May 18, 1948. A. RAIFF ET AL 2,441,843

PROJECTION PRINTING EASEL

Filed Oct. 26, 1945 3 Sheets-Sheet 1

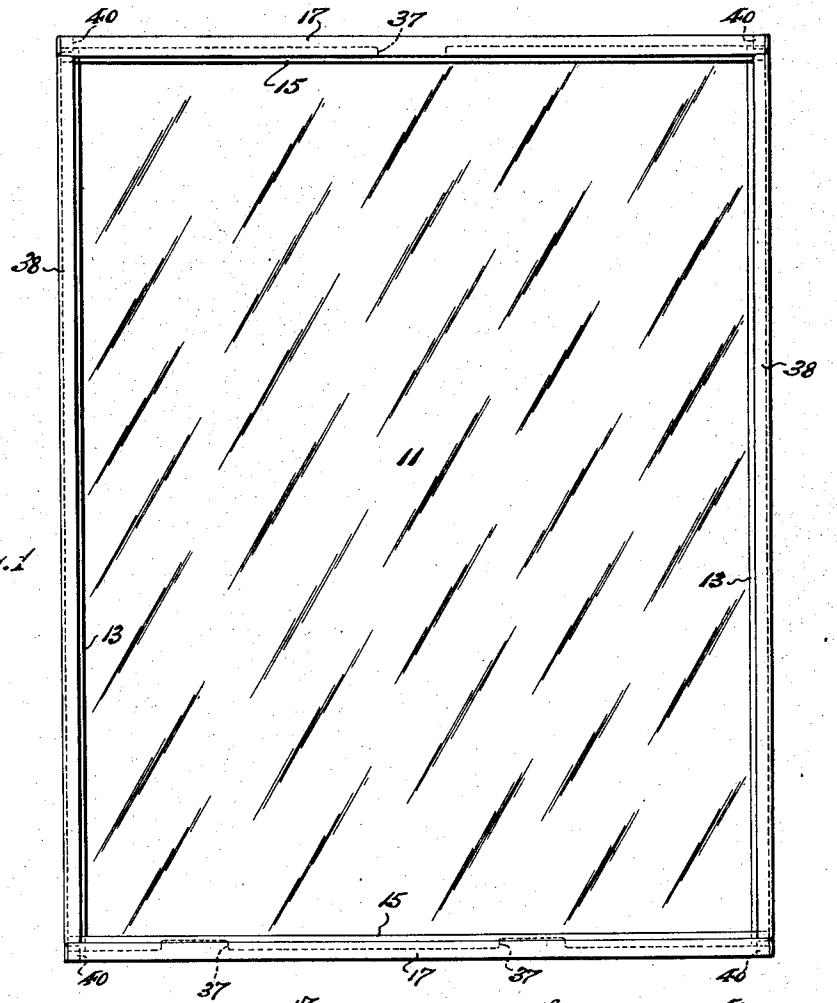


Fig. 1

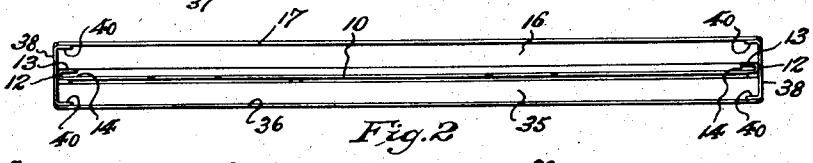


Fig. 2

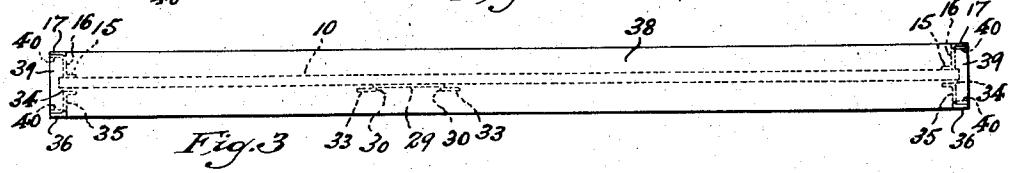


Fig. 3

INVENTORS:
Andrew Raiff, Sylvia S. Robbins, Victor G. Robbins,
& Isidore S. Rosen,
BY George D. Richards
Attorney

May 18, 1948. A. RAIFF ET AL 2,441,843

PROJECTION PRINTING EASEL

Filed Oct. 26, 1945 3 Sheets-Sheet 2

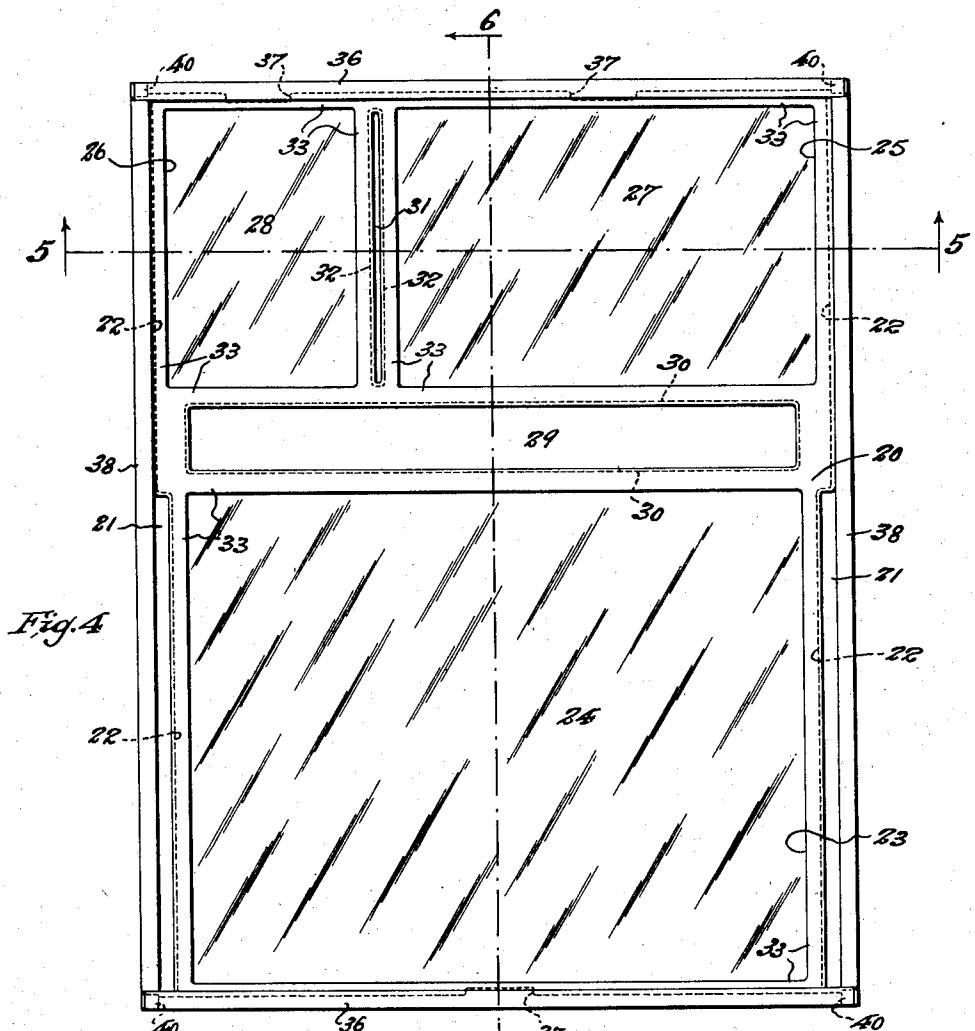


Fig. 4

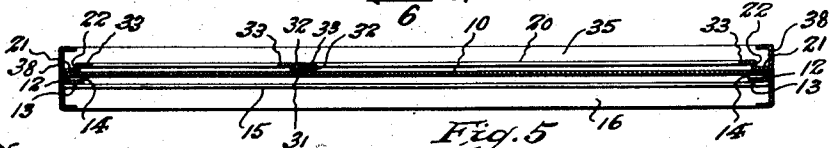


Fig. 5

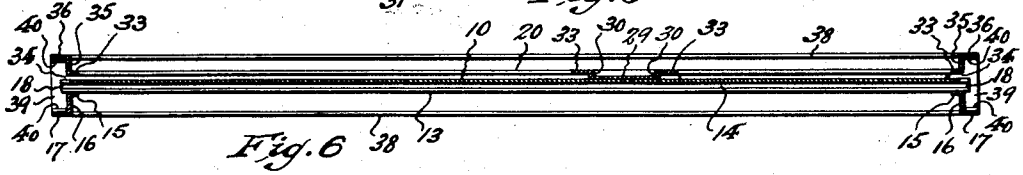


Fig. 6

INVENTORS:
Andrew Raiff, Sylvia S. Robbins, Victor G. Robbins,
& Isidore S. Rosen,
BY George D. Richards
Attorney

May 18, 1948. A. RAIFF ET AL 2,441,843

PROJECTION PRINTING EASEL

Filed Oct. 26, 1945 3 Sheets-Sheet 3

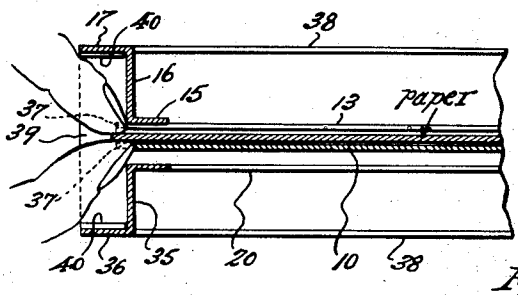


Fig. 7

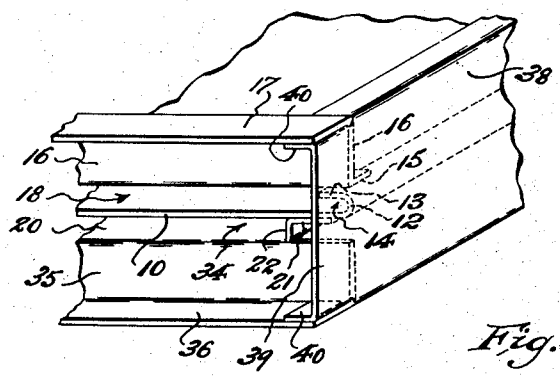


Fig. 8

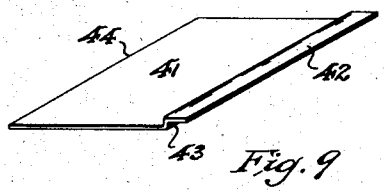


Fig. 9

INVENTORS:
Andrew Raiff, Sylvia S. Robbins, Victor G. Robbins,
& Isidore S. Rosen,
BY George S. Richards
Attorney

Patented May 18, 1948 2,441,843

UNITED STATES PATENT OFFICE

2,441,843

PROJECTION PRINTING EASEL

Andrew Raiff, Brooklyn, and Sylvia S. Robbins and Victor G. Robbins, New York, and Isidore S. Rosen, Brooklyn, N. Y.

Application October 26, 1945, Serial No. 624,858

6 Claims. (Cl. 88—24)

1

This invention relates to a novel construction of easel or frame for holding sensitized paper subject to projection printing thereon of enlargements from photographic negatives.

The invention has for an object to provide an improved easel or frame adapted to receive and position sensitized paper in exposed relation to photographic enlarger aparatus, whereby a light projected image from a negative mounted on said apparatus may be properly focused upon the paper to print thereon a desired enlargement of the negative subject.

The invention has for another object to provide an improved easel or frame for the purposes stated to which sheets of selected size of sensitized paper to be printed may be quickly, easily and successively mounted in and removed therefrom, whereby to produce a desired number of enlarged prints from a given negative subject.

A further object of the invention is to provide a novel unitary construction of easel or frame which may be produced from sheet metal or other sheet material; said easel or frame being reversible, whereby to provide at both faces thereof selectively usable paper receiving and holding means, one face of the easel or frame being formed to provide a paper receiving and holding means adapted to accommodate a maximum size of paper, while the opposite face of the easel or frame is subdivided to provide a plurality of paper receiving and holding means adapted to respectively accommodate various reduced or smaller selected sizes of paper; each paper receiving and holding means being provided with a paper admission mouth opening outwardly at an end of the easel or frame, and the easel or frame ends having novel offset visor or hood flanges exteriorly disposed to overhang said paper admission mouths, whereby to shield the same against entrance therethrough to extraneous light rays likely to interfere with the paper printing light projected image, and said visor or hood flanges, by reason of their offset relation to the admission mouths of the paper receiving and holding means, also providing finger access to said admission mouths for entering paper in or withdrawing paper from said receiving and holding means.

Another object of the invention is to provide a simple, compact and light-weight and yet strong and durable unitary easel or frame for the stated purposes, the same comprising a minimum number of parts formed and assembled in the manner hereinafter more particularly described.

An illustrative embodiment of the invention is

2

shown in the accompanying drawings, in which:

Fig. 1 is an elevational plan view of one face of the novel easel or frame made according to this invention; Fig. 2 is an end elevational view, as viewed from the lower end of Fig. 1; Fig. 3 is a side elevational view; Fig. 4 is an elevational plan view of the opposite face of the easel or frame; Fig. 5 is a transverse sectional view, taken on line 5—5 in Fig. 4; and Fig. 6 is a longitudinal sectional view, taken on line 6—6 in Fig. 4.

Fig. 7 is an enlarged fragmentary longitudinal sectional view at one end of the easel or frame, showing a sheet of paper located in the paper receiving and holding means of maximum size, and access of fingers for manipulating the same within the space intermediate the visor or hood flange members at said end of the easel or frame; Fig. 8 is an enlarged fragmentary perspective view of a corner portion of the easel or frame; and Fig. 9 is a perspective view of a separable adapter element for modifying the size of a paper receiving and holding means of the easel or frame.

Similar characters of reference are employed in the above described views to indicate corresponding parts.

Referring to the drawings, the novel easel or frame of this invention comprises a main plate 10 which is preferably in the form of a flat rectangular sheet of metal or other suitable sheet material, the same being of selected length and width adapted to provide, at one face thereof, a paper supporting area 11 for the reception and support of the maximum size of sensitized paper to be subjected to projection printing say, for example, 11 x 14 inch paper. Longitudinal side marginal portions of said main plate 10 are doubled or folded back thereon, whereby to provide lateral paper stops 12 and relatively narrow masking flanges 13 to overlie side marginal portions of said paper supporting area 11. Said masking flanges 13 are disposed in spaced parallel plane relation to said paper supporting area 11, so as to form paper receiving guides or runways 14, which are of heights somewhat in excess of paper to be engaged therein. Said guides or runways 14 are open at their respective ends, so that paper may be optionally entered therein or withdrawn therefrom at either end of said main plate 10.

Extending from and between corresponding end portions of said masking flanges 13, at each end of the main plate 10, is a transverse Z bar comprising a bottom or foot piece 15, an upstanding web section 16 and an outwardly projecting

visor or hood flange 17. The respective ends of each bottom or foot piece 15 is spot-welded or otherwise secured to the respective corresponding end portions of said masking flanges 13, so as to be unitary with the same and thus with said main plate 10. Each bottom or foot piece 15 is offset by said masking flanges 13 from the adjacent end marginal portions of said main plate 10, whereby to cooperate with the latter so as to form end masking flanges spaced thereabove, and whereby to also provide an open mouth 18 (see Fig. 8) through which paper may be admitted to the paper supporting area 11. The outwardly projecting visor or hood flanges 17 are spaced an appreciable distance above and so as to overhang said open mouths 18, whereby to shield the latter against inward entrance therethrough of extraneous light rays.

Cooperating with the oposite face of the main plate 10 is means for dividing said face into a plurality of variously smaller sizes of paper supporting areas; each such area being bounded at suitable points by paper masking and stop means. The means for so dividing said opposite face of the main plate 10 comprises a dividing plate 20 formed from sheet metal or other suitable sheet material. Said dividing plate 20 is provided along its longitudinal sides with downwardly offset footing flanges 21 joined thereto by perpendicular wall sections adapted to provide lateral paper stops 22. Said footing flanges 21 are spot-welded or otherwise affixed to said main plate 10 so that the dividing plate is unitary with the latter. The main body of said dividing plate is thus disposed to overlie said opposite face of the main plate 10 in spaced parallel plane relation thereto. At one end thereof, the body of said dividing plate 20 is cut away to provide a comparatively large opening 23 to expose an underlying paper supporting area 24 of said main plate 10 for projection printing of a comparatively large size of paper, e. g. 8 x 10 inch paper. At the opposite end thereof, the body of the dividing plate 20 is cut away to provide a plurality of further reduced openings 25 and 26 to respectively expose underlying paper supporting areas 27 and 28 of said main plate 10 for projection printing of further reduced sizes of paper, e. g. respectively for 5 x 7 inch paper and 3½ x 5 inch paper.

To separate said several paper supporting areas 24, 27 and 28 one from another, and to bound the same at suitable points with paper masking and stop means, said dividing plate is provided with a transverse section to extend between the paper supporting area 24 and the paper supporting areas 27 and 28. An interior portion of said section is depressed to provide a division boss 29 of suitable length, adapted to abut the main plate 10. Perpendicular side walls of said division boss 29 provide paper stops 30 which bound the respective inner ends of said paper supporting areas 24, 27 and 28. In like manner, said dividing plate is provided with a longitudinal section to extend between the paper supporting areas 27 and 28. An interior portion of said longitudinal section is depressed to provide a division boss 31 of suitable length extending intermediate said transverse division boss 29 and an outlying end of the main plate 10. Said division boss 31 is adapted to abut the main plate 10. Perpendicular side walls of said division boss 31 provide paper stops 32 which bound inner sides of the respective paper supporting areas 27 and 28. Internal marginal portions of the openings 23, 25 and 26 provide masking flanges 33 of suitable width, and which overhang and are spaced from the paper supporting areas 24, 27 and 28.

The respective outer marginal end portions of the dividing plate 20 are aligned with corresponding outer marginal end portions of the main plate 10, and the former are disposed in spaced parallel plane relation to the latter, thus providing, intermediate the same, open mouths 34 (see Fig. 8), through which paper may be admitted to the paper supporting areas 24, 27 and 28, as the case may be.

Formed in connection with the respective outer ends of said dividing plate 20, preferably as integral parts thereof, are upstanding web sections 35, from the upper margins of which extend outwardly projecting visor or hood flanges 36. Said visor or hood flanges 36 are spaced an appreciable distance above and so as to overhang said open mouths 34, whereby to shield the latter against inward entrance therethrough of extraneous light rays. Said visor or hood flanges 36 are disposed parallel to and spaced apart from the opposite visor or hood flanges 17 previously described.

The marginal end portions of the main plate 10 are provided in association with the mouth entrances leading to the paper supporting areas 11, 24, 27 and 28 with indented notches 37, preferably of a depth not exceeding the width of the adjacent masking flanges. Said notches 37 provide finger access to paper lodged within the easel or frame upon given paper supporting areas 11, 24, 27 and 28.

To complete the easel or frame, and so as to provide level and uniform marginal support thereof, either side up, upon a table or bed of projection printing apparatus with which it is used, side bars 38 are provided to extend along longitudinal sides of the main plate 10, said side bars being of a height equivalent to the spaced height of the visor or hood flanges 17—36 so as to be flush therewith. End portions of said side bars 38 are aligned with and between the adjacent ends of the visor or hood flanges 17—36, whereby to provide cooperative perpendicular visor or hood flange portions 39, operative to further shield the mouths 18 and 34 against inward entrance therethrough of extraneous light rays. Said side bars 38 may be affixed to the main and dividing plates 10 and 20 in any suitable manner so as to be unitary therewith. In a preferable form thereof, however, said side bars 38 are of channel shape in cross section, and end portions of their peripheral flanges are severed from main portions thereof to provide anchoring ears 40 inwardly projecting from the visor or hood flange portions 39 so as to lap end portions of the visor or hood flanges 17—36, to which said anchoring ears 40 are spot welded or otherwise suitable secured.

The paper supporting areas 11, 24, 27 and 28 may be painted or otherwise coated with material of white or other selected light color to provide a suitable ground upon which to test focus a light projecting image to be printed, preparatory to the printing operation.

In the use of the easel or frame of this invention, if it is desired to obtain an enlarged print of maximum size, e. g. 11 x 14 inches, the easel or frame is laid upon the table or bed of the projection printing apparatus with the paper supporting area 11 of the main plate 10 upward (see Fig. 1). The paper is then inserted through either mouth 18 to move through the guides or runways 14, whereby to overlie said supporting area 11

in stopped and masked operative position thereon, whereupon the printing operation is proceeded with. If it is desired to obtain an enlarged print of any of the smaller sizes, the easel or frame is reversed or turned over so as to lay upon the table or bed of the projection printing apparatus with the paper supporting areas 24, 27 and 28 of the main plate 10 upward (see Fig. 4), whereupon a selected smaller size of paper is inserted through a mouth 34 to lie upon an appropriate supporting area in stopped and marginally masked position, whereafter the printing operation may be proceeded with.

If prints smaller than the smallest size normally provided for, or of size intermediate the sizes normally provided for, by the paper supporting areas, are desired, said supporting areas may be suitably reduced to desired size by application thereto of one or more separable reducer plates. An illustrative form of reducer plate is shown in Fig. 9, and comprises a flat body 41 of suitable dimensions bordered on one side by an offset masking flange 42 joined thereto by a perpendicular wall section adapted to provide a paper stop 43. It will be obvious that such form of reducer plate may be deposited upon a paper supporting area to be reduced thereby, and the rear margin 44 of its body 41 inserted beneath a masking flange and against a paper stop at a side of said supporting area, whereby to hold the retainer plate in place and oppose its masking flange 42 and paper stop 43 to a masking flange and paper stop of an opposite side of said supporting area, being thus disposed to receive and position therebetween the paper of reduced size.

It will be observed, by inspection of Fig. 7 more particularly, that the novel arrangement of visor or hood flanges surrounding the entrance mouths leading to the paper supporting areas of the opposite faces of the main plate 10, not only provide light barriers to shield said mouths against entrance therethrough of extraneous light rays, but also provide adequate finger receiving space whereby finger access to margins of paper deposited in the easel or frame and accessible through the notches 37 of the main plate ends is facilitated when the operator desires to enter or withdraw the paper.

From the above description it will be appreciated that the instant invention provides a novel unitary construction of easel or frame, which may be conveniently and efficiently employed in the printing of photographic enlargements in a variety of selected sizes.

Having now described our invention, we claim:

1. A reversible projection printing easel comprising a flat rectangular main plate having side marginal portions thereof in-turned over one face thereof to provide lateral masking flanges and paper stop means, visor members each comprising an inwardly projecting foot-piece, an upstanding web and an exteriorly projecting visor flange, said visor members being respectively affixed by their footpieces to and between corresponding end portions of said inturned lateral masking flanges to overlie marginal end portions of said main plate in spaced relation thereto, whereby to provide intermediate entrance mouths adapted to pass paper onto said face of said main plate, said exteriorly projecting visor flanges being thereby respectively disposed in offset overhanging relation to said respective entrance mouths so as to shield the latter against entrance therethrough of extraneous light rays, a dividing plate having inwardly offset foot flanges along its sides

and secured to said main plate, said dividing plate having a plurality of openings of various dimensions to overlie variously sized paper supporting areas of said opposite face of the main plate, inwardly depressed division bosses intermediate said openings of the dividing plate adapted to abut said main body, marginal portions of said openings of the dividing plate being adapted to provide masking flanges, corresponding ends of said main and dividing plates being spaced apart to provide entrance mouths leading to the last mentioned paper supporting areas, and additional visor members at the respective ends of said dividing plate each formed by an upstanding web and an exteriorly projecting visor flange, the visor flanges of said additional visor members being disposed in outwardly offset overhanging relation to said last mentioned entrance mouths so as to shield the latter against entrance therethrough of extraneous light rays.

2. A reversible projection printing easel as defined in claim 1, wherein said main plate is provided in its ends with indented notches through which marginal portions of paper overlying the same are finger accessible, opposed visor flanges being substantially spaced apart, whereby to facilitate access of fingers to paper exposed by said notches to the grasp thereof.

3. A reversible projection printing easel as defined in claim 1, including side bars extending along the sides of said main plate at right angles thereto, said side bars being of a height substantially equivalent to the distance of separation of opposed visor flanges so as to be substantially flush therewith, and end portions of said side bars being disposed to close the ends of the space intermediate said visor flanges.

4. A reversible projection printing easel as defined in claim 1, wherein said main plate is provided in its ends with indented notches through which marginal portions of paper overlying the same are finger accessible, opposed visor flanges being substantially spaced apart, whereby to facilitate access of fingers to paper exposed by said notches to the grasp thereof, side bars extending along the sides of said main plate at right angles thereto, said side bars being of a height substantially equivalent to the distance of separation of opposed visor flanges so as to be substantially flush therewith, and end portions of said side bars being disposed to close the ends of the space intermediate said visor flanges.

5. A reversible projecting printing easel all parts of which are permanently united in fixed immovable relation one to another to provide a unitary structure comprising a main plate provided on one face thereof with paper receiving and holding means adapted to accommodate a maximum size of paper and on the opposite face thereof with a plurality of selectively usable paper receiving and holding means of various dimensions adapted to accommodate paper of correspondingly reduced sizes, all said paper receiving and holding means having permanently open entrance mouths respectively opening from ends of said main plate, and visor means operative to shield said open entrance mouths against entrance therethrough of extraneous light rays, said visor means comprising web portions disposed substantially in the vertical plane of said open entrance mouths to extend therefrom relative to opposite sides of said main plate, exteriorly projecting visor flanges extending outwardly from said web portions in planes parallel to that

of said main plate, whereby to be disposed in offset overhanging and shielding relation to said open entrance mouths, and hood flange portions interconnecting corresponding ends of said visor flanges to close the ends of the space intermediate the latter.

6. A reversible projection printing easel all parts of which are permanently united in fixed immovable relation one to another to provide a unitary structure comprising a main plate provided on one face thereof with paper receiving and holding means adapted to accommodate a maximum size of paper and on the opposite face thereof with a plurality of selectively usable paper receiving and holding means of various dimensions adapted to accommodate paper of correspondingly reduced sizes, all said paper receiving and holding means having permanently open entrance mouths respectively opening from ends of said main plate, and visor means operative to shield said open entrance mouths against entrance therethrough of extraneous light rays, said visor means comprising web portions disposed substantially in the vertical plane of said open entrance mouths to extend therefrom relative to opposite sides of said main plate, exteriorly projecting visor flanges extending outwardly

from said web portions in planes parallel to that of said main plate, whereby to be disposed in offset overhanging and shielding relation to said open entrance mouths, side bars extending along the sides of said main plate at right angles thereto, said side bars being of a height substantially equivalent to the distance of separation of opposed visor flanges so as to be substantially flush therewith, and end portions of said side bars being disposed to close the ends of the space intermediate said visor flanges.

ANDREW RAIFF.
SYLVIA S. ROBBINS.
VICTOR G. ROBBINS.
ISIDORE S. ROSEN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,197,780	Van Doran	Sept. 12, 1916
1,616,906	Kroedel	Feb. 8, 1927
2,187,381	Lane	Jan. 16, 1940
2,235,463	Porcelli et al.	Mar. 18, 1941
2,348,999	Peterson	May 16, 1944