C. F. ADLON.

ENLARGING ATTACHMENT FOR CAMERAS.

APPLICATION FILED SEPT. 5, 1907.

920,516.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

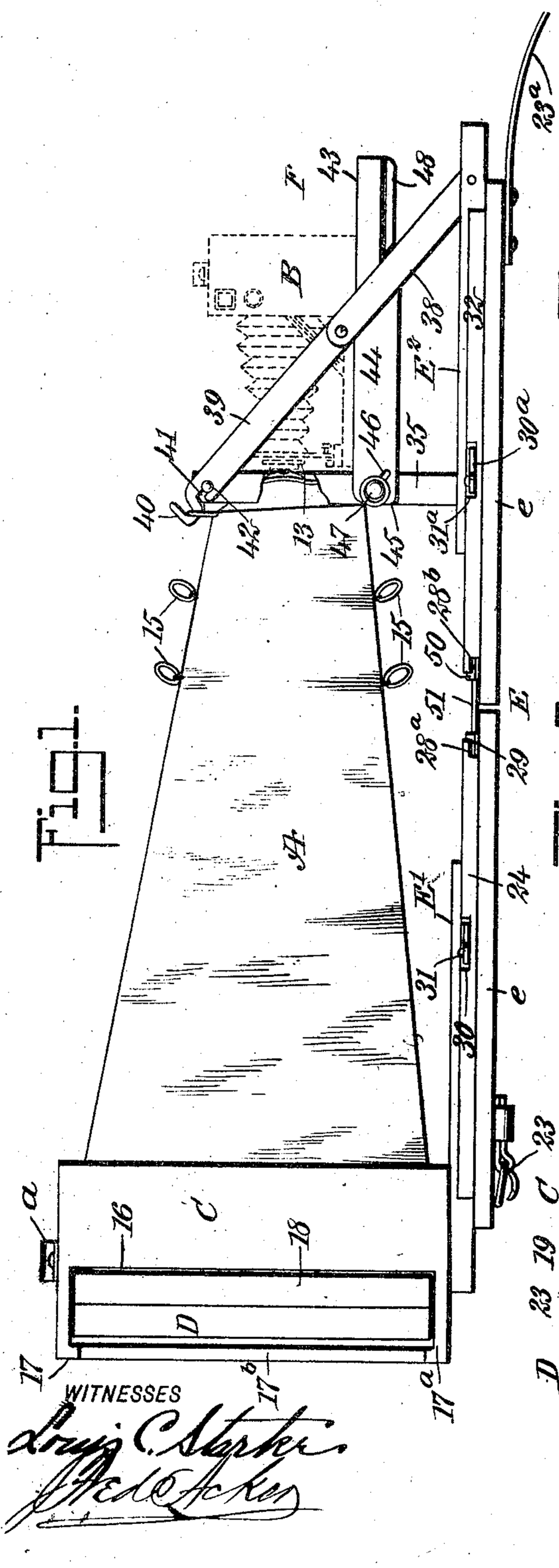
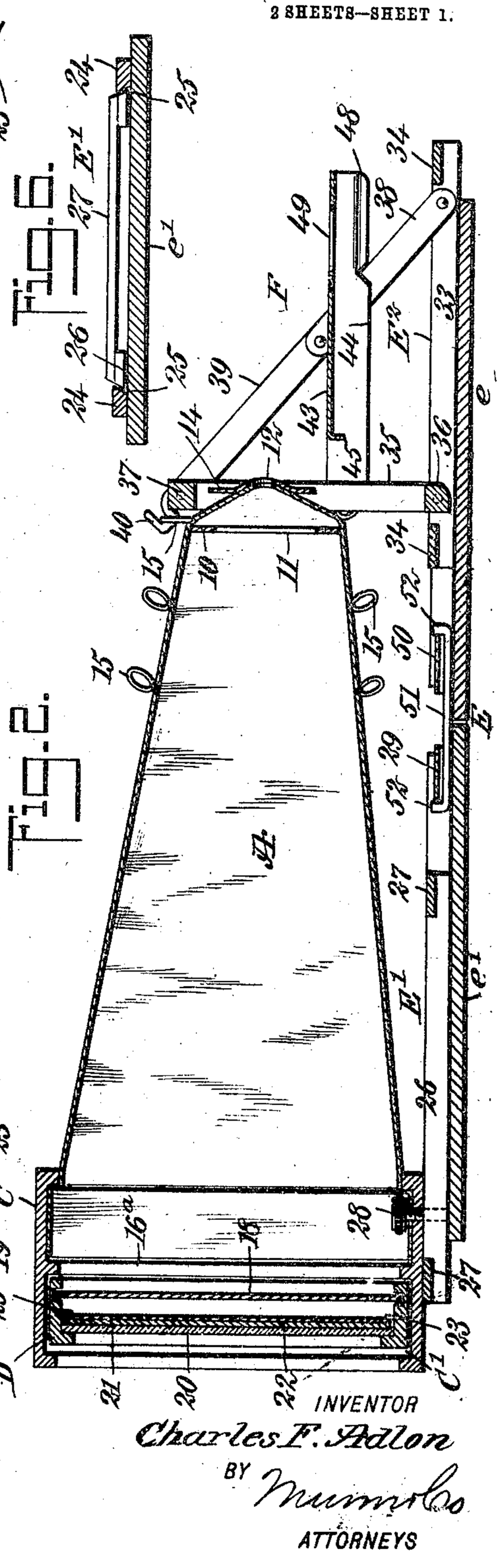


Fig. 2.



WITNESSES

Louis C. Stryker

Fred C. Ackers

INVENTOR

Charles F. Adlon

BY Munn & Co

ATTORNEYS

C. F. ADLON.

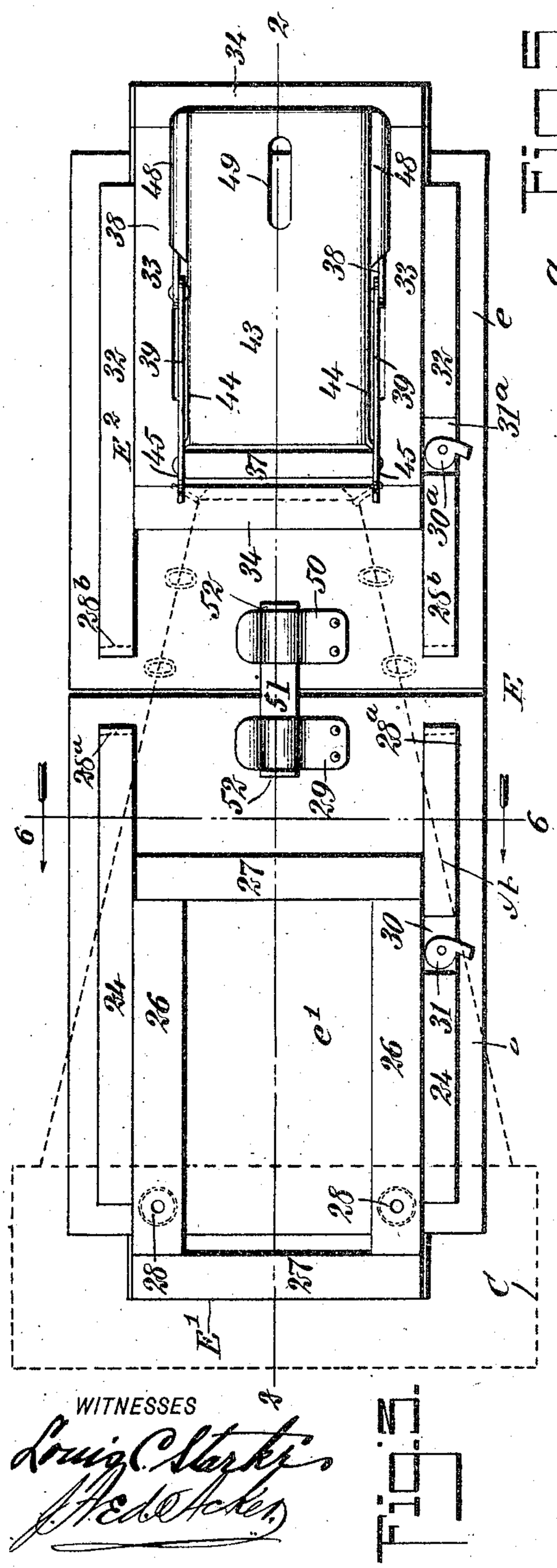
ENLARGING ATTACHMENT FOR CAMERAS.

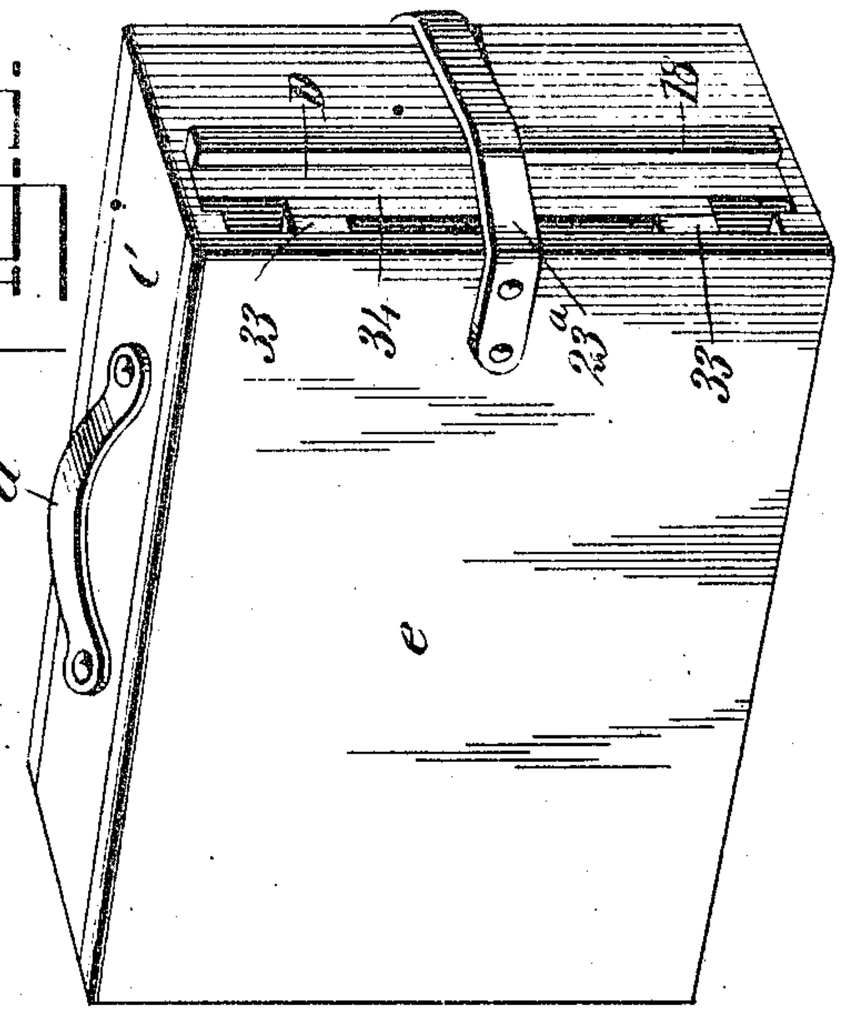
APPLICATION FILED SEPT. 5, 1907.

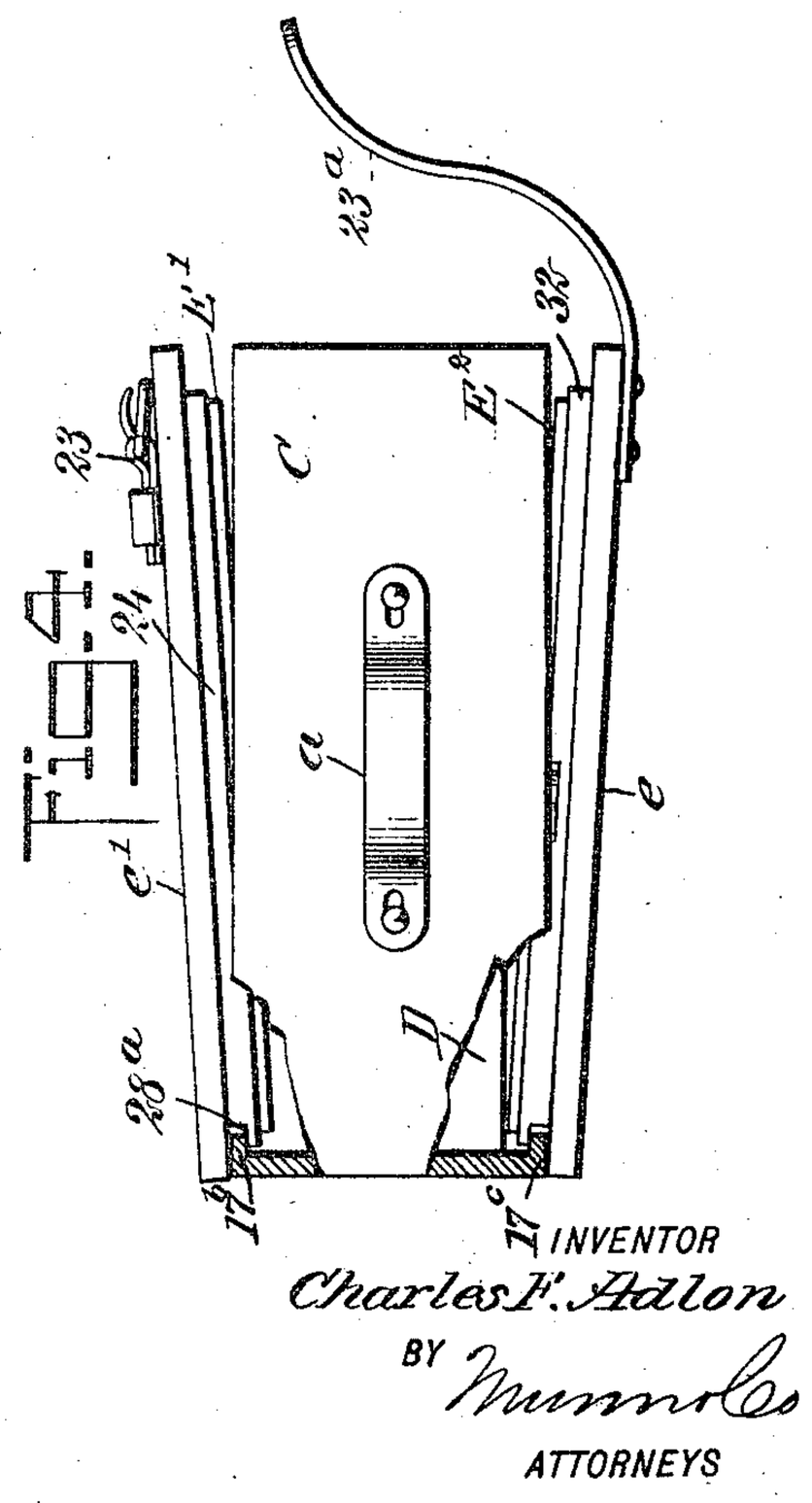
920,516.

Patented May 4, 1909.

2 SHEETS—SHEET 2.







WITNESSES

Louis C. Clarke.

J. Fred Acker.

INVENTOR

Charles F. Adlon

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES F. ADLON, OF LAS VEGAS, TERRITORY OF NEW MEXICO.

ENLARGING ATTACHMENT FOR CAMERAS.

No. 920,516. Specification of Letters Patent. Patented May 4, 1909.

Application filed September 5, 1907. Serial No. 391,462.

To all whom it may concern:

Be it known that I, CHARLES F. ADLON, a citizen of the United States, and a resident of Las Vegas, in the county of San Miguel and Territory of New Mexico, have invented a new and useful Improvement in Enlarging Attachments for Cameras, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide an attachment for cameras whereby large prints may be made upon sensitized paper from small negatives, and to so construct the attachment for the enlarging camera that it can be expeditiously and conveniently set up and applied to an ordinary camera, and as readily and quickly removed therefrom.

It is a further purpose of the invention to so construct the attachment that it will be simple, durable, economic and of light weight, and so that the attachment in its entirety can be packed in compact case form, its several members constituting a package, which package can be as readily carried from place to place as a hand camera.

The invention consists in the novel construction and combination of the several parts as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the attachment set up for use; Fig. 2 is a central longitudinal section taken practically on the line 2—2 of Fig. 3; Fig. 3 is a plan view of the divisional base of the attachment; Fig. 4 is a plan view of the attachment made up into a package, parts being broken away, and the members forming the sides being only partially in position; Fig. 5 is a perspective view of a complete package formed from the parts of the device; and Fig. 6 is a transverse section through the bed or base, the section being taken practically on the line 6—6 of Fig. 3.

The bellows A of the enlarging camera may be made of any suitable material and may be of any desired size. The bellows is given the usual longitudinal forward taper and is spread at its forward or reduced end by a suitable inserted board 10 having an opening 11 therein of proper size. The forward end of the bellows A is closed except for an opening 12 that is made therein, and this opening 12 is adapted to receive the lens 13 of the ordinary camera B, or the camera in which the negative is placed. This opening 12 in the forward end of the bellows A is reinforced by a gasket 14, the edge of which is unattached so as to facilitate the application of the bellows A to the aforesaid lens 13. Adjacent the forward end of the bellows A at the upper and lower side edges thereof, rings 15 are attached in any approved manner and these rings are adapted to be used in connection with a support for the forward end of the bellows, and are also serviceable in reducing the length of the bellows when necessary.

The rear or enlarged end of the bellows A is secured in any suitable or approved manner within a box frame C of suitable size, the said box frame being preferably rectangular in general contour, as is illustrated. The bellows is attached to the forward portion of the box frame, but the rear portion of the said box frame is open, and an opening 16 is made in one side or end of the box frame C, as is particularly shown in Fig. 1, and furthermore in the construction of the said box frame an inwardly extending flange 17 is produced at the upper rear edge of the frame, and a similar flange 17^a is produced at the lower edge, the two flanges 17 and 17^a meeting a mating flange 17^b that is at the closed end portion of the said box frame, as is also shown in Fig. 1. The box frame C is provided also with an interior rib 16^a corresponding to the flanges 17 and 17^a and 17^b, but the rib 16^a is located at about the central portion of the box frame, as is illustrated in Fig. 2, and is carried from a point flush with the wall of the opening 16 along the top of the box frame, thence along the closed end and again along the bottom, terminating also flush with the said rear wall of the opening 16, forming thereby within the said box frame C, a rear chamber C' that is adapted to receive a holder D for the sensitized paper upon which the reproduction is to be produced. This holder D is removable from the box frame and is provided at its forward portion with a slide 18 of the usual type, that travels in ways 19 interiorly produced in the said holder, as is shown in Fig. 2, and at the rear portion of the said holder is a pane of ground glass that has bearing against the flanges 17, 17^a, and 17^b. An opaque board 21 is adapted to normally lie against the forward face of the ground glass 20, and this opaque board in its turn is adapted as a support for the sensitized paper 22 employed,

the board 21 and paper 22 being held in proper position within the holder by spring clips 23 of any desired formation.

A base E is provided for the enlarging camera, said base being best illustrated in Fig. 3. This base is in two sections, a forward section e and a rear section e'. The rear section e' is provided at the rear end portion of its under face with a buckle 23, and the section e is provided at the forward end portion of its under face with a strap 23^a to be received by the buckle, the use of which will be hereinafter described. The rear section e' of the base E is adapted as a support for the rear portion of the enlarging camera. This rear section e' of the base is provided upon its upper face adjacent each of its sides with a longitudinal guide bar 24, said guide bars being in parallelism, and the guide bars stop short of the ends of the base. The inner faces of the guide bars 24 are downwardly and inwardly inclined, as is shown at 25 in Fig. 6, so as to provide slideways for the sliding frame E'. This sliding frame consists of parallel side members 26 and end members 27, the side members being beveled correspondingly to the bevel surfaces 25 of the guide bars 24, as is also shown in Fig. 6.

The box frame of the enlarging camera is removably secured to the rear end portion of the sliding frame E' by means of set screws 28, or their equivalents, that are passed through the bottom portion of the box frame at the front, and into the side members 26 of the sliding frame, as is illustrated in Figs. 2 and 3. Thus the enlarging camera has ample adjustment upon its base and the sliding frame E' is held in adjusted position by means of any approved type of latch. In the drawings the latch 31 is in the form of a cam adapted for engagement with an outer side edge of the inner side members of the said frame, the said latch being located within a recess 31 produced in the upper face of one of the guide bars 24. At the forward end of the base section e', a transverse recess 28^a is produced in the under faces of the guide bars 24, as is best shown in Fig. 1. This base section e' also carries a spring clip 29 that is secured about centrally to its upper face adjacent its forward edge, as is illustrated in Fig. 3.

Relatively to the forward base section e; it is provided with longitudinal guide bars 32 that correspond to the guide bars 24 of the section e', being of like construction, and these guide bars 32 form-slide-ways for another sliding frame E^2, which consists of side bars 33 and end bars 34, and this sliding frame E^2 is held in adjusted position by means of a cam latch 30^a, for example, mounted in the recessed portion 31^a of one of the guide bars 32. The sliding frame E^2 is adapted to carry a combined bellows and camera support F; this support is constructed as follows: Standards 35 are pivoted at their lower ends to the inner faces of the side members 33 of the frame E^2 at their rear ends, and the said standards are connected at their bottom portion by a cross bar 36, and at their free ends or upper portions, by a corresponding bar 37, as is best shown in Fig. 2. When the standards and their connecting members are in use they have an upright position, as is illustrated in Fig. 2, and may be termed a supporting frame since the parts named constitute a frame adapted as a support for the bellows A of the enlarging camera, but when the said supporting mechanism F is not in use, the supporting frame just referred to is folded down into the space between the side members of the sliding frame E^2.

Two pairs of links are employed as braces for the standards 35; these links are located at each side of the sliding frame and are designated, one as 38 and the other as 39. The links 38 are pivoted at one of their ends to the inner face of the side members 33 of the sliding frame E^2 adjacent the forward ends of said members, as is illustrated in Figs. 1 and 2, the links 39 are pivotally connected with the other ends of the links 38, and the links 39 terminate at their free ends in hooks 40, and these hooks are adapted to receive any one of adjacent rings 35, thus to support the forward end of the bellows A, and by having the rings 15 in series any one of the series of rings may be engaged by the hooks 40, and in this manner the bellows may be drawn out and supported its full length, or may be shortened up as occasion may require. Each link 39 adjacent its terminal 40, is provided with a slot 41 of a bayonet type, and this slot 41 when the said supporting mechanism F is in set up position receives pins 42 that extend from the outer side faces of the standards 35 at their upper ends.

The standards 35 also serve to support a table 43, best shown in Fig. 3, and the smaller camera B is adapted to rest upon said table. This table is adjustable for different sized cameras, and is usually made of thin sheet metal and provided with downwardly extending side flanges 44, and the said flanges are carried beyond the rear end of the bed of the table to form ears 45, and these ears are provided with slots 46, through which slots set screws 47 pass into the said standards 35. The table 43 extends rearward between the brace links 38 and 39, as is shown particularly in Fig. 1, and the flanges 44 at the forward end portion of the said table 43 are bent horizontally outward to form stops 48, which stops when the table is attached to the standards 35 and is in horizontal position, engage with the forward edges of the links 38, as is shown in Fig. 1, and in this manner the forward end of the

table is supported. This table it is evident is readily removable from the standards 35. The table, however, may be removable or not, as may be desired.

The guide bars 32 on the base section *e* are provided at their rear ends with transverse recesses 28^b in their under faces, corresponding to the recesses 28^a in the guide bars for the base section *e'*. The table 43 is provided with a slot 49 through which a suitable screw may be passed to secure the smaller camera B to said table. About centrally at the rear end of the forward base section *e* a spring clip 50 is secured, corresponding to the clip 29 on the rear base section *e'*, and when the device is set up the two base sections *e* and *e'* are coupled together by a coupling bar 51, that is placed beneath the spring clips 29 and 50, and the said coupling bar 51 is provided at each of its ends with an upwardly extending flange 52, but I desire it to be understood that I do not confine myself to any particular means for uniting the base sections, or any particular means for holding the sliding frames E' and E^2 in adjustment.

After the device has been set up and attached to the camera as has been stated, the operation is practically as follows: The ground glass is removed from the small camera B and the negative introduced in its place, the opaque board 21 is now removed from the ground glass 20 in the holder D of the enlarging camera and the bellows A thereof is adjusted until the subject of the negative appears in required size on the said ground glass 20, whereupon the bellows of the smaller camera B is adjusted until the said subject is in perfect focus on the said ground glass. The holder D is now removed from the box frame C and the opaque board 21 is again introduced in said holder accompanied by the sensitized paper adapted to receive the representation of the object. When the holder D has been properly loaded it is replaced in the box frame C and the slide 18 is removed from the holder D, the light passing through the negative and through the lens reproducing the subject in the desired increased size upon the sensitized paper in the said holder.

When the device is to be knocked down it is removed from engagement with the camera B. The box frame C is detached from the base section *e'* by removing the set screws 28, then the table 43 is disconnected from the standards 35, the bellows A is unhooked from the links 39, and the said links 39 are disengaged from the pins 42 on said standards. The links 39 are now folded inward upon or engaged by the links 38, and the links in their folded position are carried down into the space surrounded by the members of the sliding frame E^2, then the standards 35 and accompanying parts are folded down also in the said space between the folded links. Thus a flat section of the device is obtained. The bellows is then folded within the box frame and the table 43 is laid upon the folded bellows, then the section *e* is made to cover that face of the box frame, for example, from which the bellows extends and the recesses 28^b in the guide bars 32 of said section are made to receive flanges 17^c formed at the front marginal portion of the said box frame, as is shown in Fig. 4. This base section *e* thus constitutes a cover for the front of the box frame C, and the section *e'* is then made to serve as a cover for the rear side of the said box frame, the recesses 28^a of its guide bars receiving the flange 17^b at the rear portion of the box frame, as is also shown in Fig. 4. The two sections *e* and *e'* adapted as the sides for the package formed as stated, are pressed to place and will rest smoothly upon the back and front surfaces of the box frame, as is shown in Fig. 5, and then the strap 23^a is carried to an engagement with the buckle 23 holding the parts in their assembled position, and since the box frame is provided with a suitable handle *a*, at its top portion, the package formed as described can be readily carried from place to place.

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

1. In an enlarging camera, the combination with the support, of a bellows having one end fitted for adjustment to a lens, a frame at the rear of the bellows, a holder in the frame provided with a ground glass panel, and a removable cover, a folding frame at the front of the bellows, said frame comprising a base having standards pivoted thereto at one end, a table for supporting the camera adjustable on the standards, and folding braces connecting the free ends of the standards and the base, the ends of the braces connected with the standards being extended to form hooks for supporting the bars.

2. In an enlarging camera, the combination of an extensible base, a camera supported by the base, standards pivoted to the base, folding braces connected with the standards, the free ends of the base being extended beyond the standards to form hooks for supporting the camera bellows, and a table connected with the standards for supporting a smaller camera.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. ADLON.

Witnesses:
G. B. BUNKER,
HENRY P. BROWN.