(No Model.)

D. C. HUNTER.

PERSPECTIVE GAGE.

No. 486,782. Patented Nov. 22, 1892.

Fig. 1.

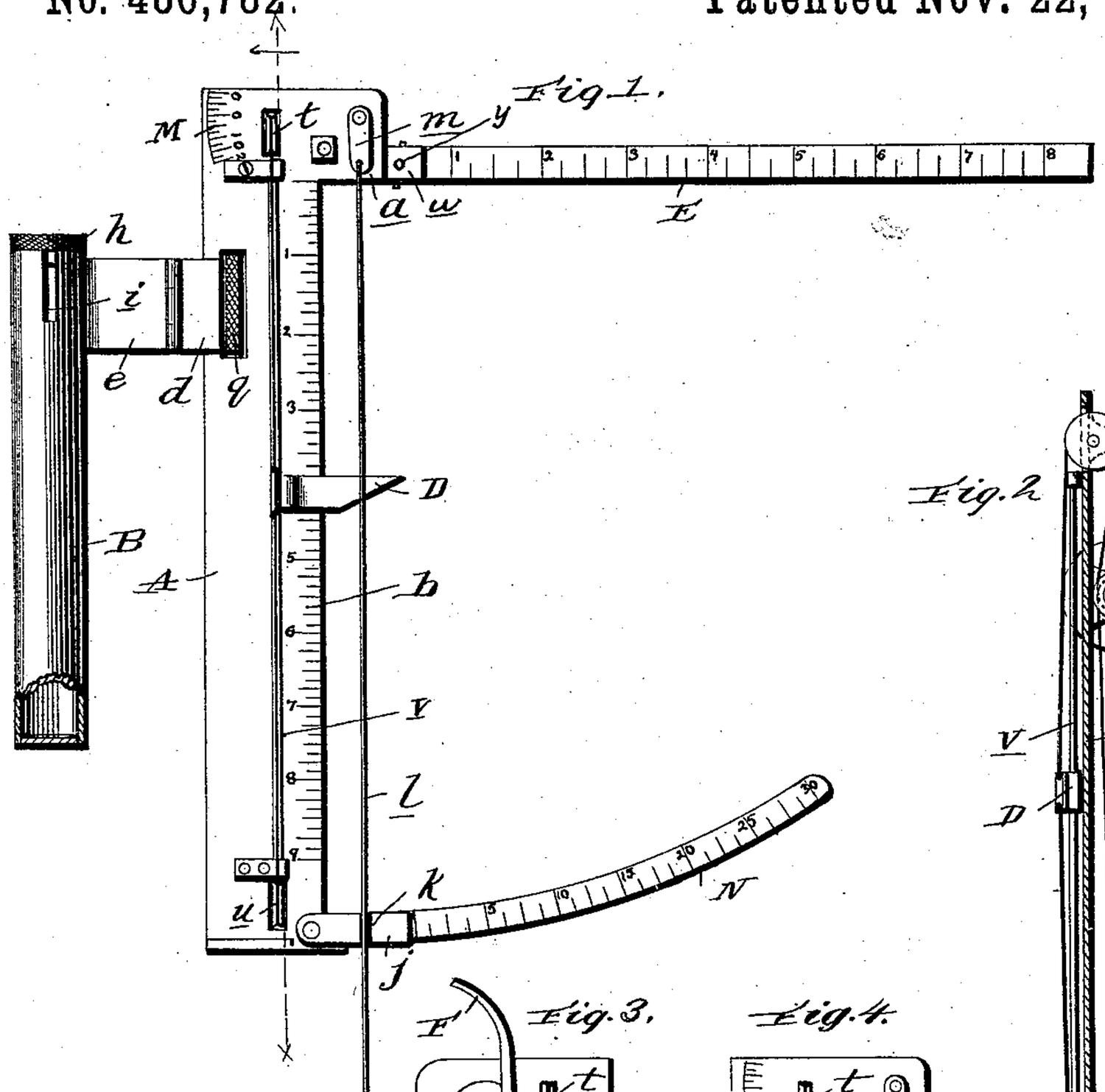


Fig. 2.

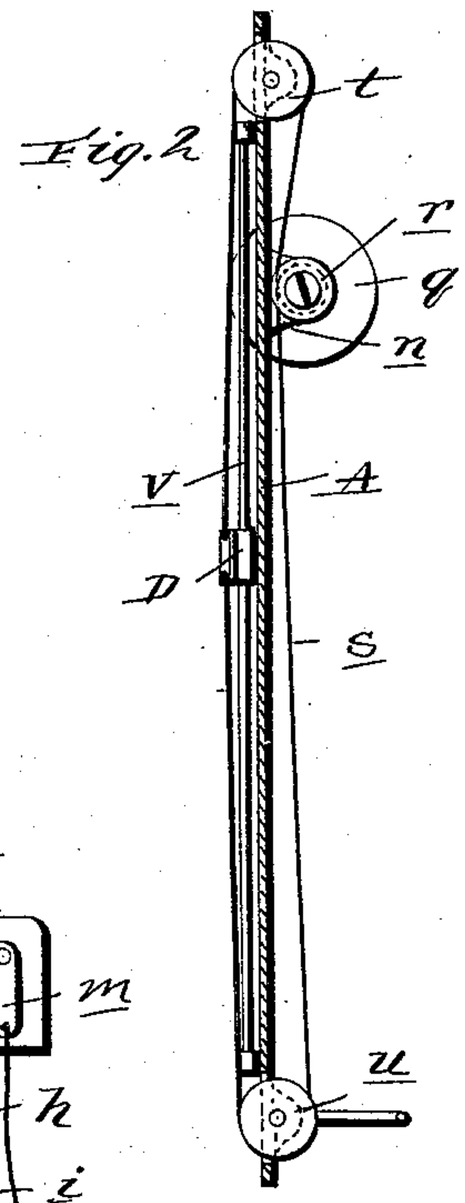


Fig. 3.

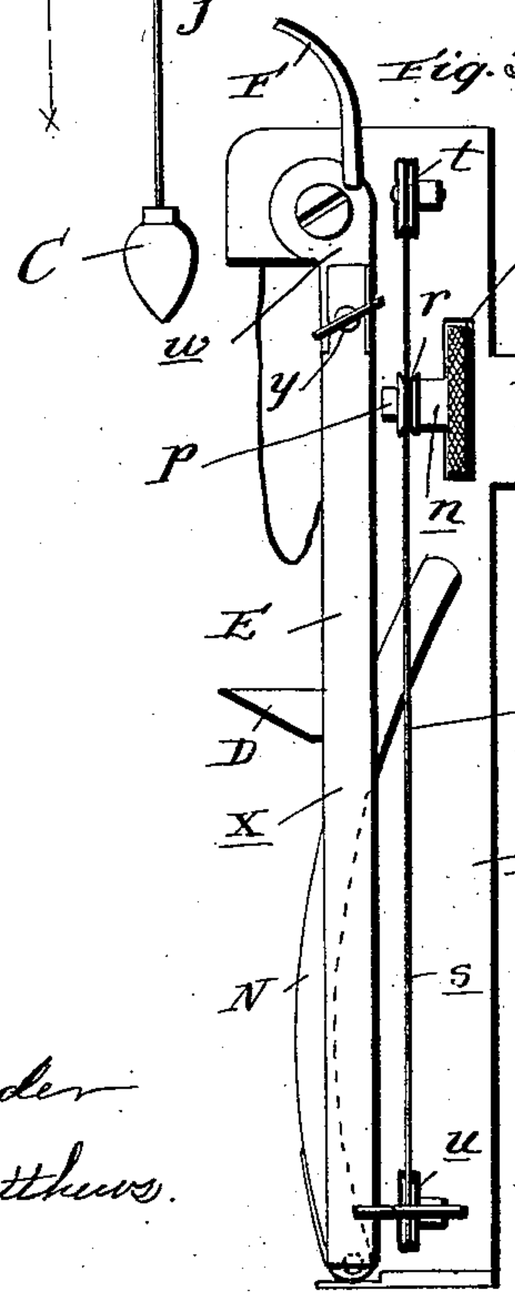
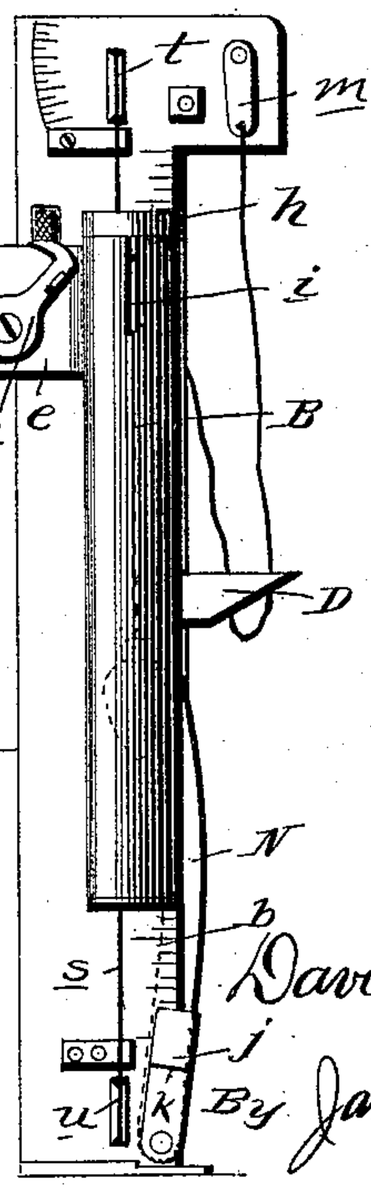


Fig. 4.



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PERSPECTIVE-GAGE.

SPECIFICATION forming part of Letters Patent No. 486,782, dated November 22, 1892.

Application filed August 9, 1892. Serial No. 442,560. (No model.)

To all whom it may concern:

Be it known that I, DAVID C. HUNTER, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Perspective-Gages; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to an improved perspective gage or instrument through the medium of which the proportional length and width of the sides or parts of an object presented to the eye may be readily ascertained.

The general object of my invention is to provide such an instrument of a cheap and simple construction, having its several parts so connected that they may be readily adjusted, so as to enable the operator to determine the proportional size of parts of different objects; and a further object of the invention is to provide such an instrument of such size and construction that it may be compactly folded and carried in the pocket without inconvenience.

Other objects and advantages will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a front elevation, partly in section, of my improved gage. Fig. 2 is a vertical longitudinal section taken in the plane indicated by the line *x x* of Fig. 1. Fig. 3 is a rear elevation of the instrument folded, and Fig. 4 is a front elevation with the parts folded.

In the said drawings similar letters designate corresponding parts throughout the several views, referring to which—

A indicates the body or plate of my improved instrument, which is provided at its upper end with a short lateral branch *a*, and is also provided upon its face with a graduated scale *b*, for a purpose presently set forth.

Flexibly connected to a short branch *d*, extending laterally from one edge of the plate A at an intermediate point in the length thereof, is the short branch *e* of the tubular hand-grasp B, which is designed when the instrument is not in use to be folded in front of the same, as shown in Fig. 4 of the drawings.

When the instrument is to be used, the tubular handle B is swung to the extended position shown in Fig. 1, in which it is held by the pivoted hook *f* on the branch *e*, engaging the lug *g* on the branch *d*. This tubular hand-grasp B, which is intended to afford a receptacle for the plumb-bob, (presently described,) is provided at its upper end with a tight-fitting cover plug or cap *h* and a notch or slot *i*, which latter is designed to seat the cord of the plumb-bob when not in use, and thereby prevent said cord from being damaged by being caught between the end of the handle and the cover plug or cap.

Pivotally connected to the plate A at or adjacent to the lower end thereof is a short straight arm *j*, which is provided at an intermediate point in its length with an index-mark *k*, which when the arm is extended at right angles to the plate rests parallel with the longitudinal edge of said plate and enables the operator to determine when the plate is perpendicular through the medium of the pendent plumb-bob C, which is connected by a cord *l* with the swinging arm *m* upon the branch *a* of the plate A. Thus it will be seen that perpendicularity of the plate A may be readily determined by simply holding said plate in a vertical position until the line *l* rests motionless in vertical alignment with the mark *k*. Journaled in a suitable bracket *n* upon the rear side of the plate A is a shaft *p*, upon which is mounted a milled manipulating-wheel *q* and a peripherally-grooved pulley *r*. The manipulating-wheel, which extends through a slot in the plate A, as shown, is designed to impart movement to a shifting-cord *s*, which takes around the pulley *q* and over pulleys *t u*, situated adjacent to the upper and lower ends of the plate. Suitably mounted upon a slide-rod *v*, arranged longitudinally upon the face of the plate A, is a traveling index piece or finger D, which is connected to the ends of the cord *s*, and is designed to be moved upon the face of the plate through the medium of said cord by the wheel *q*. Pivotally connected to the plate A adjacent to the upper end thereof is the inner section *w* of the straight gradu-

ated arm E, the outer section *x* of which is connected to the inner section by a screw *y* or the like, whereby it may be readily removed when not desired. This arm E is provided at its inner end, as illustrated in Fig. 3, with a curvilinear finger-piece F, through the medium of which it may be readily adjusted by the index-finger of the left hand in which the operator ordinarily holds the instrument when making a calculation.

The manner of operating the instrument for the purpose stated is as follows: When it is desired to ascertain the proportional size or area of the sides of a square box or other object, in perspective, the artist first makes a center line upon his canvas or board and then holds the instrument at arms length between his eyes and the box to be pictured, after which he adjusts the index-finger D, through the medium of the devices described, until he sees the box between said finger D and the lower edge of the branch *a*. Thus it will be perceived that the operator is enabled to determine the proportion of the front and top of the box in perspective and to correctly divide his center line and properly locate the upper front edge of the box. If it is found after trial that the plate A is not long enough to determine the proportional size of the front and top of a given object in the perspective the straight graduated arm E may be swung upwardly into a vertical position and the object measured between the movable finger D and the upper end of said arm. After the proportional elevation of the front and top of the box has been ascertained, as described, to get the angle or line of vanishing points in box the arm E is adjusted to a position at right angles to the plate A, as shown in Fig. 1, and the instrument is held at arms length between the eye and the object to be measured, as before described. The arm E is then adjusted up or down until the lower edge of said arm and the contiguous longitudinal edge of the main plate correspond with the outlines of the box. Thus it will be readily perceived that an artist is enabled to get the true proportional dimensions of an object in perspective and correctly picture the same.

In order that the instrument may be held in a horizontal position to make calculations when desired, I have provided a graduated segment of a circle M, whereby the operator may readily determine by reason of the pendent bob-cord when the plate A rests in a true horizontal plane, and may also determine the degree of the angle of inclination of said plate. In some instances it is desirable to determine the dimensions of an inclined object in perspective, and to this end I have provided the pivoted, curved, and graduated arm N. By the provision of this curved and graduated arm N the artist may readily determine the angle of inclination of an object by inclining the plate A until one of the longitudinal edges of said plate rests parallel with one of the inclined edges of the object when the cord *l* will indicate upon the arm N the angle of inclination. After the angle of inclination has been determined the dimensions may be ascertained in substantially the same manner as before described.

From the foregoing description it will be perceived that when not in use the arms E N may be folded back of the plate A, and the hand-grasp B may be folded or swung against the front of the same, so as to reduce the instrument to a compact form and enable the operator to carry it in a small pocket, which is a desideratum.

Although, for the sake of a thorough disclosure of my invention I have specifically described the same, I do not desire to be confined to the construction set forth, as such changes or modifications in the construction and relative arrangement may be made as fairly fall within the scope of my invention.

Having described my invention, what I claim is—

1. In a perspective-gage or mathematical instrument, the combination, with a body or plate and a plumb-bob connected to said plate by a suspending-cord, of a tubular hand-grasp connected to the plate and having a notch or slot in its upper end and a suitable means for closing the upper end of said tubular hand-grasp, substantially as specified.

2. In a perspective-gage or mathematical instrument, the combination, with the body or plate having the lateral branch *d*, of a hand-grasp having the lateral branch *e* flexiby connected to the branch *d* of the plate, the lug on the branch *d*, and the pivoted hook on the branch *e*, adapted to engage the said lug, substantially as and for the purpose set forth.

3. In a perspective-gage or mathematical instrument, the combination, with a body or plate having the branch *d* and a plumb-bob connected to said plate by a suspending-cord, of a tubular hand-grasp having a notch or slot in its upper end and also having the branch *e* flexibly connected to the branch *d* of the plate, a suitable means for closing the upper end of the hand-grasp, a lug on the branch *d*, and a pivoted hook on the branch *e*, adapted to engage said lug, substantially as and for the purpose set forth.

4. In a perspective-gage, the combination of a graduated body or plate, an index-piece adapted to be adjusted on the body or plate, and a graduated arm E, pivotally connected to said body or plate and adapted to be swung into alignment with the same, so as to serve, in conjunction with the index-piece, for indicating the proportional size of the front and top of an object in perspective, substantially as specified.

5. In a perspective-gage, the combination of a graduated body or plate, an index-piece adapted to be adjusted on said body or plate, the arm *j*, connected to the plate and having

an index-mark, a plumb-bob and a cord connecting said plumb-bob to the plate, substantially as specified.

6. In a perspective-gage or mathematical instrument, the combination of a graduated body or plate, an index-piece adapted to be adjusted on said body or plate, a curvilinear graduated arm connected to the body or plate, and a plumb-bob connected by a cord to the body or plate, substantially as specified.

7. In a perspective-gage or mathematical instrument, the combination, with a graduated body or plate, an index-piece adjustable on said body or plate, and a straight graduated arm connected to the body or plate, of a curvilinear graduated arm connected to the body or plate and a plumb-bob connected by a suspending-cord to the body or plate, substantially as specified.

8. A perspective-gage or mathematical instrument embodying the following instrumentalities, viz: a graduated body or plate, an index-piece adjustable on the body or plate, a straight graduated arm pivotally connected to the body or plate, a curvilinear graduated arm pivotally connected to the body or plate, the short arm *j*, also pivotally connected to the body or plate and having the index-mark, and a plumb-bob suspended from the body or plate, substantially as specified.

9. In a perspective-gage or mathematical instrument, the combination, with the graduated body or plate, of the index-piece, the shaft *p*, the manipulating-wheel *q*, mounted on said shaft, the pulley *r*, also mounted on the shaft *p*, the pulleys *t u*, and the cord *s*, taking around the pulley *r* and over the pulleys *t u* and having its ends connected to the index-piece, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID C. HUNTER.

Witnesses:
B. GIROUX,
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