

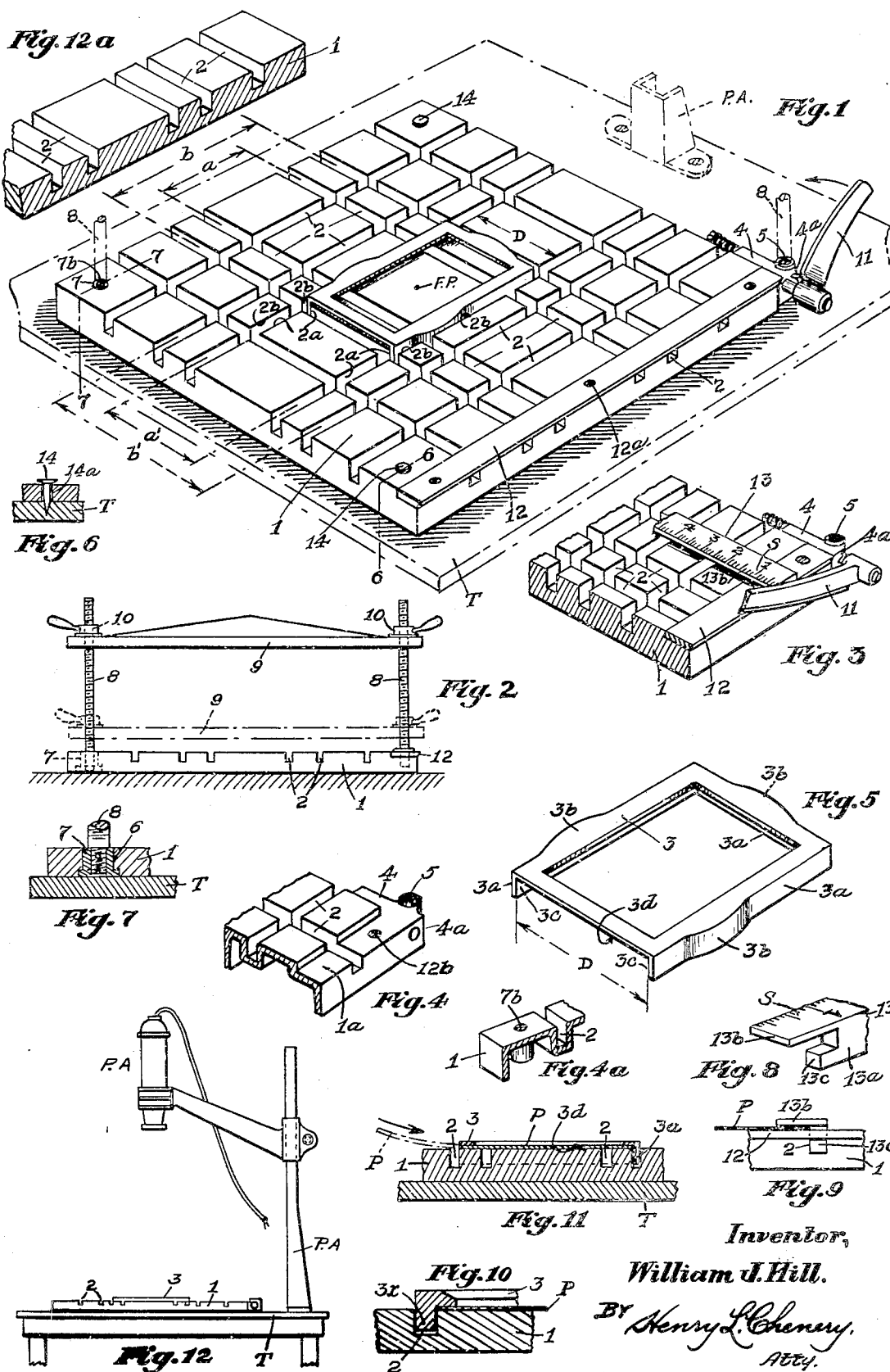
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W. J. HILL

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PHOTO ENLARGING EASEL EQUIPMENT

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Inventor,

William J. Hill.

By Henry L. Cheney,  
Att'y.

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## PHOTO ENLARGING EASEL EQUIPMENT

William J. Hill, Portland, Maine

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The invention hereinafter to be described relates, in general terms, to photo-print enlarging apparatus. It deals more specifically with an enlarging easel whose primary function is to support the sensitized paper while being exposed, but which is so constructed and arranged that it may also serve as one of the elements in a press for flattening the prints after being developed and washed, and as a component part of a cutting device for trimming the prints subsequent to their being flattened and taken from the press.

In the conventional type of enlarging easel the print paper is usually located and maintained in proper relation to the projecting apparatus by a swinging frame having arms and gauge members adjustable to different sizes of paper.

The necessity for resetting and rearranging the adjustable members for different sizes of prints, together with the requirement of separate gauging points for the border portions permits of errors easily being made, with a consequent excessive trimming of the finished prints.

In the present invention I have evolved an easel equipment the objects and advantages of which, briefly stated, include selective and positive positioning of the print frame for standard sizes of print paper to be exposed, requiring no measuring or readjusting of parts for different size frames; facilities for repositioning the print frame so that it may be disposed normal to its previous position on the easel, with the central point, measured both longway and shortway of the print, coinciding, and in line with the focal point of the projecting apparatus; and its adaptability for service when employed in association with other elements in carrying out various other operations required to be performed on the print.

For a clearer understanding of the import of my invention reference should be had to the description found in the following specification, when taken in connection with the accompanying drawing disclosing an embodiment which, at the present time, I consider preferable to other possible forms in which the invention might be carried out.

In the drawing, in which like reference characters are employed to identify like parts in all the different views,

Fig. 1 is a perspective view of my easel with a print frame mounted thereon, and further illustrates facilities with which it is equipped which permits the easel to cooperatively function as the base element in various capacities;

Fig. 2 shows the easel as the base member for a print press;

Fig. 3 illustrates it, in fragmentary view, as the base element in a print trimmer;

Fig. 4 shows one corner of the easel when made of metal;

Fig. 4a shows the diagonally opposite corner of the metal easel;

Fig. 5 shows a perspective view of a print-holding frame;

Fig. 6 is a section on line 6—6, Fig. 1;

Fig. 7 is a section on line 7—7, Fig. 1;

Fig. 8 is a perspective of the knife-engaging end of the gauge;

Fig. 9 is an end view of the gauge, locked under the paper-cutting blade;

Fig. 10 shows a heavy print frame;

Fig. 11 illustrates the method of inserting the print paper under the frame, it being entered through the open end;

Fig. 12 depicts the easel in position for making an enlargement, and

Fig. 12a is an alternate method of grooving the easel.

Referring to the drawing, Fig. 1 shows my easel upon which sensitized print paper mounted in a print frame, is exposed to the light projected through a negative, from any conventional projecting apparatus, P. A. shown in brief outline in Fig. 11.

The easel 1 is rectangular in shape, and made of wood, metal or other material, with grooves 2 cut in its upper face, both longitudinally and transversely thereof. The grooves which run lengthwise are preferably spaced so that they are arranged symmetrically with those disposed cross-wise of the board, as for instance, the distance  $a$ , between the two inner grooves running in one direction is the same as the distance  $a'$  between the grooves which are disposed normal to the two first grooves mentioned; and the same applies to the distance  $b$  and  $b'$ , and all other pairs of corresponding grooves by which the board is cut.

However it is wholly a matter of choice insofar as the particular disposition or arrangement of the grooves is concerned, provided the longitudinal and transverse pairs of grooves for any particular size of print frame are, respectively, of equal spacing and preferably normal, one pair to the other.

In certain kinds of enlarging work, it might be desirable to have the grooves arranged in such a manner that the central, focal point F. P. is located nearer one end or one side of the easel, than is shown in Fig. 1. This would move the whole arrangement toward the new F. P. loca-

tion. This is logical, and contemplated in my invention, as from practical experience, I have found it to be, at times, a desirable and convenient construction.

It is, therefore, to be understood that the arrangement shown in Fig. 1 is simply illustrative.

It is also obvious that, although the grooves are shown and described as running parallel with the sides and ends respectively, of the easel, they might, conceivably, be arranged to point diagonally across the easel in which case it would doubtless be necessary to position the projecting apparatus at one corner of the easel, or arrange the negative holder so that the same effect is produced.

And it will be understood that when, hereinafter, the terms "longitudinal" and "transverse" are used in describing the position of the grooves, it implies grooves cutting each other at ninety degrees, rather than their relation to the sides or ends of the easel.

In Fig. 5 is shown my print frame. It comprises a flat, gnomonic shape, rectangular plate 3, with depending legs 3a on two sides and one end. On the other end, the legs 3a is removed to permit inserting the sensitized paper P beneath the horizontal portions 3 of the frame, as shown in Fig. 11 of the drawing.

It will be observed that, each of the three legs 3a has a protuberant portion 3b. The reason for this detail of construction will hereinafter be explained.

Sensitized paper is apt to curl and must be held by some mechanical means to keep it flat.

For this reason certain operators of enlarging apparatus might prefer a frame which of itself is sufficiently heavy to maintain flatness of the sheet of paper without resort to other means. Such an arrangement is shown in Fig. 10 in which the vertical leg 3r fills the groove 2 widthwise, but does not seat in the bottom of it. In this instance dependence is placed on the weight of the frame to hold the paper flat.

But the grooves, to receive these heavy frames, must be made of quite generous proportions as to width; and as in my preferred construction I employ lighter weight material with which to construct the frames, some means must be provided to secure the thin legs in the wide grooves.

I accomplish this object by making the two sides and one end of the frame bulging, as seen at 3b, these bulged portions being more or less yielding, causing the inside faces of the legs, 3c, to bear firmly against the sides 2a of the grooves in which the legs 3a are disposed, the bulging parts thrusting against the opposite sides 2b of the grooves. Dimension D of frame and easel are similar.

The legs 3a come short of seating on the bottom of the grooves in order to permit strong contact of the under faces 3d of the frame with the print paper.

As the grooves are arranged symmetrically with respect to their longitudinal and transverse spacing, the print frame may be positioned lengthwise or crosswise of the easel, making it possible, without disturbing the easel to change the composition of the picture from the longway to the shortway of the print, and vice versa, by simply raising the frame, turning it ninety degrees and inserting it in correspondingly spaced grooves running in a direction normal to the first grooves.

The grooves are cut and the frames made to accommodate commercial sizes of photo-print paper; it is obvious, however, that other grooves

might be cut and frames made to fit any desired size of print paper.

I may elect to construct the print frame of material other than of metal, say of any of the numerous plastic compounds quite generally used for various other purposes.

One object in this particular construction would be the procuring of various shade effects on the margins of the print.

With a metal frame this margin is blocked off by the horizontal legs of the frame and comes out white in the finished print, whereas with semi-transparent material for these frames a margin around the print, of various color values and of not so pronounced contrast can be procured.

In the work of supplying enlarged reproductions from small negatives the photo-worker has other operations to perform than those directly connected with the enlarging process, before the finished prints are ready to deliver to his customer.

After exposing the sensitized paper it must, of course be subjected to the developing, fixing and washing operations.

But even then it is not a finished product,—the print must be properly trimmed. Before trimming, however, the prints must remain for a time under pressure to flatten them out, as otherwise they will curl and be in no condition to trim.

I have equipped my easel with facilities, both for flattening out the prints and thereafter trimming them.

At one corner of the easel when made of wood, I mount a fixture 4 which has a screw-threaded hole 5 on its top.

Should the easel be made of metal this fixture would be an integral part of it, as shown in Fig. 4.

When the easel is of wood construction a hole 6 is made near the diagonally opposite corner of the easel, and in this hole is mounted a sleeve 7 having on its lower end a head 7a which prevents its being upwardly withdrawn from the hole. The sleeve has a threaded hole 7b in it.

Rising from the easel, with their lower ends engaging, respectively, the screw-threaded holes 5 and 7b, are two screw-threaded standards 8, vertically slidable on which is a press board 9.

While I prefer diagonal positioning of the standards 8, it is obvious that they might be placed in other positions, and that more than two in number could be employed.

Each threaded standard 8 is equipped with a levered nut 10, the nuts contacting the upper face of the press board 9.

When a stack of damp photo-prints, interposed between blotters, is placed between the base member of the easel and the press board, and the nuts 10 turned in a direction calculated to lower the press board, the prints, drying under pressure, will be flat and in condition to trim, if necessary, when removed from the press.

The equipment last described is illustrated in Fig. 2.

The fixture 4 also has a bearing 4a in which may be journaled the shaft for a swinging cutter blade 11 of any conventional type.

The easel has a rabbeted side at 1a on which may be mounted a fixed cutting blade 12, secured to the easel by screws 12a operating in sized holes 12b in the easel.

To trim the photo-prints accurately there must be guiding means. For this purpose I provide an element 13 which is made angular in cross-section and carries a scale S on its top side.

The vertical leg 13a of the gauge member 13

closely fits any of the slots 2 in the easel, and when in place for right angular gauging purposes, a portion 13c extends under the blade 12, preventing that end of the gauge rising.

6 The vertical leg 13a is designed to seat in the bottom of groove 2, and when thus positioned the horizontal leg 13b is disposed slightly above the top face of the easel, forming a shelf under which the paper P is held from rising while being trimmed.

10 With the ordinary print trimmer, the first part of the cut is usually the more difficult to make, due to the excessive angularity between the cutting blades tending to push the paper ahead.

15 After an inch or two of the cut has been made, however, this shearing angle decreases and the cutting accordingly is more easily accomplished.

20 With my arrangement the gauge member 13 may be placed in a groove opposite a point on the cutting blade where the cutting starts to be more effective. Furthermore, my gauge may be placed in grooves running parallel with the cutting blades, thus serving as a side gauge in certain instances.

25 When the easel is fixed, so that, relatively, there can be no horizontal movement between it and the projecting apparatus, it becomes at times somewhat of a task to locate a negative in the latter so that the margins of the picture, as projected, properly align with the locating edges of the print frame. This is particularly true when the negative is of small dimensions.

30 For this reason I prefer to mount the easel preliminarily unattached to its supporting member, as for instance a table T.

35 Now, regardless of whether or not the negative is placed squarely in the projector, the easel may be moved bodily and positioned so that the grooves 2 align with the margins of the projected picture.

40 The easel may now be secured against lateral movement on its supporting member T by pointed pins 14 operating in holes 14a in the easel 1.

45 In making a photo-print, either enlarging, reducing, or a full size reproduction, the "sight," meaning the area of the sensitized paper being exposed to the light of the projecting apparatus, may be varied by inserting in the print frame over the print paper a mask having an opening of the desired size.

50 Three of the edges of the print paper and of the mask closely fit the corresponding and respective faces 3c of the legs 3a of the print frame, insuring continuously accurate registering of the projected picture on the print paper.

55 And herein lies the advantage of a print-paper-holding device such as is illustrated in Fig. 5 of the drawing.

60 It serves in a dual capacity. The side walls or legs 3a constitute lateral stops for the paper and a mask if desired, on three edges thereof, and the horizontal legs 3 bear on the top of the paper or the mask if one is used, holding it, or them, flat against the top face of the easel 1.

65 In certain instances it might be desirable to extend the end of the easel and mount the projecting apparatus thereon; or the two could be secured to a base member, common to both.

70 Moreover it is quite obvious that, in conjunction with the use of my improved print frame, the easel might be, and in certain instances I may elect to have it constructed with grooves running in one direction only as illustrated in Fig. 12a. This would be a special-purpose con-

struction and in no wise a full substitute for my preferred arrangement shown in Fig. 1.

An easel incorporating structure a description of which has herein been given, offers advantages to those who are handicapped for space in their workrooms, as it forms the base element in three more or less distinct but co-related devices.

The easel is built in such a manner that a customer may, if he chooses, purchase the base portion and one or more print frames only, leaving for future consideration the investment in additional equipment to make up a complete outfit. The accessories can be mounted on the easel without changing or adding any paraphernalia to the easel proper, the attaching of the accessories being a very simple procedure and accomplished in a few minutes of time.

What I claim is:

1. An enlarging easel and equipment therefor adapted for use in photo-print enlarging operations, comprising a rectangular base member, a plurality of grooves arranged symmetrically in pairs and cutting the top surface of said base member both longitudinally and transversely thereof, a print frame for each pair of grooves, said print frame embodying a rectangular, gnomonic shape plate having an opening in its top and depending interconnecting legs on two sides and one end thereof only, said legs adapted to be disposed and held in said grooves, and the plate portions of said frame to overhang the marginal portions of a sheet of photo-print paper inserted thereunder and held flat thereby, and an outwardly bulging portion formed on each of the said legs, adapted to provide contact with both sides of the groove to yieldingly hold the print frame therein.

2. An enlarging easel and equipment therefor comprising a base member, two pairs of grooves cut in the top face of said base member, one pair being disposed normal to the other pair, a print frame embodying inwardly overhanging portions on both sides and ends thereof, depending legs on two sides and one end only, said legs adapted to engage said grooves but to fall short of seating on the bottoms thereof, and an outwardly bulged portion on each of said legs, said bulged portions adapted to maintain the inside faces of the legs in engagement with the adjacent sides of the respective grooves in which they are disposed, by thrusting against the opposite sides of the grooves, to the end that the frame may be frictionally and yieldingly secured in said grooves.

3. An enlarging easel and equipment therefor adapted for use in connection with a projecting apparatus for picture-enlarging purposes, comprising a base member having on its top face a plurality of pairs of print-frame-holding grooves cut both longitudinally and transversely of the base member, either of said grooves adapted to further serve as means for securing on said base member a paper-cutter gauge, a plurality of depending-leg, open-top print frames the legs of which are adapted, respectively, to be inserted in the particular pair of grooves of equi-distance spacing, the two different-direction sets of grooves being arranged in symmetrical order permitting said print frame to be re-positioned so that the image from the projected picture may appear either longway or shortway of the print frame, a rabbet cut on the top and at one side of the base member with blade-attaching holes therein, a bearing on said base member at the

end of and disposed normal to the longway of said rabbet, said bearing adapted to provide means to journal a swinging cutter blade shaft, and means on said base member for securing it to its supporting body after the aligning of the projected picture with respect to the margins of the print frame has been completed.

4. An enlarging easel and equipment-attaching means therefor, comprising a base member, a plurality of overlapping pairs of grooves cut in the face of said base member, a duplicate set of said grooves on the face of, said base member disposed normal to the first mentioned grooves, a plurality of rectangular, gnomonic shape print frames each having depending legs on two sides and one end thereof, the legs on the sides of each of said frames being spaced, respectively, to enter correspondingly spaced grooves in said base member any and all of said grooves adapted, singly to further function as paper trimmer gauge securing means, screw-threaded apertures at the marginal portions of said base member, adapted, respectively, to receive screw-threaded standards for supporting a press board, a shallow rabbet cut on the top face at one side of said base

member adapted to receive a fixed paper-cutting blade, and means on the end of said base member, disposed normal to said rabbet, for mounting a swinging-blade-carrying shaft.

5. An easel equipment adapted for use in photo-enlarging and print-finishing operations comprising a base member, grooves cut in the top face thereof, a print-paper-holding frame structure having an opening in the top thereof, said structure embodying a horizontal plate portion adapted to overlie the base member inwardly of said grooves and to constitute masking means for the borders of the print-paper to be exposed, and legs depending from said plate portion adapted to slidably fit and substantially fill the grooves widthwise thereof when said structure is operably positioned on the base member, said legs being of such a depth as to come short of seating in the grooves when the print paper is inserted beneath the horizontal portions of the frame structure, and of such weight as to serve as means to hold the print paper flat on the top of the base member while an exposure is being made.

WILLIAM J. HILL.