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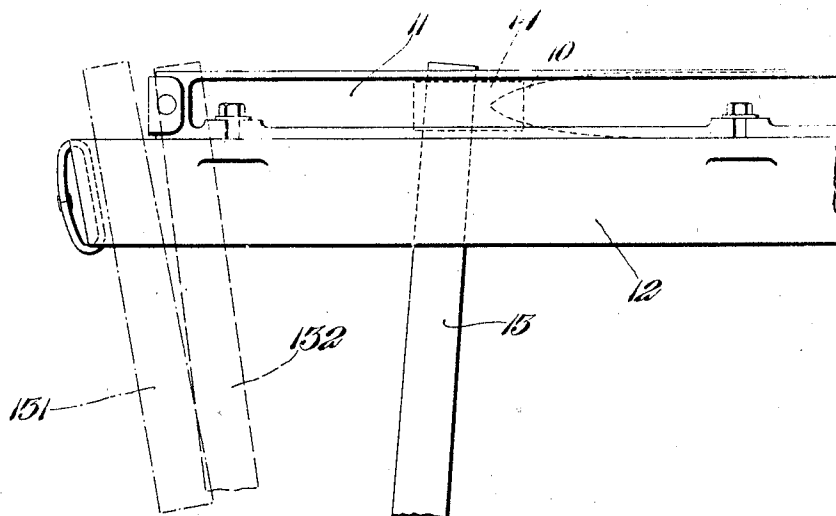
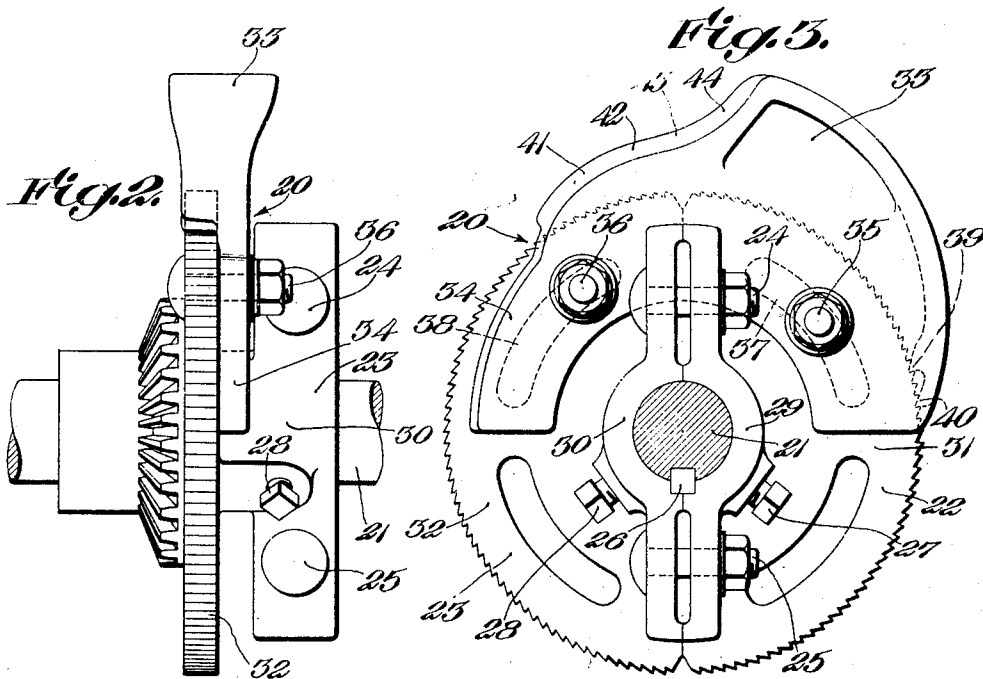
C. H. DRAPER

1,723,334

LOOM

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Fig. 1.



Witness:

Alfred H. McGlinchey.

Inventor:

Clare H. Draper
by his attorneys

Vau Green Fish Heidrich & Co.

UNITED STATES PATENT OFFICE.

CLARE H. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO DRAPER CORPORATION, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

LOOM.

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The present invention relates to an improvement in looms.

In the operation of the loom the position of the shuttle in the box ordinarily varies 5 more or less. This is due to the wear of the check, the binders, the shuttle, and the stretching of the straps, as well as by reason of variations in the humidity, temperature, etc. This sometimes results in the rebound 10 of the shuttle, and when the rebound becomes excessive the loom bangs off. It sometimes results in the failure of the shuttle to reach the end of the box. These variations in the position of the shuttle cause variations in the 15 time of the shuttle throw and in the speed of the shuttle, and are particularly objectionable in looms such as high-speed looms in which a high shuttle velocity is employed. The object of the invention is to reorganize 20 and improve the shuttle picking operation so as to secure a uniformity of velocity of the shuttle, and therefore to eliminate some of the reasons for wear and irregularity of the shuttle operation. The present invention 25 consists of the loom hereinafter described and particularly defined in the claim.

In the accompanying drawing illustrating the preferred form of the invention Fig. 1 30 is a front elevation of a part of the lay of a loom; Fig. 2 is a front view of the pick-cam; and Fig. 3 is a side view of the same.

The illustrated embodiment of the invention is described as follows: The shuttle 10 35 is shown entering the usual shuttle-box 11 on the lay 12. It is picked by the picker-stick 13, which is provided with the usual picker-stick-check 14. When the shuttle enters the box it is received by the binders which retard 40 its motion, and it finally strikes the picker-stick-check against which it impinges with some force. Its position of stopping varies with the degree of friction offered by the binder, the wear of the picker-stick-check, 45 and the other conditions to which reference has been made. Before picking begins according to the present invention, the picker-stick is moved slowly from the position 131 to the position 132 and then the picker-stick 50 makes its picking motion. The position 131 may be referred to as the end-position of the picker-stick corresponding to the end-posi-

tion of the shuttle, and the position 132 to the picking-point of the picker-stick corresponding to the picking-point or position of 55 the shuttle. At the picking-point or picking position the picking motion of the picker-stick begins, and the shuttle is accelerated throughout the picking motion in order to throw it from the one loom-box 60 across the loom into the other. The motions of the picker-stick are imparted by means of the pick-cam indicated in a general way by the reference character 20. The pick-cam mounted on the shaft 21 consists of two parts 65 22 and 23 which are bolted together by the bolts 24 and 25. The cam is splined to the shaft by the key 26 and securely held in position on the shaft by the set screws 27 and 28. These two pick-cam parts comprise the hub, 70 made up of the hub parts 29 and 30 which embrace the shaft, and the disk, made up of the disk portion 31 and 32. The hub is provided with the bevel gear teeth for operating the take-up mechanism; see bevel gears 75 of Jonas Northrop Patent No. 1,479,154. The disk is toothed at its periphery. The cam element or cam 33 has a semicircular body portion 34 which is adapted to be bolted to the side of the cam disk. It is pro- 80 vided with two holes which receive the bolts 35 and 36. These bolts are received in the arcuate slots 37 and 38 which provide means for adjusting the angular position of the cam proper on the disk. By loosening the 85 bolts the cam may be turned to different angular positions with respect to the disk. The cam 33 is provided with two teeth 39 and 40 which engage the teeth in the periphery of the disk and contribute to holding 90 the cam securely in position on the disk. In the loom as ordinarily constructed the pick-ball, after picking is completed, falls back upon a stop so located that the ball does not engage the periphery of the disk between the 95 points approximately indicated at 40 and 41. The pick-ball first engages the cam surface 42 at about the point 41, and as the cam moves forward it lifts the pick-ball slowly until the point 43 is reached, thereby advancing 100 the picker-stick from the end-position 131 to the picking-point 132. Thereupon, at the point 43, the picking-portion 44 of the pick surface 42 lifts the pick-ball, rapidly

accelerates it to the desired extent, and causes it to throw the shuttle with the necessary velocity across the loom.

The operation of the loom is as follows:
5 After the shuttle has been received in a shuttle-box it remains stationary until just before it is picked and then it is moved forward at a moderate rate and without picking acceleration until it reaches the picking-
10 point to position it in the shuttle-box, and thereupon its accelerated picking motion begins and the shuttle is picked.

The advantages incident to the present invention are that irrespective of the final
15 position of the shuttle in the box it is always brought to a certain predetermined picking-point or position before the motion of the picking begins, then the picking of the shuttle is initiated in this loom always at the
20 same position in the box, and it has been found that a uniformity of shuttle velocity is attained and banging off materially reduced with the result that a loom provided

with the present invention will produce more cloth than another loom, other things being 25 equal.

Having thus described the invention, what is claimed is:

A high speed loom, having in combination a lay, a shuttle box and shuttle, a picker for 30 engaging the shuttle, and a pick cam provided with a portion having a convex curvature of uniform rise for preliminarily advancing the picker to picking position into firm engagement with the shuttle prior to the 35 commencement of the picking movement of the picker and shuttle, and merging into a concave curvature of steeper rise for picking the positioned picker, whereby the picker will be given a slow, unaccelerated position- 40 ing movement followed by a rapidly accelerated picking movement.

In testimony whereof I have signed my name to this specification.

CLARE H. DRAPER.