June 29, 1943. J. FALCON 2,322,839

AUTOMOBILE TOP CONSTRUCTION

Filed July 1, 1939 2 Sheets-Sheet 1

FIG. 1.

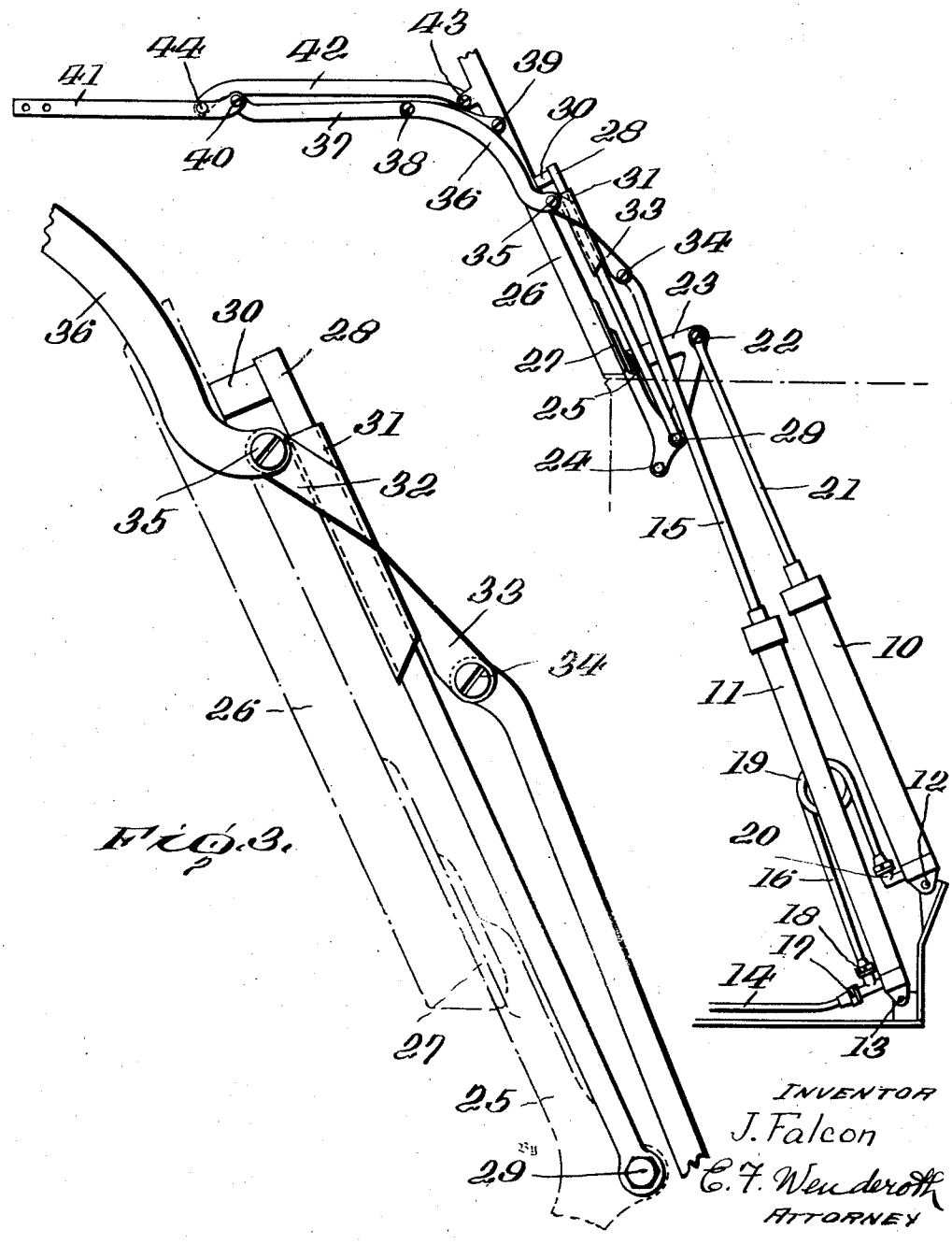


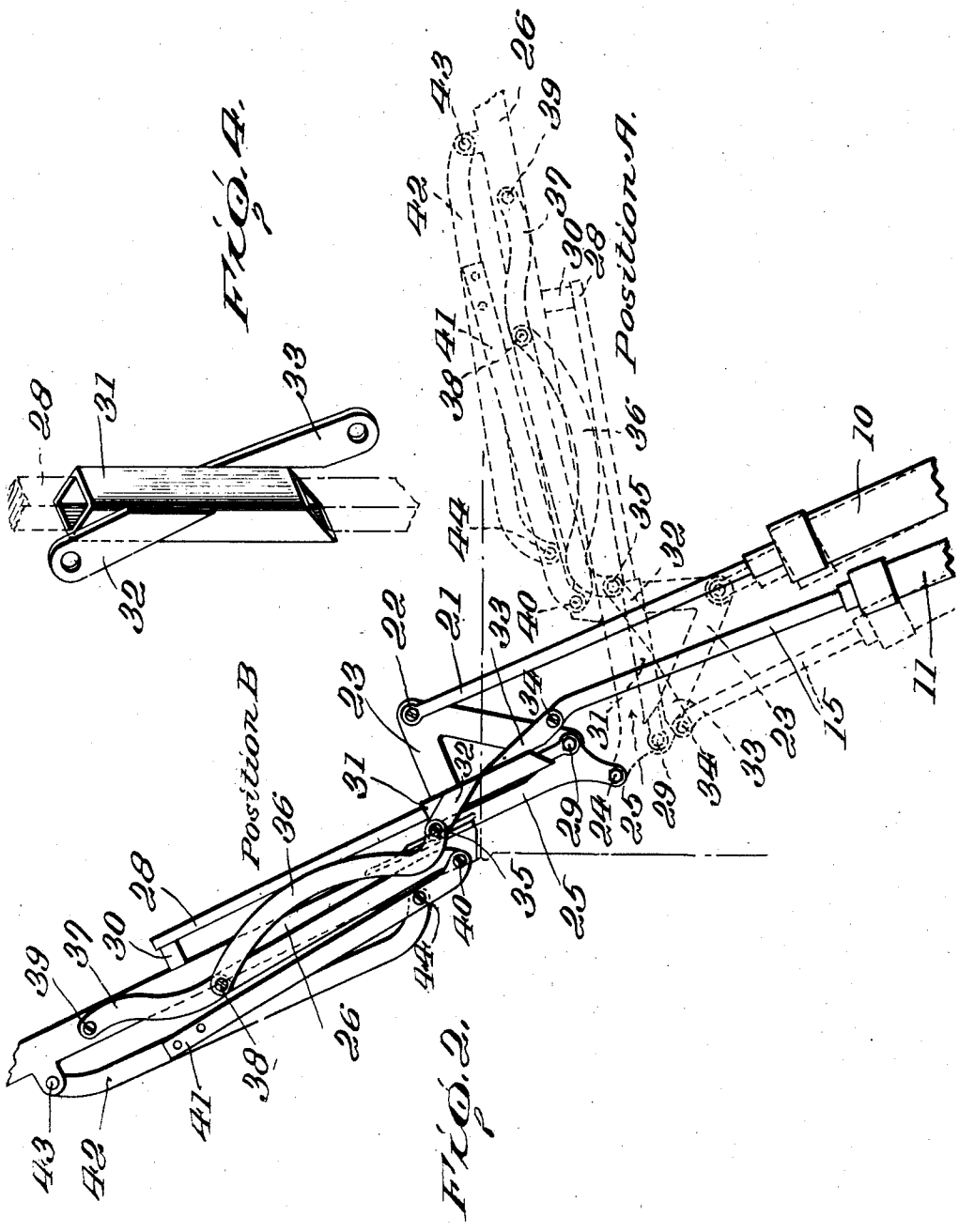
FIG. 3.

INVENTOR
J. Falcon
By C. F. Wenderoth
ATTORNEY

June 29, 1943. J. FALCON 2,322,839

AUTOMOBILE TOP CONSTRUCTION

Filed July 1, 1939 2 Sheets-Sheet 2



INVENTOR
J. Falcon
By C. F. Wenderoth
ATTORNEY

Patented June 29, 1943

2,322,839

UNITED STATES PATENT OFFICE

2,322,839

AUTOMOBILE TOP CONSTRUCTION

Jeronimo Falcon, Detroit, Mich.

Application July 1, 1939, Serial No. 282,508

2 Claims. (Cl. 296—117)

This invention relates to a new and improved automobile top construction for use on so-called convertible cars.

An object of the invention is to provide a simple, efficient and reliable construction for raising and lowering the automobile top.

A further object of the invention is to provide a construction in which the top is extended in two stages.

A still further object of the invention is to provide a construction whereby the means for extending the top over the car cannot come into operation until the collapsed top has been moved from horizontal position to substantially vertical position first.

With these and other objects in view which will become apparent from the detailed description below a preferred embodiment of the invention is shown in the drawings in which,

Figure 1 is a side elevational view showing the outrigger in fully extended position;

Figure 2 is a side elevational view showing the outrigger in collapsed condition in the intermediate position and illustrating the collapsed mechanism in dotted lines in horizontal position or the final collapsed position;

Figure 3 is a side elevational view of some of the elements on a larger scale; and

Figure 4 is a perspective view of a detail.

Referring to the drawings in which like reference characters indicate like parts in the various views the plunger cylinders for raising the top construction are shown at 10 and 11. The cylinder 10 is larger than cylinder 11 and more powerful and is utilized for swinging the collapsed top from position A in Figure 2 to position B. The drawings only show one pair of cylinders 10 and 11 but it is understood that another pair of cylinders similar thereto are used on the other side of the car. The cylinders 10 and 11 are pivotally mounted at 12 and 13 respectively to the vehicle floor or framework. A conduit 14 is connected by a nipple 17 to the lower portion of the cylinder 11 for operating the plunger 15 thereof and a conduit 16 is connected by a nipple 18 to the nipple 17 and passes over a pulley 19 and the other end of the conduit 16 is connected to a right angular nipple 20 secured to the lower end of the cylinder 10 for operating the plunger 21.

The plunger 21 is pivotally connected by the pivot pin 22 to one corner of a triangularly shaped member 23 which is pivotally connected at 24 to a standard or other fixed portion of the automobile body. The triangular member 23 has rigidly fixed thereto at another corner 25 the main bow 26 of the top construction. The corner 25 is preferably provided with extensions 27 which are secured by any desired means to the main bow 26. By means of the construction described the main bow 26 carrying all the other elements may swing about the pivot point 24 from the full line position shown in Figure 2 at position B to the substantially horizontal position indicated in dotted lines at position A in Figure 2.

The means for extending the outrigger will now be described. This means comprises a guide rod 28 preferably having a square cross section secured pivotally to the triangular member 23 at 29 at one end and having at the other end an abutment 30 which contacts the main bow 26. If desired the guide rod 28 may be fixedly secured at both of its ends to the triangular member 23 and the main bow 26 respectively. Sliding upon the guide rod 29 is a tubular member 31 more particularly shown in Figure 4 and the tubular member has secured to opposite sides thereof an extension 32 extending upwardly and an extension 33 extending downwardly. The downwardly extending extension 33 is pivotally secured at 34 to the upper end of the plunger 15 and the upwardly extending extension 32 is pivotally secured by pivot 35 to one end of a curved link 36.

The other end of the link 36 is pivotally connected at 38 to the link 37 intermediate the ends of the link 37. One end of the link 37 is pivoted at 39 to the main bow 26 while the other end is pivotally connected at 40 to the extreme forward link 41 which is attached to the header, not shown. The link 42 is pivotally connected at one end thereof at 43 to the main bow and the other end is pivotally connected at 44 to the forward link 41 at a point intermediate the ends thereof.

The operation of the construction is as follows. After the collapsed top construction has been swung from position A to position B then the plunger 15 comes into action and fully extends the top construction from the position of position B to that shown in Figure 1. In accomplishing this upon an upward movement of the plunger 15 the tubular element 31 slides along the guide rod 28 and in doing so the link 36 is urged upwardly and swings the links 37, 41 and 42 outwardly into the position shown in Figure 1.

As is obvious when the top is in the fully collapsed position or in position A the plunger 15 is prevented from acting to move the tubular member 31 along the guide rod 28 due to the

positioning thereof. The assembly is such that a very reliable and simple two-stage actuation of an automobile top is accomplished. Furthermore the provision of the tubular element **31** sliding upon the guide bar **28** is extremely certain and sure and no binding can possibly occur.

I claim:

1. In combination in a convertible top mechanism, a main bow pivotally attached to a vehicle body, a bracket secured to said bow, a pushrod having a fixed pivotal attachment to the outer end of said bracket to provide a lever arm with respect to said bow, a cylinder pivotally mounted at its lower end, said pushrod terminating in a piston traversable in said cylinder, a second bracket secured to said bow, a collar slidably mounted on said bracket with respect to said bow, a second pivotally mounted cylinder having a second piston rod traversable therein and pivotally secured at its outer end to said collar, said collar being pivotally secured in turn to folding outrigger members adapted to support the top covering, and a fluid pressure line connecting said cylinders in series, the first named piston rod being responsive to fluid pressures to elevate said bow, the second piston rod being locked against movement of said collar during bow elevating movements and automatically free to respond to continued pressure in said fluid pressure line upon completion of extending movement by said first piston whereby the leading edge of said top is prohibited from exceeding substantially the height of said bow during elevating movements, said second cylinder being rockable with the first cylinder during elevating and lowering movements of the top.

2. In combination in a convertible top mechanism, a main bow pivotally attached to a vehicle body, a cylinder pivotally mounted at its lower end below said bow and having a piston rod projecting therefrom, a triangular bracket secured at one corner to said bow adjacent its point of pivotal attachment to said body, said bracket abutting said bow along its length at another corner and pivotally secured to said piston rod at its other corner, a collar slidably mounted with respect to said bow, a second cylinder substantially parallel to the first cylinder also pivotally mounted at its lower end and having a piston rod pivotally attached to said collar, said piston rod being of different length, a single fluid pressure line connecting said cylinders in series, and means prohibiting actuation of the second piston rod until elevating movement of the first piston rod has been completed, said second piston rod upon being allowed to move traversing said collar to cause extending movements of the top.

JERONIMO FALCON.