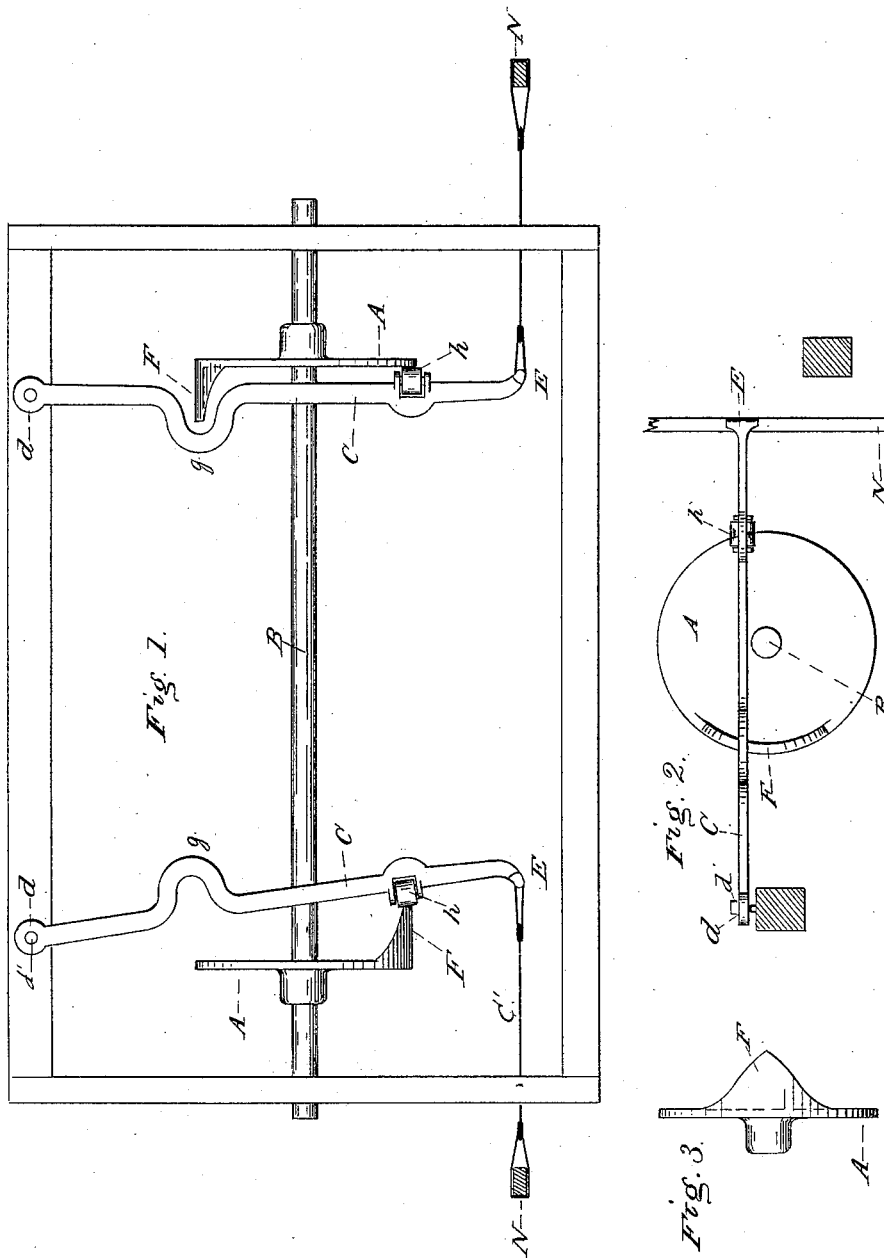


(No Model.)

S. & S. M. HAMBLIN.  
LOOM PICKING MECHANISM.

No. 384,622.

Patented June 19, 1888.



WITNESSES:  
*Ezra C. Chandler*  
*Henry C. Wade*

*Stephen M. Hamblin.* INVENTORS.

# UNITED STATES PATENT OFFICE.

SILVANUS HAMBLIN AND STEPHEN M. HAMBLIN, OF PLYMOUTH, MASSACHUSETTS, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO ROSWELL S. DOUGLASS, OF SAME PLACE, AND HENRY SAWYER, OF BOSTON, MASSACHUSETTS.

## LOOM PICKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 384,622, dated June 19, 1888.

Application filed September 21, 1887. Serial No. 250,335. (No model.)

*To all whom it may concern:*

Be it known that we, SILVANUS HAMBLIN and STEPHEN M. HAMBLIN, both citizens of the United States, and both residing at Plymouth, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Loom Picking Mechanisms, of which the following is a specification.

10 This invention is an improvement in looms, and has relation particularly to certain improvements in picker-motions, or means for communicating motion from the driving mechanism of the loom to the shuttle through the medium of the picker-staffs.

15 In carrying out our invention we provide two disks or wheels which have each a V-shaped projection, the two projections extending inward toward each other when placed in position for use, forming, together with said disks, cam-wheels to act alternately upon certain levers, hereinafter to be described. These cam-wheels are fixed at proper points to the driving-shaft, with their V-shaped cams bearing certain relation to each other, so that the proper interval of time will be given between the throws of the picker-staffs.

25 Pivoted to a fixed portion of the frame of the loom are lever-arms, partly straight and partly curved, which move about their axes or fulcrums in a horizontal plane and lie with their straight portions normally close to the inner surfaces of the said disks. The straight portions of said lever-arms are engaged at points forward of the shaft which carries the cam-disks and between said shaft and the strap ends of the levers by the cam points or projections, and after contact at said points the cam projections are allowed to pass the curved portions of said levers unobstructed between the said driving-shaft and the fulcrums or pivoted ends of the said levers. The forward ends of the levers are connected to the picker-staffs on each side of the loom by flexible straps. The picker-staffs in practice will have their bottom ends connected by a spring in the usual manner, which will keep their upper ends out from

the center of the loom normally. During the revolution of the cam-holding shaft the cams act upon the lever-arms described, and thus move the picker-staffs to throw the shuttle.

In the drawings, Figure 1 is a plan view, partly in section, of part of a loom, showing our improvement. Fig. 2 is a vertical sectional view of the same. Fig. 3 is an edge elevation of one of the cam-wheels.

Similar reference-letters indicate like parts in all of the figures.

Referring to the drawings, B is the driving-shaft, properly journaled in the frame of the loom, upon which are fixed the disks A, provided with the inwardly-projecting V-shaped cam-points F.

C C are the lever-arms, pivoted to the rear portion of the frame of the loom and curved or bent laterally in rear of the shaft B, as at *g*, so that the cam-points may pass said levers unobstructed on that side of the cam-shaft. The arms C C at their rear ends have eyes *d*, through which pass bolts *d'*, which secure said levers to the frame of the loom and answer the purposes of pivots or fulcrums for the said arms. At the opposite ends of the levers C C are loops E, which receive the straps C', the latter of which are secured also to the picker-staffs N.

The picker-staffs N are of the usual form, pivoted at the base of the frame of the loom and rising to the shuttle-race.

The cam-points of the disks are formed with easings, which merge gradually into the inner faces of the disks and preclude the possibility of shock between said points and the levers C. The levers C at their points of contact may be provided with anti-friction rollers *h*; but these are not essential. The lever-arms are placed in horizontal planes close to the cam-carrying shaft.

The construction and arrangement of our picker-motion have merit over any devices of this kind of which we have a knowledge in the following particulars, viz:

First. The point of contact between the cam and the lever is forward of the driving-shaft

and near the strap end of the said lever, so that we get the benefit of a long leverage to the lever-arm with short radius for the disk.

Second. The lever-arms being placed so as to contact with the inner surfaces of the disks, the change from the plane surfaces of the disks and the cam-points is easy, gradual, and without lost motion.

Third. The lever-arms being almost in a horizontal plane with the driving shaft, force that would be expended in lifting the said arms is avoided.

Fourth. The lever-arms bearing against the disks at all times, the action between the said disks and levers will be prompt and steady, and there can be no lost motion to the picker-staffs.

Fifth. The motion of the lever-arms being in a horizontal plane, and said levers being close to the driving-shaft, but little space is required for the device. Consequently it is easily adaptable to any of the ordinary looms now in use.

Sixth. From the nature of the cam-points with reference to the disks, said points are readily interchangeable with others of larger or smaller size when more or less throw to the picker-sticks is required.

Seventh. The cam-points being eased to the flat surfaces of the disks, the movement of the levers against said points is smooth and without shock and practically noiseless.

We are aware of English Patent No. 12,979, old law, which shows and describes a roller fixed on an arm carried by a rotating shaft and having working in connection with said roller a lever provided with an offset, which normally sets vertically below the axis of the roller-carrying shaft. The roller contacts with the lever or its offset primarily between the driving-shaft and the fulcrum end of said lever and ceases its contact at a point immediately below said shaft. Such contact between the roller and the laterally-movable lever requires more power to effect a given force than would be the case were the power exerted forward of the driving-shaft and between said shaft and the moving end of the lever, as it is in our ar-

rangement; and not only does not the roller in said English patent contact forward of the driving-shaft, but with its arrangement it is quite impossible for the lever and roller to have such contact.

It is to be borne in mind that our device gives the contact in a horizontal plane with the driving-shaft, while said English patent gives the contact in a vertical plane with reference to the driving-shaft. Then, again, the English patent shows the lever inclining inward toward the plane of movement of the roller, which increases the resistance to be overcome by the power over and above what would be offered were the said lever parallel to the said plane of movement. In our device the lever is not only at right angles to the driving-shaft, but it is parallel with the plane of the cam-disk. There is also advantage to our device over the construction of the English patent referred to, in that the movement of our lever laterally is guided and steadied by its constant contact with the said disk—an advantage impossible to said English patent.

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

The combination, with the cam-shaft and the cam-disks on the said shaft provided with laterally-projecting V-shaped cams, of picking-levers pivoted at the rear of said cam-shaft and bent or curved at the rear of the said shaft to permit unobstructed passage of the cam-projections, the cam projections engaging with the said levers at points in front of the cam-shaft and between the said shaft and forward ends of the said levers, as described, the picker-staffs, and straps connecting the said staffs with the front ends of the said levers, as and for the purpose set forth.

SILVANUS HAMBLIN.  
STEPHEN M. HAMBLIN.

Witnesses to both:

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Witness to Stephen M. Hamblin:

HERBERT MORISSEY.