R. B. Goodyear.

Shuttle Box.

No. 6,170. Patented Mar. 13, 1849.

Fig. 1.

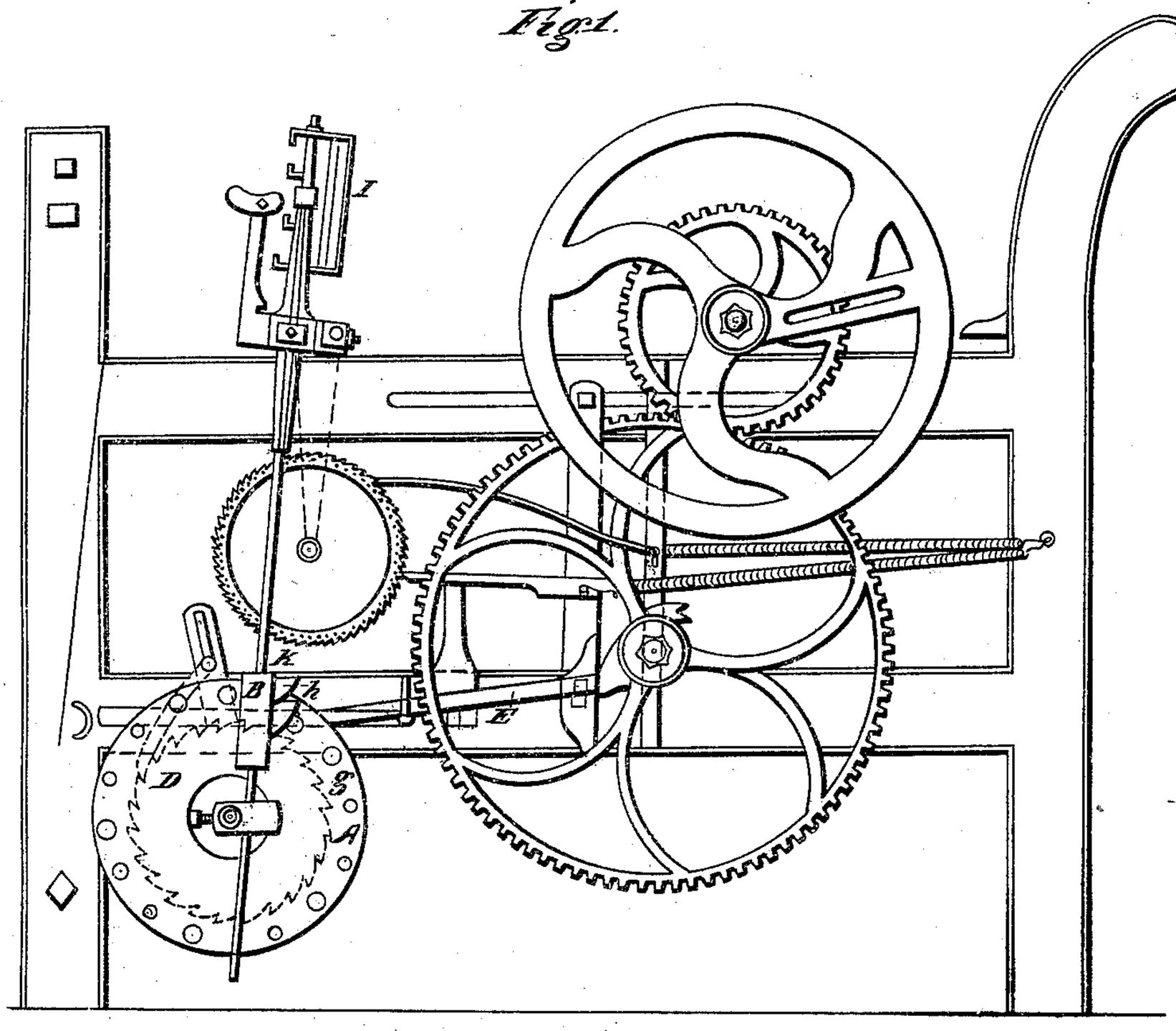
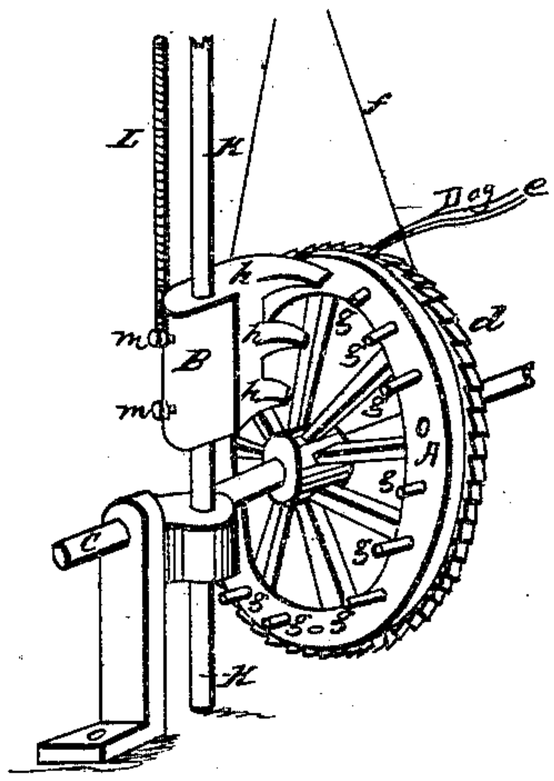


Fig. 2.



Inventor:

R. B. Goodyear.

UNITED STATES PATENT OFFICE.

ROBT. B. GOODYER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO BOWIE & CARR.

APPARATUS FOR OPERATING SHUTTLE-BOXES OF LOOMS.

Specification forming part of Letters Patent No. 6,170, dated March 13, 1849; Antedated September 13, 1848; Reissued June 14, 1853, No. 242.

To all whom it may concern:

Be it known that I, ROBERT BURNS GOODYER, of the city of Philadelphia and State of Pennsylvania, have invented and made new and useful Improvements to be Applied and attached to the Ordinary Power-Loom; and I do hereby declare that the following is an exact description of the construction, operation, and mode of applying and using said improvements, reference being had to the annexed drawings, forming part of this specification.

Figure 1 is a perspective view of an entire loom with the improvements attached showing the operation of the pins (letter *g*) upon the shoe (B) by which means the shuttle boxes ( ) are raised.

The nature of my invention and improvements consist in the application of a new and more simple method of raising the shuttle boxes by means of which almost an infinite number of patterns may be woven, the cost of the machine greatly reduced and the machine so improved as to enable a loom to weave at least one third more yards per day than any other loom in use. This object is accomplished by means of what I designate an index wheel (A) together with a shoe (B) with steps or inclined planes so arranged as to be acted upon by the pins (*g*) which are inserted in the index wheel (A) these pins (*g*) being of different lengths and so placed as to raise the shoe (B) which is affixed to the rod (K) connecting with the shuttle boxes (A). The pins (*g*) in the index wheel (*a*) may be removed and placed at pleasure in such positions as to produce any pattern desired.

As the construction of the ordinary power loom is well known I will not here describe its different parts but confine my description to the parts which are new and which I claim as my invention excepting reference to some parts which are old and well known for the purpose of explaining the mode of application and uses.

Upon the shaft (*c*) where a ratchet wheel (*d*) is first placed, I put what I designate an index wheel (A) this wheel is put upon the shaft (*c*) loosely and is kept from revolving except when pushed by the dog (*e*) which fits in the ratchet wheel (*d*) by a friction band (*f*) the ratchet wheel (*d*) and index wheel (A) are fastened together so that the index wheel is revolved by the moving of the ratchet wheel (*d*) within about one inch (more or less) of the outside rim or edge of the wheel (*a*) and on its side a number of holes are made generally corresponding in number with the number of teeth in the ratchet wheel. In some of these holes are placed as many pins (*g*) as may be required and of such lengths as to raise the shuttle boxes so as to throw in the color wanted to form the pattern desired. This index wheel (A) as before stated revolves upon the shaft (*c*) and the pins (*g*) coming in contact with the steps or inclined planes (*h*) in the shoe (B) raises the shoe (B) connecting rod (K) and shuttle boxes (I). The shortest pin (*g*) strikes upon the top step (*h*) of the shoe (B) and raises the shuttle boxes (I) to a position at which the shuttle in the second box from the top will be used and the next pin or medium length strikes the second or middle step and raises the boxes as much higher as to put that shuttle in use and the longest pin (*g*) strikes the lowest step and raises the boxes so as to put the shuttle in the lower box in play, any number of steps may be used corresponding with the number of shuttles to be used, and when it is intended to use the same shuttle several times in succession pins will be left out in the wheel so as to allow the shuttle boxes to remain in the position they were placed in by the pin just past. In a loom in which four shuttles are used but three steps in the shoe are required the top shuttle being in use when the shuttle boxes are at their lowest point. The pins (*g*) in the index wheel may be removed and placed in such positions as to produce any pattern desired. On the side of the index wheel (A) is placed a contrivance called a shoe (see letter B) having steps or inclined planes in it so arranged as to be raised when the pins (*g*) come in contact with them. This shoe is fixed permanently to the connecting rod (K) which passes through the center of said shoe (B) by two set screws (*m*) which enables me to place it in the position desired. The top step of the shoe (B) extends over toward the index wheel so as to be nearly in

contact with it and the second step is so far from the index wheel as to allow the shortest pin to pass by it the shoe being raised only by the pin of the length intended to reach it. The lowest step being the farthest off from the index wheel is acted upon only by the longest pin. The spiral spring (*l*) is attached at the top to the bottom of the case in which the shuttle boxes move and the lower end of said spring is attached to the shoe (B) the only object of which is to break the fall of the shoe (B) connecting rod (K) and shuttle boxes.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the index wheel (A) having movable pins of different lengths, with the shoe B, having projections adapted to the pins for the purpose of raising and falling the shuttle boxes the whole being constructed substantially as above described.

ROBERT BURNS GOODYER.

Witnesses present:
WILLIAM MCCAULEY,
LUKE (his X mark) GOODYER.

[FIRST PRINTED 1913.]