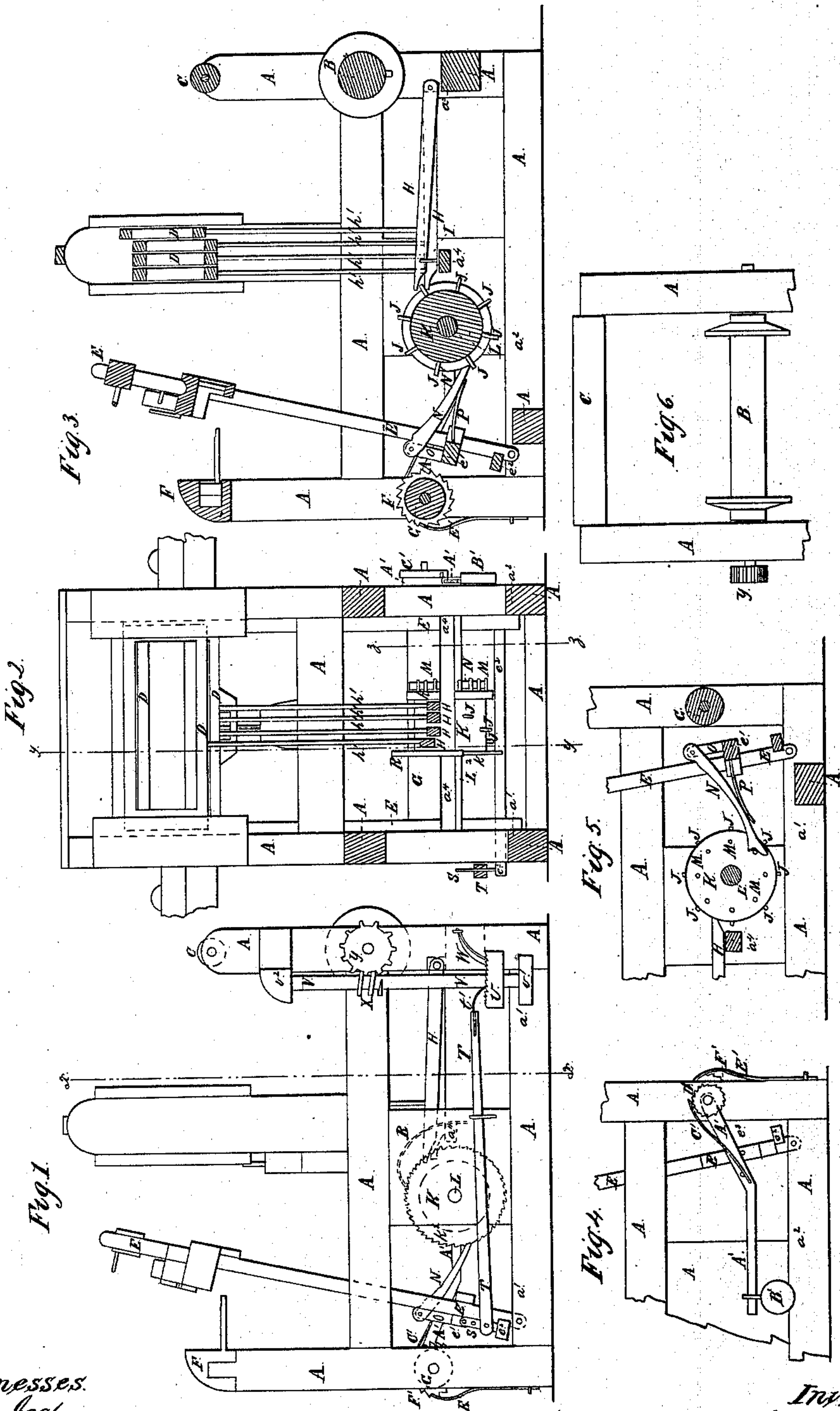


C. Wandel.
Hand Loom.

N^o 68,918.

Patented Sept. 17, 1867.



Witnesses.
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CHARLES WANDEL, OF MILTON, IOWA.

Letters Patent No. 68,918, dated September 17, 1867; antedated September 4, 1867.

IMPROVEMENT IN HAND-LOOMS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES WANDEL, of Milton, in the county of Van Buren, and State of Iowa, have invented a new and useful Improvement in Hand-Loom; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side view of my improved loom.

Figure 2 is a vertical cross-section of the same, taken through the line $x x$, fig. 1.

Figure 3 is a vertical longitudinal section of the same, taken through the line $y y$, fig. 2.

Figure 4 is a detail view of a portion of one side of the loom.

Figure 5 is a detail sectional view of the same, taken through the line $z z$, fig. 2.

Figure 6 is a detail view of a portion of the rear end of the loom.

Similar letters of reference indicate like parts.

My invention consists in the combination of the shaft, drum, projecting arms, ratchet-wheel, pawl, arm, and spring with each other, and with the treadles, lathe, and frame of the loom, as hereinafter more fully described.

A is the frame of the loom. The warp of the web is wound upon the yarn-roll B; thence it passes over the roller C, through the heddles D, through the reed of the lathe E, where the weft is applied, the cloth passing over the breast-beam F, and being wound upon the cloth-roll G. The lower end of the lathe E is pivoted to the sills $a^1 a^2$ of the frame A, and by its movement operates all the other parts of the loom. H are the treadles, the rear ends of which are pivoted to the rear cross-piece a^3 of the frame A, and their forward ends rest upon the cross-piece a^4 , being separated from each other and kept in their proper relative positions by the guide-pin I projecting upward from the said cross-piece a^4 , as shown in fig. 3. In the upper sides of the forward ends of the treadles H are formed sockets, in which rest the lower ends of the rods h' which support the heddles D, so that by raising either of the said treadles H the heddle with which it is connected will also be raised. The treadles H are raised by the arms or pins J, projecting from the face of the drum K, coming in contact with the forward ends of the treadles as the said drum is revolved, the arms J being so arranged as to raise the treadles and operate the heddles in the required order. The drum K is securely attached to the shaft L, which revolves in bearings in the frame A of the loom. To the outer side of the flange k^1 of the drum are attached arms or pins M, projecting horizontally, as shown in figs. 2 and 5. N is an arm or lever, one end of which is pivoted to an arm, O, projecting from the cross-piece e^1 of the lathe E, as shown in figs. 1, 3, and 5. The other end of the lever N is notched, as shown in fig. 5, so as to take hold of the pins or arms M, and it is held up to its place by the spring P, one end of which is attached to the said cross-piece e^1 , and the other end presses against the under side of the lever N. As the lathe E is moved back or towards the heddles D the lever N pushes against the pin or arm M with which it may be in contact, and revolves the drum K, operating the treadles H. As the lathe E is moved forward or towards the breast-beam F, the spring P raises the lever into position to take hold of the next arm M, and again revolve the drum at its next backward movement. k^2 is a ratchet-wheel attached to the end of the drum K. R is a pawl attached to the cross-piece a^1 of the frame A, which takes hold of the teeth of the ratchet-wheel k^2 , and prevents the drum K from moving back from the point to which it has been moved by the lever N. S is an arm, projecting upward from the end of the cross-piece e^2 of the lathe E. To this arm is pivoted the end of the lever T. Several holes are made through the arm S, so that the lever T may be adjusted to have a greater or less throw, according to the coarseness or fineness of the cloth being woven. The other end of the lever T terminates in a pawl, t' , which takes hold of the teeth of the ratchet-wheel U attached to the vertical shaft V, and moves it forward with each movement of the lathe E. W is a pawl attached to the frame A, which takes hold of the teeth of the ratchet-wheel U, and holds it securely in the position to which it has been moved by the pawl t' . The vertical shaft V revolves in bearings $v^1 v^2$ attached to the side of the frame A, as shown in fig. 1, and has an endless screw, X, formed upon it, which operates upon the teeth of the cog-wheel Y attached to the projecting end of the axle of the yarn-roll B, so that, by the revolution of the shaft V, the warp is unwound from the roll B, and fed forward to the heddles D. A' is a lever, pivoted to the projecting end of the axle of the cloth-roll G, from the free end of which is suspended

a weight, B', which holds the said lever down upon a pin, e^3 , projecting from the side of the lathe E, upon which pin the said lever rides as the said lathe is operated. C' is a spring-catch, attached to the side of the lever A', the catch of which takes hold of the teeth of the ratchet-wheel D attached to the end of the axle of the roll G. By this construction, as the lathe E is moved back toward the heddles D, the free end of the lever A' is raised, causing the catch C' to slip forward over one or more of the teeth of the ratchet-wheel D', and when the lathe E is moved forward towards the breast-beam F the free end of the said lever is lowered, revolving the cloth-roll G, and winding up the cloth. E' is a pawl attached to the frame A, which takes hold of the teeth of the ratchet-wheel F' attached to the end of the cloth-roll G, and holds the said roll securely in the place to which it has been revolved by the lever A' and catch C', as before described. The throw of the catch C' may be regulated as desired by varying the position of the pin e^3 . It will thus be observed that all the parts of the loom are operated by the simple movement of the lathe E.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

The construction and arrangement of the shaft L, drum K, arms or pins J M, ratchet-wheel k^2 , pawl R, arm or lever N, spring P, treadles H, and lathe E, as herein set forth for the purpose specified.

CHARLES WANDEL.

Witnesses:

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