Sheet 1, 3 Sheets.

R. Garsed.

Loom.

No. 6,845. Patented Nov. 6, 1849.

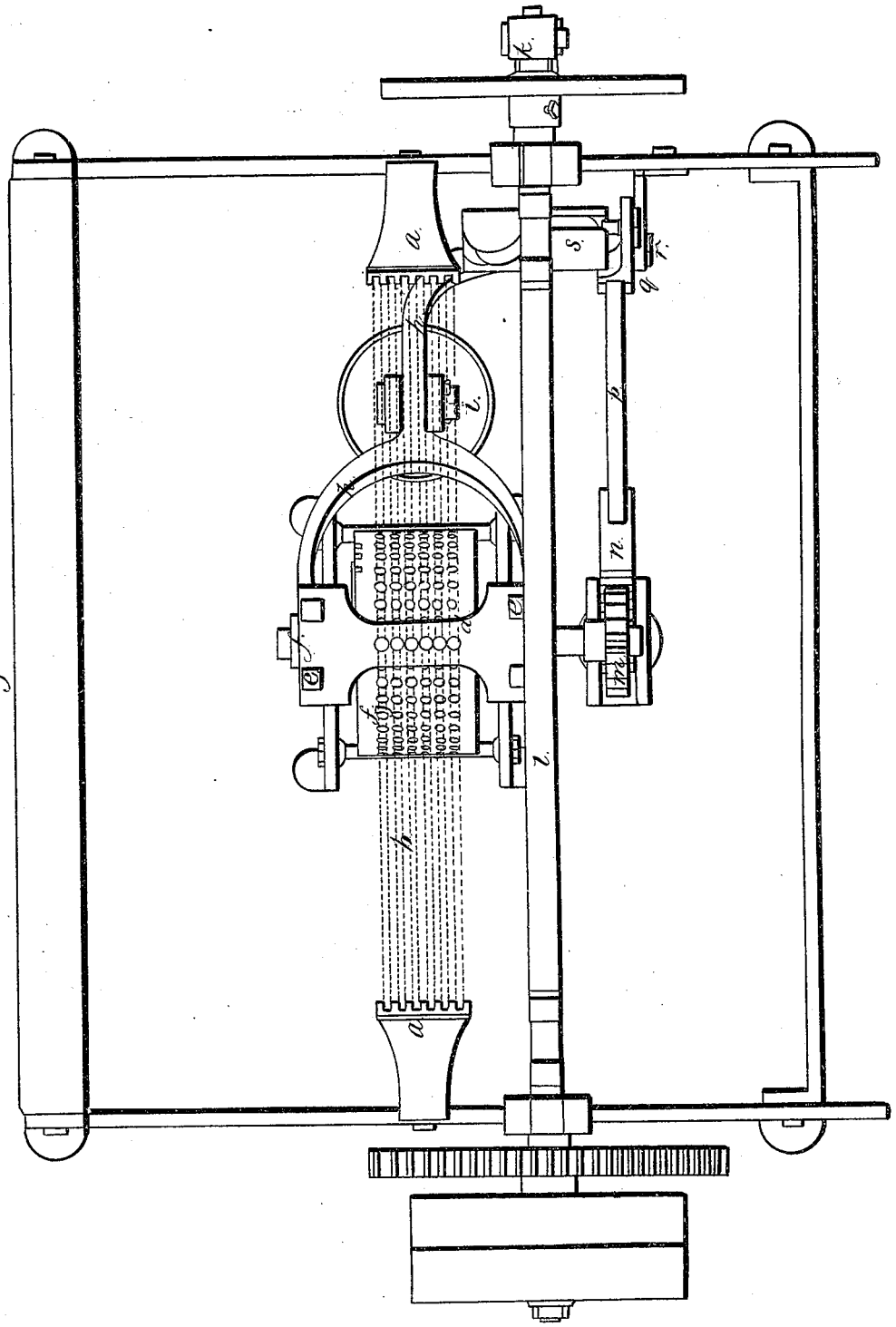

Fig. 1.

Sheets, 3 Sheets.

R. Garsed.

Loom.

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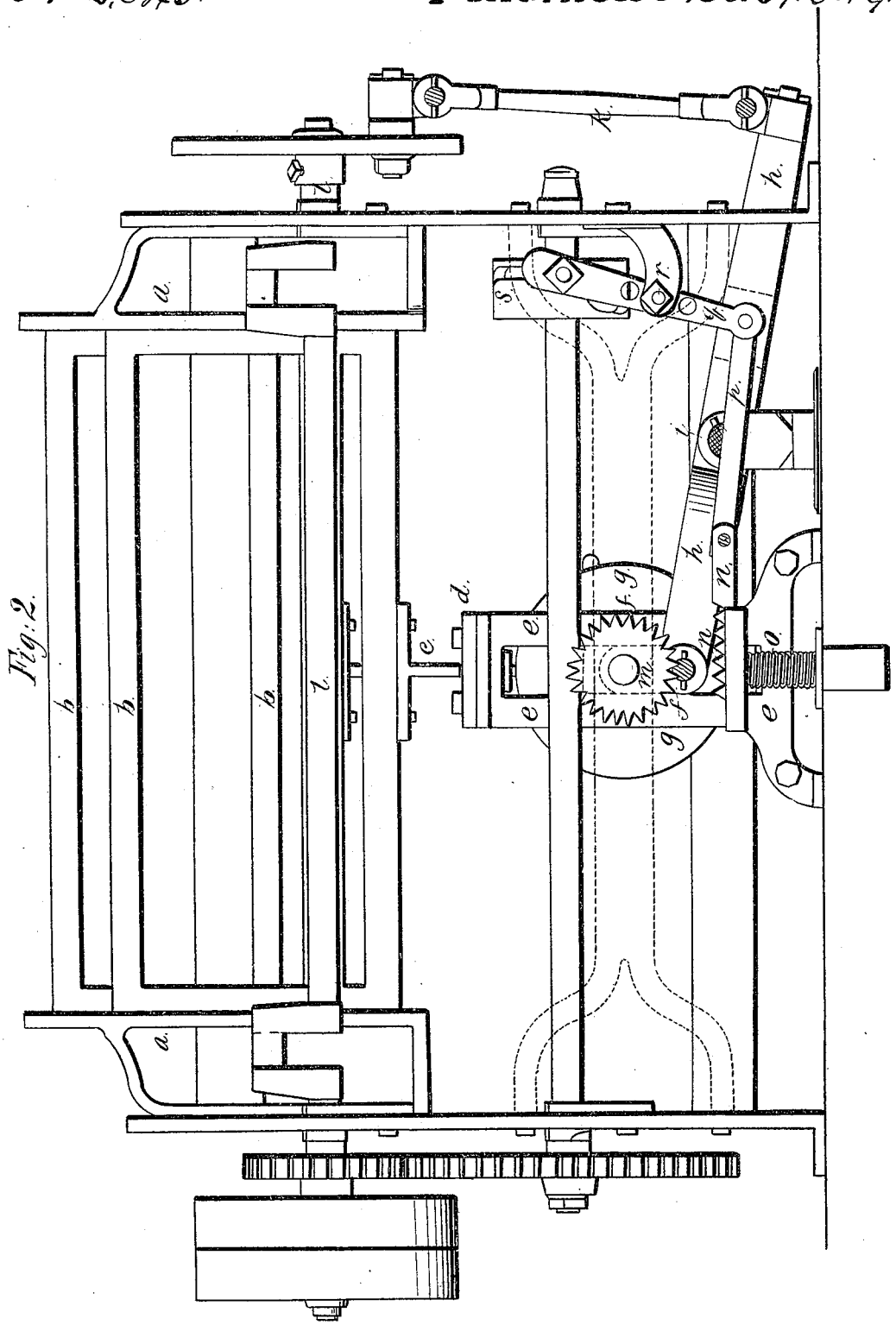


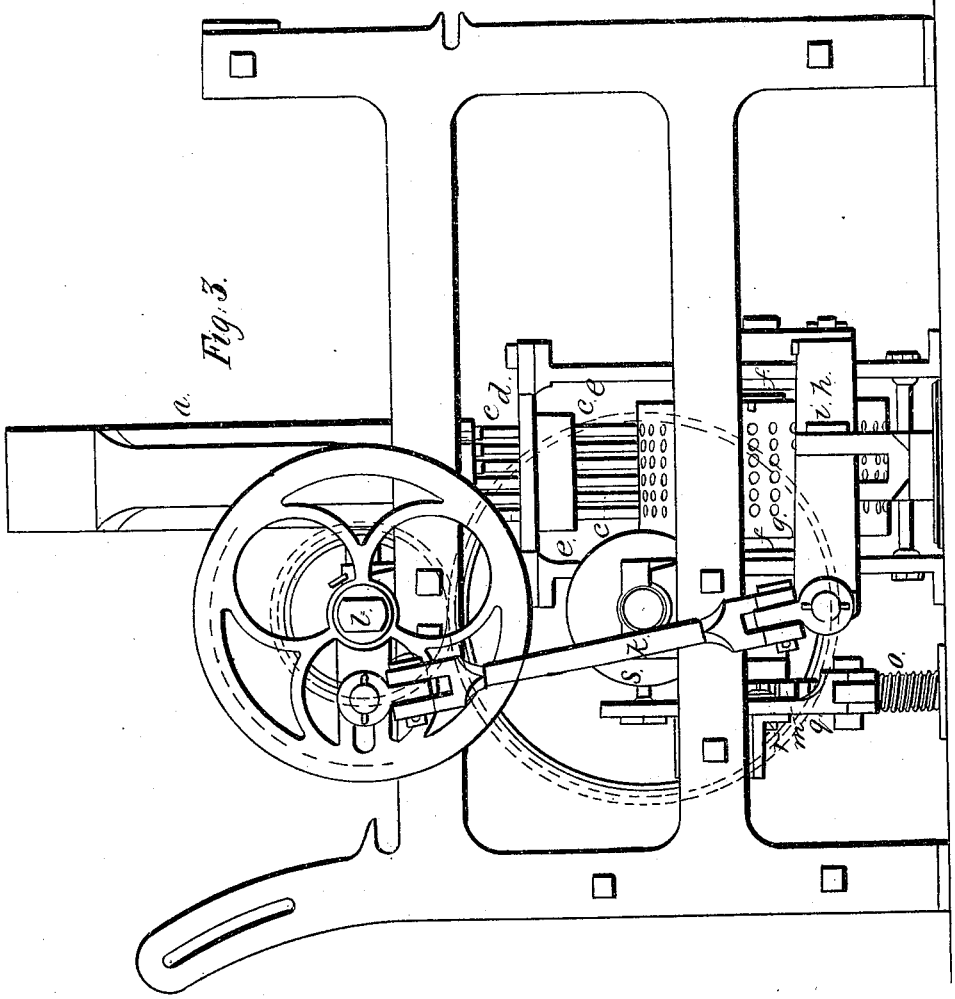
Fig. 2.

Sheet 3, 3 Sheets.

R. Garsed.

Loom.

No. 6,845. Patented Nov. 6, 1849.



UNITED STATES PATENT OFFICE.

RICHARD GARSED, OF FRANKFORD, PENNSYLVANIA.

LOOM FOR WEAVING FIGURED FABRICS.

Specification forming part of Letters Patent No. 6,845, dated November 6, 1849; Reissued July 24, 1855, No. 320.

To all whom it may concern:

Be it known that I, RICHARD GARSED, of Frankford, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Working the Heddles of Power-Looms, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawing, in which—

Figure 1 is a top plan; Fig. 2 is a rear elevation; Fig. 3 is a side elevation.

My improvement consists of a combination of a pattern wheel directly with the heddles of a loom, and in the distribution and working of the patterns on said cylinder or wheel.

Many attempts have been made to work heddles by a jacquard, or its equivalents; but they have all involved a complicated combination of levers with a trapping apparatus, and have generally been limited in their powers to vary the pattern, which could not be changed without great delay in stopping the loom, and substituting new parts. I am also aware that a jacquard has been placed under a series of needles for working the pattern directly from it; but this is impracticable in power looms.

By my invention I obviate all the above named difficulties, and obtain a permanent and direct pattern action, which is simple in its parts, is not liable to derangement, can be readily changed, and is perfectly adapted to power looms, by means of which I am enabled to weave several fabrics that could not be done on ordinary looms, such for instance as salt bags, which I can weave whole by changing the pattern at each length of a bag, so as to weave alternately plain cloth and a four leafed tweel.

The construction of my apparatus is as follows:—The loom is in all particulars like that of ordinary construction, except in the particulars hereafter named; to the side of the frame I attach two guides (*a*) having vertical parallel grooves in them, in which the heddles slide up and down. The heddles (*b*) are oblong rectangular frames of metal, to lower bar of each of which a stem (*c*) is attached, that projects downward through a stationary guide (*d*) the lower end being just over a cylinder, to be hereafter described.

Below the heddles there is a frame (*e*) affixed to the floor, in which are sliding boxes (*f*) that receive the journals of a cylinder (*g*), in the periphery of which are regular series of parallel indentations, a portion of which are drilled through the exterior of the cylinder, according to the pattern to be woven, a matter well understood by all practical figured power loom weavers; the boxes or bearings (*f*) are supported on the end of a bifurcated lever (*h*) the fulcrum of which is at (*i*); the opposite end of this lever is attached by a connecting rod (*k*) with a crank on the main or crank shaft (*l*) so that at each revolution of said shaft, the cylinder is made to rise and fall; and as it rises, it carries up all the heddles, except where the holes are drilled through, so as to permit the stems (*c*) to pass into the cylinder as it rises.

The cylinder is turned in the following way to form the pattern: On the end of one of the journals of the cylinder there is a spur wheel (*m*) the teeth of which are triangular, or miter formed; below this wheel I place a rack (*n*) with similar shaped teeth; the guide on which it is fixed being made to rise and fall by means of a spring (*o*), the rack is connected by a rod (*p*) with the lower end of a lever (*q*) that has its fulcrum at (*r*); the upper end of said lever carries a pin on it, that works into a zig-zag groove (*s*) on the face of a cylinder on the cam shaft, so as to cause the rack to move back every time the wheel (*m*) descends, so as to mesh into it, and then return to its place when the wheel rises from it; by which arrangement the cylinder can be made to revolve any distance, so as to pass over one, two or more series of holes, by simply changing the fulcrum (*r*) of the lever (*q*) by which means I can make any number of patterns, (consistent with the size) upon the same cylinder; the cylinder is made to turn on its axis independent of it, and is connected with it by a catch (*t*) that enters notches on the cylinder, by which arrangement I can shift the cylinder readily to any pattern without otherwise disturbing the arrangement of the loom; pins can be inserted in any of the holes in the cylinder, if a great variety is wanted in the patterns; but I prefer not to employ them generally; they are well known, and I do not claim them.

Having thus fully described my improvements in working heddles, what I caim thereon as new, and for which I desire to secure Letters Patent, is—

1. Operating the heddle frames by the direct application of a cylinder to them, substantially in the manner and for the purpose set forth.

2. I claim the mode of changing the pattern by having several patterns on one cylinder and at each operation turning the cylinder so far as to pass over the intermediate patterns and bring the desired one under the heddle frames as above described; and I also claim the apparatus for turning the cylinder, substantially as herein specified, whereby the cylinder can be turned through a greater or less arc as may be required, substantially as herein described.

RICHD. GARSED.

Witnesses:
WM. GREENOUGH,
S. C. DONN.

[FIRST PRINTED 1913.]