

(No Model.)

W. TRUEMAN.
BACKGROUND SUPPORT.

No. 532,844.

Patented Jan. 22, 1895.

Fig. 1.

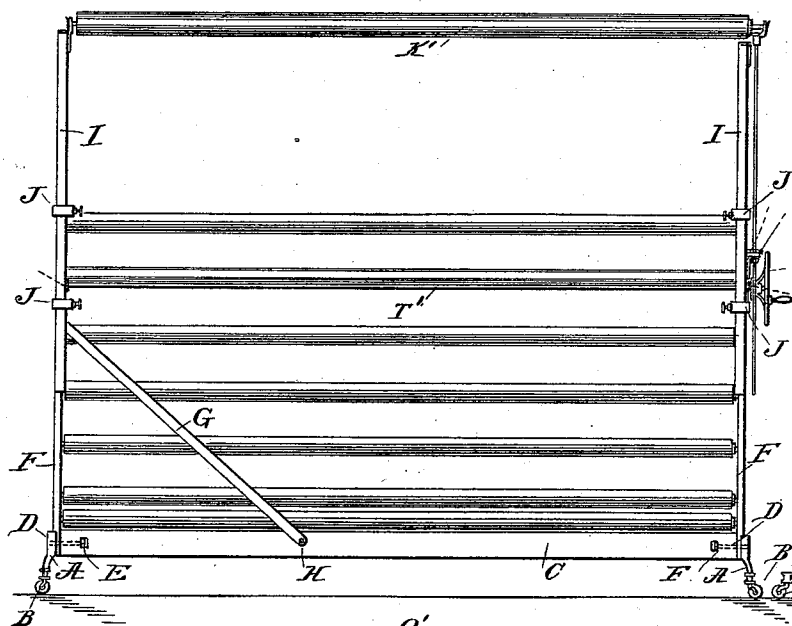


Fig. 2.

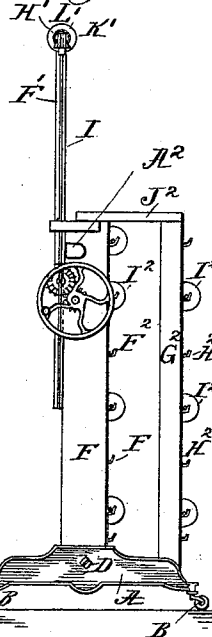


Fig. 5.

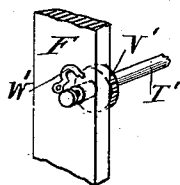


Fig. 3.

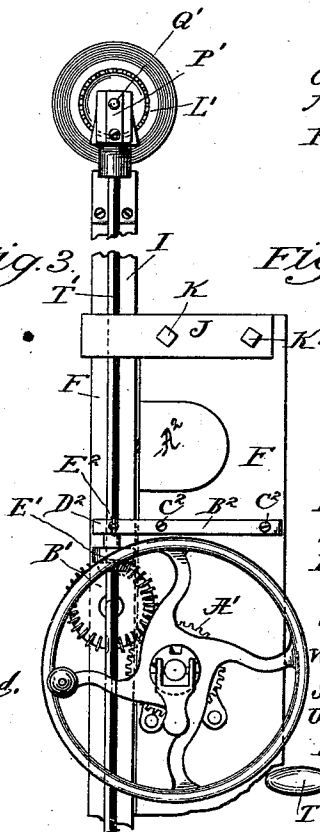
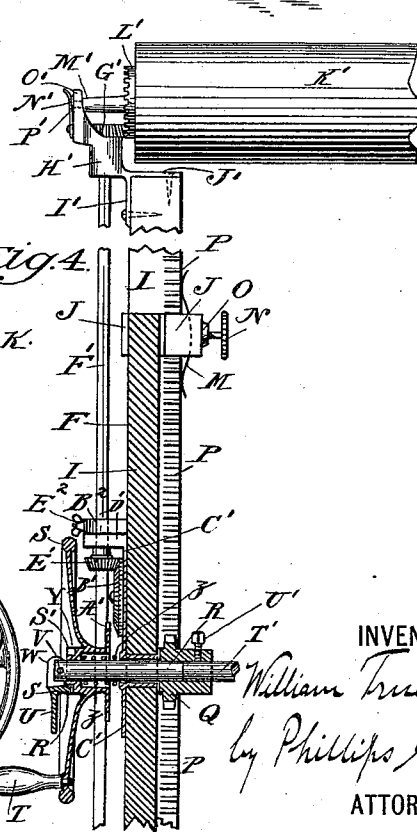


Fig. 4.



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BACKGROUND-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 532,844, dated January 22, 1895.

Application filed August 11, 1894. Serial No. 520,031. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM TRUEMAN, a subject of the Queen of Great Britain, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Background-Supports, of which the following is a specification.

My invention relates to improvements in apparatus for supporting backgrounds, charts, maps and the like, it being especially applicable to photographers' use.

Broadly stated the invention comprises a base having uprights at each end, whereby the back-ground frame and co-acting parts are suitably supported. To the base is attached suitable mechanism whereby the back-ground frame proper may be elevated or depressed as desired, and maintained at any desired position, and the special features of my invention are the devices for vertically adjusting and maintaining the movable back-ground frame, also the method of constructing the base, and the fixed frame attached to it; also the devices for supporting and actuating the roller upon which the background is rolled.

The invention also comprises a rack for the reception of rollers supporting back-grounds which are not immediately in use.

My invention also comprises certain features not above alluded to, but which will be hereinafter explained.

Referring to the drawings hereof: Figure 1, illustrates a front elevation of the apparatus. Fig. 2, illustrates a sidewise elevation, as seen from the right in Fig. 1. Fig. 3 illustrates a view similar to Fig. 2, showing the mechanism which actuates the device, enlarged as compared with Fig. 2. Fig. 4, illustrates a sectional view taken at right angles to Fig. 3. Fig. 5 illustrates a detail.

A, A are the feet of the main frame. They may be provided with casters or rollers B, B or not, as preferred.

C is a cross-bar, preferably of wood, which extends from one of the feet to the other.

D, D are bolts, which pass through the feet

A and enter nuts E, or equivalent fastening devices set into the cross-bar C.

F, F are uprights preferably of wood, fastened to the feet A, A.

G is a brace pivoted at H to the cross-bar C and engaging at its upper end with a bayonet slot, or similar connection formed on the left hand upright F. This detail is not shown because it is well-known, and is used wherever it is desirable to break the joint or disconnect the part.

I, I are vertically sliding upright pieces, which are guided by metallic strap-like pieces J, J, which surround the pieces I, I, and are fastened to the uprights F, as by bolts K, K. (See Fig. 3, in which one of the upper ones is shown.) The two upper guides J, one on each side of the apparatus, are made somewhat larger than necessary, to receive the sliding piece I, as shown in Fig. 4, so that a spring M, the ends of which are turned outwardly, may be placed inside of it, there being a thumb-screw N threaded into a boss O on the guide piece, whereby the tension of the spring may be increased by running in the thumb-nut N, the inner end of which presses upon the spring. The purpose of this construction is so that any tendency to "wobble" on the part of the upright I, during its vertical movement up or down, may be overcome, and a good, smooth, sliding action secured.

P, (see Fig. 4) is a rack fastened to the side of each of the vertically sliding parts I, in which a pinion Q, which is set upon a shaft R, engages, when that shaft is in its most forward position.

S is a hand-wheel, which may, if desired, be provided with a crank handle T, which is set loosely on the shaft R, so that it may revolve independently of the shaft.

U is what I call the gear lever of the apparatus, because it throws the various parts into and out of gear. It is pivoted, as at V, in a slot cut in the end of the shaft R, and the end W of the lever U is made cam-shaped, so that when it is pulled upwardly, it will slide the hand-wheel S rearwardly, in other words, to the right of the shaft R, by reason of the

cam-face W, of the lever striking against the end of the hub Y of the hand-wheel S; and as the lever U is swung upwardly, the cam surface of the end of the lever moves the entire wheel to the right.

A spring Z set in a recess of the hub of the hand-wheel S, and which is preferably coiled about the shaft R normally throws the hand-wheel S forwardly.

A' is a pinion set on the hub of the wheel S, which, when the wheel is in its projected position, in other words, farthest to the right, meshes into another pinion B', which is pivoted on a plate C', which is fastened to the side of one of the uprights F.

D' is a stud projecting at right-angles from the plate C', in which rotates a beveled gear E', the hub of which has a square hole through it, through which passes a long rod F', which fits the hole somewhat loosely, so that it may easily slide up and down therein. The upper end of the rod carries another beveled gear G', which rotates in a bracket H', which is fastened by top and side plates I' and J' to the upper end of the right hand frame I.

K' is one of the rollers supporting the background, and upon one end of it there is a circular faced gear L', which meshes into the beveled gear G'. A spindle M' projects from the center of the face gear L' on the end of which is a head M', which enters a notch or recess in the upper end O' of the bracket H', and a spring P' having a hole Q' in it springs outwardly upon the introduction of each roller, and the rounded head N' of the spindle M' fits into the hole Q' in the spring, so that it is held against displacement.

The gear lever U has a spud R' upon it, which fits into recesses S' in the hub of the hand-wheel S.

The shaft R upon which the hand-wheel and other parts are mounted extends in the form of a rod T', which is fastened to the shaft R by means of a set screw U', which passes through the hub of the pinion Q. This rod extends, as above stated, across the apparatus, and at its other end passes through the left hand upright F, as shown in Fig. 5, and upon it is fastened another gear V', which is substantially the same as the gear Q, which meshes into the rack P on the left-hand sliding upright I of the apparatus.

W' is a latch, which being depressed enters an annular groove near the extreme end of the rod T', which prevents withdrawal of the rod and holds the upper portion of the frame together, giving additional stiffness to it.

In order to provide a suitable counterpoise, I provide counterbalance springs A' (see Fig. 2), which are set into the uprights F, F, one on each side. They are or may be of the well-known form of sash counterbalance and do not require further description. Of course the free end of the strap or cord is made fast to the sliding uprights I, I, at or near their lower ends; and in order to prevent the weight of the background from unrolling the roller

K', which would result in the rotation of the mechanism connected with the roller through the face gear L' and the beveled gear G', I provide a brake B'. (See Figs. 3 and 4.) This brake is a flat piece of wood, which is fastened by screws C², C² to the side of the upright F, upon which the actuating mechanism is fastened, and the forward end, marked D² (see Fig. 3) has a hole in it, which encircles the upper end of the hub of the beveled gear E' which is made circular to fit this round hole, and the piece of wood is sawed from its end inwardly in a vertical direction through the center of the hole bored in it, and the saw kerf extends considerably beyond the hole, so that the projecting lip or finger of wood is rendered springy or elastic. A bolt E² passes through this sawed or split end of the piece of wood, which is provided with a thumb nut, as shown in Figs. 3, and 4, and this thumb-nut being screwed up more or less as desired, generates exactly the sufficient friction upon the upper end of the hub of the beveled gear E' to overcome the weight of the background, and the pressure can be instantly adjusted to suit the requirements of each case. This is an exceedingly cheap and simple equalizer of this part of the mechanism.

F², F² (see Fig. 2) are hooks placed upon the back side of the uprights F, F, upon which rollers containing backgrounds not in use, may be supported.

G² is a supplemental frame or rack, which has likewise pins or supports H², for the same purpose. I², I² illustrate the rolls of background which are not in use.

This supplemental frame may be supported at its lower end upon the feet A on each side of the apparatus, and at the top, a brace J² may connect it with the main frames F, F.

The operation of the apparatus is obvious—that is to say, the operator places the background which he desires to use, in the brackets H', H', one on each side of the apparatus. He then turns the gearing lever U into such position as to allow the spring Z to project the hand-wheel S, so that the pinion A' on it does not engage with the beveled gear B'. By then turning the crank T, the sliding frame I, I, carrying the roll of background with it, is given the desired vertical position. Thereupon the operator swings the lever U outwardly, which causes the hand-wheel S to slide inwardly and the pinion A' engages with the beveled gear B'. Thereupon, upon turning the crank handle T, the hand-wheel S turns loose upon the shaft R, but owing to the engagement of A' with B', above stated, the roller K' is rotated in one direction or the other as desired, through the instrumentality of beveled gear E', rod F', beveled gear G' and face gear L'. In this way any desired position may be given to the background. The operation of the other parts of the apparatus has been sufficiently explained during the general description, but I desire to call atten-

tion to one special feature of my apparatus, that is to say, the ease with which my apparatus may be knocked down, and the parts assembled and dissembled—that is to say, all that is necessary to dissemble the apparatus is to lift the latch W' (see Fig. 5), withdraw the rod T', then break its connection at the other end, by loosening the set screw U', then loosening the brace G by disconnecting the bayonet joint connection, at its upper end, when it may be folded over, so as to lie parallel with the bottom brace C; then lowering the uprights, I, I, so that they lie practically side by side with the uprights F, F, and then run back the bolts D, D, so that the feet may be separated from the rest of the frame. In this way it will be seen that the apparatus can be quickly taken apart and the various pieces laid side by side and packed in a relatively small box for transportation.

It will be observed that my invention embodies certain features, which, as I believe, are superior to those embodied in other like mechanism—that is to say:

First. The construction is exceedingly simple and not liable to get out of order.

Second. The mechanism which elevates the vertically sliding frame, which carries the background is at the same time, but when differently geared, the mechanism which operates the background itself, *i. e.*, rolls it up or unrolls it.

Third. The rolling up and unrolling of the background is positively accomplished. There is no reliance upon springs or other similar devices for effecting these movements. It has been found that springs are apt to get out of order in devices of this character, where the backgrounds are frequently quite heavy.

Fourth. My brake attachment which prevents the rolling and unrolling of the backgrounds, by reason of its weight, is much better than the pawl, which is ordinarily used for this purpose, because, with a pawl, the background cannot be moved in any direction, excepting upon lifting it, and where it, (the pawl) is elevated, some means have to be employed to prevent the running down of the background, and if the background gets away and does run down, it is very apt to tear or rip itself free from the roller at the end, by reason of its weight; also my brake permits the background to be unrolled and rolled up, without touching any part of the mechanism, excepting, of course, the handle of the crank.

Fifth. My spring counterbalance for the vertically sliding frame does away with pawls or equivalent devices, to maintain them in the desired position.

Sixth. My construction is such that it is very easy to take apart or to erect and the pieces are adapted to be laid side by side and packed in a snug compass.

It will be evident to those who are familiar with this art, that modifications may be made

in the details of construction of the parts, without departing from the spirit of my invention. I therefore do not limit myself to such details.

Having described my invention, I claim—

1. The combination of a lower frame, a vertically movable upper frame, a roller for backgrounds, supported on the movable frame, mechanism for vertically adjusting the movable frame, and devices for disconnecting said mechanism from the movable frame and connecting it with said roller, whereby it may be revolved in both directions, for the purposes set forth.

2. The combination of a lower frame, a vertically movable upper frame, a roller for backgrounds supported on the movable frame, mechanism for vertically adjusting the movable frame, devices for disconnecting said mechanism, from the movable frame, and connecting it with said roller, whereby it may positively revolve the roller in both directions, and a brake applied to the roller mechanism to overcome the action of gravity upon the background, for the purposes set forth.

3. The combination of a lower frame, a vertically movable upper frame, a roller for backgrounds supported on the movable frame, mechanism for vertically adjusting the movable frame, devices for disconnecting said mechanism from the movable frame and connecting it with said roller, whereby it may positively revolve the roller in both directions, a brake to control the action of gravity upon the background, and a counterbalance for the movable frame, for the purposes set forth.

4. The combination of a lower frame, a vertically movable upper frame, racks upon the movable frame, a shaft on the lower frame, which carries pinions which gear into the racks on the upper frame, a handwheel loose on said shaft, gearing mechanism between the shaft and handle, a background roller provided with a gear wheel and mechanism adapted to be geared with the said handwheel, whereby said background roller is rotated, for the purposes set forth.

5. The combination of a fixed lower frame, a movable upper frame, a cross shaft, which engages with both sides of the fixed frame; provided with pinions, racks on the movable frame, which engage with said pinions, a handwheel adapted to slide longitudinally on the shaft, a spring which normally projects the said handwheel, a cam gearing lever engaging with the shaft, and with the handwheel, a beveled gear on the lower frame, a vertical rod carried by the movable frame geared to said beveled gear and having a gear at its upper end and a background roller provided with a gear which meshes into said last named gear, for the purposes set forth.

6. The combination of a fixed lower frame, a movable upper frame, a cross shaft which engages with both sides of the fixed frame, provided with pinions, racks on the movable

frame, which engage with said pinions, a handwheel adapted to slide longitudinally on the shaft, a spring which normally projects the said handwheel, a cam gearing lever engaging with the shaft and with the handwheel, a beveled gear on the lower frame, a vertical rod carried by the movable frame geared to said beveled gear and having a gear at its upper end, a background roller provided with a gear which meshes into said last named gear, and a counterbalance for the movable frame, for the purposes set forth.

7. The combination of a fixed lower frame, a movable upper frame, a cross shaft, which engages with both sides of the fixed frame, provided with pinions, racks on the movable frame, which engage with said pinions, a handwheel adapted to slide longitudinally on the shaft, a spring which normally projects the said handwheel, a cam gearing lever engaging with the shaft and with the handwheel, a beveled gear on the lower frame, a vertical rod carried by the movable frame geared to said beveled gear and having a gear at its upper end, a background roller provided with a gear which meshes into said last named gear, a counterbalance for the movable frame, and means to cause the upper frame to slide smoothly through its ways upon the lower frame, for the purposes set forth.

8. The combination of a lower frame and an upper movable frame, supports for the background roller on the upper frame, a vertical rod carried by the upper frame, which passes through the hub of a horizontally arranged gear supported on the lower frame, a vertically arranged beveled gear, also supported on the lower frame, and a shaft carrying a handwheel provided with a pinion, which

meshes into said last named gear, whereby the background roller may be positively turned in either direction, for the purposes set forth.

9. The combination of a lower frame, and an upper movable frame, supports for the background roller on the upper frame, a vertical rod carried by the upper frame, which passes through the hub of a horizontally arranged gear supported on the lower frame, a vertically arranged beveled gear also supported on the lower frame, a shaft carrying a handwheel provided with a pinion, which meshes into said last named gear, whereby the background roller may be positively turned in either direction, and a brake to control the action of gravity upon the said roller, for the purposes set forth.

10. In a background exposing or supporting device, a lower frame, a vertically movable upper frame, a shaft positively held to both sides of the lower frame, pinions upon said shaft, racks upon the movable frame, which gear into the said pinions, gearing support on the lower frame, and connected by a sliding bar with the roller of the background, a handwheel set loose on the said shaft, adapted to be geared thereto or to the roller actuating mechanism, but not both at the same time, and means whereby said gearings may be effected, for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 6th day of August, A. D. 1894.

WILLIAM TRUEMAN.

Witnesses:

PHILLIPS ABBOTT,
GEORGE DILLON.