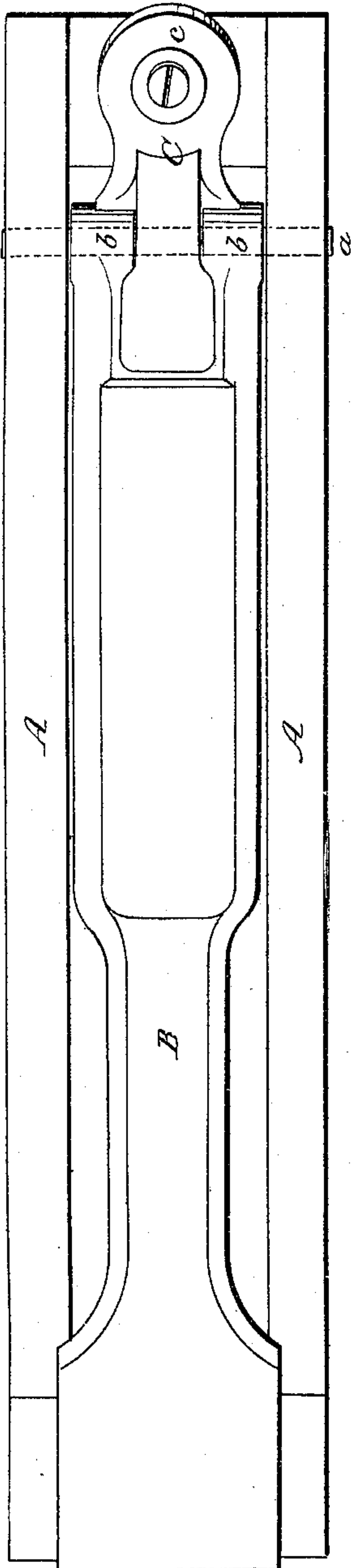


*C. Duckworth.*  
*Shuttle Check.*

*Nº 57,300.*

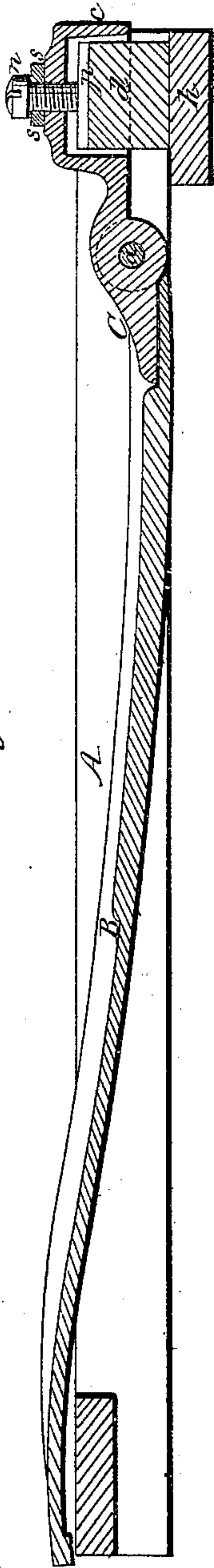
*Patented Aug. 21, 1866.*

*Fig. 1.*

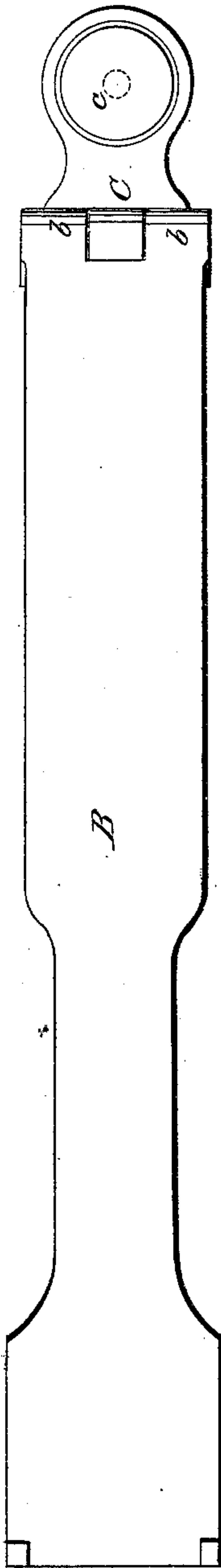


*Witnesses.*  
*R. Campbell.*  
*Edw. Schaefer.*

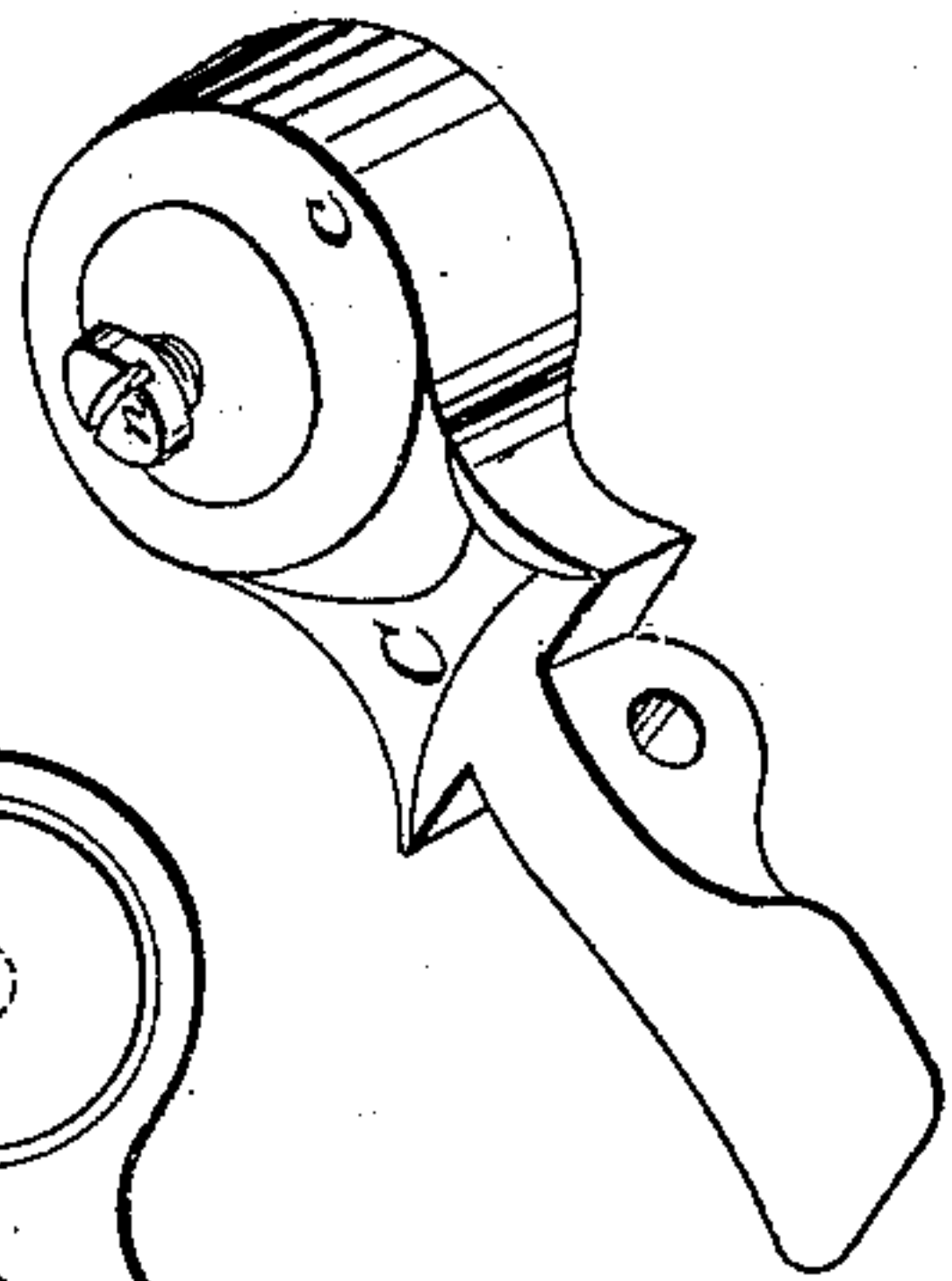
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Inventor.*

*Christopher Duckworth*  
*by his attys*  
*Mason, Fenwick & Lawrence.*

# UNITED STATES PATENT OFFICE.

CHRISTOPHER DUCKWORTH, OF MOUNT CARMEL, CONNECTICUT.

## IMPROVEMENT IN SHUTTLE-BINDERS FOR LOOMS.

Specification forming part of Letters Patent No. 57,300, dated August 21, 1866.

*To all whom it may concern:*

Be it known that I, CHRISTOPHER DUCKWORTH, of Mount Carmel, in the county of New Haven and State of Connecticut, have invented a new and Improved Shuttle-Binder; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of my improved shuttle-binder. Fig. 2 is a longitudinal section through the same. Fig. 3 is a bottom view of the binder. Fig. 4 is a perspective view of the movable cupped piece which is applied to the tongue of the binder.

Similar letters of reference indicate corresponding parts in several figures.

Shuttle-binders which are applied to the extremities of the shuttle-race of looms are usually constructed with metal springs for pressing them to the shuttle, which springs very often break and require frequent renewal. The tongues on those portions of the binders which impinge upon the shuttles also break in old looms, and require a renewal of the entire binder.

It is the object of my invention to construct a shuttle-binder with a rear detachable projection, which is adapted for receiving and keeping in place an india-rubber spring, said projection or extension being so applied to the tongue portion of the binder that should this tongue break it can be readily removed and another substituted in its stead without the loss of the extension-piece, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents a portion of a shuttle box or frame, to which the binder is applied for the purpose arresting the shuttle at the termination of its stroke and holding it until acted upon by a picker. B is the tongue of the binder, which may be made of the usual or most approved form, with this exception, it does not extend back of its pivot or fulcrum pin *a*. The hinge-eye *b* of this tongue B is slotted for the purpose of

receiving an extension-piece, C, to be pivoted by the same pin *a* that pivots the tongue B, as shown in Figs. 1, 2, and 3.

The free end of the tongue B bears upon a cross-piece of the frame A when it is not pressing upon a shuttle.

The piece C extends in front and in rear of the pivot-connection *a*, and upon its rear end a cup, *c*, is formed for the reception of a rubber or other suitable spring, *d*, which is inserted into this cup so as to press upon a cross-piece, *h*, of frame A, as shown in Fig. 3. The piece C also projects forward of the pivot *a*, and forms a tongue for pressing upon the main tongue B and holding it down in place.

The cup *c* is perforated to receive a screw, *n*, which is used for regulating the tension of the spring on the tongue B. When an india-rubber spring is used, and I prefer such a spring, a circular plate, *p*, is interposed between its upper end and the lower end of the adjusting-screw, as shown in Fig. 2.

It will be seen from the above description that I construct the binder of two parts, united together and pivoted by one pin, *a*, so that in the event of the tongue B breaking it can be removed and a new tongue of the same form and size introduced in its place. Should the spring become too weak it can also be removed and a new one used in its stead.

It will be seen by reference to Fig. 2 that a jam-nut, S, is applied to the screw *n*. The object of this nut is to prevent the screw from jarring loose after it has been properly adjusted.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The shuttle-binder composed of the parts B C, when these parts are constructed substantially as described.

2. The construction of the removable piece C with a cupped receptacle for the spring which produces pressure upon the tongue B, substantially as described.

CHRISTOPHER DUCKWORTH.

Witnesses:

LEVERETT HITCHCOCK,  
EMILY HITCHCOCK.