

PATENTED AUG 1 1871

Fig: 1.

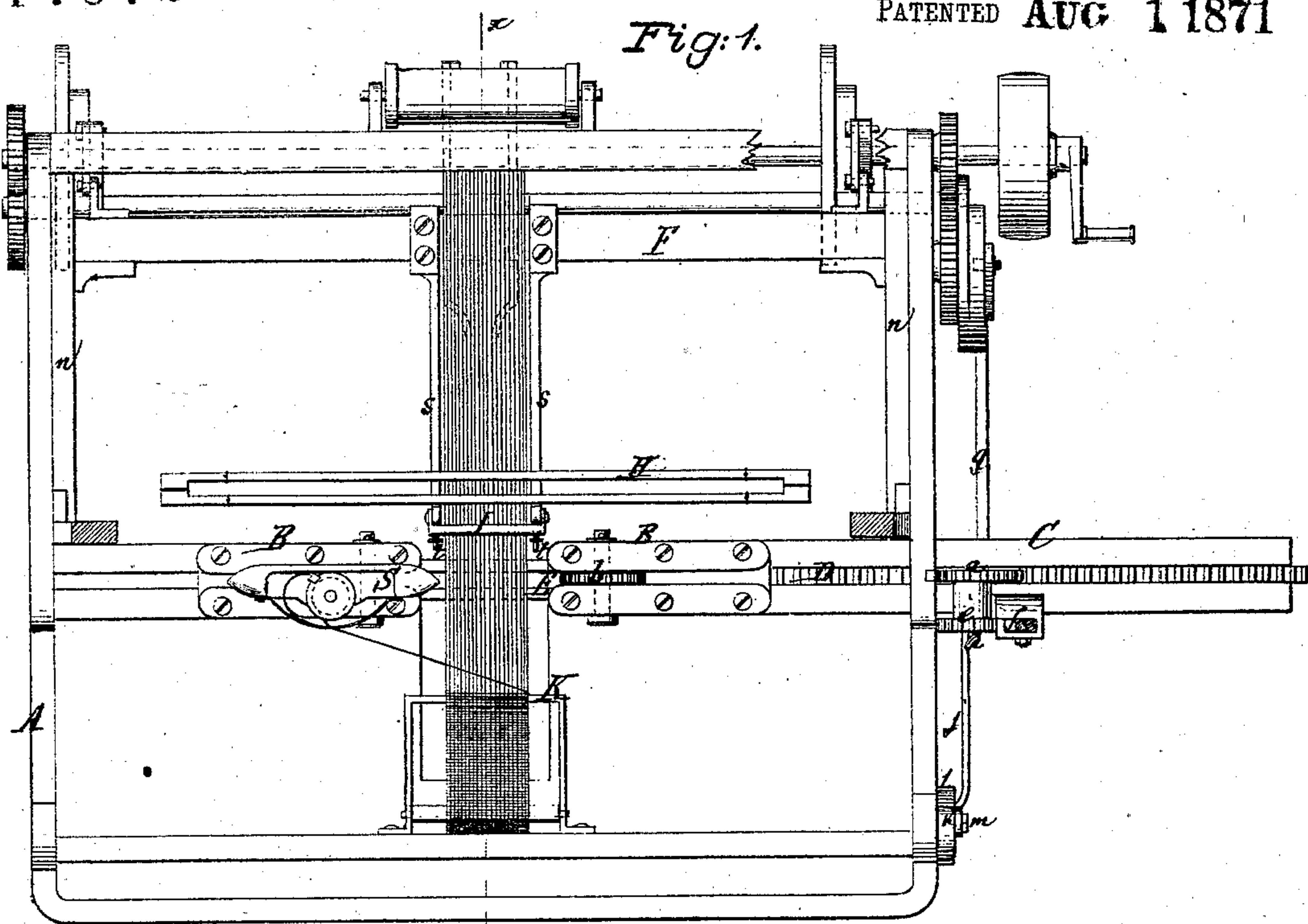
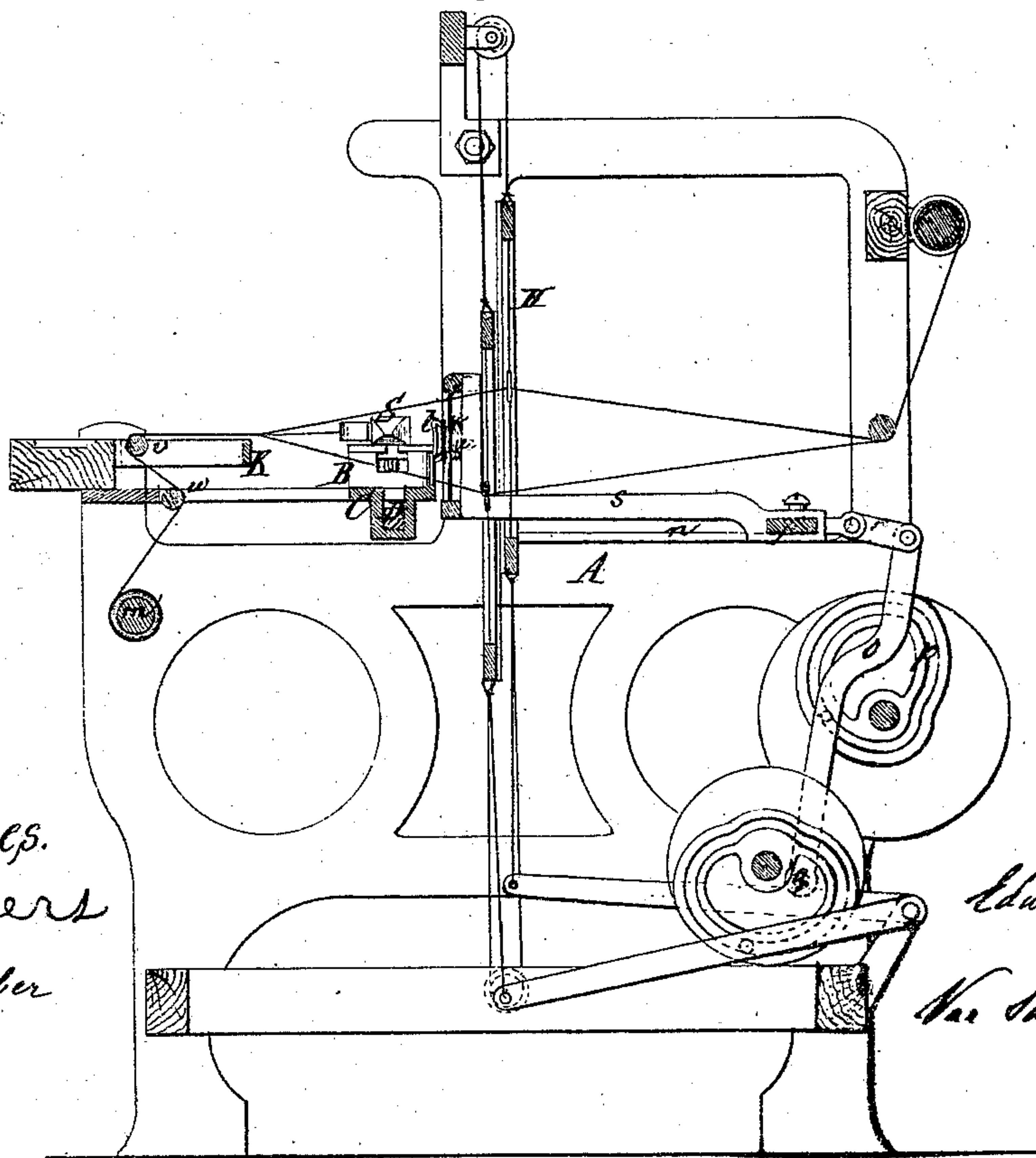


Fig: 2.



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Edwin Oldfield's Improved Looms.

2 Sheets Sheet 2

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Fig. 3.

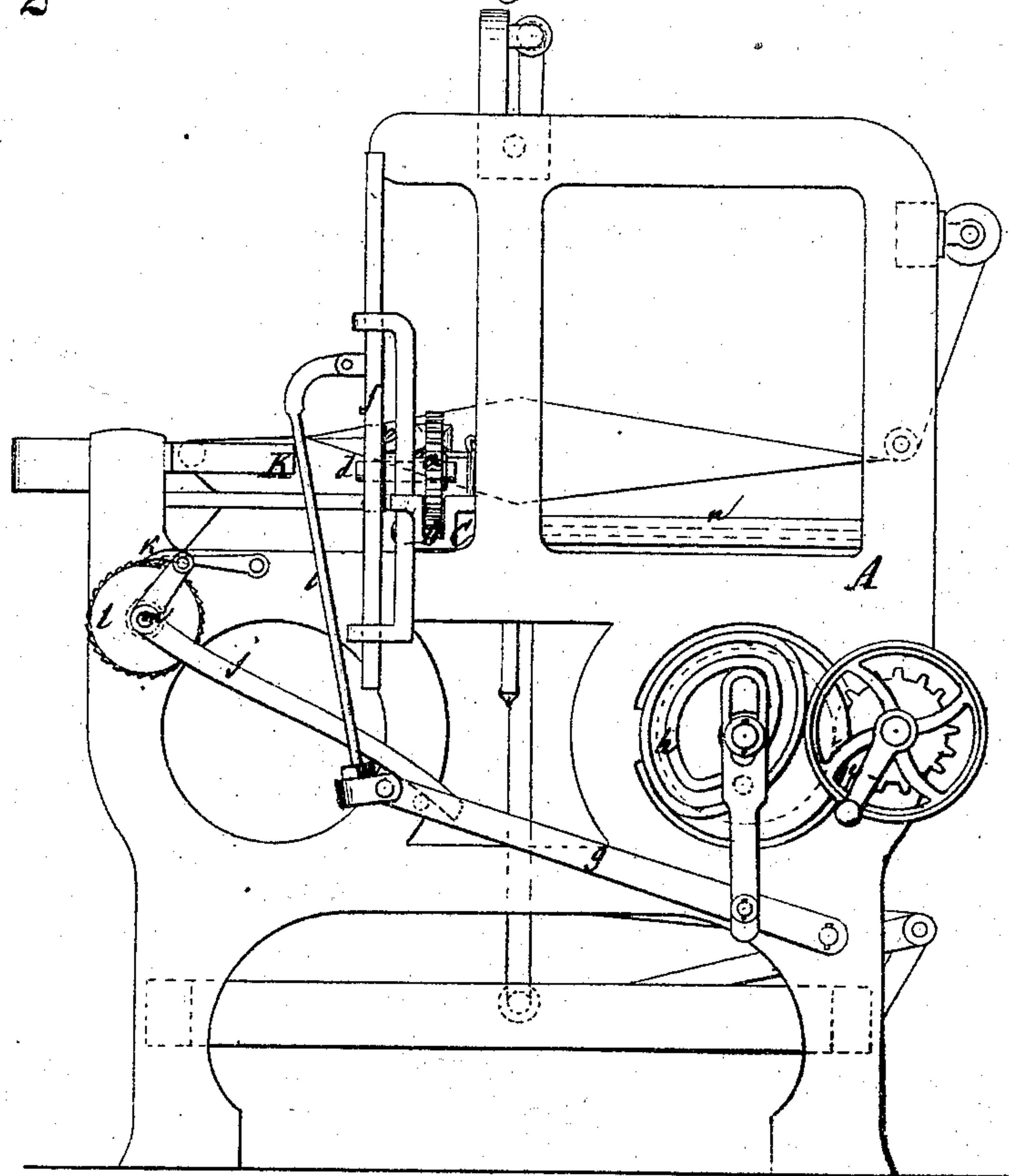
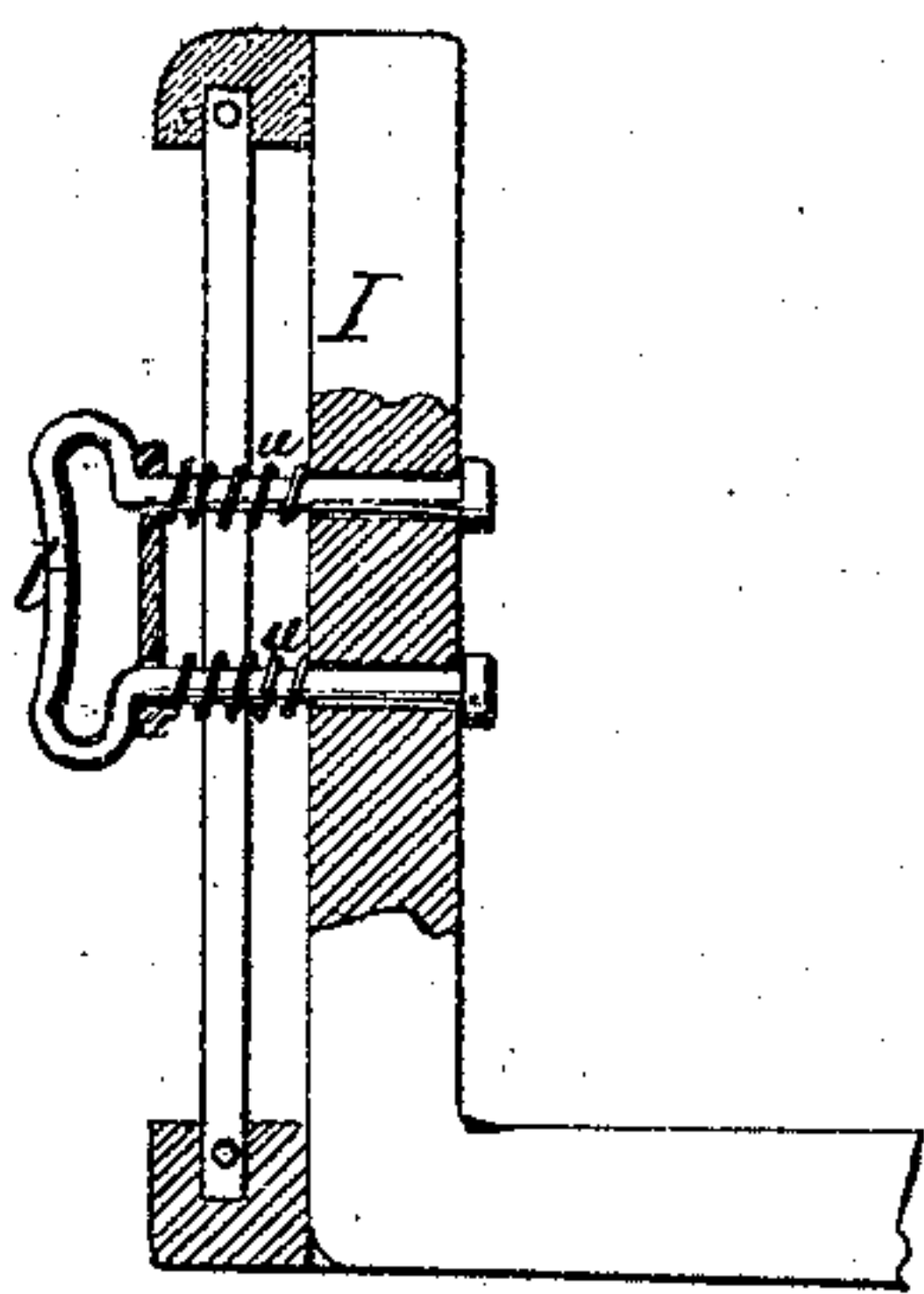


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWIN OLDFIELD, OF NORWICH, CONNECTICUT.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. 117,672, dated August 1, 1871.

To all whom it may concern:

Be it known that I, EDWIN OLDFIELD, of Norwich, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Looms; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a plan or top view of this invention, partly in section. Fig. 2 is a transverse section of the same, the line *xx*, Fig. 1, indicating the plane of section. Fig. 3 is a side view of the same. Fig. 4 is a detached view of the reed-carrier in a larger scale than the previous figures.

Similar letters indicate corresponding parts.

This invention relates to a loom in which the shuttle-race is stationary and the reed attached to a reciprocating batten, the filling-thread being carried a distance beyond the cloth-making point and then held stationary during the advance or retreat of the reed or sley. The reed is secured to the ends of two arms which extend from a reed-carrier to the harness-frames, said reed-carrier being situated behind the harness and actuated as hereinafter described, while the shuttle-race is stationary and secured to a bar which forms the guide for the reciprocating rack, imparting motion to the shuttle in such a manner that the reed advances and retreats through an opening in the shuttle-race, while the shuttle remains stationary, and, at the same time, the harness is brought as close as possible to the shuttle-race. In the uprights of the reed-frame or other pieces connected to the reed-carrier, or to a separate mechanism, are secured suitable fingers, which may be yielding, and which serve to press the filling-thread back to its position and hold it there for a short period at the end of the reed, and by these means the filling-thread is thrown to its position before the warp-threads close upon it, and held stationary until after the warp-threads have changed, so that it cannot move, and a more even and perfect selvage is produced than by the ordinary method of weaving. When the reed advances said yielding fingers act against a bar which forms a stop of the fingers, and also a support for the cloth.

In the drawing, A designates the frame which

forms the bearings for the working parts of my loom. On this frame is firmly secured the shuttle-race B, which is provided with a guide-groove opening upward to receive the shuttle S. The shuttle-race is supported by a bar, C, which is grooved to receive a rack, D, to which a reciprocating sliding motion is imparted by means of a cog-wheel, *a*, and which gears in two pinions, *b*, projecting up through the groove in the shuttle-race, so as to be able to engage with cogs in the lower surface of the shuttle. The pinions *b* are situated on opposite sides of the opening E in the shuttle-race through which the warp extends, and the shuttle is made of such a length that the same reaches from one of the pinions across the other, so that its cogs are capable of engaging simultaneously with both pinions, and that, by the action of the sliding rack and the pinions, the shuttle can be propelled across the opening E and through the shed. The cog-wheel *a* is mounted on a shaft, *d*, which has its bearings in an arm rising from the bar C, and on the outer end of said shaft is mounted a pinion, *e*, which meshes in a rack-bar, *f*, to which a rising-and-falling motion is imparted by a treadle, *g*. This treadle derives its motion from a cam-groove, *h*, and it connects with the rack-bar *f* by a rod, *i*. (See Fig. 3.) With the treadle *g* is also connected an elbow-lever, *j*, which carries a pawl, *k*, to engage with a ratchet-wheel, *l*, mounted on the end of the take-up roller *m*, so that the take-up motion is made dependent upon the motion of said treadle. F is the reed-carrier or batten, which moves in guide-bars *n* secured to the sides of the frame A, and to which a reciprocating motion is imparted by levers *o* and cam-grooves *p*, the levers *o* being connected to the reed-carrier F by links *r* and supported by studs *q* secured in the frame A. (See Fig. 2.) Said reed-carrier is situated behind the harness H, and it carries two arms, *s*, to the outer ends of which is secured the reed I. The width of this reed corresponds to the opening E in the shuttle-race, and when the reed-carrier has moved clear back the reed occupies a position close to the shuttle-race, which is in its front, and close to the heddles, which pass down behind it, so that the shed produced by a comparatively small motion of the harness is sufficiently wide to allow the passage of the shuttle, it being obvious that, if the distance between the heddles and the shuttle-race is enlarged, the motion of the harness

must be increased correspondingly to open the shed sufficiently for the passage of the shuttle. The heddles are secured in frames to which an alternaterising-and-falling motion is imparted by cams and treadles, or by any other suitable means, as the pattern may demand. From the sides of the reed I project fingers *t*, which are best seen in Fig. 4, and which are rendered yielding by means of springs *u*. When the reed advances to beat up the filling-thread one or the other of these fingers strikes the filling-thread just thrown in, which, previous to its being beaten up, occupies the position shown in Fig. 1, and, by the action of the finger said filling-thread is carried in to its proper position. *K* is a bar which extends below the cloth, forming a support for the same, and also a stop for the fingers *t*. Said bar is firmly secured to the front cross-bar of the loom, and the cloth, after having been made to pass over this bar, is carried over rollers *v w* down to the take-up roller, as shown in Fig. 2.

The operation of my loom is as follows: As soon as the shed has been made by the motion of the harness the shuttle is propelled through the same, carrying the filling-thread through the shed and leaving it in the position shown in Fig. 1. The shuttle then remains stationary, while the reed advances to beat up. As the reed advances the filling-thread last thrown in is carried to its position by one of the fingers *t*, and it is held there during the last part of the advance and the beginning of the retreat of the reed, and by these means the filling-thread is brought to its position before the warp-thread closes upon it, and it is retained in this position until after the warp-threads have crossed each other by the motion of the harness, which takes place immediately after the reed has beaten up.

By this arrangement the selvage is rendered more perfect than it is by the ordinary method of weaving, since, in my loom, the filling-thread is not permitted to get out of its proper position before it is locked by the crossing of the warp-threads.

It is obvious that the springs *u*, which act on the fingers *t*, may be made adjustable in regard to their tension, so that the filling-threads are retained with more or less force, and, as the fingers *t* are made yielding, the liability of breaking the filling-threads by their action is materially reduced and the speed of the loom can be correspondingly increased.

It must be remarked that the fingers *t* might be attached to a separate mechanism, acting independently of the reed-carrier, and in some cases said fingers might be made rigid; but in most cases I prefer to make them yielding.

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the reciprocating toothed rack of the shuttle-motion, stationary shuttle-race, reciprocating reed-carrier and its actuating mechanism, all constructed and operating as herein shown and described.

2. The yielding fingers *t*, in combination with the bar *K*, the stationary shuttle-race, and the reciprocating reed-carrier, as herein shown and described, for the purpose specified.

3. The combination of the bar *K* with the yielding fingers *t*, constructed and operating as shown and described.

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Witnesses:

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