May 8, 1934. A. D. EITZEN 1,957,448

STOCK QUOTATION PROJECTING MACHINE

Original Filed May 18, 1929 2 Sheets-Sheet 1

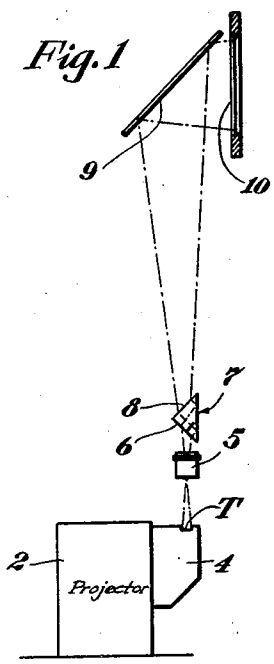


Fig. 1

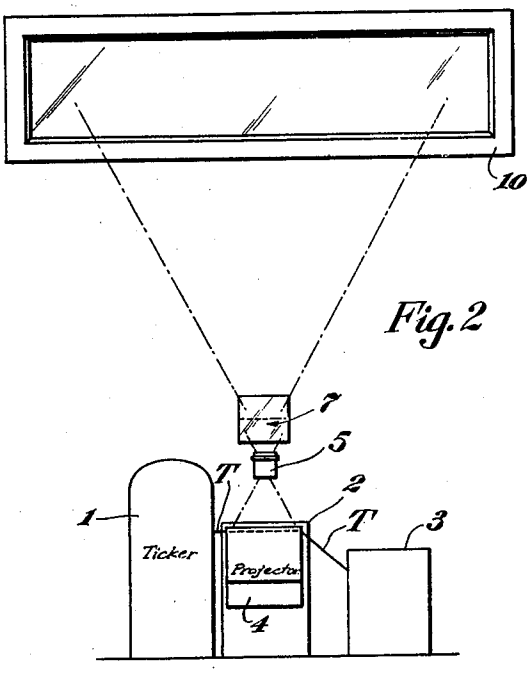


Fig. 2

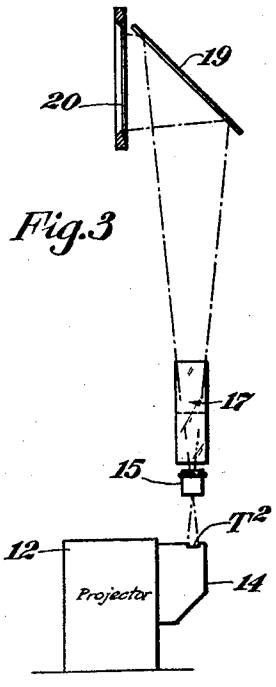


Fig. 3

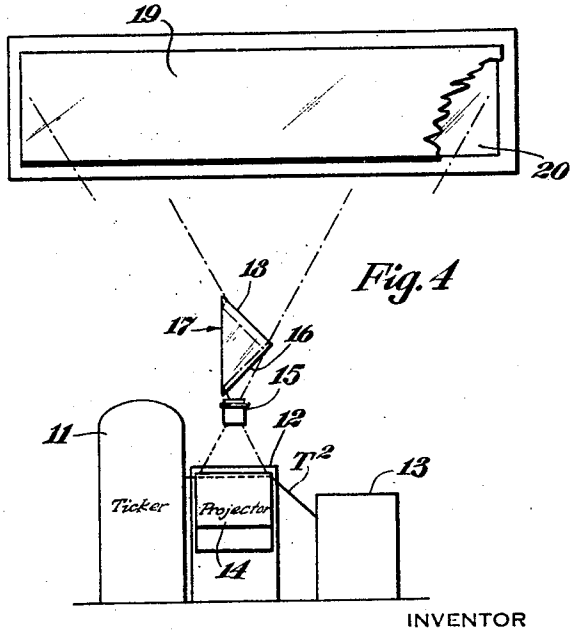


Fig. 4

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Fig. 5

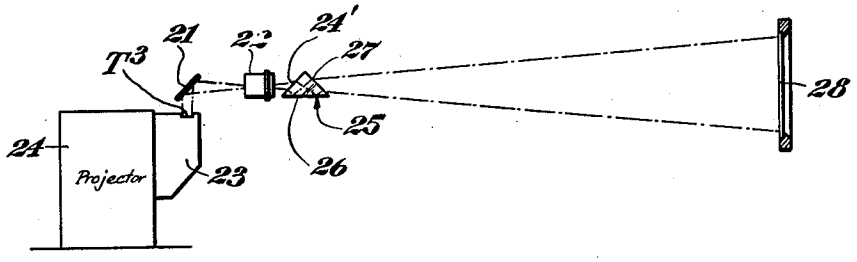
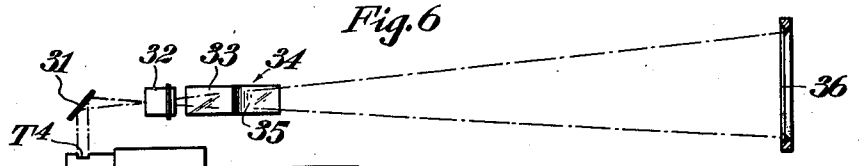


Fig. 6



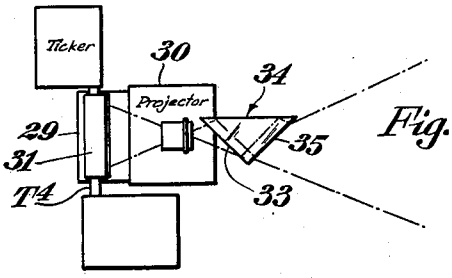


Fig. 7

Fig. 8

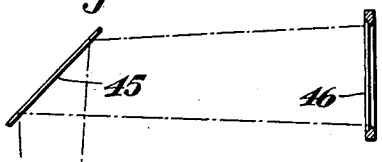


Fig. 10

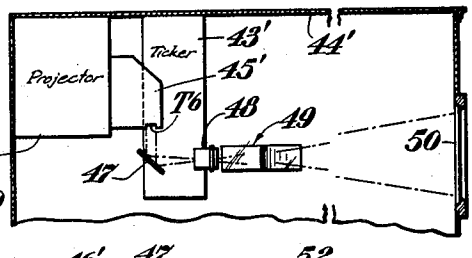
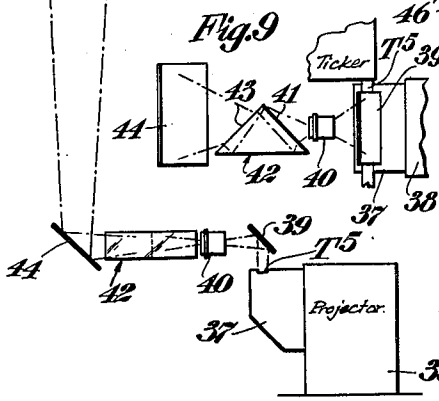


Fig. 9



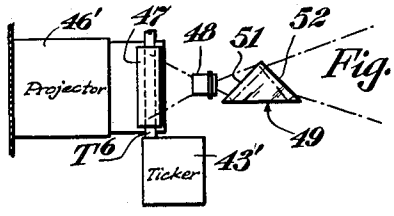


Fig. 11

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1,957,448

STOCK QUOTATION PROJECTING MACHINE

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Application May 18, 1929, Serial No. 364,139
Renewed March 2, 1932

5 Claims. (Cl. 88—24)

This invention relates to stock quotation projecting machines in general.

With stock quotation projecting machines today in use, considerable difficulty has been encountered from time to time in properly locating the screen relative to the ticker and projecting machine to suit the space allotted by the broker. This is particularly due to the fact that space, especially in the larger cities, can only be had at a very high rental and consequently the occupant as a rule wishes to use every foot of space to the best advantage.

When installing a stock quotation projecting machine, with the machines heretofore in use, a number of conditions had to be considered in order to get the best effect. As an instance, while the screens generally used with stock quotation projecting machines are so-called "day light" screens, it is of course well known that the best results can be produced with these "day light" screens when they are not exposed to the direct glare of day light. Similarly, consideration must also be taken of the interior of the room in which the machine is to be installed, especially with respect to surrounding light reflecting surfaces. Another condition that always must be considered is the amount of space and configuration of the same allotted for the area to be occupied by the projecting machine which will frequently determine the type of apparatus to be used.

To this end, the present invention aims to provide a new combination of elements using the well known light refracting prism whereby a minimum number of parts may be used to obtain the desired efficiency of projection, and which combination of elements is sufficiently flexible to permit arranging the same to suit any number of installation problems, whereby standardization of equipment will be considerably enhanced.

These and other features, capabilities and advantages of the invention will appear from the subjoined detail description of specific embodiments thereof illustrated in the accompanying drawings in which

Figure 1 is an end elevation, partly in section, of one embodiment of the invention;

Fig. 2 is a side elevation of the same;

Fig. 3 is an end elevation, partly in section, of a second embodiment of the invention;

Fig. 4 is a side elevation of the embodiment shown in Fig. 3;

Fig. 5 is an end elevation, partly in section, of a third embodiment of the invention;

Fig. 6 is an end elevation of a fourth embodiment of the invention, partly in section;

Fig. 7 is a plan of the embodiment illustrated in Fig. 6;

Fig. 8 is an end elevation, partly in section, of a fifth embodiment of the invention;

Fig. 9 is a plan of the embodiment illustrated in Fig. 8;

Fig. 10 is an end elevation, partly in section, of a sixth embodiment of the invention; and

Fig. 11 is a bottom plan view of the embodiment illustrated in Fig. 10.

In the embodiment illustrated in Fig. 1, the tape T proceeds from the ticker 1 to the projecting machine 2 and then passes to the tape puller 3. The projecting machine 2 is provided with an extension 4 which has a deflector at the bottom thereof to project light rays up through the tape T to the projecting lens 5, from which it passes into the inclined surface 6 of the prism 7 and emerges from the inclined face 8 and passes to the deflector 9 to be projected onto the screen 10. The tape when proceeding from the ticker 1 has the printed matter on the upper surface thereof and reads longitudinally of the tape.

From the foregoing it will thus be seen that the image of the tape will pass through the projecting lens 5 and there be inverted but still face upward. Thereupon, the images will pass through the prism 7 and be again inverted, but this time so that they can only be legible when looking upwardly at the same, that is, the images have now been inverted to face upside down. From the prism 7 the images will be received on the deflector 9 and be deflected onto the screen 10 in erect position with the characters moving from the right to the left of the screen 10 looking at Fig. 2, as distinguished from the movement of the tape passing from the ticker 1 to the tape puller 3 from left to right.

In the embodiment illustrated in Figs. 3 and 4, the tape T^2 passes from the ticker 11 to the projecting machine 12 and from the projecting machine 12 to the tape puller 13. Here, too, the printed side of the tape faces upwardly and the printed matter reads longitudinally of the tape. The projecting machine 12 has formed thereon an extension 14 from the bottom of which the light is directed upwardly through the tape T^2 to project the images to the projecting lens 15, by which the images are inverted but still face upwardly. From the projecting lens 15 the images pass into the inclined face 16 of the prism 17, emerging through the inclined face 18 but this time facing downwardly. From the face 18 the images pass to the deflector 19, the rear

side of which is seen in Fig. 4, and then finally pass to the screen 20 in erect position.

It will thus be seen that by merely changing the position of the prism an angle of ninety (90) degrees, all of the remaining parts of the apparatus may remain the same, and projection can be had on a screen facing the opposite direction to that illustrated in the embodiments of Figs. 1 and 2. Note should be taken of the fact that under some circumstances it may be desirable to have a larger prism than the embodiments illustrated in Figs. 3 and 4. Otherwise, however, the parts remain the same as aforesaid and the vertically extending face of the prism instead of facing to the front of the screen 10, as in the embodiment of Figs. 1 and 2, now faces toward the right end of the screen.

In the embodiment illustrated in Fig. 5, we again have the same number of parts as used in the embodiments of Figs. 1 and 3. In this embodiment, however, instead of disposing a deflector adjacent to the screen, to wit, the deflector 21 is disposed between the projecting lens 22 and the tape T^3. The tape T^3 in this instance extends across the upper end of the extension 23 of the projecting machine 24, the light passing from the bottom of the extension 23 upwardly through the tape whereby the images of the printed matter on the tape are projected onto the deflector 21 from which they pass to the right through the projecting lens 22 where they are inverted now facing the projecting machine and in addition being disposed upside down. From the projecting lens 22 the images pass through the inclined face 24' of the prism 25 which has a plane face facing downwardly in a horizontal direction, to wit, the face 26. From the face 24' the images pass to the face 26 and then emerge through the face 27 and are received on the screen 28 in an erect position where the images pass, with respect to Fig. 5, out of the sheet of drawings and in a vertical direction with respect to the customer who may be reading the images, as distinguished from the movement of the tape which moves into the sheet of drawings in a vertical direction and through a horizontal plane with respect to the customer who may be reading the images on the screen 28.

In the embodiment illustrated in Figs. 6 and 7, there is illustrated an arrangement similar to that illustrated in the embodiment of Fig. 5 with the exception that the projecting machine now faces in the opposite direction. This is made possible by changing the position of the prism so that its elongated plane face faces toward the right end of the screen.

Here, as an instance, the tape T^4 passes across the light aperture at the upper end of the extension 29 of the projecting machine 30. The light rays pass up from the bottom of the extension 29, passing through the tape T^4, and project the images thereof onto the deflector 31, from which the images pass to the projecting lens 32 where they are inverted and face the mirror or deflector 31 and then pass through the inclined face 33 of the prism 34 and emerge from the inclined face 35, and then pass to the screen 36 reversed end for end, so as to move from right to left in a legible manner.

When a greater number of mirrors or deflectors are used with a prism, as illustrated in the embodiments of Figs. 8 and 9, a large number of different arrangements can be provided to suit most any condition. In the embodiment illustrated in Figs. 8 and 9, the condition is illustrated where, as an instance, it is required to project the images around an obstruction disposed between the projecting machine and the final passage of the images or light rays to the projecting screen. The light rays, in this instance, pass upwardly from the bottom of the extension 37 of the projecting machine 38 through the tape T^5 whereby the images pass to the deflector 39 and from the deflector 39 pass to the left through the projecting lens 40 and are inverted when passing through the projecting lens 40, and then pass through the inclined face 41 of the prism 42, emerging from the inclined face 43, then passing to the deflector 44, and then upwardly to the deflector 45, and finally to the screen 46 reversed end for end so as to move from right to left to be readable. In this case, the images travel on the screen 46 in the same direction as the direction of movement of the tape T^5 across the light aperture at the upper end of the extension 37 with the exception that the images travel in a vertical plane and the tape when crossing the light aperture passes along a horizontal plane.

The embodiment illustrated in Figs. 10 and 11 is another embodiment in which a single deflecting mirror is used with the prism and in which the deflecting mirror is disposed between the projecting machine and the objective lens. This embodiment is particularly practical where floor space is not available and it is desirable to secure the ticker and projecting machine to an overhead support.

In this case the ticker 43' is connected to the overhead support or ceiling 44' from which the tape T^6 passes to the extension 45' of the projecting machine 46'. As the tape passes beneath the light aperture in the extension 45', the light rays from the extension pass through the tape T^6 causing images to be projected onto the deflector 47 from which the images pass through the projecting lens 48 and then to the prism 49, and from the prism 49 onto the screen 50 to one side and below the projecting machine 46 and ticker 45. As the images pass through the projecting lens 48 they will be inverted in the usual way, and after they pass into the inclined face 51 and emerge from the inclined face 52 of the prism 49, the images will be turned end for end and toward the screen 50 and finally be shown in legible position on the screen 50.

It is obvious that various changes and modifications may be made to the details of construction without departing from the general spirit of the invention as set forth in the appended claims.

I claim:

1. The combination with a screen, of a ticker, a stock quotation projecting machine having a light aperture, a tape puller, the tape being discharged by the ticker to the projecting machine and being moved through the projecting machine with its printed matter facing upwardly by the tape puller, a projecting lens disposed adjacent to said light aperture, a light refracting prism disposed adjacent to said lens for receiving images of the tape from said projecting lens, and a deflector remote from, but associated with, said projecting lens and prism to direct the images ontc said screen.

2. The combination with a screen, of a projecting machine having a light aperture, a ticker for printing stock quotations on a tape and feeding the same to said projecting machine, a tape

puller for pulling the tape with its printed matter facing upwardly through said projecting machine, a light refracting prism disposed adjacent to said light aperture for receiving images from said projecting machine, and an image controlling means remote from, but associated with, said prism for directing the images of the tape onto said screen.

3. The combination with a ticker, of a stock quotation projecting machine having a light aperture, a tape puller for pulling the tape with its printed matter facing upwardly through said projecting machine, a projecting lens disposed adjacent to said light aperture for receiving the images from said light aperture, a prism disposed adjacent to said lens for receiving the images from said lens and erecting the same, a deflector remote from said prism for receiving the images from said prism, and a screen adjacent to said deflector for receiving the images from said deflector.

4. In a stock quotation projecting machine, the combination with a screen, of a ticker, a projector having a light aperture, a tape puller for drawing the tape as it is ejected by said ticker across said light aperture with its printed matter facing upwardly, a projecting lens disposed adjacent to said light aperture, a light refracting prism disposed adjacent to said lens for receiving images of the tape from said projecting lens, and a deflector remote from, but associated with, said projecting lens and prism to direct the images onto said screen, said deflector being disposed between said prism and said screen and said projecting lens being disposed between said prism and said light aperture.

5. In a stock quotation projecting machine, the combination with a ticker, of a screen, a projector having a light aperture, a tape puller for pulling the tape across said light aperture as it is ejected by said ticker, a light refracting prism disposed adjacent to said light aperture for receiving images from said light aperture, and an image controlling means remote from, but associated with, said prism for directing the images of the tape onto said screen, said image controlling means being disposed between said screen and said prism and said prism being disposed between said image controlling means and said light aperture.

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