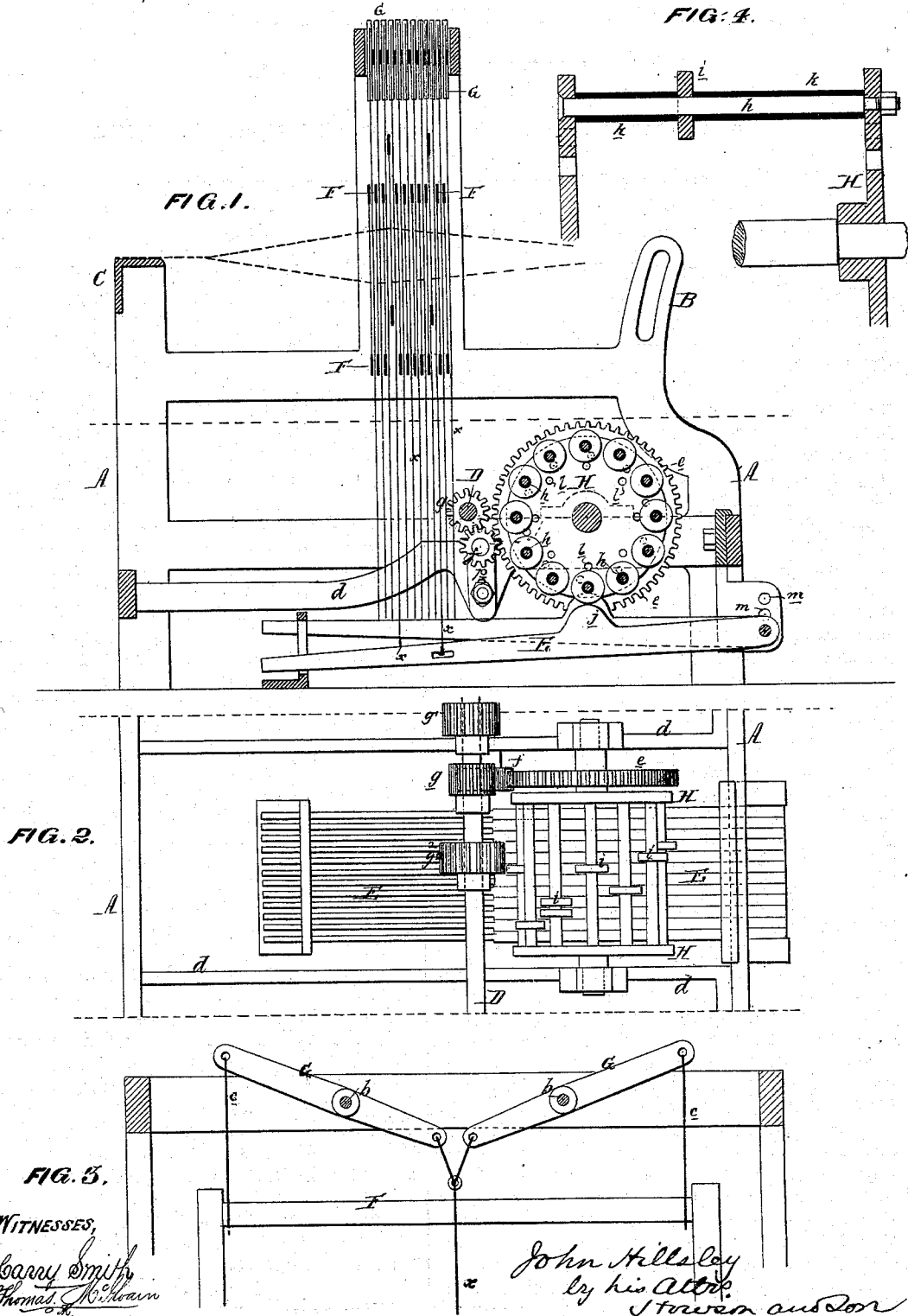


Improvement in Looms.

No. 127,055.

Patented May 21, 1872.



UNITED STATES PATENT OFFICE.

JOHN HILLSLEY, OF WEST MANAYUNK, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND JOHN THOMAS HILLSLEY, OF SAME PLACE.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. 127,055, dated May 21, 1872.

Specification describing Improvements in Looms, invented by JOHN HILLSLEY, of West Manayunk, Montgomery county, Pennsylvania.

Improvements in Looms.

My invention consists of certain improvements—too fully explained hereafter to need preliminary description—in mechanism for operating the heddles of looms.

In the accompanying drawing, Figure 1 is vertical section of sufficient of a loom to illustrate my improvements; Fig. 2, a plan view of the same; Fig. 3, a transverse section of the upper portion of the loom; and Fig. 4, a detached view drawn to an enlarged scale.

A represents the frame of the loom; B, one of the slotted bearings for the whip-roller; C, the breast-beam; D, the cam-shaft; E, the treadles; and F, the leaves of heddles. A cord or wire, *x*, secured to each treadle, extends upward to a point above the heddles, where it is forked and secured to the inner arms of two levers, G G, Fig. 3, hung to the frame at *b b*, and connected at the extremities of their outer arms, by cords or wires *c*, to the opposite ends of the leaf of heddles immediately beneath them. A cylinder, H, having its bearings in in bars *d d* secured to the frame of the loom, extends transversely over the treadles, and is provided at one end with a cog-wheel, *e*, operated, through the medium of an intermediate pinion, *f*, by a pinion, *g*, on the shaft D, a slow but continuous movement being thus imparted to the said cylinder.

There are, in the present instance, twelve leaves of heddles, and twelve treadles connected therewith; and upon the cylinder H there is a corresponding number of rods or spindles, *h*, arranged at equal distances apart, close to the periphery of the said cylinder, each rod carrying a roller or rollers, *i*, and each roller being arranged, as the cylinder revolves, to strike projections *j* on the treadles, and thus depress the latter and correspondingly elevate the heddles. The rollers *i* are confined in any required position upon their rods *h* by sleeves or distance-pieces *k*, adapted to the said rods and bearing against the opposite sides of the rollers, as shown in Fig. 4.

If six rollers are arranged upon a single rod, six of the treadles will be operated when the said rod is brought to a position directly over the same; and, in like manner, five, four, or a

less or greater number, may be operated simultaneously, according to the number and positions of the rollers upon the rods of the cylinder.

As it is desirable that the number of rods *h* on the cylinder should correspond with the number of leaves of heddles employed, I form several concentric rows of holes, *l*, in the ends of the cylinder for the reception of the rods *h*. The outer row, which is employed in the present instance, has twelve holes; the next row has ten, and can be used when but ten leaves of heddles are employed; and the inner row is adapted to but eight roller-rods *h*, to be used in connection with eight leaves of heddles.

When the inner rows of holes are used, in order to reduce the number of roller-rods, the diameter of the cylinder is also reduced, and the treadles must consequently be raised in order to be brought into the path of the rollers. To enable this to be accomplished, holes *m*, Fig. 1, arranged one above the other, are formed in the frame of the loom.

It is also necessary, when the number of roller-rods on the cylinder is increased or diminished, to correspondingly change the speed of the cylinder. This is effected by means of pinions *g*, *g*¹, and *g*² on the shaft D, having different numbers of teeth, and capable of being moved upon the said shaft without turning independently of the same, so that any one of them can be thrown into gear with the intermediate pinion *f*, (see Fig. 2.) The latter, in order that it may accommodate itself to the different diameters of the change wheels, is hung to blocks *p*, Fig. 1, rendered vertically adjustable upon the frame.

I claim as my invention—

1. The cylinder H, arranged in respect to the adjustable treadles, as set forth, carrying rollers *h*, and having in the ends rows of holes *l*, for the purpose specified.
2. The combination of the cylinder H, shaft D, and the adjustable gearing described, by which motion is transmitted from the said shaft to the cylinder.

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

JOHN HILLSLEY.

Witnesses:

WM. A. STEEL,
JOHN K. RUPERTUS,