No. 640,714. Patented Jan. 2, 1900.

W. I. STIMPSON & J. H. NORTHROP.

LOOM.

(Application filed Mar. 25, 1899.)

(No Model.)

Fig: 1.

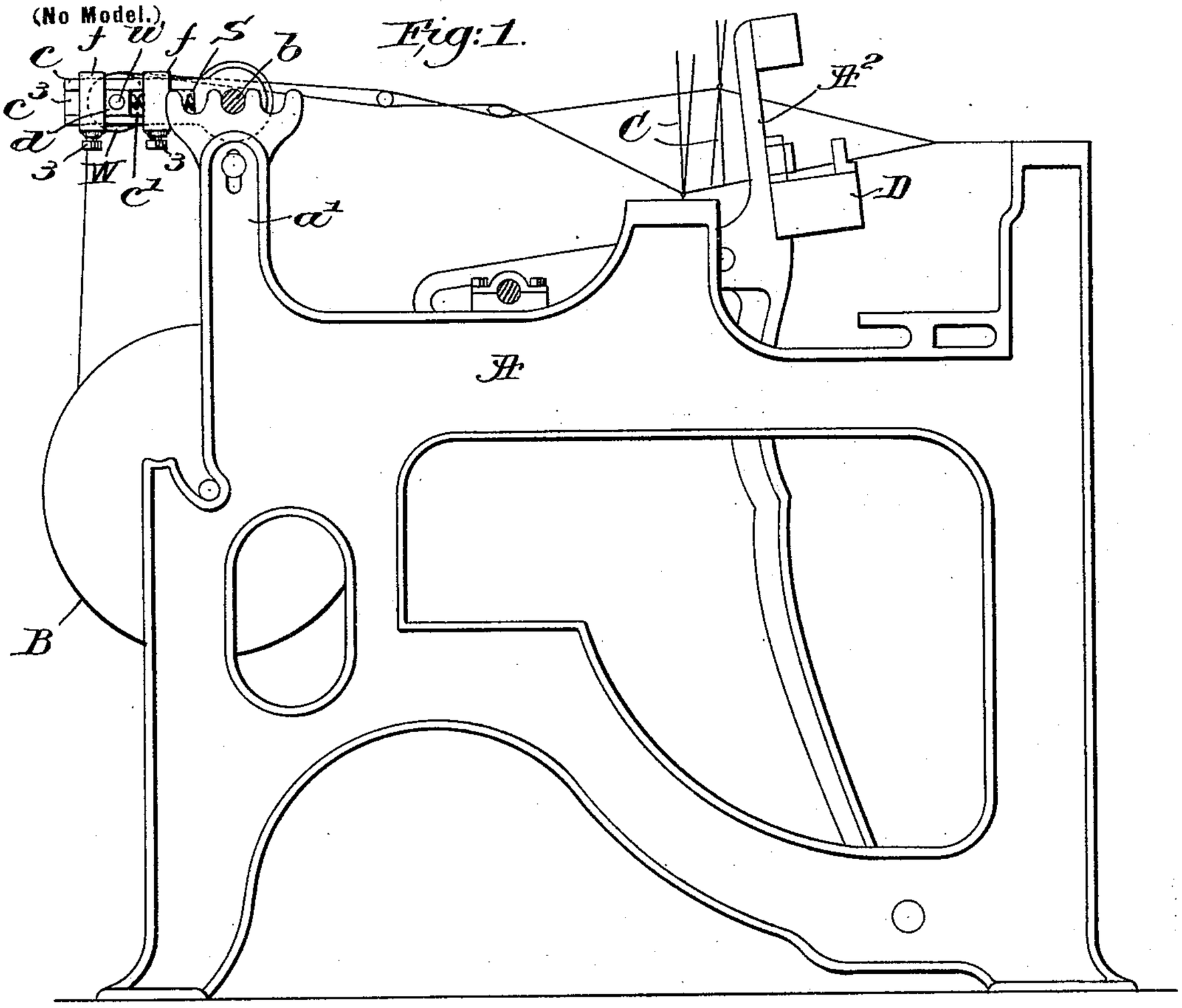


Fig: 2.

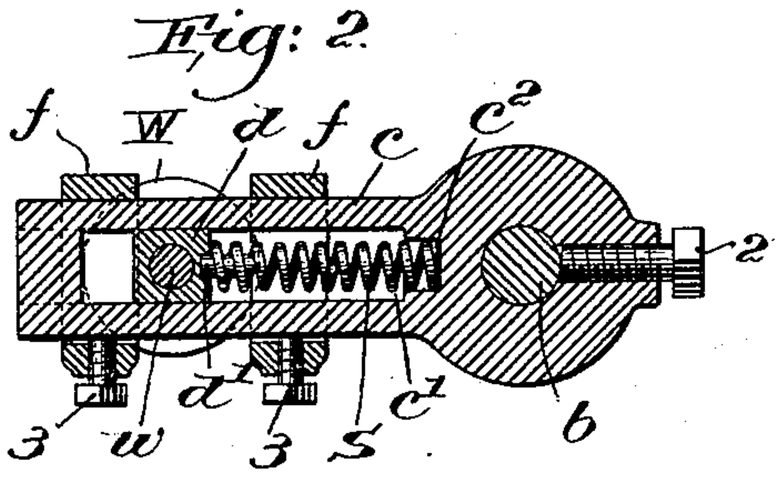
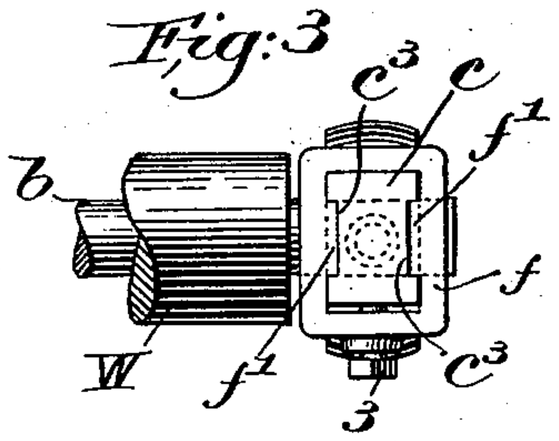


Fig: 3.



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UNITED STATES PATENT OFFICE.

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LOOM.

SPECIFICATION forming part of Letters Patent No. 640,714, dated January 2, 1900.

Application filed March 25, 1899. Serial No. 710,471. (No model.)

To all whom it may concern:

Be it known that we, WALLACE I. STIMPSON, of Milford, county of Worcester, State of Massachusetts, and JAMES H. NORTHROP, of Tustin, county of Orange, State of California, have invented an Improvement in Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention relates to looms for weaving wherein the whip-roll or similar support for the warp is so mounted as to yield under strain applied to the warp in weaving, whereby said roll or support is moved substantially horizontally toward and from the fell of the cloth, such a construction being shown in United States Patent No. 381,617, dated April 24, 1888, to which reference may be had. By this construction thin places or stripes in the cloth are prevented. On certain goods the beat of the lay would simply compress the springs of the Durkin device without forcing the filling into place under proper pressure. The new stops give a definite resistance at a certain proper point. In the patent referred to, however, great difficulty has been experienced in providing springs of the proper tension, as there is a great difference on the strain of the warp with different looms and different classes of goods, so that springs proper for one class of goods would not operate properly when another class was to be woven.

Our present invention has for its object the production of means for overcoming these practical objections and relegating the particular strength of the controlling-springs to a minor position, as by our invention the weaver is enabled to readily vary the effective action of the springs without depending on their inherent strength and to positively limit the range of movement of the whip-roll, according to the requirements of the particular cloth being woven.

Figure 1, in side elevation, shows a sufficient portion of a loom to be understood with one embodiment of our invention applied thereto. Fig. 2 is an enlarged sectional view of one of the guides for the whip-roll journal-boxes, showing the arrangement of the means for regulating the movement of the roll; and Fig. 3 is a rear end elevation of one of the guides with a part of the whip-roll and the rock-shaft to which the guides are secured.

The loom-frame A, warp-beam B, harnesses C, the lay D, and reel A^2 may be and are of usual construction, such as shown in the patent referred to.

At each side of the frame A uprights a' support the usual rock-shaft b, to which are attached, as by set-screws 2, two arms or guides c, extended rearwardly above the warp-beam and longitudinally slotted at c' to receive the journal-boxes d of the journals w, extended from the end of the warp-support or whip-roll W. A spring S is interposed between each journal-box and the inner end of the slot c', as best shown in Fig. 2, a pin d' on the box entering the outer end of the spring, while the inner end of the spring is held in a recess c^2 in the arm or guide c. By means of the springs the roll W is yieldingly maintained at or near the outer ends of the guides, while it is movable toward the fell of the cloth when sufficient strain is exerted upon the warps.

We have herein shown the guides c as longitudinally grooved on their inner and outer faces, as at c^3, Fig. 3, to receive projections or ears f' on the inner sides of two like stops f, mounted on each arm in front of and behind the box d, respectively, said stops being loop-like or open to embrace and slide upon the guides. A suitable set-screw 3 extends through each stop and bears against the guide to hold the stop securely in adjusted position.

It will be obvious from the foregoing and an inspection of the drawings that the extent of movement of the journal-boxes, and consequently of the roll W, will be regulated or adjusted by the position of the stops f on the guide-arms c without reference to the strength of the springs S, while the latter will still yieldingly control the movement of the roll within the limits set.

Should it be necessary to permit the roll to move a certain distance under warp strain, it will be obvious that without the stops the

springs would have to be very carefully selected to permit that particular movement, and for a different movement other springs would have to be substituted. By our invention, however, this is obviated, as the weaver sets the stops to suit the work being done, limiting the extent of movement of the roll and also fixing positively each end of such movement, the springs still maintaining their control of the roll, but within the prescribed limits defined by the position of the stops.

By means of the outer stops the springs may be more or less compressed at all times, while the inner stops provide a positive limit to the inward movement of the roll.

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

1. In a loom, the warp-beam, shedding mechanism, an intermediate spring-controlled support over which the warp-threads pass from the warp-beam, bearings for said support, in which the latter is movable toward and from the shedding mechanism, and means to positively regulate the extent of such movement of the support in both directions.

2. In a loom, shedding mechanism, the warp-beam, a whip-roll between said mechanism and the beam, a controlling spring or springs for the whip-roll, means to positively regulate the extent of movement of said whip-roll toward the shedding mechanism independently of the controlling-spring, and means to regulate the tension of the controlling-spring.

3. In a loom, the whip-roll, journal-boxes therefor, guides for said boxes, in which they are movable toward and from the fell of the cloth, springs to act upon said roll against the pull of the warp-threads, and adjustable stops to limit the extent of movement of the journal-boxes independently of the springs.

In testimony whereof we have signed our names to this specification in the presence of the subscribing witnesses.

WALLACE I. STIMPSON.
JAMES H. NORTHROP.

Witnesses to the signature of Wallace I. Stimpson:

GEO. OTIS DRAPER,
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Witnesses to the signature of James H. Northrop:

GEO. HUNTINGTON,
L. H. LORD.