

E. HARROLD.
PHOTOGRAPHIC TIMER.
(Application filed May 29, 1902.)

(No Model.)

Fig. 1.

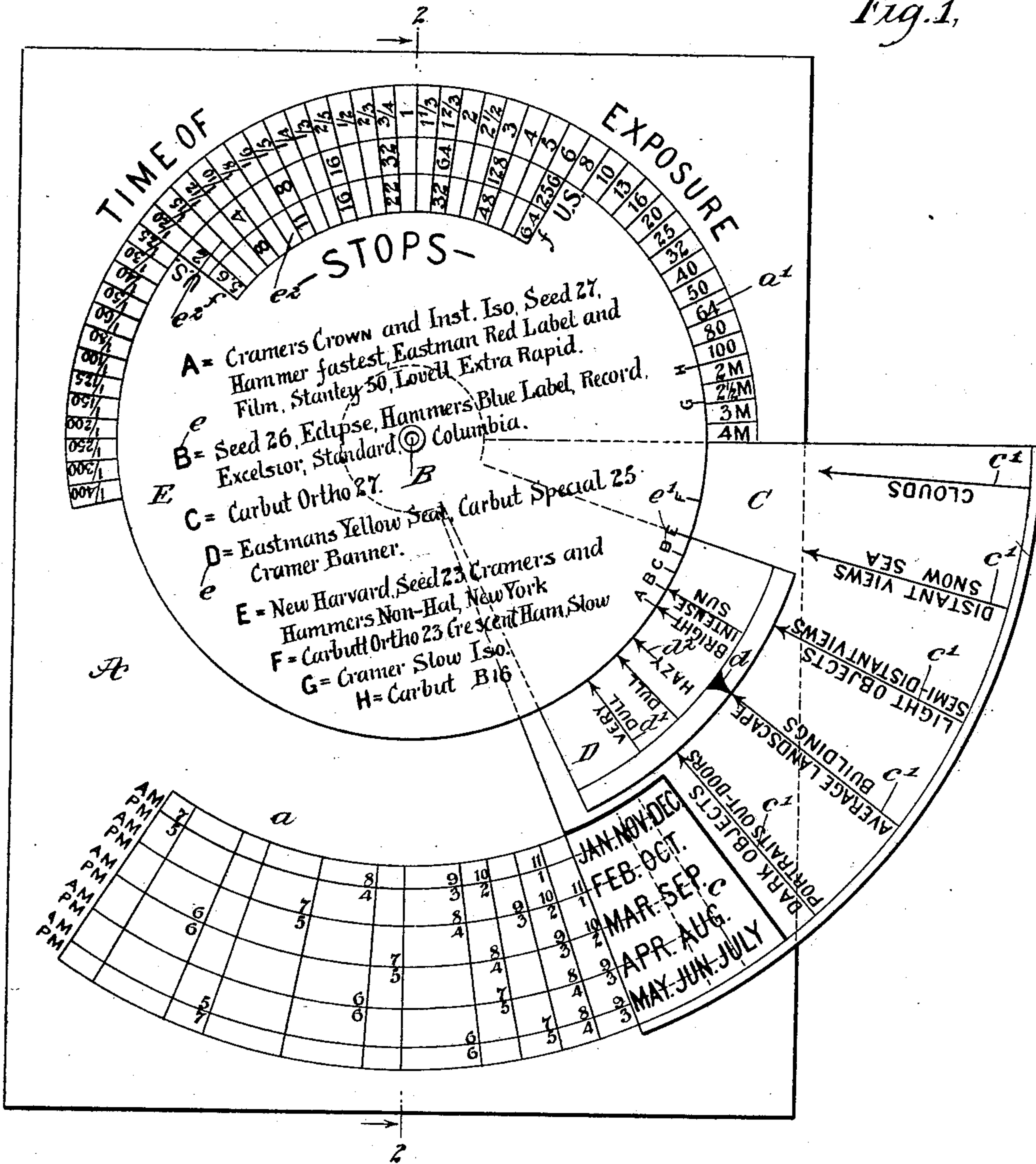


Fig. 2.



WITNESSES:

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ELMER HARROLD, OF LEETONIA, OHIO, ASSIGNOR OF ONE-FOURTH TO
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PHOTOGRAPHIC TIMER.

SPECIFICATION forming part of Letters Patent No. 715,061, dated December 2, 1902.

Application filed May 29, 1902. Serial No. 109,516. (No model.)

To all whom it may concern:

Be it known that I, ELMER HARROLD, a citizen of the United States, and a resident of Leetonia, in the county of Columbiana and State of Ohio, have invented a new and Improved Photographic Timer, of which the following is a full, clear, and exact description.

This invention relates to a device for furnishing readily from certain known conditions an exact statement of the proper duration of photographic exposures.

It consists in certain features of construction and arrangement of parts, rendering it more convenient and certain in operation than those heretofore produced, all of which will be fully set forth hereinafter.

This specification is an exact description of one example of my invention, while the claims define the actual scope thereof.

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 both views.

Figure 1 is a plan view of the invention, and Fig. 2 is a section on the line 2 2 of Fig. 1.

The device comprises a base A, preferably in the form of a rectangular plat, of any suitable material—such as cardboard, celluloid, parchment, aluminium, &c. Mounted to swing on this base around a center B are a major sector C, a minor sector D, and a disk or top member E. The center B may be formed by a rivet, as shown best in Fig. 2. The elements C, D, and E may be constructed of the same material as the base A.

On the base A is produced a series of lines concentric to the center B and a series of crossing lines radially of said center, these forming a belt (designated by the letter *a*) on which are marked the hours of the day. On the major sector C is a division *c*, on which are marked the months of the year in groups, respectively coinciding with the concentric lines in the belt *a*, so that the major sector C may be swung around its center B to place its left-hand radial edge directly adjacent to any hour of the day opposite any one of the five groups of months. For example, if the exposure is to be made in May, and the hour is 9 a. m. or 3 p. m., the major sector C should be adjusted, as shown in Fig. 1. Extending

from the division *c* of the major sector C, along the circumference of said sector, to the opposite radial edge, are a number of radial lines *c'*, which are arranged according to the various subjects which might be photographed. It should be understood that different subjects in photography require varying durations of exposure. For example, light objects do not require so great an exposure as dark objects. The letters along the lines *c'* refer to said varying objects.

On the minor sector D is produced a pointer *d*, which is adapted to read with respect to the radial lines *c'* on the major sector C. On this minor sector D are also produced a number of radial lines *d'*, and the letters along these lines refer to the varying degrees of light due to the condition of the sun and atmosphere. For example, the words on the radial lines *d'* "intense sun," "bright sun," "hazy," "dull," "very dull," all of which are conditions of which account must be taken during a photographic exposure. The disk E has a series of letters (designated *e*) produced thereon, and opposite these letters are markings referring to the various forms of photographic plates and films. Different brands of photographic plates require different periods of exposure, and account must of course be taken of the brand of plates being used. On the periphery of the disk E at the point *e'* are a series of letters corresponding exactly with the letters *e*, and opposite these letters *e'* are pointer-lines adapted to be placed in coincidence with the lines *d'* of the minor sector D. Above the letters *e* and just outward of the legend "Stops" are two concentric lines or belts *e²*, which bear figures representing the size of the stops or exposure-openings which admit light to the camera. Opposite these two lines or belts *e²* the letters "f" and "U. S." are marked, these letters referring to different systems of measuring said exposure-openings. Finally around the upper periphery of the disk E, but on the base-plate A, is a concentric belt *a'*, bearing figures representing the durations of the exposures to be made under the various possible conditions.

In using the device the major sector C should be moved until the correct month, as marked thereon in the division *c*, is directly

adjacent to the correct hour of the day as marked on the belt *a* of the base-plate A. Then the minor sector D should be moved to place its pointer *d* directly opposite the radial line *c'* which stands for the particular subject to be photographed. For example, the adjustment shown in Fig. 1 shows the pointer *d* opposite the line *c'* standing for "average landscape;" "buildings." Then the operator, knowing the brand of plate or film which he is about to employ, should determine which of the letters *e* stand for this plate, and then the disk E should be moved to place the proper letter *e'* directly opposite that line *d'* on the minor sector D which correctly represents the condition of the light at the time the photograph is being taken. For example, let it be assumed that the photographer is using the "seed 27" plate and that the light is bright. Then the letter "A" of the series *e'* should be moved opposite the word "bright" on the minor sector D. This is the last adjustment necessary, and the operator, knowing the size of the light-admitting orifice, should find the same on the belt *e*², and then by referring to the belt of figures *a'* the figure on this belt directly opposite the figure on the belt *e*² standing for the size of the exposure-orifice will give the exactly correct duration of exposure to meet the various conditions outlined hereinbefore.

It will thus be seen that by very easy adjustments each of the several conditions which require to be considered in making exposures may be given their due weight in determining the duration of the exposure, and when the lettering and figuring of the device is properly calculated the result will necessarily be mechanically and mathematically accurate.

It is clear that the precise form of the moving elements A B C D is not entirely material to my invention, although I consider the form and arrangement here shown as preferable by far. It will also be apparent that the markings, figurings, and letterings are not essentially those shown in the drawings and that these may be varied greatly without departing from the spirit of my invention. It is unnecessary for me to illustrate and describe the various changes which may be resorted to; but I desire it understood that I am not limited to the precise arrangement here shown, but consider myself entitled to all such variations of form and details of the invention as may lie within the scope of my claims.

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

1. A photographic timer, comprising a base member having marked thereon figures representing the hours of the day, and having also marked thereon figures representing various durations of exposure, three additional members movably mounted with respect to the said main or base member, the first addi-

tional member having produced thereon the months of the year and also having markings standing for various subjects of photography, the second additional member being adapted to read with respect to the subject-markings on the first additional member and having produced thereon markings representing various conditions of light, and the third additional member having markings thereon standing for various sorts of photographic plates or films, said markings being adapted to read with respect to the light-markings on the second additional member, and said third additional member also having markings thereon adapted to read with respect to the exposure-duration markings on the base member, and representing various measurements of camera light-admitting orifices.

2. A photographic timer, comprising a base-plate, a major sector mounted to swing thereon, a minor sector mounted to swing on a center coincident with the center of movement of the major sector, and a disk mounted to turn around said center of the sectors, said base-plates, sectors and disk having exposed surfaces and said exposed surfaces having markings representing conditions to be accounted for in photography, and the base-plate having a scale, bearing figures giving the duration of exposures under varying conditions.

3. A photographic timer, comprising a base-plate, and members mounted to swing on the same, said members turning around a common axis, said base-plate and said swinging members thereon having exposed surfaces and said surfaces having markings representing conditions to be accounted for in photography, and the base-plate also having a scale, bearing figures giving the duration of exposures under varying conditions, the markings on said exposed surfaces of the base-plates and swinging members reading progressively from the base-plate over the swinging members to the scale on the base-plate bearing figures giving the duration of the exposure.

4. A photographic timer, comprising a base, a major sector mounted to swing thereon, a minor sector mounted over the major sector to swing around an axis coincident to that of the major sector, and a top member lying over the sectors and mounted to turn around an axis coincident to that of the sectors, said base, sectors and top member having scales thereon representing conditions to be accounted for in photography, and said scales reading the one with the other, substantially as described.

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

ELMER HARROLD.

Witnesses:

WILBUR G. BESS,
CLINTON G. WILDERSON.