

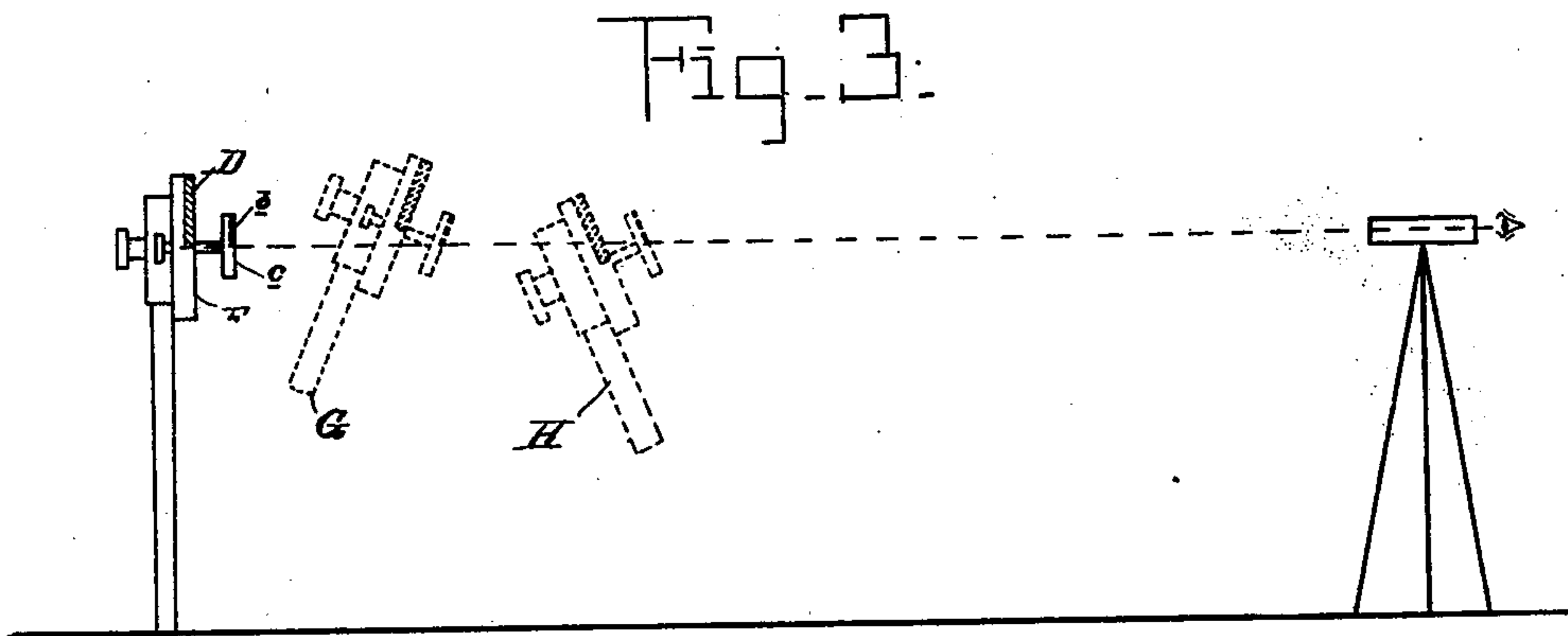
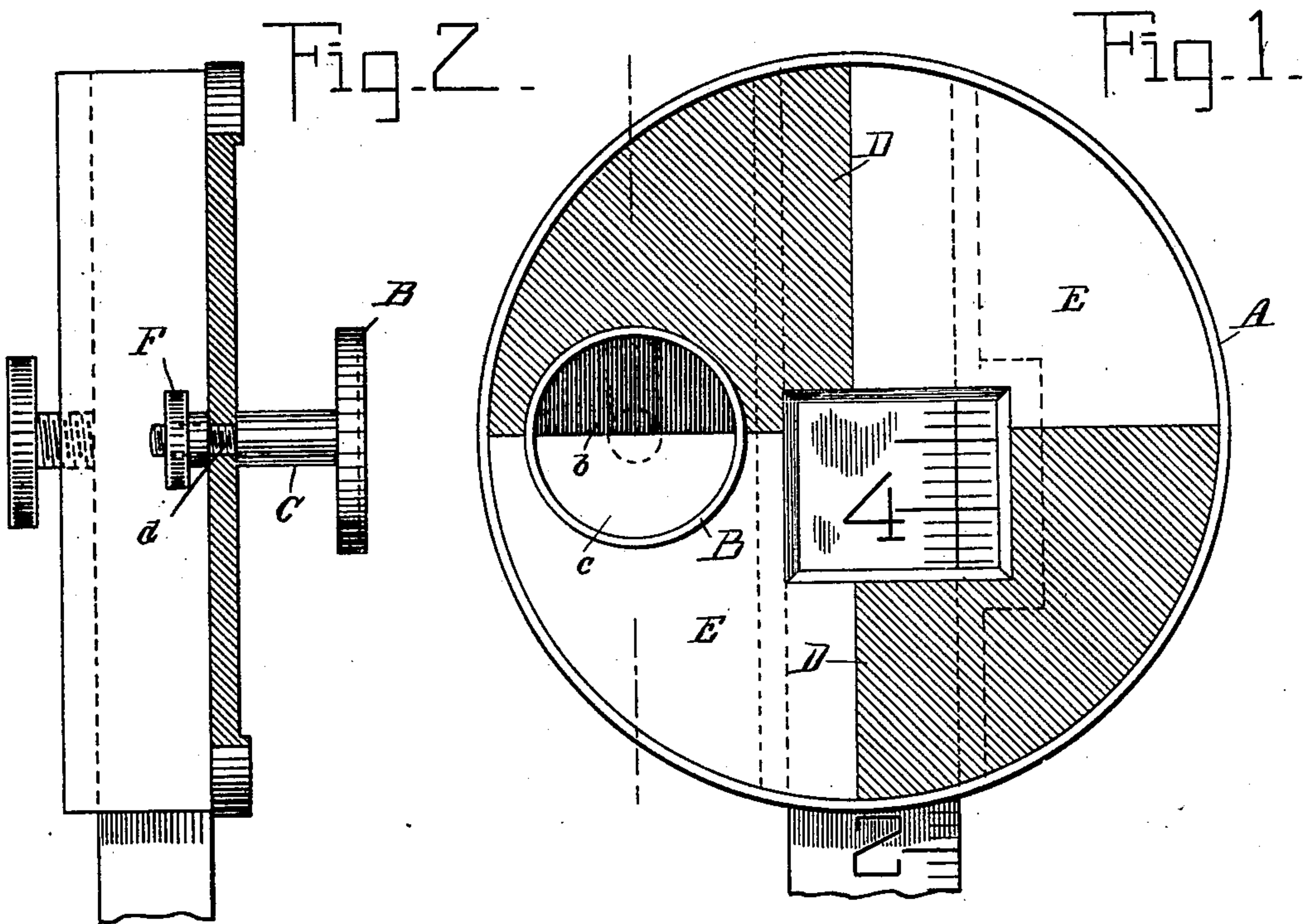
No. 677,720.

Patented July 2, 1901.

T. W. VAN HOESSEN.
TARGET FOR LEVELING RODS.

(Application filed Sept. 24, 1897.)

(No Model.)



Witnesses:
Merwin
Shino Sleck

Inventor,
Theodore W. Van Hoesen
by *Ward Cameron*
Atty's.

UNITED STATES PATENT OFFICE.

THEODORE W. VAN HOESSEN, OF TROY, NEW YORK, ASSIGNOR TO THE
KEUFFEL & ESSER COMPANY, OF HOBOKEN, NEW JERSEY.

TARGET FOR LEVELING-RODS.

SPECIFICATION forming part of Letters Patent No. 677,720, dated July 2, 1901.

Application filed September 24, 1897. Serial No. 652,927. (No model.)

To all whom it may concern:

Be it known that I, THEODORE W. VAN HOESSEN, a citizen of the United States, residing at the city of Troy, county of Rensselaer, State of New York, have invented a new and useful Improvement in Targets for Leveling-Rods, of which the following is a specification.

My invention relates to surveying instruments; and the object of my invention is to provide an improved device to be detachably secured to the target on a leveling-rod for the purpose of enabling the surveyor to determine when the rod is in a vertical position. I attain this object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan. Fig. 2 is a section, and Fig. 3 is an outline view showing the position of the transit and leveling-rod when the leveling-rod is vertical and when out of the vertical line.

Similar letters refer to similar parts throughout the several views.

It is very difficult to determine when the leveling-rod is at a distance from the transit whether it is in a vertical position or not, the cross-hairs in the transit being so fine that at a distance it is difficult to determine to a nicety whether they overlap the meridian of the target or not, and it is for the purpose of arranging a device which shall be close to the target compared with the distance from the cross-hairs in the transit to the target and which being larger will be more plainly observable to the surveyor and which will therefore render the work more accurate, because the vertical position of the target may be positively determined. For this purpose I arrange upon the main target-disk A, which is constructed in the usual manner and colored with two quarters red or black and the other two quarters white, a projecting smaller disk B, which has half of its face colored, preferably, black and the other half of its face white, said smaller disk arranged upon the face of the main disk preferably at one side of the center in such a manner that when the target is vertical the dividing-line between the

colored portion *b* of the face and the white portion *c* thereof shall exactly coincide with the dividing-line between the colored portion *D* of the main disk and the white portion *E* thereof. This smaller disk may be thus arranged by forming the same upon a shank *C*, which has a threaded portion *d* engaging with threads in the target *A* and provided with a thumb-screw *F*. Of course this need not be secured in exactly the manner described, as any manner of detachably fastening the disk upon the target-disk, allowing the smaller disk to be projected from the face of the target a short distance and arranged so that when the target is vertical the line of division between the colored and white portion of the smaller disk shall exactly coincide with the line of division between the colored and the white portion of the target-disk, may be used.

The operation of my device immediately suggests itself to the most casual observer. When the leveling-rod is exactly vertical, the surveyor will notice that the line of division on the disk coincides with the line of division on the target. Should the target incline toward the transit, as shown at *G* by dotted lines in Fig. 3, the colored portion *b* of the face of the disk will be projected upon the white portion *E* of the target and will be clearly discernible, showing the surveyor that the target must be raised and moved from him. Should the target lean in the position shown at *H* in Fig. 3 by dotted lines, the white portion *c* of the face of the disk *B* will be projected upon the dark portion *D* of the target and will be easily discernible and suggests to the surveyor that the target should be moved toward him.

When it is not desired to use the small disk, the same may be readily removed from the main disk, its holding means being detachably secured.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a target for leveling-rods, a main disk having its front surface quartered by alternate colors, a smaller disk having its face bi-colored, a shank connected with said disk,

and means for detachably uniting said shank
to the main disk at one side of the vertical
center of the latter in such manner that the
smaller disk shall be projected from the main
5 disk, and so arranged that the line of divi-
sion between the two colors on the face of the
smaller disk shall, when the rod is vertical,
exactly coincide with the line of division be-

tween the two colors in one hemisphere on
the main disk, substantially as described and 10
for the purpose set forth.

THEODORE W. VAN HOESEN.

Witnesses:

L. C. KINGSLEY,
JOHN A. R. KAPPS.