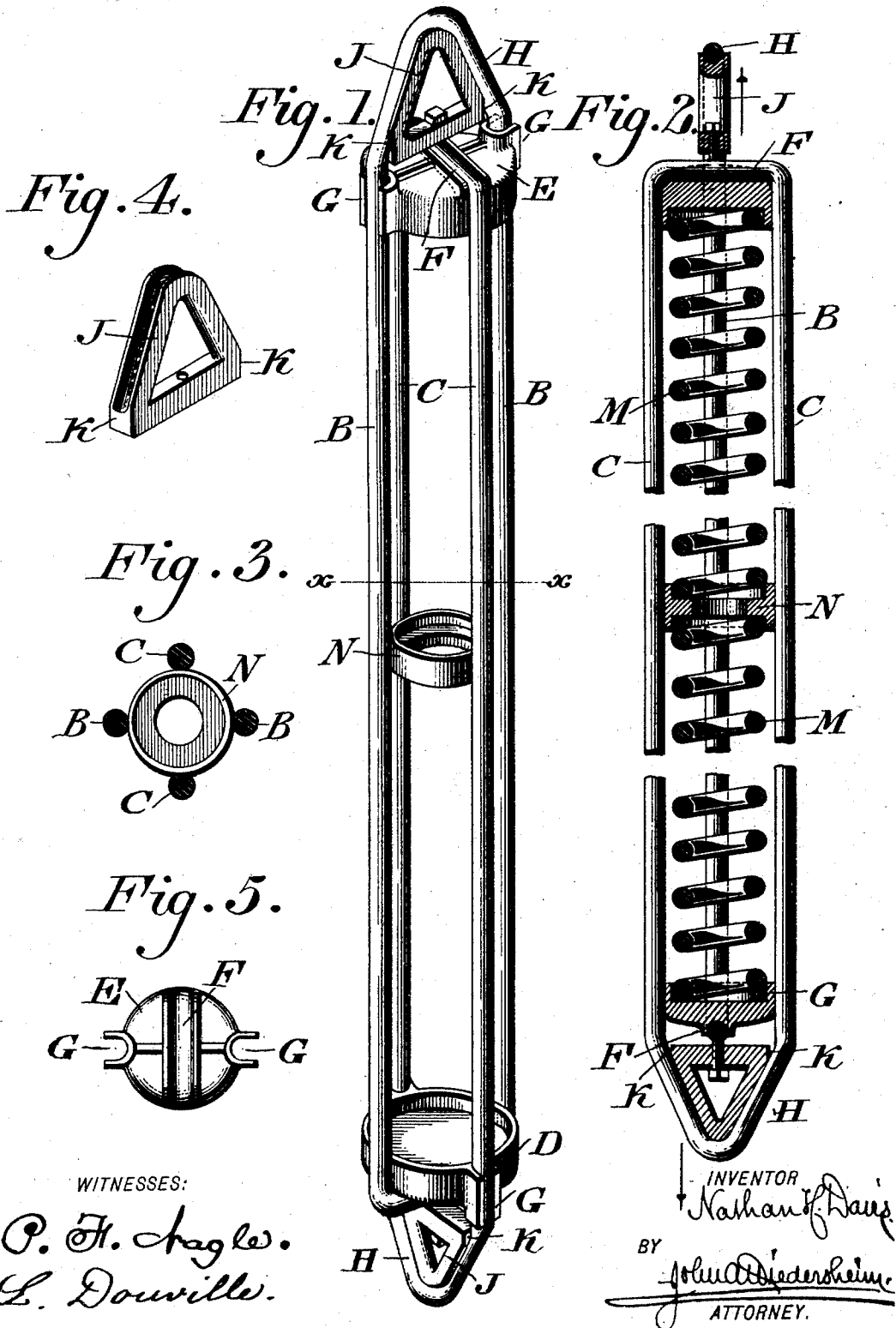


(No Model.)

N. H. DAVIS.
DRAFT SPRING.

No. 503,408.

Patented Aug. 15, 1893.



UNITED STATES PATENT OFFICE.

NATHAN H. DAVIS, OF PHILADELPHIA, PENNSYLVANIA.

DRAFT-SPRING.

SPECIFICATION forming part of Letters Patent No. 503,408, dated August 15, 1893.

Application filed April 15, 1893. Serial No. 470,439. (No model.)

To all whom it may concern:

Be it known that I, NATHAN H. DAVIS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Springs, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a spring formed of separate frames, caps opposite to each other, each at the end of one of the frames, a spring between said caps, whereby a light, strong, durable and effective spring is constructed, as will be hereinafter more fully described.

It also consists of means for strengthening the eyes on the ends of the springs, as will be hereinafter explained.

Figure 1 represents a perspective view of a portion of a spring embodying my invention. Fig. 2 represents a longitudinal section of the completed device. Fig. 3 represents a transverse section on line *x, x*, Fig. 1. Fig. 4 represents a perspective view of the brace for the eye of the spring. Fig. 5 represents a top or plan view of one of the caps.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: *a* designates a frame formed of the crossing loops B and C, which are arranged parallel to each other. One end of the loop B rests upon the head or cap D, and one end of the loop C rests upon the head or cap E, the outer faces of said caps having grooves F to seat said ends therein, and prevent shifting thereof, it being noticed that said caps are opposite to each other, and that the sides of the same have ears G in which are freely located the adjacent portions of the loops B and C, so that while the end of the loop bears against the relative cap, the adjacent portions of the other loop rest freely in the ears G, and are guided therein. Furthermore, one end of each loop extends beyond its respective cap, forming an eye H, by which the frame may be connected with chains, hooks, bars or other means with which the device is to render service.

In the eyes H are braces J which engage the inner walls thereof, and are grooved on their outer faces to have the contiguous por-

tions of the eyes seated therein. The sides of the braces are cut away as at K, thus reducing the width of the inner ends of the braces, whereby as there is a space between said braces and the bends or ends of the loops, the braces may have sufficient play in order to be removed from the eyes H. The braces are of open form so that they may be engaged by the chains, &c., hereinbefore referred to.

In order to retain the braces in position, I employ screws or bolts L, which are passed through the inner sides or bars of said braces, and tightened against the loops or caps, thus rendering said braces immovable. Within the loops is a spring M, whose ends rest upon and bear against the opposite caps D, E, it being seen that when the loops are subjected to draft, the caps are drawn toward each other, whereby the spring is compressed, and when the loops are relieved of draft, the spring is permitted to contract, and the parts resume their normal positions. In the present case, the spring is formed in sections and a plate N placed within the loops between the ends thereof as bearings for the inner ends of the sections of the springs, but to this feature I do not limit myself, as a single spring may be employed for my purposes. By proper manipulation of the braces J, spring M, caps D, E, and plate N, said parts may be removed from the loops, and the latter placed compactly together for convenience of packing, storing, or transportation.

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

1. Crossing loops, caps within said loops having grooves for seating said loops, and ears for guiding the same, and a spring between said caps and within said loops, each of said loops having an eye on one end thereof, said parts being combined substantially as described.

2. A frame consisting of crossing loops, a cap forming a seat for one end of each of said loops, the other end of each of the loops constituting an eye outside of the cap, braces within said eyes and a spring within said frame, said parts being combined substantially as described.

3. Crossing loops forming a frame, caps
having grooves and ears forming seats and
guides respectively for said loops in combi-
nation with a spring bearing against said
5 caps, each of said loops having an eye at one
end with a brace therein provided with fas-
tening means, said brace being of open form

and cut away at its sides, substantially as de-
scribed.

NATHAN H. DAVIS.

Witnesses:

JOHN A. WIEDERSHEIM,
R. H. GRAESER.