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W. H. LAFABELLE.
POWER SHIPPING MECHANISM.
APPLICATION FILED NOV. 27, 1909.

953,847.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.

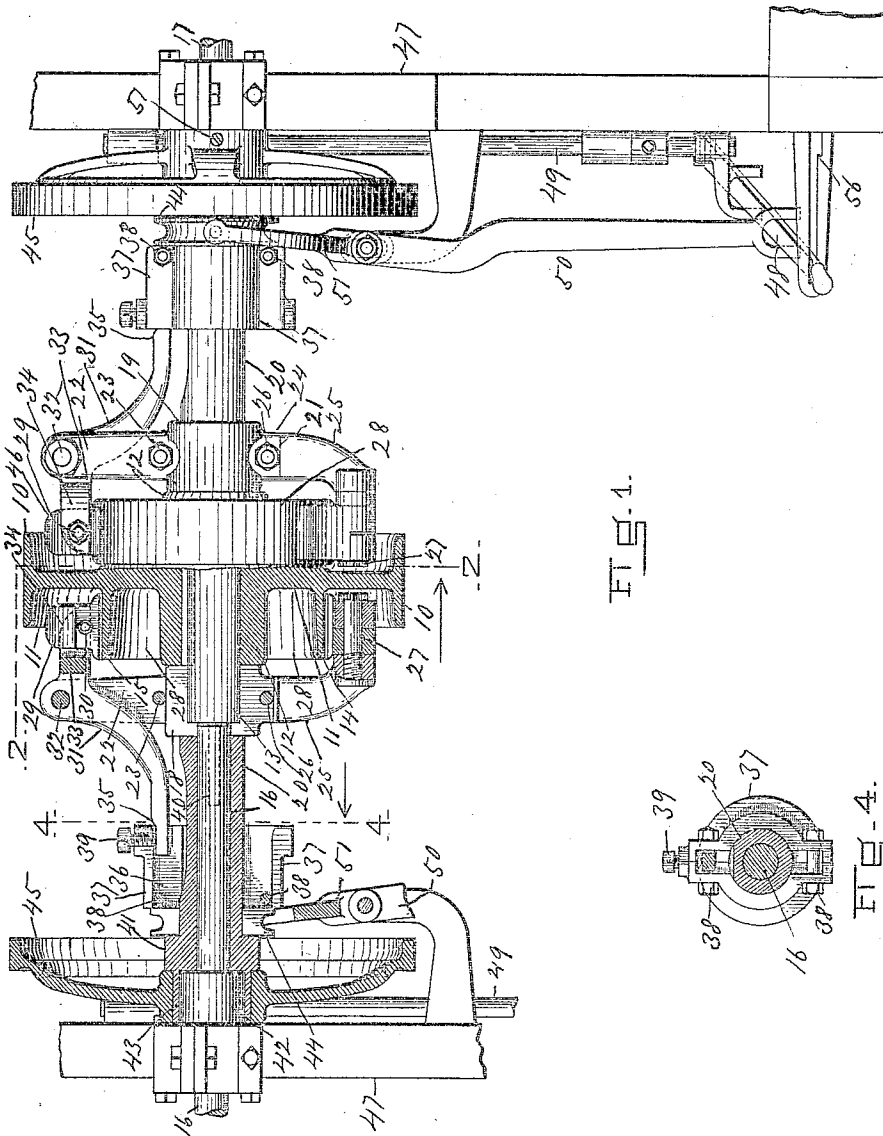


FIG. 1.

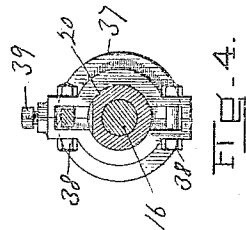


FIG. 4.

WITNESSES
M. A. Atwood.
Frank B. Parker.

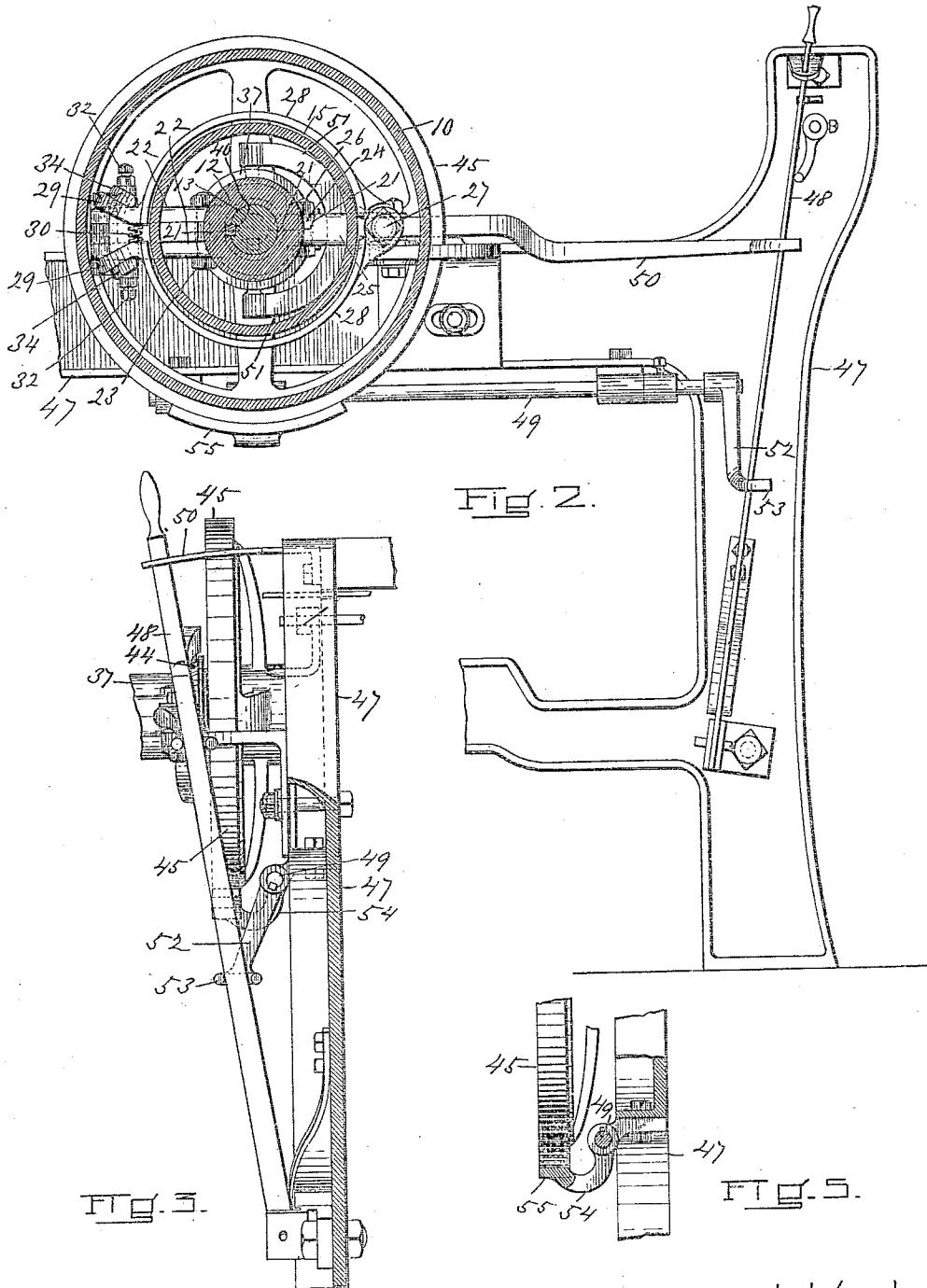
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By
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UNITED STATES PATENT OFFICE.

WILLIAM H. LAFUELLE, OF BOSTON, MASSACHUSETTS.

POWER-SHIPPING MECHANISM.

953,847.

Specification of Letters Patent.

Patented Apr. 5, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM H. LAFUELLE, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Power-Shipping Mechanism, of which the following is a specification.

This invention relates to that class of power-shipping mechanisms to which the inventions described and illustrated in Letters Patent of the United States numbered 420,160, granted to me January 28, 1890, and Letters Patent of the United States numbered 891,267, granted to me June 23, 1908, belong; and it is intended to be an improvement over and upon the said inventions, and in inventions in which the power of a continuously-rotating shaft may be transmitted to either or both of two shafts which operate as main shafts in transmitting motion to two different machines, such as more particularly, but not necessarily exclusively, looms.

In my present improvement the principal objects are to provide greater efficiency in operation, to render the parts easily assembled and disassembled, and to enable the mechanism when a loom to which it is connected is being stopped (as when the filling breaks) to not only throw out the clutch on that side but operate a brake which accelerates the stopping of the shaft extending from the power-shipping mechanism to said loom.

The nature of the invention is fully described below, and illustrated in the accompanying drawings, in which:—

Figure 1 is a view of my improved mechanism, a portion being shown in plan and a portion in horizontal section, connected up to a pair of looms or similar mechanisms sufficient portions of which are shown to illustrate the operation of the invention. Fig. 2 is a view partly in elevation and partly in section taken on line 2—2, Fig. 1, looking toward the right. Fig. 3 is a front view taken at one end of the mechanism, a portion of the frame of the loom being shown in section. Fig. 4 is a section taken on line 4—4, Fig. 1, looking toward the left. Fig. 5 is a sectional detail of a portion of the brake and adjacent parts.

Similar numerals of reference indicate corresponding parts.

Reference-numeral 10 represents the cen-

tral driving-pulley connected with the power, 11 representing the web and 12 the hub thereof rigid on the central shaft 13.

14 and 15 (Figs. 1 and 2) represent a pair of flanges integral with the web, extending on opposite sides thereof, and concentric with the periphery of the pulley—said flanges being exactly alike.

In line with the driving-shaft or pulley-shaft 13 and extending from opposite ends thereof are the two main shafts 16 and 17 which are adapted to extend into two separate machines, such as looms, and operate as driving-shafts for the same. Surrounding the shaft 13 next the hub 12 are the collars 18 and 19. Each of these collars is made in two parts, as indicated by the dividing line 21 shown dotted in Fig. 2 and in a full line in Fig. 1, and integral with one part of the collar (the lower part as illustrated in Fig. 1) is the sleeve 20, below described. As will readily be understood, in Fig. 1 the outer surface of one-half of the divided collar on the right side of the pulley-wheel is shown and the inner face of the opposite half of the divided collar on the left side of the pulley-wheel, the sleeve being in section. Integral with the two parts of each of the divided collars are two parallel bars 22 secured together by a bolt 23, and on the opposite side of each collar there are integral with its two parts a short ear 24 and a curved arm 25, secured together by a suitable bolt 26. Hence one part of each divided collar is integral with the sleeve 20, one bar 22 and the arm 25, while integral with the other part of the collar is one bar 22 and the short ear 24. These parts 22, 23, 24 and 25 on opposite sides of the pulley-wheel are exactly alike, and the same is true of all the parts described below located on opposite sides of the pulley-wheel, and hence the same reference-numerals will be used for describing the parts on both sides of the web 11 of the driving-pulley.

Pivotally secured at 27 to the outer end of each of the arms 25 are the adjacent ends of a pair of curved yokes or clutch-members 28, the yokes of each pair, that is, the yokes on each side of the web 11 being pivoted together as well as to the arm 25 at 27 and extending along the outer surface of the flange 14 (or 15 as the case may be) until their opposite ends are adjacent to each other. These ends, that is, the ends of the yokes which are opposite the pivots 27 are

provided with integral ears 29 formed non-radially with the yokes whereby they extend outward and apart from each other at their outer ends, as clearly shown in Fig. 2.

5 A spring 30 between said ears holds them normally sufficiently apart from each other to keep the yokes or clutch-members 28 off the surface of the flange 14 (or 15).

Clutch-levers 31 are pivotally connected
10 at 32 to and between the bars 22, the short arm of each of said clutch-levers being provided with a frame which consists of the bar 33 at right angles with the clutch-lever and the two parallel jaws 34 set at right
15 angles with the part 33, but with their inner surfaces spreading apart at their outer edges at substantially corresponding angles with the ears 29 (Figs. 1 and 2) whereby they are enabled to bear against the outer
20 surfaces of the opposite ears 29. The long arm of each of these levers 31 is provided on its outer surface with a bunch or protuberance 35 near its outer end, and said outer end extends into a recess 36 in the sliding
25 sleeve 37 which consists of two parts bolted together at 38 and is slidingly mounted on the sleeve 20 on that side. A regulating-screw 39 bears against the surface of the outer end of the long arm of each lever 31.
30 The sleeves 20 are rigid on the shafts 16 and 17 by means of keys 40, and each sleeve 20 is provided with an annular ring or flange 41 next the boss or enlarged portion 42 of the shafts 16 and 17, and an extension
35 or flange 43 integral with the sleeve 20 surrounds said boss. Integral with the sleeve 37 and between it and the shoulder 41 is a shipping-pulley 44 made in two parts to correspond with the sleeve 37, and mounted
40 on the portion 43 of the sleeve 20 is a large brake-wheel 45, said brake-wheel being rigid on the sleeve by means of suitable screws 57, (Fig. 1), and the sleeve being, as above mentioned, rigid on the shaft 16. Preferably I provide adjusting-screws 46 for the
45 jaws 34 whereby said adjusting-screws can, if desired, bear against the adjacent surfaces of the ears 29.

47 represents portions of frames of ordinary looms into which the opposite shafts 16 and 17 extend and constitute driving-shafts, said looms being provided with the ordinary loom shipping-levers 48 and rock-shafts 49 operating in the well-known manner
50 in case of the breaking of the filling to stop the machine.

50 represents a clutch shipping-lever connecting at its outer end with the loom shipping-lever 48 and provided at its inner end
60 with a yoke 51 whose ends extend into the groove in the pulley 44. Rigid on the rock-shaft 49 is an arm 52 whose outer end 53 is in engagement with the loom shipping-lever 48, and also rigid on the rock-shaft is
65 a curved brake-lever 54 on whose outer end

is the curved brake or shoe 55 which is adapted to be applied to the brake-wheel 45; it being understood that the looms on both sides of the mechanism are provided with similar brake-mechanisms for application to
70 the two brake-wheels 45.

In the drawings the power-shipping mechanism is represented as being stationary with the exception of course of the driving-pulley which is always running. The brakes 55
75 have been applied by the loom shipping-lever 48 to the brake-wheels, the pulleys 44 are held back against the flanges 41 by the yokes 51 on the clutch shipping-levers 50, and hence the sleeves 37 are moved back
80 far enough to allow the bunches 35 to be withdrawn from under the regulating-screws 39, thus allowing the jaws 34 on the short arms of the clutch-levers 31 to be moved down by the ears 29 integral with
85 the clutch-members 28, said ears being forced apart by the springs 30, and hence the clutch-members being spread out of contact with the flanges 14 and 15. If the loom on the right side, for example, of the
90 power-shipping mechanism is to be started, the loom shipping-lever 48 is swung from the position illustrated in the drawings into the notch 56 (Fig. 1), swinging with it by
95 means of the rock-shaft 49, the brake-mechanism 52, 53, 54, 55 and thus releasing the brake-wheel 45. At the same time the clutch shipping-lever 50, which is in engagement with the loom shipping-lever 48, is moved
100 inward thereby, its yoke 51 sliding the pulley 44 and with it the sleeve 37 toward the driving-pulley, and hence moving said sleeve with its regulating-screw 39 along the long arm of the clutch-lever 31 and upon
105 the bunch 35, pressing down the outer end of said long arm and forcing up the short arm of the clutch-lever and hence swinging up the beveled jaws 34 whose inner surfaces bear against the outer surfaces of the spreading ears 29, forcing said ears toward
110 each other against the power of the spring 30, and moving the curved yoke or clutch-member 28 against the outer surface of the flange 15. This causes the driving-pulley 10 to communicate rotation to the clutch-member and thence to the clutch-lever 31 and by means of its connection at 32 to the bars 22 and by means of the connection at 27 to the arm 25, and as one of the bars 22 and the arm 25 are integral with one-half of the divided collar 18 rotation is imparted to said collar. The rotation of the collar is communicated to the sleeve 20 integral with said half as above described, and said sleeve communicates rotation to the shaft 16 by means
12 of the key 40, driving the loom with which it is connected. Moreover the sleeve communicates rotation to the brake-wheel 45 which is rigid thereon by means of screws 57 or in any other suitable manner.
13

Of course either or both of the shafts 16 and 17 may be set in operation by the clutches and thus actuate one or both of the looms on either or both sides of the mechanism.

By means of the divided collars 18 and 19, the parallel bars 22 integral with the two parts of the collars, the parts 24 and 25 integral with the two parts of the collars, the sleeves 20 integral with one part of each collar, and the divided sleeves 36 and divided pulleys 44, it is easy to disassemble the parts by withdrawing the bolts 23, 26, 32, and 38, and to reassemble them by applying said bolts.

By the operation of the brake which is set against the brake-wheel 45 simultaneously with the movement of the rock-shaft 49 of the loom, whether said loom is stopped automatically or by hand, the stopping of the loom is accelerated by the operation of the brake-wheel on the shaft 16 or 17 as the case may be. Such action stops quickly the rotation of the sleeve 20 and shaft 16 and hence the rotation of the collar 18, and the clutch shipping-lever which is operated by the loom shipping-lever at the same time by reason of the connection of said loom shipping-lever with the rock-shaft 49 withdraws the sleeve 37 and allows the jaws 34 of the clutch-lever 31 to release the spreading ears 29 and hence allow the clutch-member 28 to be spread by the spring 30 out of contact with the flange 15 on the driving-pulley.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is:—

1. In a power-shipping mechanism containing a central driving-shaft and driving-pulley rigid on said shaft provided with flanges concentric with the periphery of the pulley and main shafts extending outward from the opposite ends of the driving-shaft and adapted to transmit motion to two looms or other machines, pairs of yokes constituting clutch-members adapted to be engaged by said flanges the yokes in each pair being pivotally connected at one end and formed at their outer ends with ears whose outer surfaces are beveled rearward in opposite directions from radial lines with the yokes, clutch-levers provided at one end with jaws adapted to be moved along the outer surfaces of said ears, sliding sleeves supported by the main shafts and adapted to swing the outer ends of the clutch-levers toward said main shafts, and means for pivotally supporting said clutch-levers between said clutch-members or yokes and said sleeves, for the purpose set forth.

2. In a power-shipping mechanism containing a central driving-shaft and driving-pulley rigid on said shaft provided with

flanges concentric with the periphery of the pulley and main shafts extending outward 65 from the opposite ends of the driving-shaft and adapted to transmit motion to two looms or other machines, pairs of yokes constituting clutch-members adapted to be engaged by said flanges the yokes in each pair 70 being pivotally connected at one end and formed at their outer ends with ears whose outer surfaces are beveled rearward in opposite directions from radial lines with the yokes, springs holding said ears normally 75 apart, clutch-levers provided at one end with jaws adapted to be moved along the outer surfaces of said ears and near their opposite ends with protuberances or bunches on their outer surfaces, sliding sleeves sup- 80 ported by the main shafts and adapted to swing the outer ends of the clutch-levers toward said main shafts by engaging said protuberances or bunches, and means for pivotally supporting said clutch-levers be- 85 tween said clutch-members or yokes and said sleeves, for the purpose set forth.

3. In a power-shipping mechanism containing a central driving-shaft and driving-pulley rigid on said shaft provided with 90 flanges concentric with the periphery of the pulley and main shafts extending outward from the opposite ends of the driving-shaft and adapted to transmit motion to two looms or other machines, divided collars at the op- 95 posite ends of the driving-shaft, sleeves rigid with the main shafts and integral with one-half of each of the divided collars, pairs of substantially parallel bars integral with the two halves of each collar and connected 100 together by removable bolts, arms integral with the one of the halves of the divided collars with which said sleeves are integral and connected by removable bolts to small projections on the opposite halves of the collars, 105 divided sleeves and divided pulleys integral therewith sliding on the sleeves which surround the main shafts and with their two halves removably connected together, pairs of yokes constituting clutch-members adapt- 110 ed to be engaged by said flanges, the yokes in each pair being pivotally connected at one end, and clutch-levers pivotally supported by the two pairs of bars which are integral with the opposite halves of the collars 115 and adapted by means of the sliding sleeves to force the clutch-members into engagement with said flanges, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of 120 two subscribing witnesses.

WILLIAM H. LAFABELLE.

Witnesses:

HENRY W. WILLIAMS,
M. A. ATWOOD.