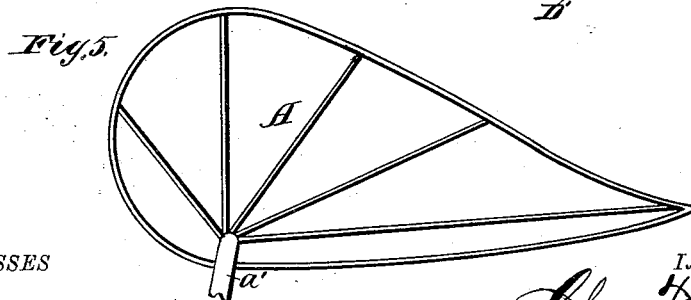
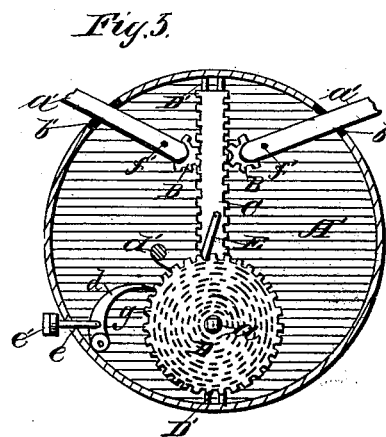
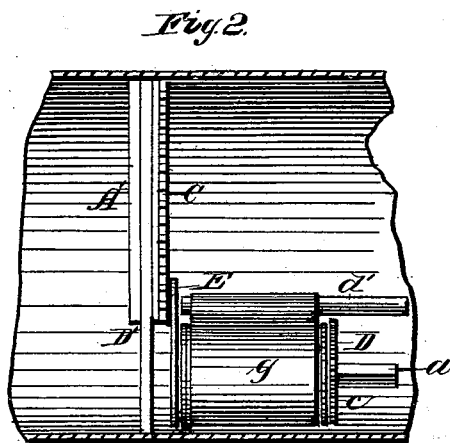
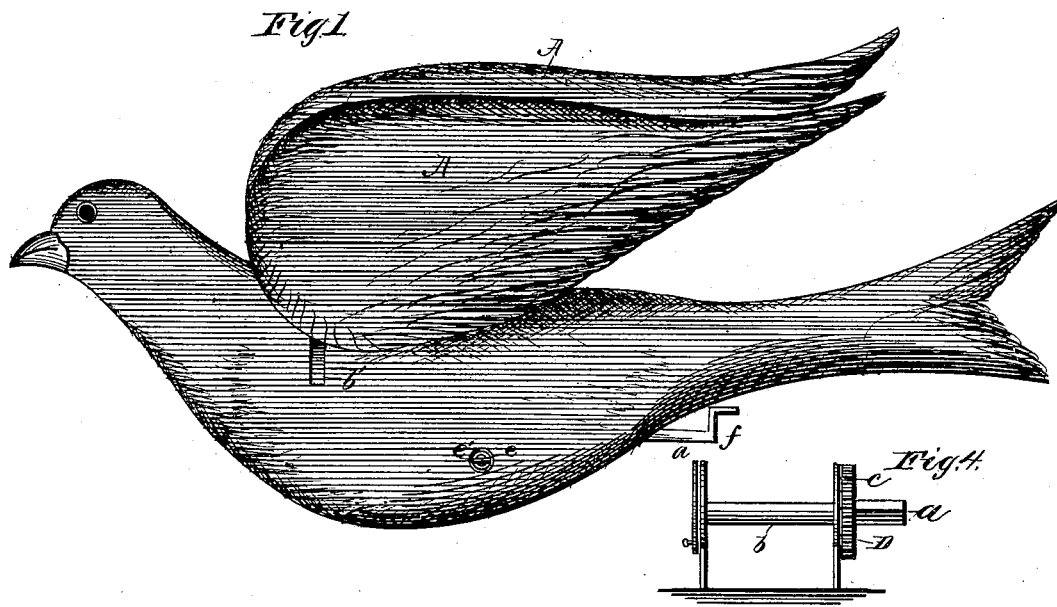


(No Model.)

C. F. MYERS.
TOY FLYING MACHINE.

No. 262,686.

Patented Aug. 15, 1882.



WITNESSES

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CHARLES F. MYERS, OF WASHINGTON, DISTRICT OF COLUMBIA.

TOY FLYING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 262,686, dated August 15, 1882.

Application filed March 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. MYERS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Toy Flying-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in flying-machines. It is designed for conveying light articles—such as dispatches for military purposes—and as a toy for children, and to be utilized for many other obvious purposes.

It consists in the wings A A, having cog-wheels B B rigidly attached to the arms thereof and operated by the rack C, in connection with the cog-wheel D, arm E, arbor *a*, barrel *b*, ratchet *c*, pawl *d*, trigger *e*, crank *f*, and spring *g*, the machinery being secured in a suitable frame and located in the interior of a bird, boat, or water-tight car, and in constructing the operating machinery of light metal, wood, or papier-maché, or other hardened plastic material, as a means of combining lightness with strength.

In the drawings, Figure 1 is a view of my flying bird. Fig. 2 is a longitudinal section thereof, showing its interior construction. Fig. 3 is a transverse sectional view thereof. Fig. 4 is a detached view of the barrel with spring removed. Fig. 5 is a detached view of the wing.

A' represents the frame of the operating machinery, which may be made of any hardened plastic material, or of any suitable light wood, and when the device is enlarged thin sheet-steel may be employed for this purpose. It is located in the center of the outer shell of the bird or other device—as boat or car—in which it is located, and for convenience of thus stationing it the outer shell is constructed in sections, which are fastened together in any well-known method.

The arms *a' a'* of the wings A project through the vertical slots *b' b'*, provided in the outer

shell, and the arbor *a* also projects outside the outer shell, as shown.

The barrel *b* has coiled thereon and secured to bar *d'* the spiral spring *g* and the ratchet *c* rigidly attached thereto. This ratchet is secured in position, when the spring is wound up, by the pawl *d*. Pivoted to the pawl *d* is the trigger *e*, provided with the cap or button *e'*. The pawl, which meshes in the teeth of the ratchet, prevents the release or unwinding of the spring. Hence to send the bird flying when the spring is wound up and secured it is only necessary to pull out the trigger *e*.

In lieu of the crank *f*, an ordinary clock-key may be employed for winding up the spring.

The rotary arm E is pivoted to the face of the barrel at one end and to the rack C at the other. This rack is provided with two sets of cogs, which mesh into the small cog-wheels B B. It is also provided with recesses for reception of the guides and supports D', and the latter are rigidly secured to the frame A', which supports the machinery in position.

The arms *a' a'* of the wings are secured and pivoted to the frame by the pins *f' f'*, and having rigidly attached thereto the small cog-wheels B B, they are partially rotated by the vertical oscillation of the rack C.

The wings A A may be made of paper, parchment, light skin, or other material stretched upon a wire, bamboo, rattan, or twine frame, and pasted over the same or covered with any other light fabric, which may be pasted or sewed thereto. When designed for permanent use the wings may embody radiating supports and ties, made of light steel wire, for securing the parts together in sections; but in constructing small machines the weight of the parts composing the frame of the wings must necessarily be reduced by use of bamboo, palm-leaf, rattan, twine, or other light material.

The spring, until within a few coils of the end where its action is last exerted in propelling the device, is of uniform size and power; but toward that end its size and power are intentionally lessened, in order that the device may be enabled, through the lessened action of the wings consequent upon the lessened power of the springs, to make such gradual descent as to prevent accident or injury to the

device in landing; and when employed as a toy a string may be attached thereto at one end, and the other end of the string held in the hand of the operator.

5 What I claim, and desire to secure by Letters Patent, is—

1. A flying-machine operated by a spring, substantially as shown, and for the purpose described.

10 2. A flying-machine having pivoted wings and arms provided with cogs rigidly secured thereto in order to effect a flying or flapping movement of the wings by partial rotation of the cogs, substantially as shown, and for the purpose described.

15 3. A flying-machine operated by a spring or springs in connection with a cog-wheel, rack, ratchets, and a pawl, substantially as shown, and for the purpose described.

4. The combination of the pawl *d*, arm *E*, 20 and ratchet *c*, substantially as shown, and for the purpose described.

5. The barrel *b*, having ratchet *c*, arbor *a*, and crank *f*, in combination with rotary arm *E* and rack *C*, substantially as shown, and for 25 the purpose described.

6. The barrel *b*, arbor *a*, crank *f*, rotary arm *E*, and rack *C*, in combination, substantially as shown, and for the purpose described.

In testimony whereof I affix my signature in 30 presence of two witnesses.

CHAS. F. MYERS.

Witnesses:

GEO. R. HERRICK,

WILL R. OMOHUNDRO.