(No Model.)

# H. VAN HOEVENBERGH.

## OPTICAL TOY.

No. 259,950. Patented June 20, 1882.

*Fig. 1,*

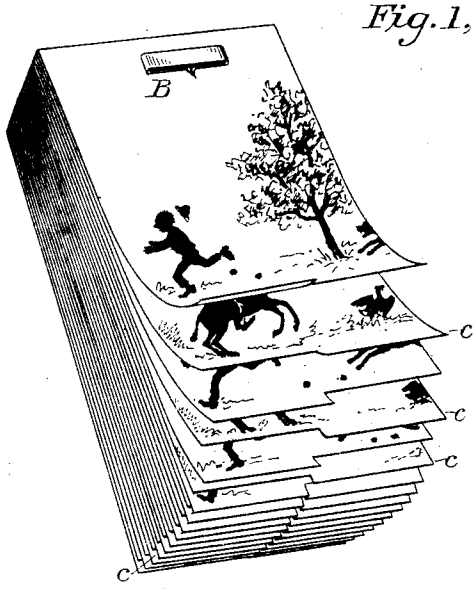
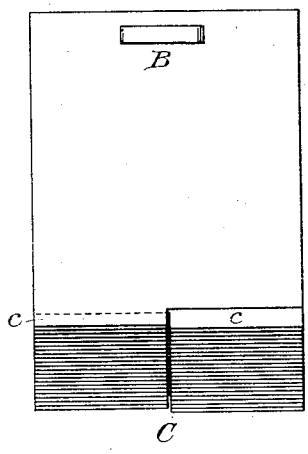



*Fig. 2,*




*WITNESSES*

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# UNITED STATES PATENT OFFICE.

HENRY VAN HOEVENBERGH, OF ELIZABETH, NEW JERSEY.

## OPTICAL TOY.

SPECIFICATION forming part of Letters Patent No. 259,950, dated June 20, 1882.

Application filed May 24, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY VAN HOEVENBERGH, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Optical Toys, of which the following is a specification.

My invention relates to that class of optical toys which depend for their action upon the well-known fact that the impression communicated by an object to the eye remains upon the retina for a short time after the object itself has been withdrawn.

In a patent granted to me May 16, 1882, No. 258,164, I have described and illustrated a method of and devices for producing an optical illusion, whereby a series of pictorial representations of an object in different positions may be passed in rapid succession before the eye, thereby conveying the impression to the mind of a single object in motion.

The method therein described consists in uniting together at one margin a series of leaves, each bearing upon its upper surface a pictorial representation of some object, the representation upon each succeeding leaf showing the same object in a slightly different position. The leaves are arranged in such a manner as to be exposed momentarily and in rapid succession to the eye by being bent backward and then allowed to resume their normal position one by one, but with any required degree of rapidity.

My present invention relates to certain improvements upon the invention described in the patent above referred to; and it consists in combining two or more series of superposed leaves, each containing a distinct succession of pictorial representations, so that the individual leaves of each series alternate with each other in regular succession, and in cutting away a corresponding portion from the lower margin of each leaf in each series in such a manner that the representations in either series alone may be brought into view in succession, accordingly as the projections remaining upon the free ends of the cards in that series of the pack are released from the hand of the operator.

In the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a plan view, showing the method of preparing the free ends so that one series or the other may be brought into view at will.

In carrying out my invention two or more sets of cards of moderate stiffness are employed, and each set or pack is preferably trimmed off at one edge in a beveled form, as shown at C, but is provided with a projection, *c*, which partakes of the same angle or bevel. The projections upon all the cards in each pack correspond with each other with respect to their position at the free end of the pack, but occupy different vertical positions in the pack upon the different series. For example, if two series of cards are to be combined, the projections upon one series occupy the right-hand half, the ends being cut away through the other half, while at the ends of the other series the projections are permitted to remain at the left side, the right-hand portion being cut away. If three or more series are to be employed, the extensions of two series occupy the two outer thirds of the beveled ends, respectively, while the other is provided with a projection at central portion of its beveled end. The same plan is carried out for any required number of series which are to be combined.

Each card of each series bears a pictorial representation of some object, but this object is represented in a different position upon the successive cards of its own series, and each series contains a different subject or set of representations, as hereinafter more fully explained. The packs thus prepared are made up with their successive leaves alternating in the manner described. The three straight edges of all the cards in the pack are flush with each other, and the projections of the different series are preserved in their relative positions, and finally all the series are bound together bookwise into one pack by uniting them at the margin opposite the beveled portion by a clamp or other device, B, of suitable character.

The representations upon each card of a series are unlike in that each succeeding picture represents the object in a slightly different progressive position, as illustrated in Fig. 1. It is evident, therefore, that if the leaves be brought rapidly and in proper succession into view the appearance will be as of a moving object or group of objects. The manner in which this

is accomplished is by grasping the pack firmly in the left hand at its clamped edge, as represented in Fig. 1, bending it downward with the right hand, and finally allowing the free ends of the several cards, from the first to the last, to slip successively and rapidly from beneath the thumb of the right hand and to regain their normal position by virtue of their inherent resiliency.

The method of causing one or another series of representations to appear independently of the remaining ones with which it is bound consists in placing the thumb of the right hand over the projections of that particular series and freeing the leaves, as already explained. Only those leaves of that series having the projections which are engaged by the thumb will be presented to the eye, for the reason that the leaves of the other series are held in their bent position only by the pressure upon the projections of the one being displayed, and will therefore resume their normal position the instant the projection of the preceding leaf is freed from the thumb of the operator, and without being exposed to view.

It is not absolutely necessary that the edge of the pack which is passed under the thumb should be beveled, as it is evident it may be operated, though with less convenience, if the leaves are all of equal length. It is, however, essential that the projection upon all the cards of a continuous series should correspond in vertical position with each other, and that the cards of each of the series should be cut away over a portion as wide or slightly wider than the combined projections of the remaining series.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, of two or more series of superposed leaves, in which each successive leaf of each series bears a pictorial representation of an object in a different position, the leaves belonging to the different series being alternated, as described, and means, substantially such as described, for securing said leaves together bookwise by one margin thereof.

2. The combination, substantially as hereinbefore set forth, of two or more alternating series of superposed leaves united bookwise at one of their margins, each series bearing the pictorial representation of an object upon each of its leaves, and being provided with a corresponding projection upon the free end of each leaf, whereby one series may be exhibited without exposing another series.

In testimony whereof I have hereunto subscribed my name this 22d day of May, A. D. 1882.

HENRY VAN HOEVENBERGH.

Witnesses:
CHARLES A. TERRY,
MILLER C. EARL.