

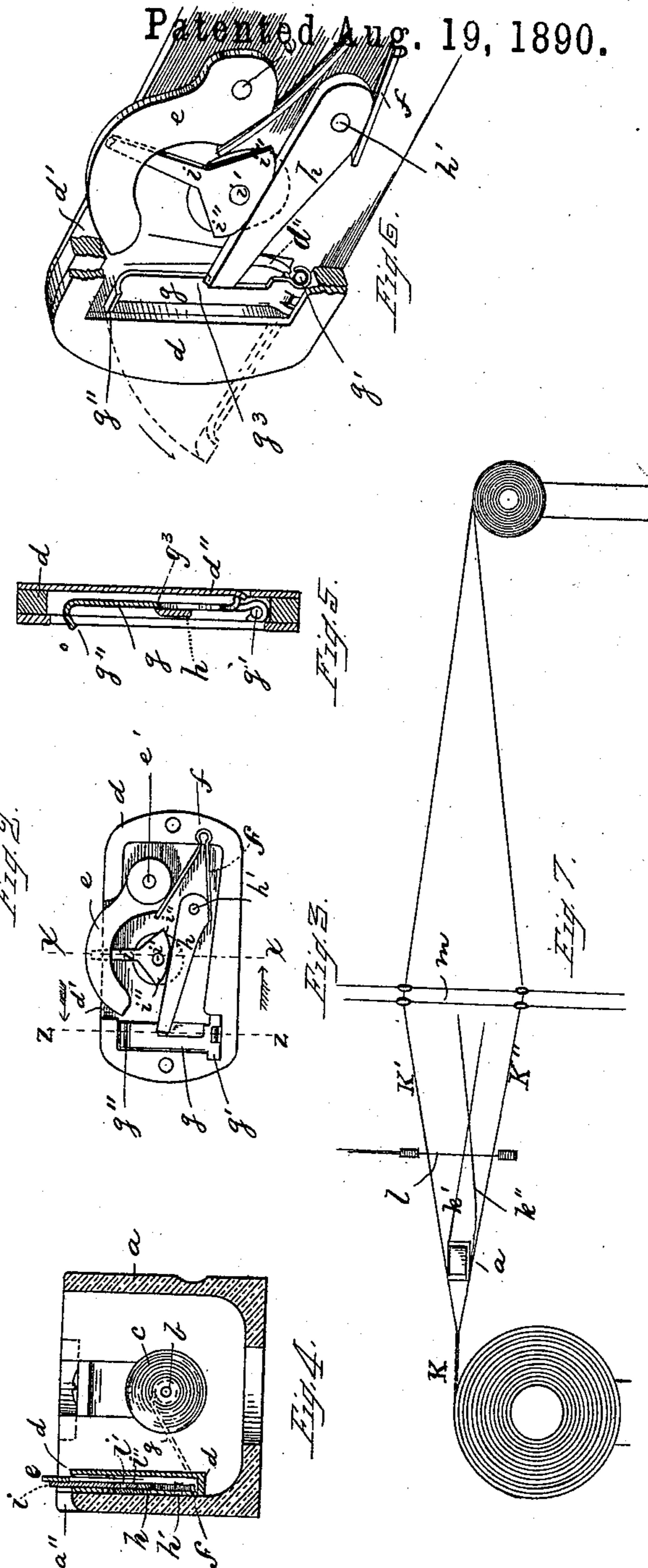
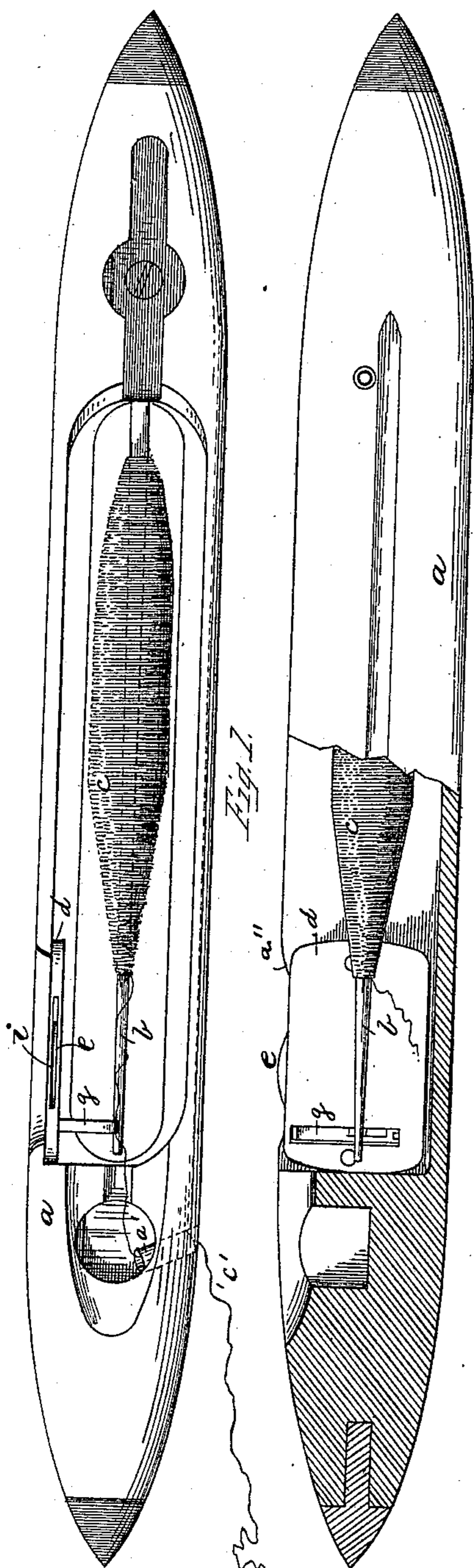
(No Model.)

H. BAUMANN.

LOOM SHUTTLE ATTACHMENT FOR PREVENTING MISWEAVING.

No. 434,419.

Patented Aug. 19, 1890.



Witnesses.
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UNITED STATES PATENT OFFICE.

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LOOM-SHUTTLE ATTACHMENT FOR PREVENTING MISWEAVING.

SPECIFICATION forming part of Letters Patent No. 434,419, dated August 19, 1890.

Application filed October 4, 1889. Serial No. 325,953. (No model.)

To all whom it may concern:

Be it known that I, HERMANN BAUMANN, a citizen of the United States, and a resident of Adams, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Loom-Shuttle Attachments for Preventing Misweaving, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to an improved loom-shuttle attachment for preventing misweaving caused by the breaking of one or more of the warp-threads, or by threads or other articles being thrown on or accidentally intermixed with the warp-threads of a loom at any place between the woven cloth and the harness during the weaving process, by which such warp-threads are tightened or entangled and a free passage of the loom-shuttle prevented.

The invention consists in the combination with a bobbin or cop-spindle, of a spring-pressed bar adapted to be forced in contact with the spindle and serve as a weft-thread breaker, a locking-lever for engaging said bar and holding it out of contact with the spindle, a rock-lever adapted to be engaged by a tightened or tangled warp-thread and provided with cams to bear on and depress the locking-lever to release the bar, a yielding guard-arm for the warp-thread, and a spring for supporting the locking-lever and guard.

In connection with this my improved shuttle attachment I use any of the well-known automatic stop-motions for stopping the loom by the breaking of the filling-thread, so as to enable the operator to remedy the entanglement or breaking of the warp-thread before any misweaving occurs. As such automatic stop-motion forms no part of my present invention, it is not represented in the drawings.

My improved loom-shuttle attachment is constructed as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a top view of a loom-shuttle provided with my improved attachment. Fig. 2 represents a side view of the same, partly shown in section. Fig. 3 represents a detail front view of the attachment. Fig. 4 represents a cross-section on the line X X in Fig. 3, showing also the shuttle-body

in cross-section. Fig. 5 represents a cross-section on the line Z Z, shown in Fig. 3. Fig. 6 represents an enlarged detail perspective view of the attachment, the parts being broken away; and Fig. 7 represents a diagram for explaining the working of the invention.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a represents the loom shuttle-body, as usual, in which is mounted the pivoted cop-spindle *b*. *c* is the cop, and *c'* the filling-thread leading from the same through the shuttle-eye *a'* in the ordinary manner.

The attachment consists of a metal case or frame *d*, secured in a suitable manner to one of the interior sides of the shuttle-body. Inside of the case *d* is pivoted, at *e'*, the curved arm *e*, which is normally held by the influence of one arm of a spring *f* in the position shown in Figs. 3 and 6, in which position a portion of said arm projects upward through an opening *d'* in the top of the case *d*, as shown, and while in such a position it serves as a cover or shield for preventing the upper end of the trip-lever *i* (hereinafter to be described) from catching in the warp-threads during the regular weaving process.

To the case *d* is pivoted or connected, at *g'*, the bar *g*, having preferably a hooked, bent, or curved upper end *g''*, as shown, which bar when released is forced against the cop-spindle *b* by the influence of a spring *d''*, forming a part of or attached to the case *d*, as shown in Fig. 5.

h is a locking-lever pivoted at *h'* to the frame *d*, and is normally held in the position shown in Figs. 3 and 6 by the influence of one arm of the spring *f* or other suitable spring, in which position its free end is held in front of a projection *g³* on the arm *g*, thus preventing the latter from moving forward until the locking-lever *h* is depressed. The said lever *h* is depressed by the rocking of the lever *i*, which is pivoted at *i'* to the case *d* and has its upper end projecting through the opening *d'* in the upper end of the case *d* and on one side of the curved arm *e*, as shown in Figs. 3, 4, and 6. The hub of the lever *i* has lateral cams or side projections *i'' i''*, which cause a depression of the lever *h* and consequent re-

lease of the arm *g* when the lever *i* is rocked in either direction. At the place where the improved attachment is secured to the inside of the shuttle-body *a* is made on the upper part of the latter a recess or cut-away portion *a''*, as shown in Fig. 2, for the purpose of guiding the tightened or entangled warp-threads onto the curved arm *e* and upper end of the rock-lever *i*, as will hereinafter be described.

10 In Fig. 7, *K* represents the woven cloth; *K'* and *K''*, the warp-threads during the ordinary process of weaving. *k'* and *k''* represent the entangled upper and lower warp-threads; *l*, the reed, and *m* the harness of a loom.

15 The operation of the device is as follows: During the ordinary process of weaving the hooked bar *g* is held locked by the spring-pressed lever *h* in the position shown in Figs. 3 and 6, and the curved arm *e* and rock-lever *i* are also held in their respective positions shown in said figures. If from any cause the warp-threads become twisted or entangled, as shown at *k' k''* in Fig. 7, the upper tightened thread *k'* will be pressed against the upper edge of the shuttle-body *a*, and thereby cause the curved arm *e* to be depressed against the influence of its spring *f*. As the said arm is depressed the upper end of the rock-lever *i* is exposed, and as it comes in contact with the entangled tightened warp-threads it is rocked sufficiently to depress the locking-lever *h*, by which the hooked bar *g* is liberated and forced by the influence of its spring *d* against the bobbin or cop-spindle *b*, as shown in Fig. 1 and in dotted lines in Fig. 4, by which the free delivery of the filling-thread from the cop or bobbin is prevented, causing such thread to break. The breaking of the

filling-thread *c'* is followed by a stoppage of the loom, effected by any of the usual automatic devices used for this purpose, as hereinabove mentioned, thus preventing any misweaving. After the loom has been stopped and the entangled warp-threads adjusted the bar *g* is locked in its original normal position, (shown in Fig. 3,) the filling-thread is tied, and the loom set in operation, and so on.

I desire to state that I do not wish to confine myself strictly to precise details as shown and described, as these may be varied without departing from the essence of my invention; but

What I wish to secure by Letters Patent, and claim, is—

The combination, with the bobbin or cop-spindle, of the spring-pressed bar *g*, adapted to be forced in contact with the spindle and serve as a weft-thread breaker, the locking-lever *h*, for engaging said bar and holding it out of contact with the spindle, the rock-lever *i*, adapted to be engaged by a tightened or tangled warp-thread and provided with cam projections to bear on and depress the lever *h*, to release the bar *g*, the yielding guard-arm *e*, and the spring *f*, for supporting the lever *h* and guard *e*, substantially as shown and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 1st day of October, A. D. 1889.

HERMANN BAUMANN.

Witnesses:

JERRY H. WATSON,
FRED R. SHAW.