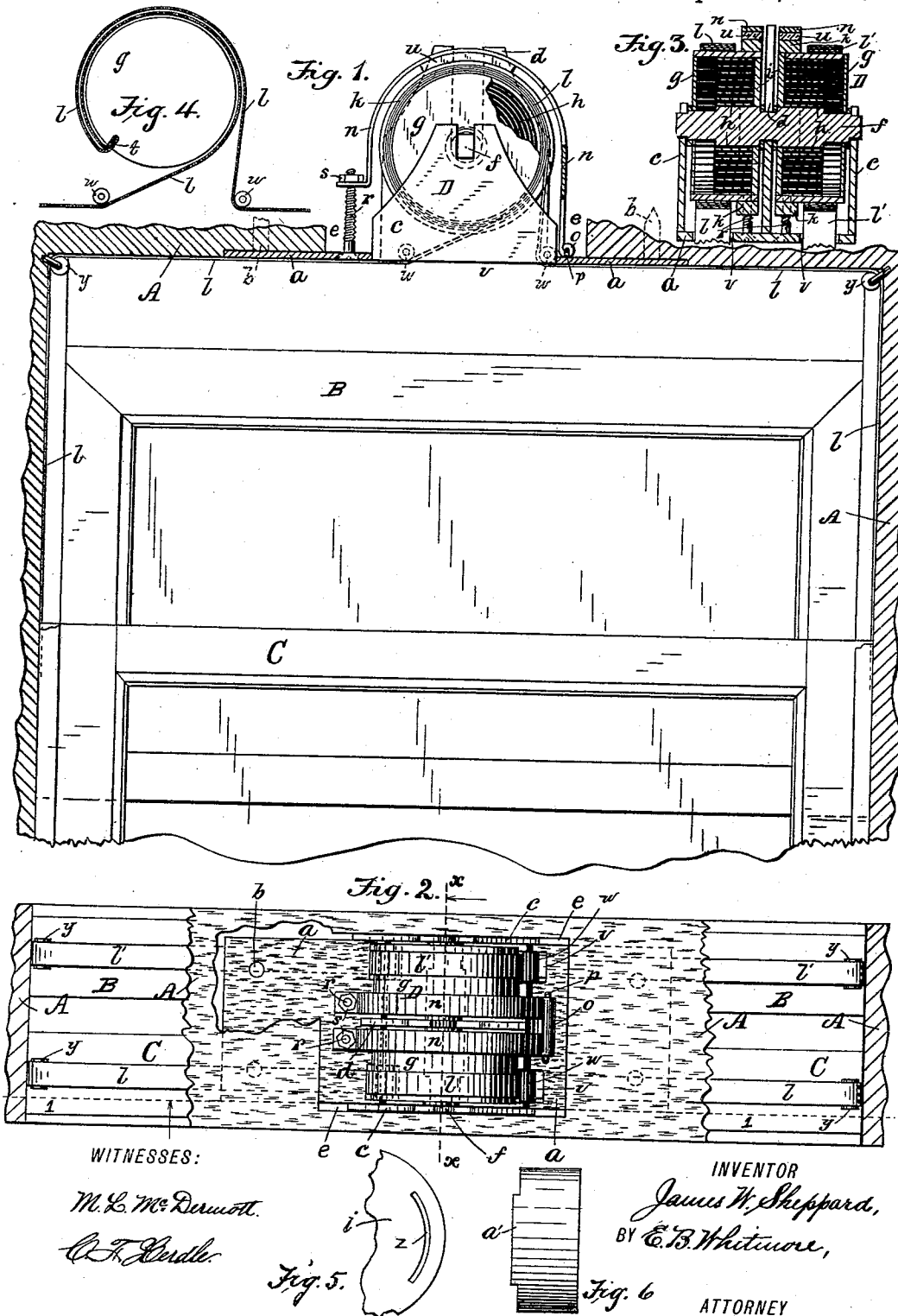


(No Model.)

J. W. SHEPPARD.
SASH BALANCE.

No. 473,129.

Patented Apr. 19, 1892.



UNITED STATES PATENT OFFICE.

JAMES W. SHEPPARD, OF ROCHESTER, NEW YORK.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 473,129, dated April 19, 1892.

Application filed February 29, 1892. Serial No. 423,278. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. SHEPPARD, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Sash-Balances, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention relates to that class of sash-balances in which the spring-drums for the suspending tapes or bands are placed in the upper part of the casing of the window over the middle of the sashes.

The object of my invention is mainly to reduce the number of parts usually employed for balancing or suspending the sashes and the expense in manufacturing the device.

The invention consists in the improvement of the parts and the arrangement thereof hereinafter described, the novelties and combination of the parts being particularly pointed out.

Referring to the drawings, Figure 1 is a side elevation of a window, showing my improved sash-balance in place, the casing being vertically sectioned as on the dotted line 1 1 in Fig. 2. Fig. 2 is a top view, parts of the casing being broken away. Fig. 3 is a vertical central section taken on the dotted line *x x* in Fig. 2, viewed as indicated by the arrow pointed thereon. Fig. 4 shows more clearly the method in which the tapes are wound upon the drums. Figs. 5 and 6 show the method of joining the parts of a spring-drum.

Referring to the parts shown, A is the casing of the window, which is ordinarily constructed, B and C being respectively the upper and lower sashes.

D is my improved device for balancing and suspending the two sashes placed centrally over the window in the upper part of the casing. This sash-balance consists of a horizontal plate *a*, held by screw *b* to the casing, so as to have its lower surface even with the lower surface of the contiguous part of the casing. This plate holds rigidly three standards *c c* and *d*, projecting vertically upward in an opening *e* in the casing. These standards are bifurcated at their upper ends to receive a central horizontal shaft *f*, as shown, said shaft being held motionless.

g g are two spring-drums, substantially of

common construction, held to turn independently upon the shaft *f*, each drum being connected with and adapted to balance a sash.

h h are coiled springs of common construction in the respective drums, each spring being attached at one end to the shaft *f* and at the other end to the interior of the drum to turn the latter in the usual manner. Each drum is provided with a circular end piece or cap *i*, formed with a heavy projecting flange *k*, which slips on over the outside of the drum, as shown.

l l are tapes or bands of fibrous material or thin metal wound upon the respective drums, each of which tapes leads to and supports a sash.

n is a brake for the drums, made to partly encircle the latter, it being preferably made of spring metal, as hard brass or steel. This brake is divided longitudinally into two parts or branches throughout most of its length, it being solid or in one piece for a distance upward from its lower end *o*. The end *o* is secured to a horizontal rod or loop *p*, rigid with the plate, the brake being preferably turned or bent around the rod, as shown. The free ends of the brake are held by adjusting-screws *r r*, passing upward through the plate *a*, each screw being provided with a nut *s* above the horizontally-turned end of the brake. The brake is of such width as to cover the two flanges *k k*, one branch or part of the brake being over each flange. The divided parts or branches of the brake are each preferably provided with a pad *u*, of fibrous or other soft material, to bear directly upon the flange to modify the actions of the drums upon the sashes.

The bands or tapes are wound directly upon the respective drums at the sides of the flanges, and one essential part of the invention consists in the manner of winding the tapes upon the drums. In placing a tape upon the drum I double it at the middle and secure the doubled end *t*, Fig. 4, to the periphery of the drum by some simple means, as by inserting it in an opening formed in the drum. Both ends or parts of the tape are then carried around the drum in the same direction, as clearly shown in Fig. 4, one end being finally carried to the right and secured to the right-hand side of the sash and the

other end being carried to the left and secured to the left-hand side of the sash. These ends of the tape after leaving the drums are carried downward through openings *v* in the plate *a* and turned oppositely in horizontal directions around anti-friction rollers *w w*, secured to the plate. Thence they pass around other anti-friction rollers *y y* in the corners of the casing and so vertically downward, being secured to the opposite edges of the upper and lower sashes, respectively, by any common and convenient means. The two parts of each band thus unreel from the same side of the drum when the sash is pulled downward, and they are reeled onto the drum at the same side by the action of the spring when the sash is raised.

As shown in Fig. 6, the loop or cylindrical part of each drum is formed with one or more projecting tongues *a'* at its edge, and the end piece or cap *i*, Fig. 5, is formed with circular slots *z* to receive said tongues. By this means the two parts when put together are locked, so that both must turn together. These two parts of the drum are fitted lightly together, so as to hold to place by friction.

What I claim as my invention is—

1. A sash-balance secured centrally over the sash, consisting of a rotary spring-drum and a band secured to the latter, said band being doubled at its middle point and secured thereat to the periphery of the drum, both ends of the band being carried around the drum in the same direction and thence to the respective opposite edges of the sash, in com-

ination with anti-friction rollers for the bands to turn on, substantially as shown and described.

2. A sash-balance secured over the sash, consisting of rotary spring-drums turning independently of each other and bands secured to the drums, said bands being doubled and secured to the peripheries of the respective drums, both ends of each band being carried around its drum in the same direction and thence to the sash, in combination with a brake divided longitudinally throughout the greater part of its length, one branch being over each drum and adapted to bear thereon, substantially as described.

3. A sash-balance secured over the sash, consisting of rotary spring-drums turning independently of each other and bands secured to the drums, said bands being doubled and secured to the peripheries of the respective drums, both ends of each band being carried around its drum in the same direction and thence to a sash, said drums being each provided with a peripheral projecting part or flange, in combination with a divided brake, a branch being over each of said flanges and provided with a pad adapted to bear thereon, substantially as shown and described.

In witness whereof I have hereunto set my hand, this 26th day of February, 1892, in the presence of two subscribing witnesses.

JAMES W. SHEPPARD.

Witnesses:

ENOS B. WHITMORE,
M. L. McDERMOTT.