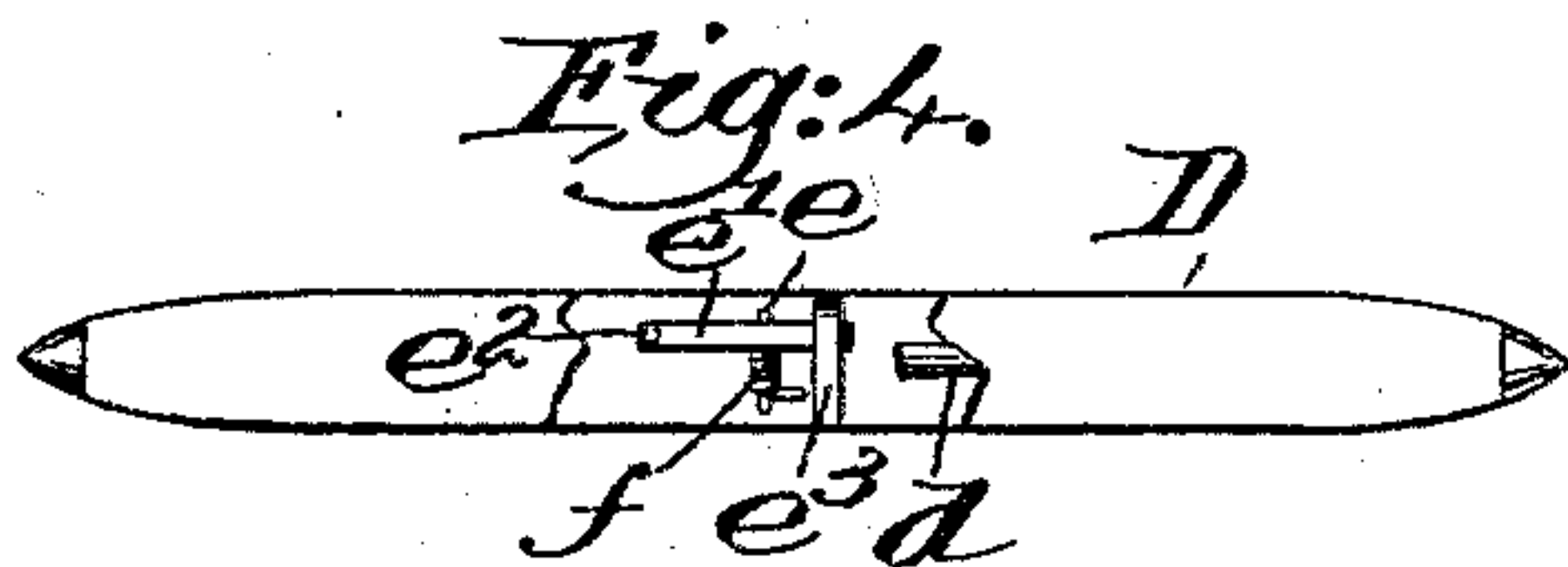
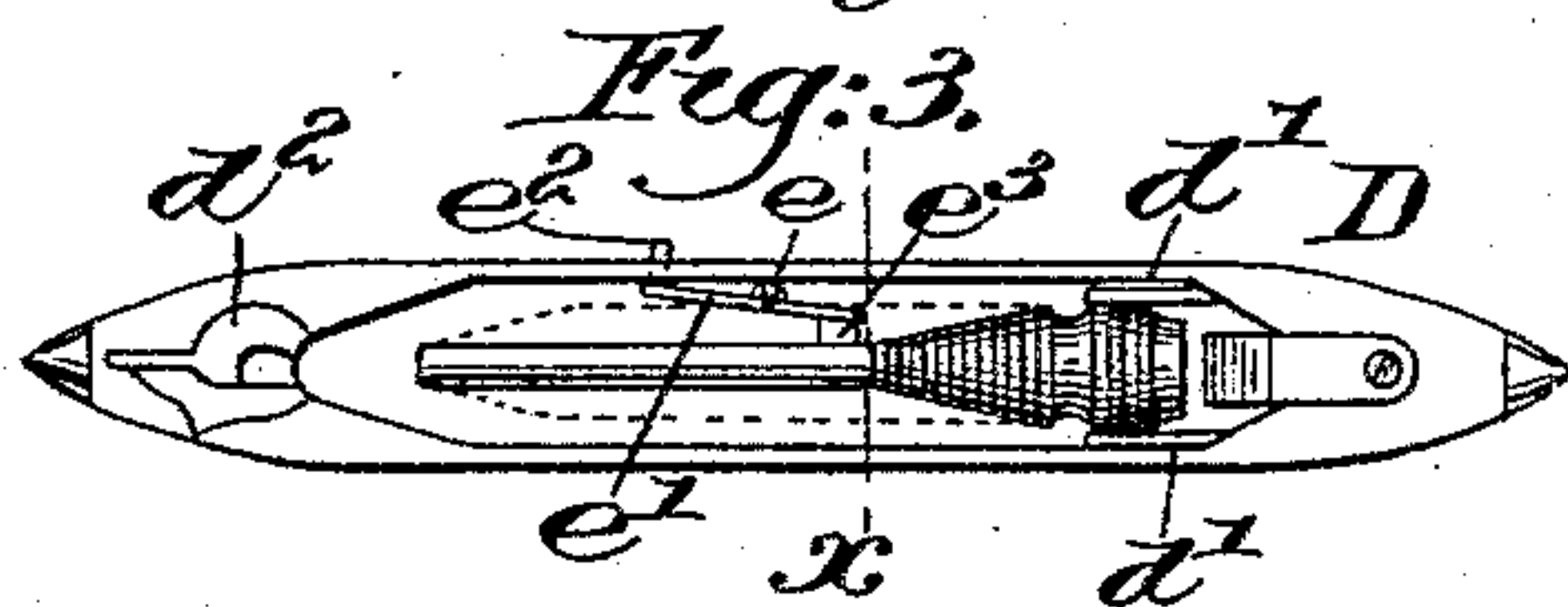
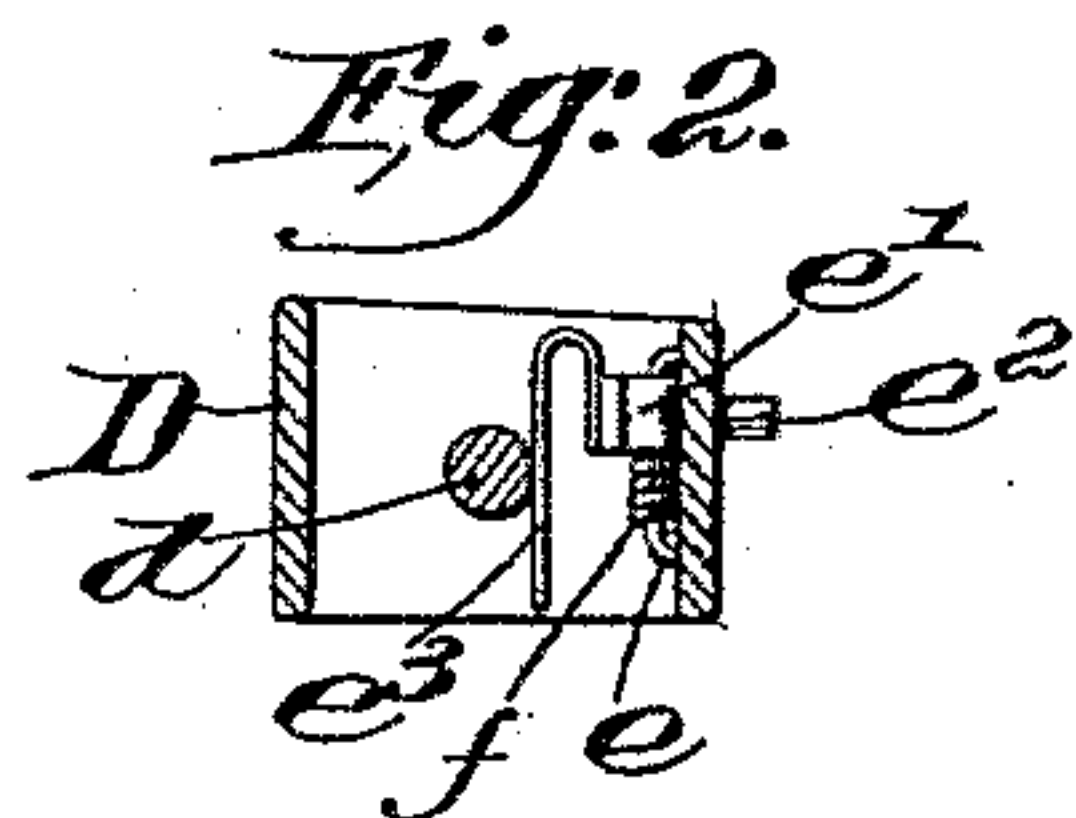
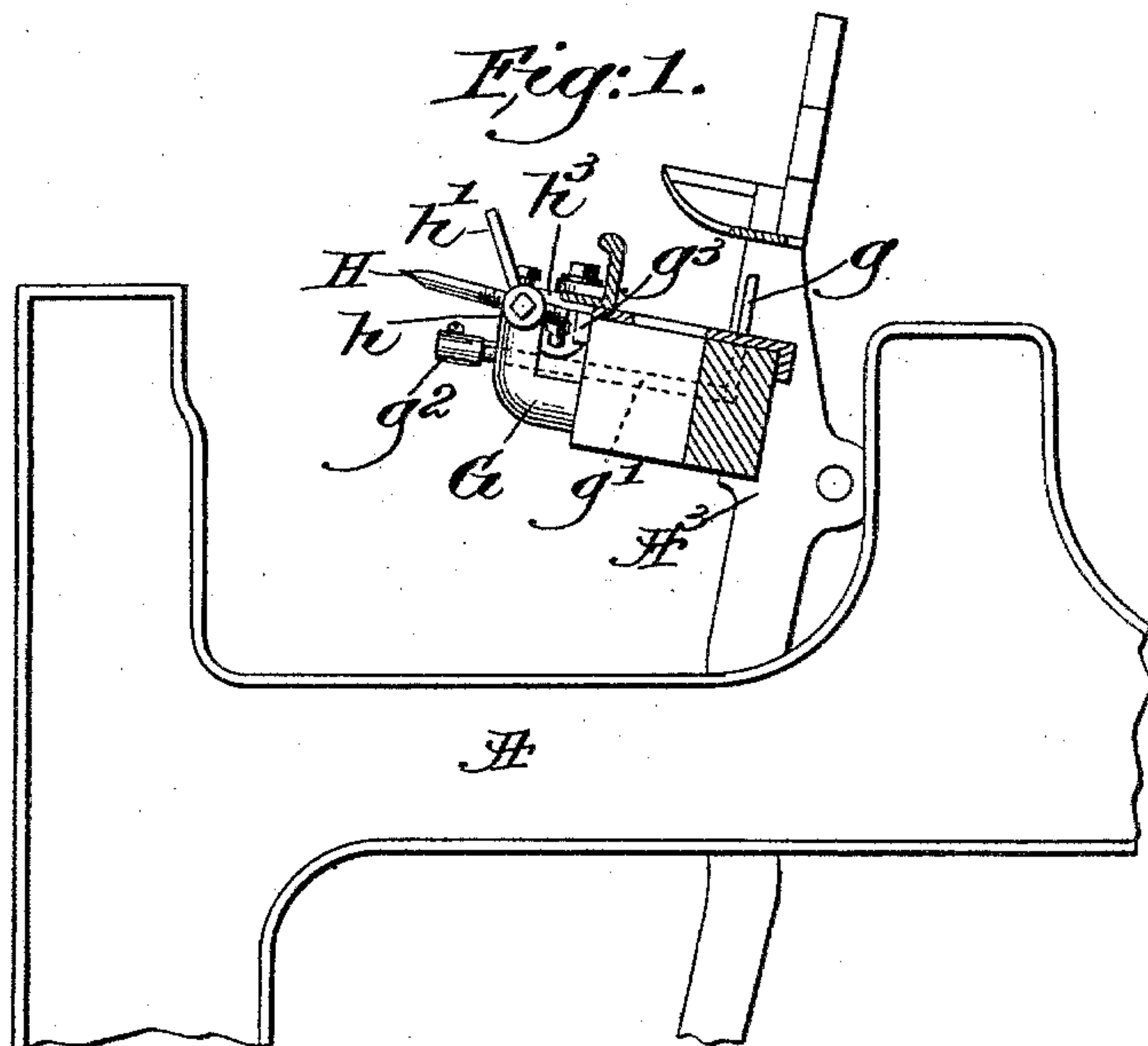


(No Model.)

A. W. BEARDSSELL.
LOOM SHUTTLE.

No. 596,840.

Patented Jan. 4, 1898.



Witnesses

Edward F. Allen.

Thomas J. Drummond.

Inventor:

Arthur W. Beardsell.

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attys.

UNITED STATES PATENT OFFICE.

ARTHUR W. BEARDSSELL, OF MILFORD, MASSACHUSETTS, ASSIGNOR TO
THE DRAPER COMPANY, OF PORTLAND, MAINE, AND HOPEDALE,
MASSACHUSETTS.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 596,840, dated January 4, 1898.

Application filed May 22, 1897. Serial No. 637,647. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. BEARDSSELL, of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to that class of loom wherein the shuttle contains a device which when the filling therein has been exhausted to a predetermined point will indicate that fact and either effect the change of the filling automatically or stop the loom.

In the invention herein contained the shuttle is provided with a detecting-finger provided at its inner end with a spring-pad which bears against the filling on the filling-carrier in the shuttle, the said spring when the carrier is full or in running condition yielding to the mass of filling, the spring expanding as the filling is unwound and keeping its contact with the filling mass through the action of the spring in its finger, and finally when the filling has been exhausted to substantially the predetermined point, the spring-pad then resting upon a layer of filling close to the barrel of the filling-carrier, the detector-finger is turned so far about its pivot as to cause a projection on the said finger to protrude from the shuttle far enough to coöperate with and start in action devices to either change the filling-carrier or to stop the loom. By the use of a spring-pad at one end of the detector-finger it is possible to make the finger effective with a less movement in the shuttle than if the end of the finger bearing on the filling mass were solid or unyielding. The spring-pad herein described is an essential element of this invention.

Figure 1, in side elevation, shows part of the side of a loom and a lay having devices to coöperate with the detector-finger. Fig. 2 is a transverse section of a shuttle and filling-carrier in about the line *x*, Fig. 3, said shuttle being provided with my improved detector-finger and spring-pad. Fig. 3 is a top view of a shuttle, on a smaller scale, and the detector-finger and spring-pad, the latter being in the position it will occupy when the finger is to indicate that the filling has been

exhausted to the predetermined point; and Fig. 4 is a side view with one wall of the shuttle broken out and the filling-carrier broken off.

The loom-frame A, the lay A³, the bracket G on the lay, the bunter H, its carrying-shaft *h*, the resetting-pin *h'*, said shaft having also fast on it a collar provided with a lip *h*³, which coöperates with a finger *g*³, fast on a rock-shaft *g'*, having a collar *g*², and normally locks said shaft with its arm *g* standing vertically with relation to the lay, said arm *g* standing in such relation to the shuttle-race that it will be struck by the pin or projection at the outer end of the detector-finger, to be described, when the same is projected outside the shuttle, are and may all be substantially such as designated by like letters in application, Serial No. 621,730, filed February 3, 1897, in the name of E. W. Davenport.

This invention relates to the shuttle and the peculiar construction of the detector-finger.

The shuttle D, having the filling-carrier *d*, held frictionally between spring-arms *d'*, and a self-threading device *d*² are and may be of any usual construction and need not therefore be herein more fully described.

One side wall of the shuttle has a suitable fulcrum pin or loop *e*, on which is pivotally mounted the detector-finger *e'*, provided at its outer end with a projection *e*² and at its opposite end with a spring-pad *e*³. The pivot-pin *e* receives and supports a spiral spring *f*, which is connected at one end to the said finger, the said spring normally acting to press the spring-pad toward the filling-carrier. When the filling-carrier is full of filling, the filling mass will occupy the dotted-line position, Fig. 3, and the filling, acting on the spring-pad, will turn the detector-finger on its pivot *e* in such position as to pull the end of the projection *e*² inside the body of the shuttle, and at the same time the spring-pad will be somewhat compressed. As the filling mass is unwound and removed from the shuttle in its flight the spring-pad will gradually assume its normal state, and it will be thereafter pressed against the filling mass by a force due to the spring *f*, and by the time that the filling mass is unwound to the predetermined point, the spring-pad then bearing on the last layers wound on the carrier, the finger is

moved far enough to push the projection e^2 out from the shuttle-body far enough to meet the projection g , turn the shaft g' , it releasing the rock-shaft h and permitting the bunter H to drop and operate, as provided for in said application, to effect the automatic removal of the carrier from the shuttle, and at the same operation put a fresh carrier in the shuttle, the free end of the spring-pad being directed toward the under side of the shuttle, so as not to be struck by an incoming filling-carrier.

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

1. A shuttle provided with a detector-finger carrying at one end a spring-pad to bear against the filling mass, and at its other end with a projection which on the exhaustion of the filling to a predetermined point opposite said spring-feed will enable said projection

to be protruded out through the shuttle-body, substantially as described.

2. A shuttle provided with a detector-finger carrying at one end a spring-pad to bear against the filling mass, and at its other end with a projection which on the exhaustion of the filling to a predetermined point opposite said spring-feed will enable said projection to be protruded out through the shuttle-body, and a spring to normally turn said finger in a direction to keep its spring-pad pressed against the filling on the filling-carrier, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR W. BEARDSSELL.

Witnesses:

HERBERT S. MANLEY,
GEO. OTIS DRAPER.