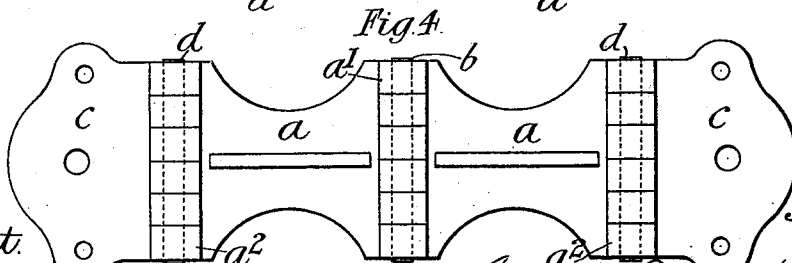
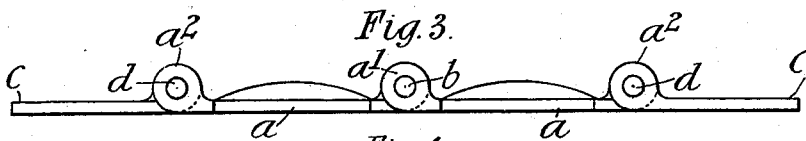
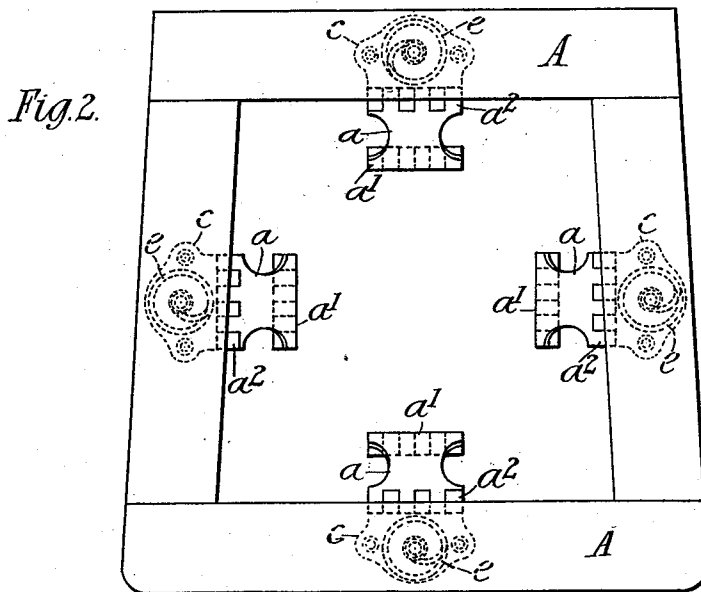
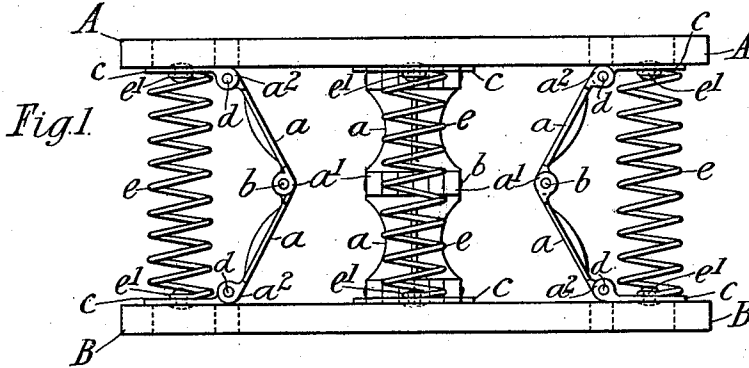


J. W. HOLLAND & R. OWEN.
SPRING ATTACHMENT.

No. 533,009.

Patented Jan. 22, 1895.



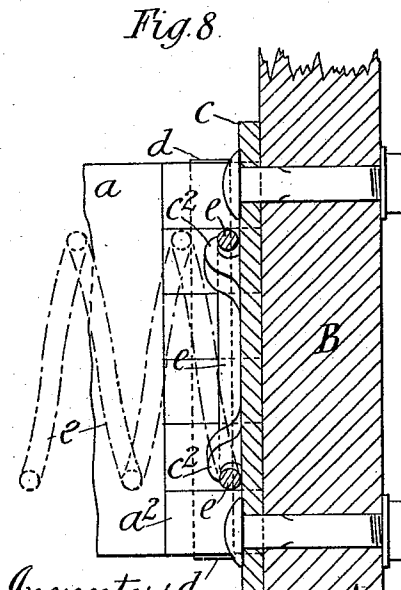
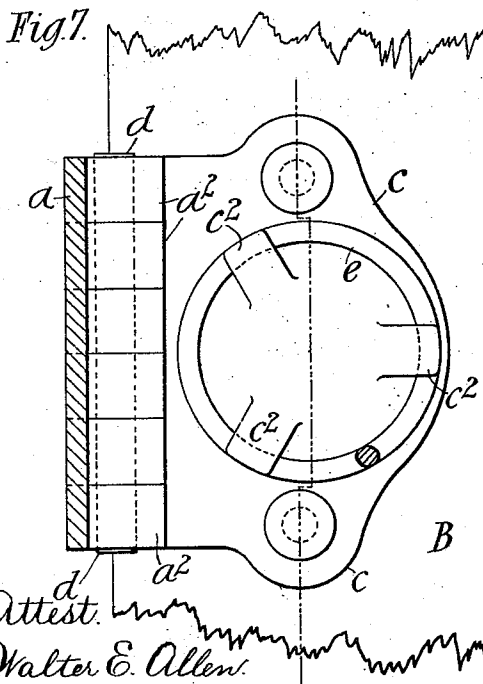
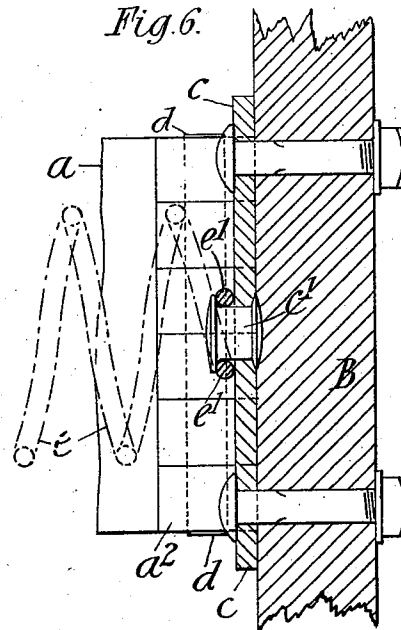
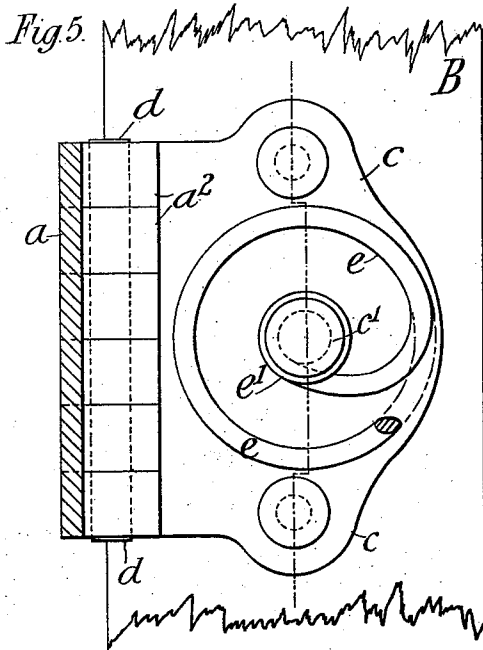
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Fig. 9.

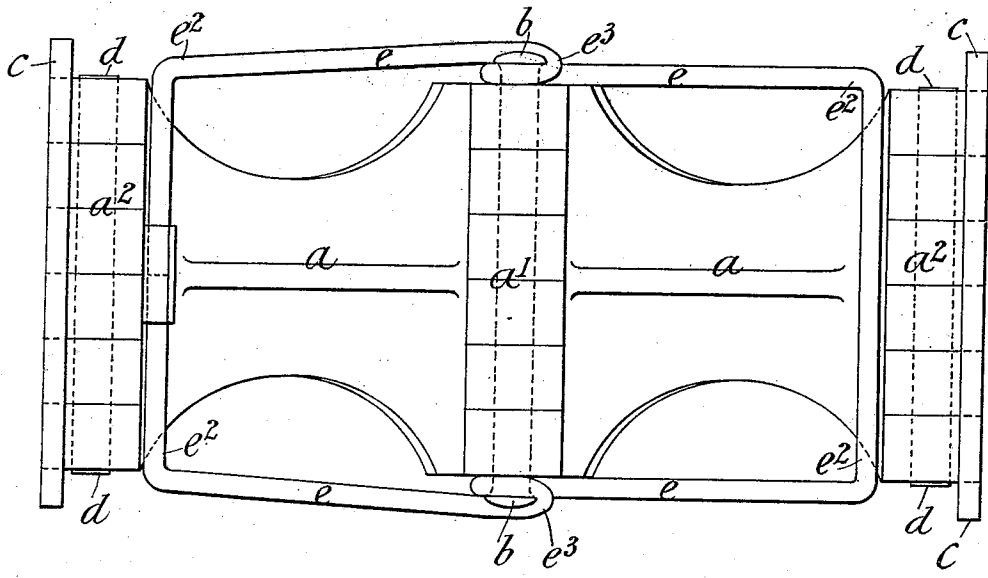
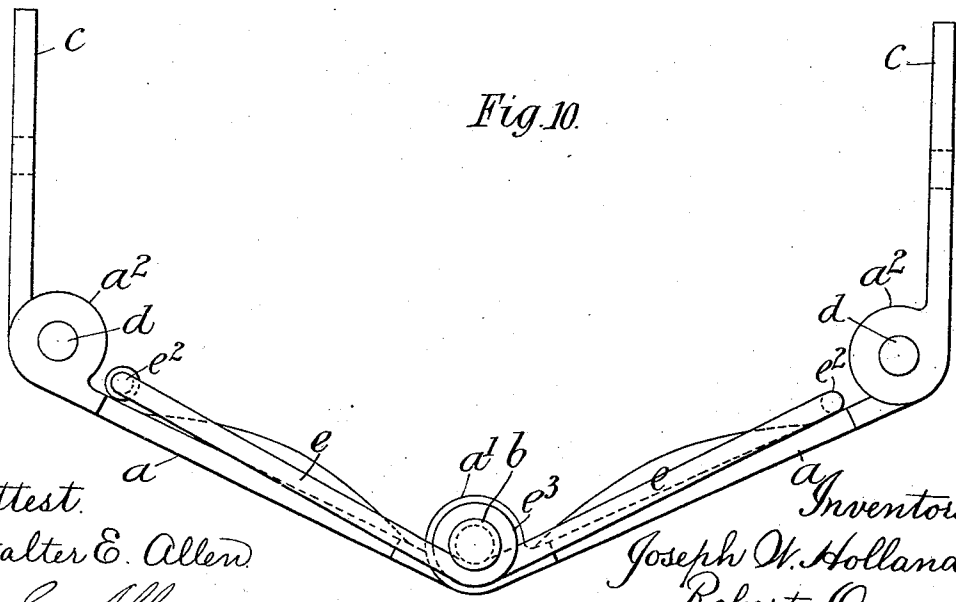


Fig. 10.



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UNITED STATES PATENT OFFICE.

JOSEPH W. HOLLAND AND ROBERT OWEN, OF COVENTRY, ENGLAND,
ASSIGNORS OF ONE-THIRD TO THOMAS LATHAM, OF SAME PLACE.

SPRING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 533,009, dated January 22, 1895.

Application filed April 17, 1894. Serial No. 507,896. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH WILLIAM HOLLAND and ROBERT OWEN, subjects of the Queen of Great Britain, residing at Coventry, in the county of Warwick, England, have invented certain new and useful Improvements in Spring Attachments, of which the following is a specification.

The invention consists in a combination attachment and spring by means of which two parts can be connected together in such manner that the one part is caused to rise and fall in a perpendicular direction with spring action and is controlled to move more or less truly parallel with the other part to which the spring attachment is connected.

Our invention consists in novel features of construction as hereinafter described and claimed.

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

Figure 1 is an elevation and Fig. 2 is a plan of two parts of a seat connected together by four of our improved spring attachments. Fig. 3 is an edge view and Fig. 4 is a plan drawn to a larger scale of the flaps of our improved spring attachment opened out and separate from the spring. Fig. 5 is a plan and Fig. 6 is a vertical section, drawn to a larger scale than Figs. 3 and 4, showing the attachment provided with a coiled spring fixed rigidly thereto. Figs. 7 and 8 are similar views to Figs. 5 and 6 showing a coiled spring removably connected to the attachment. Fig. 9 is a face view and Fig. 10 is an edge view of our improved spring attachment fitted with a different form of spring from that shown in the previous figures.

In carrying the invention into effect we propose to use three, four, or it may be more, of such combined attachments and springs arranged in any convenient manner. In Figs. 1 and 2 we have shown four of them connecting the movable frame A of a chair to the base B. Each combined attachment and spring consists of two mobile inwardly folding hinge-flaps *a a*, jointed together by knuckles *a'* and a hinge-pin *b*, and also jointed, by other knuckles *a''* and hinge-pins *d*, to another pair of outwardly extending flaps *c c*, which latter are fixed, the one, for instance, to the

frame A of a seat, and the other to the base frame or support B, as shown at Figs. 1 and 2.

According to the arrangement shown at Figs. 1 to 8, the ends of a coiled spring *e* are fixed within and to the fixing flaps *c c*, which spring acts to force such fixing flaps *c c* away from each other, except as pressure is applied thereto.

In the construction shown at Figs. 1 to 6, the spring *e* has each of its ends formed with a central eye *e'*, which, by rivets *c' c'*, are riveted to the flaps *c c*.

In the construction shown at Figs. 7 and 8, the ends of the spring *e* are formed into complete rings, which are sprung over claws or hooks *c''* cast on the flaps *c c*.

In the modification shown at Figs. 9 and 10, is a spring *e* made of wire or rod metal bent to form arms *e''* bearing against the inner faces of the flaps *a a* and having central coils *e'''*, by which, and by the hinge-pin *b* passing through, the said spring is connected to the attachment. In this latter case the spring will, by more or less straightening the flaps *a a*, act to separate more or less the flaps *c c* from each other, while by pressure applied to such flaps *c c*, they will be made more or less to approach each other.

These combined attachments and springs, when applied to a seat, and when four are used, which is the preferred number, may be placed at the corners or preferably at the sides as shown at Figs. 1 and 2, between the frame A of the seat proper and the base frame or support B, with the central knuckles *a' a'* preferably arranged toward each other.

These combined attachments and springs are applicable to various articles, among which may be named chairs, bath chairs, couches, bedsteads, seats for ship and other saloons, stools, footrests, railway carriage and tram car seats, the bodies of perambulators, &c.

It will be evident that combined attachments and springs may be constructed according to the invention of various dimensions and proportions.

Having fully described our invention, what we desire to claim and secure by Letters Patent is—

1. As a new article of manufacture, a spring

attachment comprising a base frame B, a top
frame A, outwardly extending flaps *c* secured
to the base and top frames respectively, the
paired flaps *a* hinged together at their inner
5 ends and hinged at their outer ends to the in-
ner ends of the outwardly extending flaps and
folding from the latter inwardly of the frames,
and the springs located and secured between
the upper and lower flaps for opening the
10 paired flaps and raising the top frame perpen-
dicular to the base frame; substantially as
described.

2. As a new article of manufacture, a spring
attachment comprising a base frame B, a top
15 frame A, outwardly extending flaps *c* secured

to the base and top frames respectively, the
paired flaps *a* hinged together at their inner
ends and hinged at their outer ends to the in-
ner ends of the outwardly extending flaps and
folding from the latter inwardly of the frames, 20
and the coil springs located between, bearing
upon and secured to the upper and lower
flaps for opening the paired flaps and raising
the top frame perpendicularly to the base
frame; substantially as described.

J. W. HOLLAND.
ROBERT OWEN.

Witnesses:

G. W. HINE,
R. CRUMP.