

JAMES CHRISTY.

Improvement in Adjustable Supporting-Springs.

No. 127,569.

Patented June 4, 1872.

Fig. 1.

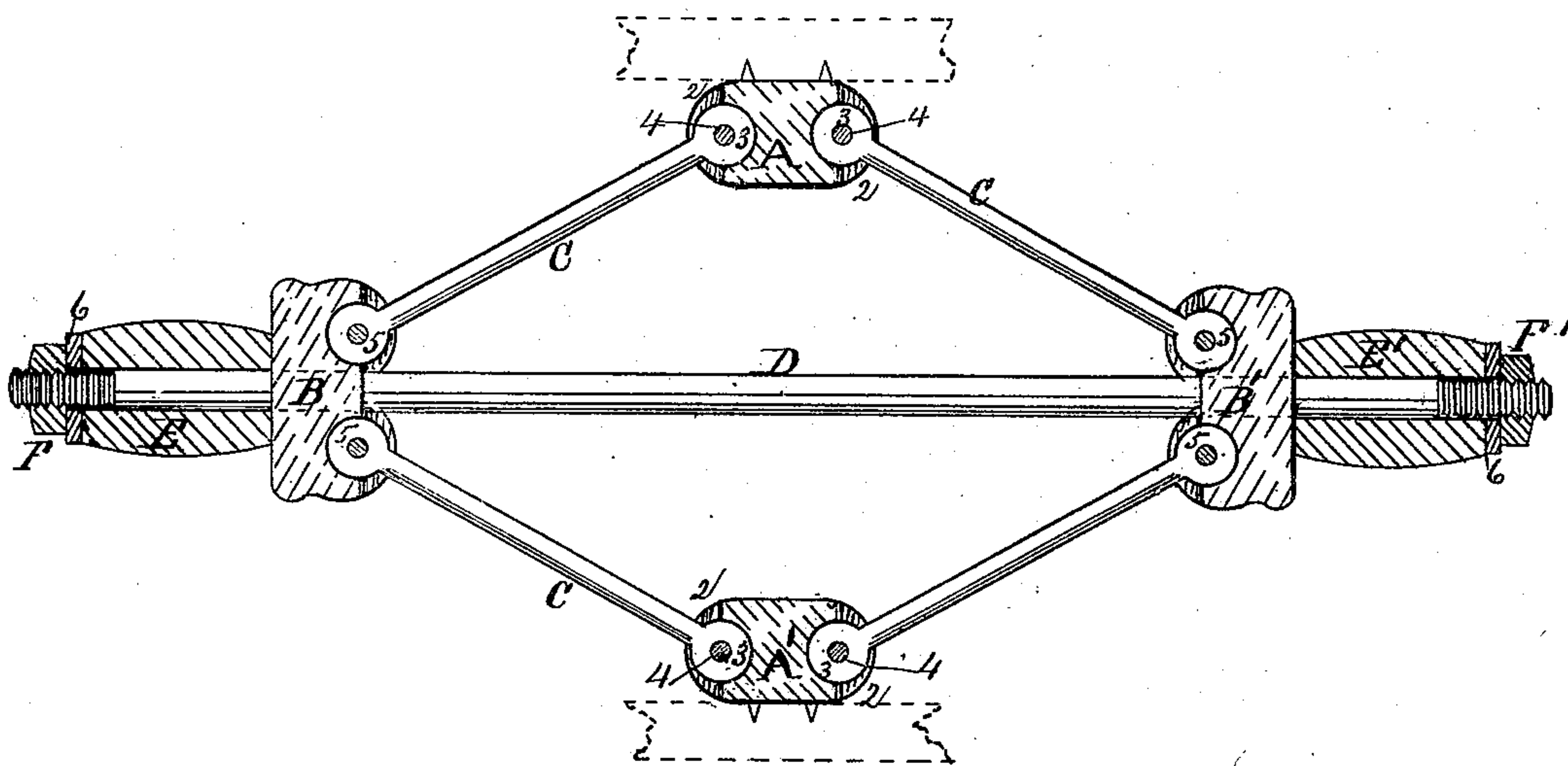
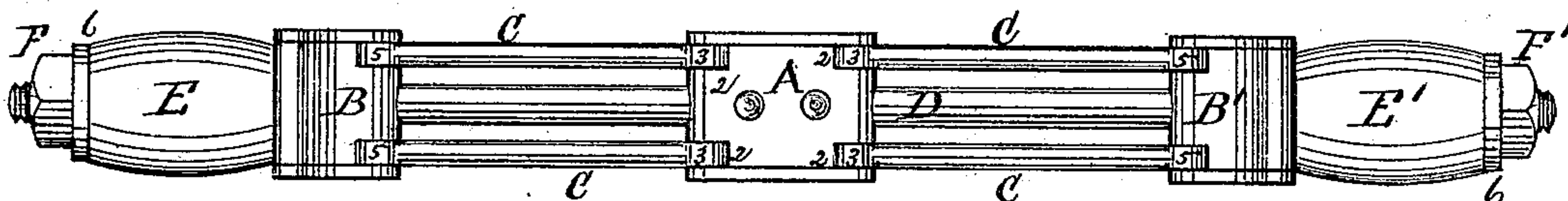


Fig. 2.



WITNESSES:

Prof. Morrison.
Wm. H. Morrison,

INVENTOR:

James Christy

UNITED STATES PATENT OFFICE.

JAMES CHRISTY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO JOHN M. GAUGHEN, OF SAME PLACE.

IMPROVEMENT IN ADJUSTABLE SUPPORTING-SPRINGS.

Specification forming part of Letters Patent No. 127,569, dated June 4, 1872.

Specification describing a certain Improved Adjustable Supporting-Spring, invented by JAMES CHRISTY, of the city of Philadelphia, in the State of Pennsylvania.

My invention relates to the combined arrangement of four bearing blocks of metal—two of which form respectively, the top and bottom bearings, and the other two the end bearings of the said spring—all articulated together by a series of intervening metallic bracing-bars, and held in their proper relative position by a metallic tie-bar, the ends of which latter pass, respectively, through the two end blocks, and longitudinally through two cylinders of vulcanized elastic gum or metallic spiral springs, which, respectively, abut against the outer sides of said end blocks, and are retained in position thereat by respective screw-nuts on the ends of said tie-bar, and serve also as means of adjusting the distance apart of the two end blocks, and consequently the distance apart of the top and bottom blocks; the object of my invention being to produce a readily adjustable and easy supporting-spring for cars, wagons, carriages, or any other weight or burden which requires to be supported by a reliable and easy spring.

Referring to the drawing, A A' are respectively the top and bottom blocks; B B', the end blocks; C C, the series of intervening bars; D, the tie-bar; E E', the end cylinders of elastic gum; and F F', the screw-nuts, whereby the relative positions of the blocks and bracing-bars to the tie-bars and elastic cylinders are adjusted and maintained. The blocks A A' are each made of solid metal, and have two separate parallel recesses or transverse mortises, 2 2, with curved, concave, smooth bottoms in each of their two opposite sides, and into these are fitted the respective flattened and rounded inner ends 3 3 of the series of bracing-bars C C, so that the rounded inner edges of the said flattened ends will correspond with and bear accurately against the said curved concave bottoms of the recesses or mortises 2 2, and be retained therein loosely by pivots 4 4; and so, also, that the said round-

ed edges 3 3 of the bars will have an easy sliding bearing against the curved bottoms 2 2, when the spring is in use as such. The two end blocks B B' and the respective outer ends 5 5 of the series of bracing-bars C C are articulated together, substantially in the same manner just described, as the top and bottom blocks A A', and inner ends 3 3 of the same series of bracing-bars C C. The end cylinders E E' are, in this instance, each made of vulcanized gum-elastic, and with a hole longitudinally through its center of sufficient size to allow the cylinder to be slipped on to its respective end of the tie-bar D, which latter is a straight rigid bar of tough iron, screw-cut to the length of three or four inches from its respective ends, and fitted with traversing screw-nuts F F'. The length of the bar D should be such as will bring the connected bearing-blocks and bracing-bars into the relative positions shown in Fig. 1, where the elastic cylinders E E', or their equivalents, are abutted against the end blocks B B', and retained by the screw-nuts F F', with thin washers 6 6 between.

In the operation of this spring, the burden acts, first, upon the top and bottom bearing-blocks A A', pressing them toward each other; secondly, through the series of bracing-bars C C, upon the two end bearing-blocks B B', pressing them further apart from each other; and, thirdly, upon the elastic cylinders or springs E E', compressing them against the stationary washers 6 6 and screw-nuts F F'; and it will, therefore, be seen that the elasticity of my said improved spring depends upon the elasticity of the cylinders E E', or their equivalent spiral springs; and that the length of the movements of the burden in either direction will be considerably greater than the synchronous movements of the end blocks B B', and consequently of the longitudinal contractions and expansions of the elastic cylinders E E' or their equivalents, and therefore the movements of the burden will be proportionately easier. It will also be seen that the elastic supporting-power of said spring can be

readily and accurately adjusted at any time to suit the burden which it is intended to support, at any different periods of time, by simply rotating either one or both of the traversing screw-nuts F F' on the ends of the tie-bar D accordingly.

I claim as my invention—

The adjustable supporting-spring, constructed and operating substantially as hereinbefore set forth and described.

JAMES CHRISTY.

Witnesses:

BENJ. MORISON,
WM. H. MORISON.