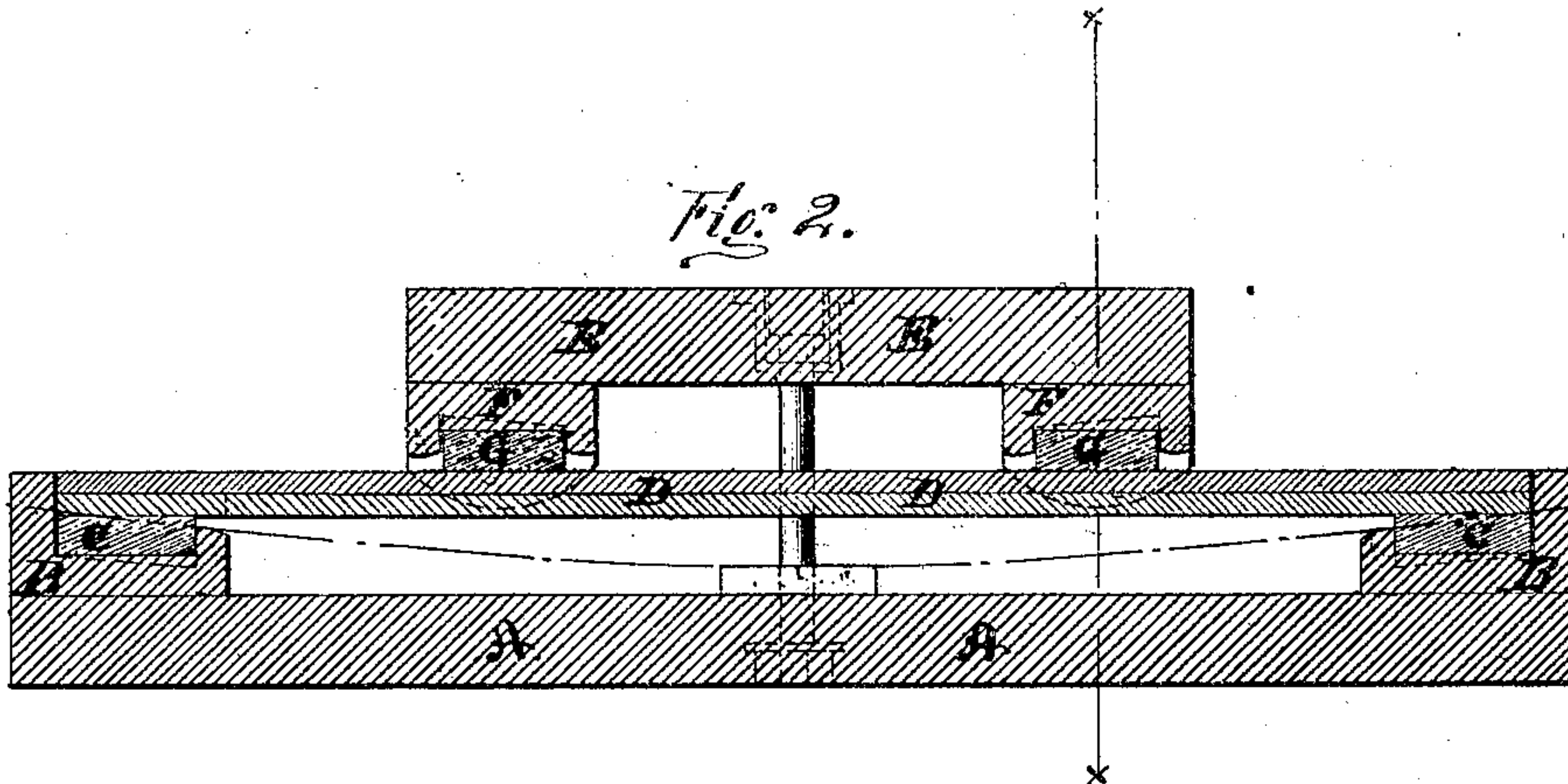
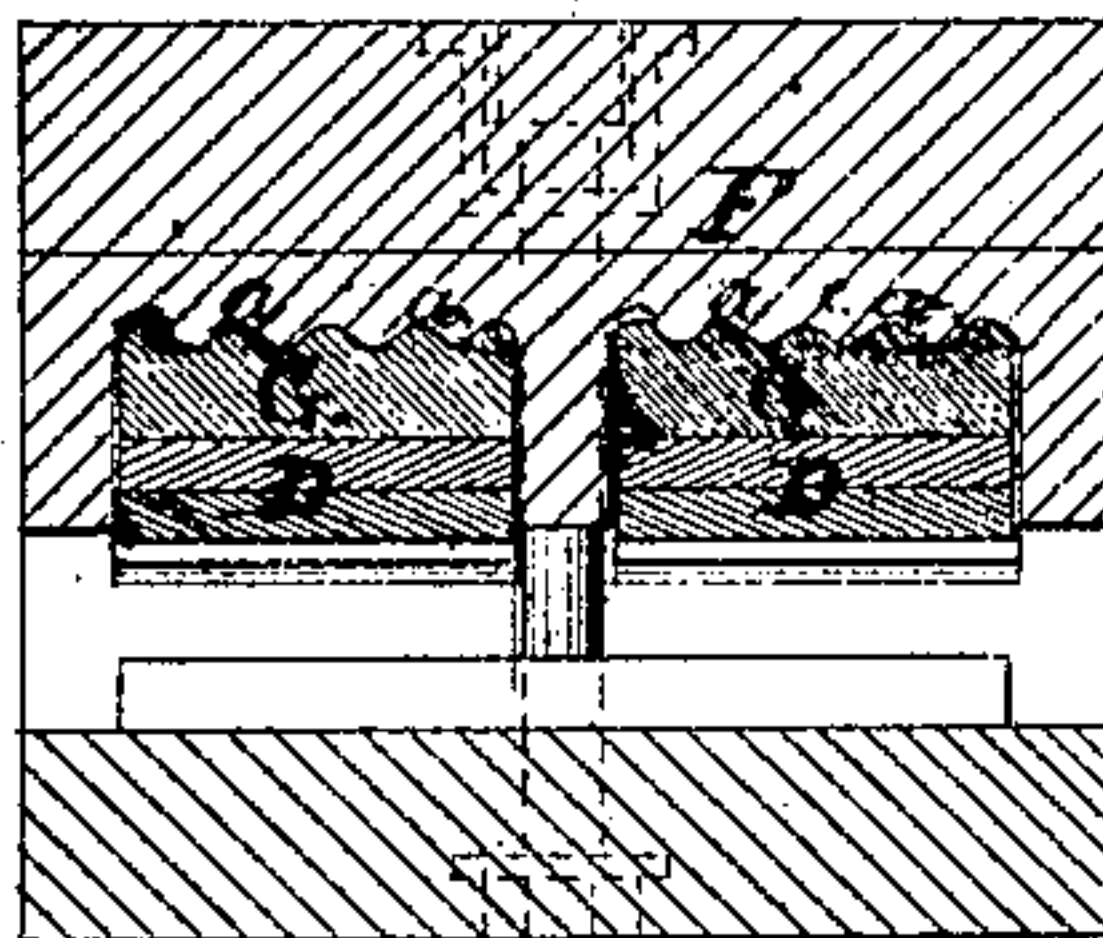


Fig. 3.



Witnesses:

Godfrey Mathys.
B. F. James.

Inventor:

Timothy F. Allyn

United States Patent Office.

TIMOTHY F. ALLYN, OF NYACK, NEW YORK.

Letters Patent No. 101,563, dated April 5, 1870.

IMPROVEMENT IN CAR-SPRINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern.

Be it known that I, TIMOTHY F. ALLYN, of the town of Nyack, and State of New York, have invented a new and useful Improvement in Railroad Car-Springs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, in which—

Figure 1 is a top view, and

Figure 2, a longitudinal sectional view, through the center of said spring.

The nature of this invention consists in the construction of a railroad car-spring, in a simple and compact manner, with the smallest number of separate parts, easily detached and applied, to admit of convenient packing for shipment;

Also, in the construction of a car-spring in such a manner that its maximum pressing will always admit of elasticity of its different parts, in the manner hereinafter described;

Also, in the construction and arrangement of a lower or frame, to be applied to the upper surface of the spring, in such a manner as to have only two bearing-surfaces upon such spring, and said surfaces being yielding or movable, in order to adapt themselves to the curvature of the spring.

A represents the bolster or frame of the railroad car.

B are metallic cups, fastened in any secure or desirable way to said frame.

C are pieces of rubber, fitting into and approximating in form to the cups B; or the frame A may be dispensed with, and may form a part or portion of a casting, upon which are formed the cups B, the whole being in one piece.

The above frame and cups are made of sufficient width to admit of said cups receiving two or more sets of steel springs, the ends of which rest respectively upon the rubber C, contained within the cups B. These springs, D, may or may not be of equal length and thickness.

A frame, E, is applied to the upper side of the springs D, and is constructed very much like the lower frame A, it being of metal, and having cast upon its ends cups F, conforming in size and shape to the cups B, and within which is placed the pieces of rubber G.

The frame E is about one-half the length of the frame A, and is placed centrally upon it, so that the bearing-surfaces, or fulcra, may be equally distributed upon the spring.

The weight of the car resting upon the top of the frame E, has four points of contact upon the spring, to wit: two points being upon the ends of the spring,

and two points at about one-quarter of the distance from each end of the same when the spring is in its normal position.

The upper frame E is confined to the lower frame or bolster A by means of a suitable bolt, or bolts, that are so arranged as to allow the free action and play of the spring.

When the car is heavily laden, the springs may become so much depressed in the center as to come in contact with the frame A. This fact does not destroy the effect of the spring, nor impair its function.

I place a piece of rubber either upon the center of the lower frame or confined within a cup, constructed as above described, and which cup may be cast upon or fastened in the center of said lower frame or bolster, thereby affording a yielding surface and fulcrum, so that the spaces left between this fulcrum and the ends of the spring will continue to form an elastic medium for the superincumbent weight, as illustrated in dotted lines in fig. 2.

In the foregoing description I have stated that the frames and cups may be made of metal, cast or otherwise, each frame and its cup being in one piece; but, if desired, the cups alone may be so made of metal, cast or otherwise, and attached in any suitable manner to wooden bolsters or frames, and subserve the same purposes.

Figure 3 shows a sectional view, taken through the line *x x*, fig. 2, and is intended to illustrate the mode of construction of the bearing-surface of the cup F, and the bearing-surface of the cup B, being made in the same manner.

a a a a are corrugations, formed within such bearing-surface, of either a square or rounding surface, the latter being preferable, as not being as liable to cut or fracture the rubber. These corrugations may be made either straight across the surface, or angular, each alternate corrugation being wider than the other, which mode of construction allows a greater expansion of the rubber within the cup, and equalizes the pressure upon the rubber when the spring is deflected.

It is apparent that other elastic material may be used in the place of the India rubber referred to as above, or that wood may be applied in such a manner as to afford a bearing-surface, the latter, however, being inferior in its character and power.

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

1. The construction and arrangement of a car-spring, in such a manner that the bearing-surfaces of the upper frame E shall have only two points of contact upon the spring D, when said points of contact are yielding or movable, and allowing the full free action

of the spring, in the manner and for the purpose herein described.

2. The cups B and F, having formed upon their bearing-surfaces the corrugations *a a a*, in the manner and for the purpose herein described.

3. The combination of the frame E, cups F, and rubber G, with the springs D D, frame or bolster A, cups B, and rubber C, in the manner and for the purpose herein described.

4. As an article of manufacture, the frames A and

E, having formed upon them the cups B and F, when each of said frames and cups is cast in one piece, in the manner and for the purpose herein described, or whether said frames be made of wood, and have secured to them the cups B and F.

TIMOTHY F. ALLYN.

Witnesses:

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