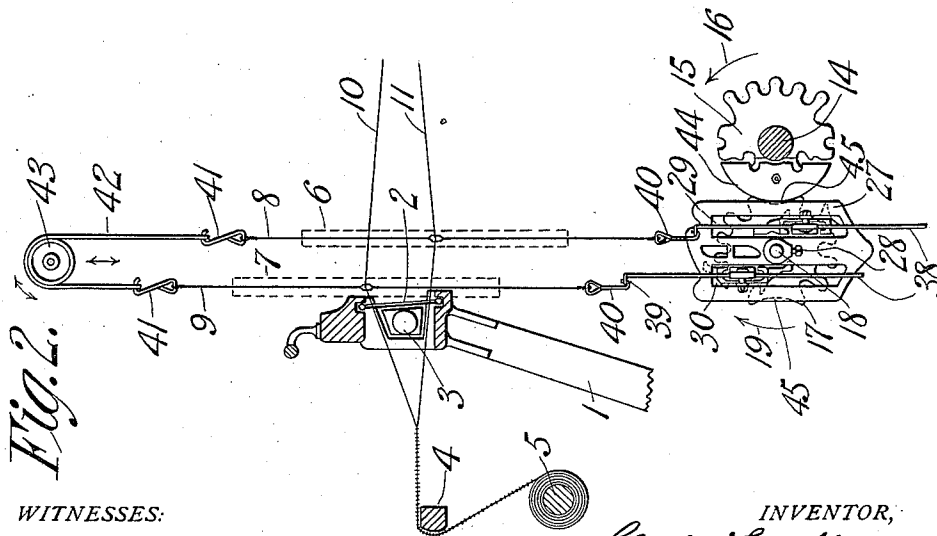
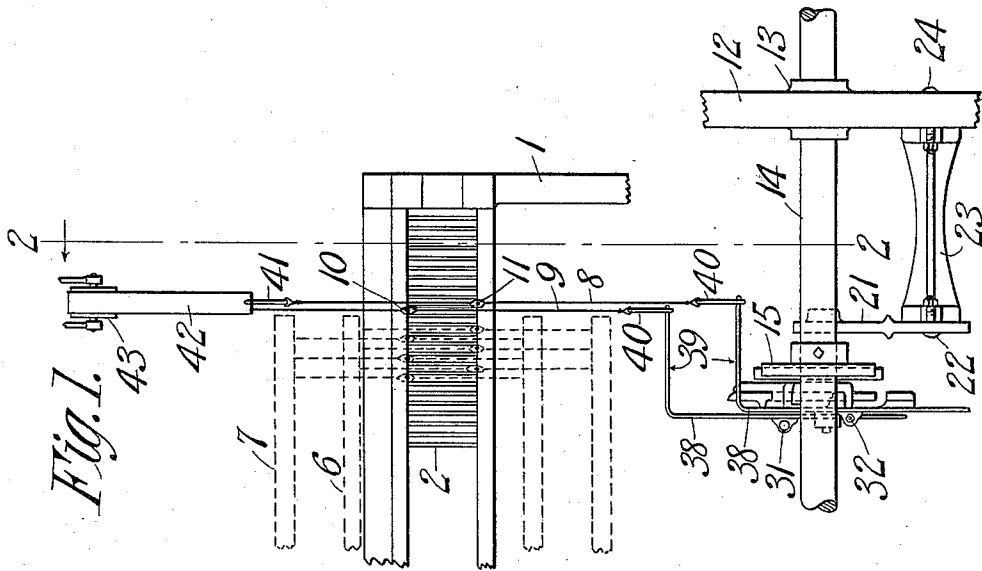


C. LAVALLEE.
SELVAGE MOTION FOR LOOMS.
APPLICATION FILED FEB. 17, 1911.

1,027,860.

Patented May 28, 1912.

3 SHEETS-SHEET 1.



WITNESSES:

H. L. Sprague
R. M. Mowry

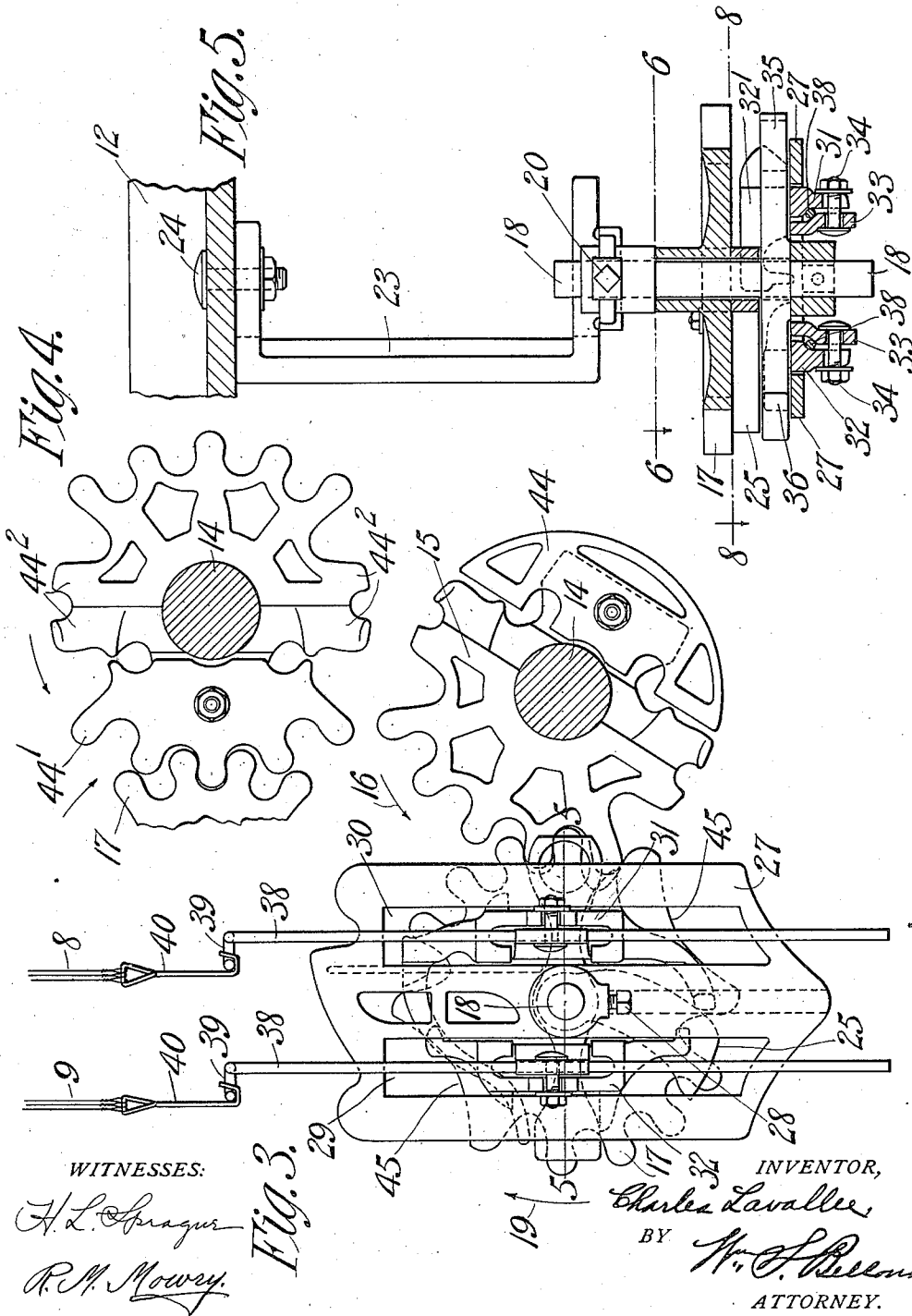
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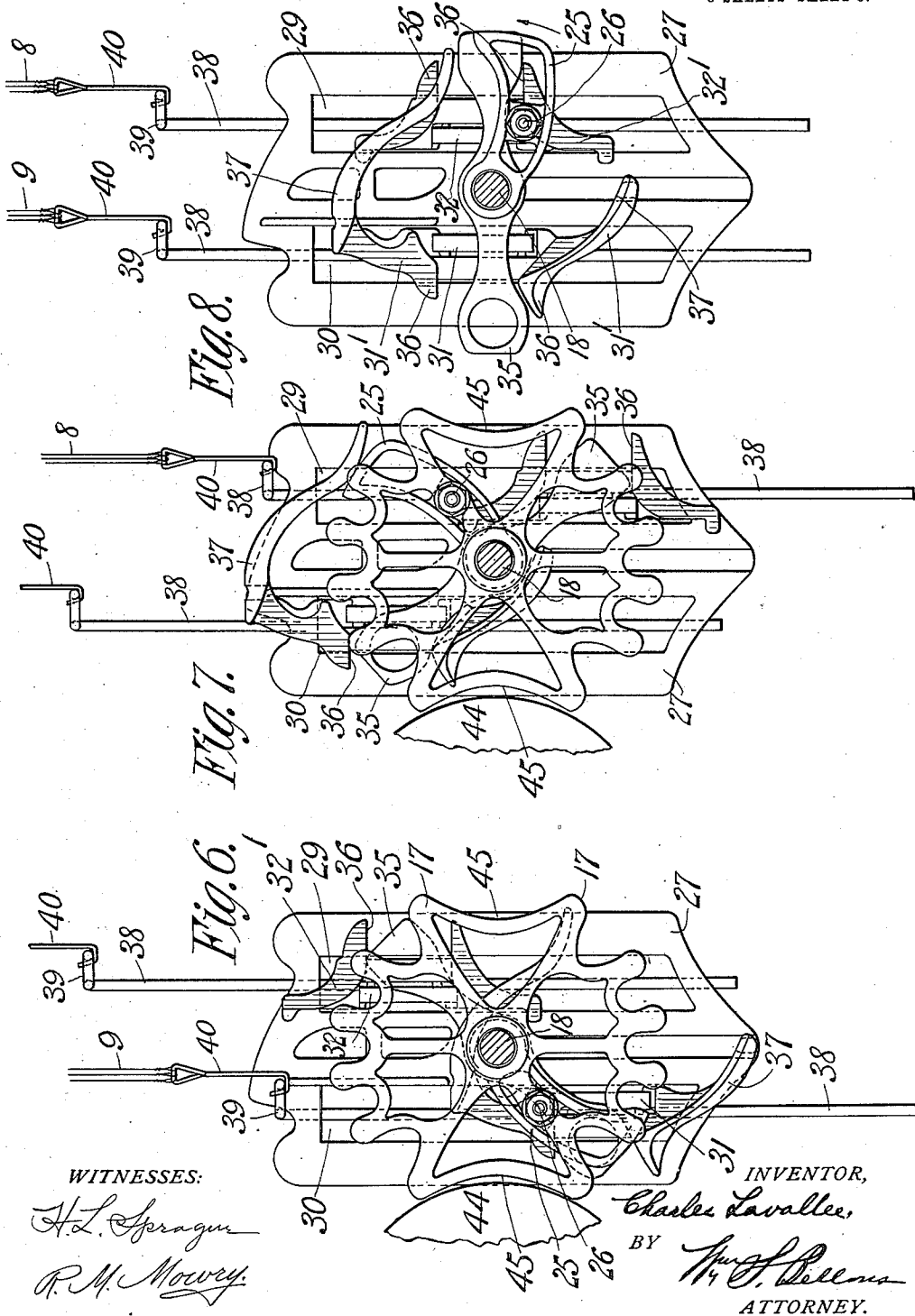


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3 SHEETS—SHEET 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES LAVALLEE, OF NEW MARKET, NEW HAMPSHIRE.

SELVAGE-MOTION FOR LOOMS.

1,027,860.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed February 17, 1911. Serial No. 609,244.

To all whom it may concern:

Be it known that I, CHARLES LAVALLEE, a citizen of the United States of America, and resident of New Market, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Selvage-Motions for Looms, of which the following is a full, clear, and exact description.

This invention relates to improvements in looms, and more particularly pertains to that portion of the machine which weaves the "selvage" of fabrics.

The invention has for one of its objects means for controlling independent selvage harnesses so that a single pick selvage or a tape selvage may be made on the same loom without unnecessarily retarding the operation of the same.

Another object of the invention is to utilize two or more warp threads to constitute the selvage of the cloth. And another object of the invention is to provide ways and means for constituting a selvage forming mechanism which may be applied to any loom of standard make or pattern.

Other objects are the provision of means for quickly adjusting or adapting the relative position of the heddles to the corresponding position of the harness heddles proper so that the warp threads may form an equal shed to receive the shuttle; and the provision of means for tensioning the selvage heddles relatively to each other, and also means whereby a selvage of one or two picks may be made on the same loom.

The invention is described in conjunction with the accompanying drawings, and is set forth in the claims.

In the drawings:—Figure 1 is a front elevation illustrating the relative position of the lay, harnesses, selvage heddles, and selvage heddle operating mechanism. Fig. 2 is a cross section taken on the line 2—2, Fig. 1. Fig. 3 is an enlarged detail view illustrating the relative position of the selvage heddle driving and driven gear for a two pick or tape selvage. Fig. 4 is a side elevation of the driving gear and a portion of the driven gear similar to Fig. 3, which illustrates the adjustable differences in the driving gear to accomplish a single pick selvage. Fig. 5 is a sectional plan taken on the line 5—5, on Fig. 3, illustrating the various parts of the device and showing particularly the means

for adjusting the positions of the heddles for tensioning the same. Fig. 6 is a view similar to Fig. 3, taken on the line 6—6, Fig. 5, illustrating the dwell position with one heddle in its upper position and one heddle in its lower position. Fig. 7 is a view similar to Fig. 6 taken on the line 6—6, Fig. 5, which shows the heddle supporting members in opposite arrangement to that in Fig. 6. Fig. 8 is a sectional side elevation taken on the line 8—8, Fig. 5, illustrating the cams which operate the heddle supporting members, and showing the heddles in a position which they would have when the shed is closed.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, 1 represents the lay, 2 the reed, 3 the shuttle and 4 the breast beam,—5 representing the cloth beam,—the same being shown in their customary position relative to the harnesses 6 and 7.

In line with the harnesses 6 and 7 are shown the heddles 8 and 9 through which are caused to pass the selvage warp threads 10 and 11, the same coinciding and in relative alinement with the warp threads of the body of the cloth.

At a convenient location on the frame 12 is formed a bearing 13 through which passes a uniformly revolving shaft 14 which has rigidly secured thereon an intermittent driving gear 15 which revolves in the direction indicated by the arrow 16, which in turn causes the driven gear 17 to revolve intermittently upon a shaft 18 in the direction of the arrow 19. The gear 17 is loosely mounted upon the shaft 18 which is adjustably connected by a set screw 20 to a conveniently formed bracket 21 held in position by a bolt 22 upon the bracket 23 rigidly connected by a bolt 24 to the loom frame, as seen in Fig. 1.

Appurtenant to the driven gear 17 is a cam shaped arm 25 which is rigidly secured to the gear 17 by the bolt 26 which causes the cam to revolve about the shaft 18 in perfect unison therewith.

Upon the rigid shaft 18 or its outer end is rigidly secured a guide frame 27 held in place thereon by the screws 28. The guide frame 27 is provided with two rectangular shaped apertures 29 and 30 through which are caused to pass the suitably formed members 31 and 32 respectively, to which are

secured clamping members 33 which by the bolts 34 are secured in their proper engagements with the heddle supporting rods 38.

Upon the gear side of the guide frame 27 are two cam shaped projections 31', formed integral with the members 31, which operate in an upward and downward direction in the aperture 30. Upon the projections 32 on the gear side of the supporting frame 27 are further cam shaped projections 32' which are integrally formed with the rear projections 32, and which operate in an upward and downward direction as guided in the aperture 29.

Loosely mounted on the shaft 18 is a rocker arm 35 which engages the projections 36 conveniently formed upon the cam shaped members 31' and 32', and by further extensions 37 of the cam shaped members 31, which are extended in line of the path of the cam 25, the cam shaped extensions 37 are caused to move in an upward and downward direction by engagement of the cam 25, thereby resulting in the rocker arm 35 oscillating on the shaft 18 by the impingement of the four projections 36; and as the members 31 and 32 are integrally formed with the members 36 and 37, the ones 31, 32 are caused to operate in the apertures 29 and 30 in perfect synchronism, and in a relatively upward and downward direction to each other.

It will be seen by a comparison of Figs. 6 and 7 that the heddle supporting rods 38 are moved alternately upward and downward, and the stroke of the same may be proportioned correspondingly with the stroke of the harnesses of the loom.

The upper ends of the heddle supporting members 38 are extended at right angles to the vertical portion and are provided with a loop 39 to which may be secured the heddle hook 40. The loops 39 are so formed that two or more heddle wires may be employed to have a narrow or a wide selvage according to the class of fabric to be woven.

The upper end of the heddles 8 and 9 are supplied with hooks 41 which engage the belt 42, which runs over an idler pulley 43 in a usual manner.

By a comparison of Figs. 3 and 4, it will be seen that in Fig. 3 the driving gear 15 is so made up with the arc edged segment 44 as a fixed part thereof, that as such arc edged segment 44 engages the concave portion 45 of the driven gear 17, the gear 17 will remain at rest locked by its engagement with the segment 44 against rotation for a period of time sufficient to permit two picks of the loom. By a further comparison of Figs. 3 and 4, it will be seen that by substituting a gear shaped portion 44' for the segment 44, a continual and uniform rotation of the driven gear 17 will be obtained, the same to be utilized when a single pick sel-

vage is required; and at such time the mongrel teeth 44² engage the concave surface 45 of the driven gear 17 and cause the driven gear 17 to revolve in unison with the driving gear 15.

It is to be remembered, although heretofore so stated, that the cam 25 unitary with the gear wheel 17 causes by its impingement against the cam projections of one of the actuators and supports for one set of selvage heddles the vertical reciprocatory movement of such set of heddles; and one of the reciprocating heddle actuators positively cam operated causes the swinging reciprocatory movement of the rocker 35 which by its engagement with the projections on the support and actuator for the other set of selvage heddles causes a relatively reversed reciprocatory movement of the second support and actuator.

It will be explained as possibly not casually apparent from the drawings that the tooth constituting portions 44² when coming into engagement at the middles of the concave edged segments 45,—which latter are not truly concentric with the revoluble path of the teeth 44²,—exert a crowding, and in effect gear toothed engagement to all intents and purposes the same as the intermeshing of the ordinary form of spur gear teeth; but as it is necessary to have the teeth of the segment form 45 to receive when desired the coaction therewith of the gear segments 44 (having the characteristic of a "Geneva lock"), and for the giving of the dwell to permit the two pick action, and as it is not practicable, and would not be in the attainment of the object of this invention to make the gear 17 interchangeable,—as it would require hours of time and delay in the loom work,—the expedient of the gearing such as here illustrated is a practical, satisfactory and time saving one.

I claim:—

1. In a selvage motion for a loom, in combination, two sets of selvage heddles, a pair of reciprocatory members operatively connected with the respective sets of heddles, one thereof having cam engagement projections and lever engagement projections, and the other having lever engagement projections, a revoluble cam coacting with the said cam engagement projections and an intermediately pivoted rocking lever engaged and positively operated by one set of the lever engaging projections and in turn engaging the other set of lever engagement projections.

2. In a selvage motion for a loom, in combination, two sets of selvage heddles, a stationary frame having a pair of vertical guideways therein, a pair of members slidable in said guideways, operatively connected respectively with the two sets of heddles, one thereof having cam engagement

projections and also lever engagement projections, and the other having lever engagement projections only, a gear wheel rotatively mounted adjacent said frame, having
5 a cam member coacting with the aforesaid cam engagement projections, an intermediately pivoted rocking lever engaged by one set of the lever engagement projections and in turn engaging the other set of lever
10 engagement projections, and a gear wheel

for driving the first named gear, one of said gears having detachable segmental portions of different characters interchangeably used thereon for the purpose set forth.

Signed by me at New Market, N. H., in 15
presence of two subscribing witnesses.

CHARLES LAVALLEE.

Witnesses:

JOSEPH CARTER,

HENRY L. TROTTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents.
Washington, D. C."