

(No Model.)

A. B. MACKLIN.  
PHOTOGRAPHIC OR SURVEYOR'S STAND.

No. 563,496.

Patented July 7, 1896.

Fig. 1.

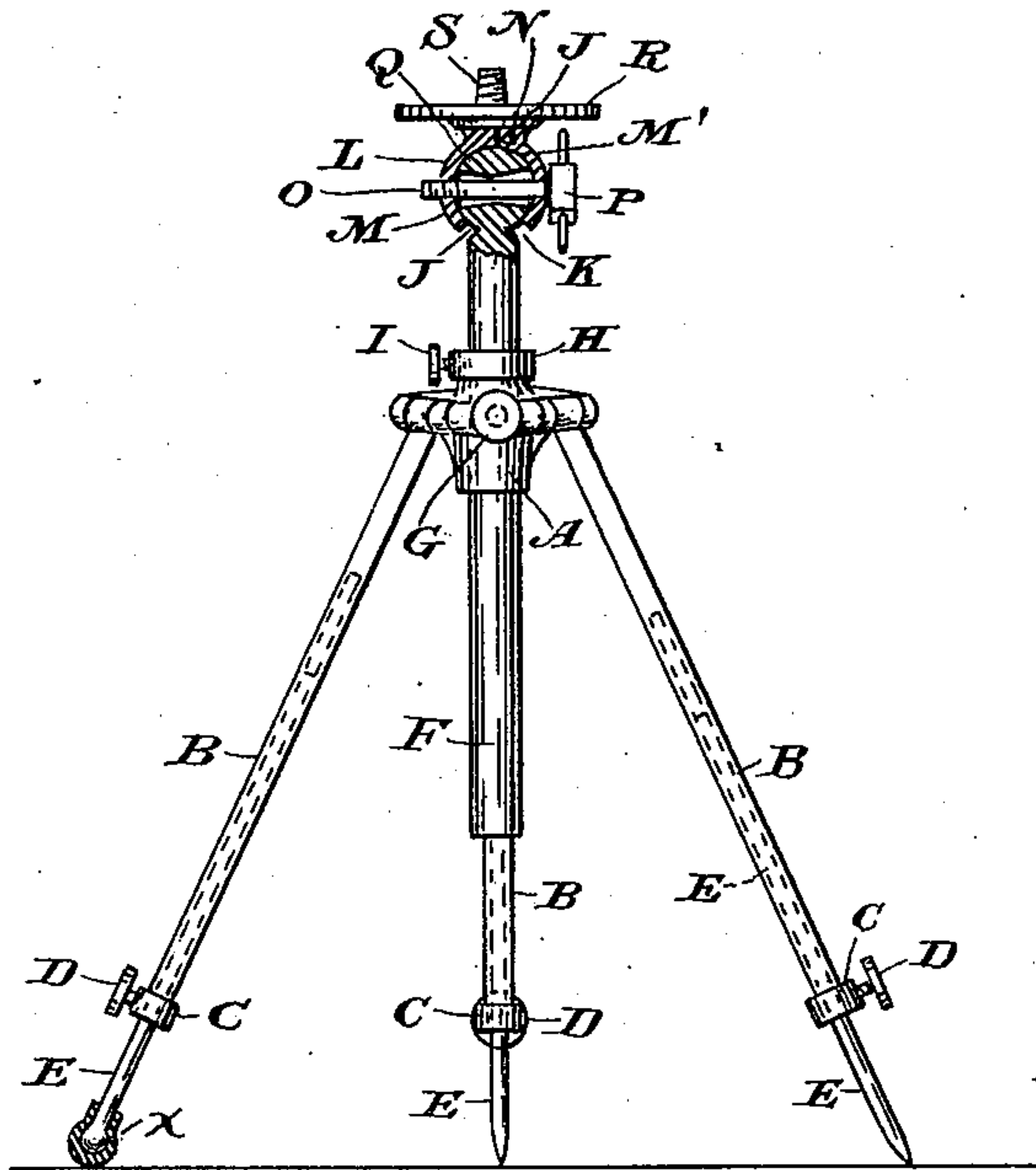


Fig. 2.

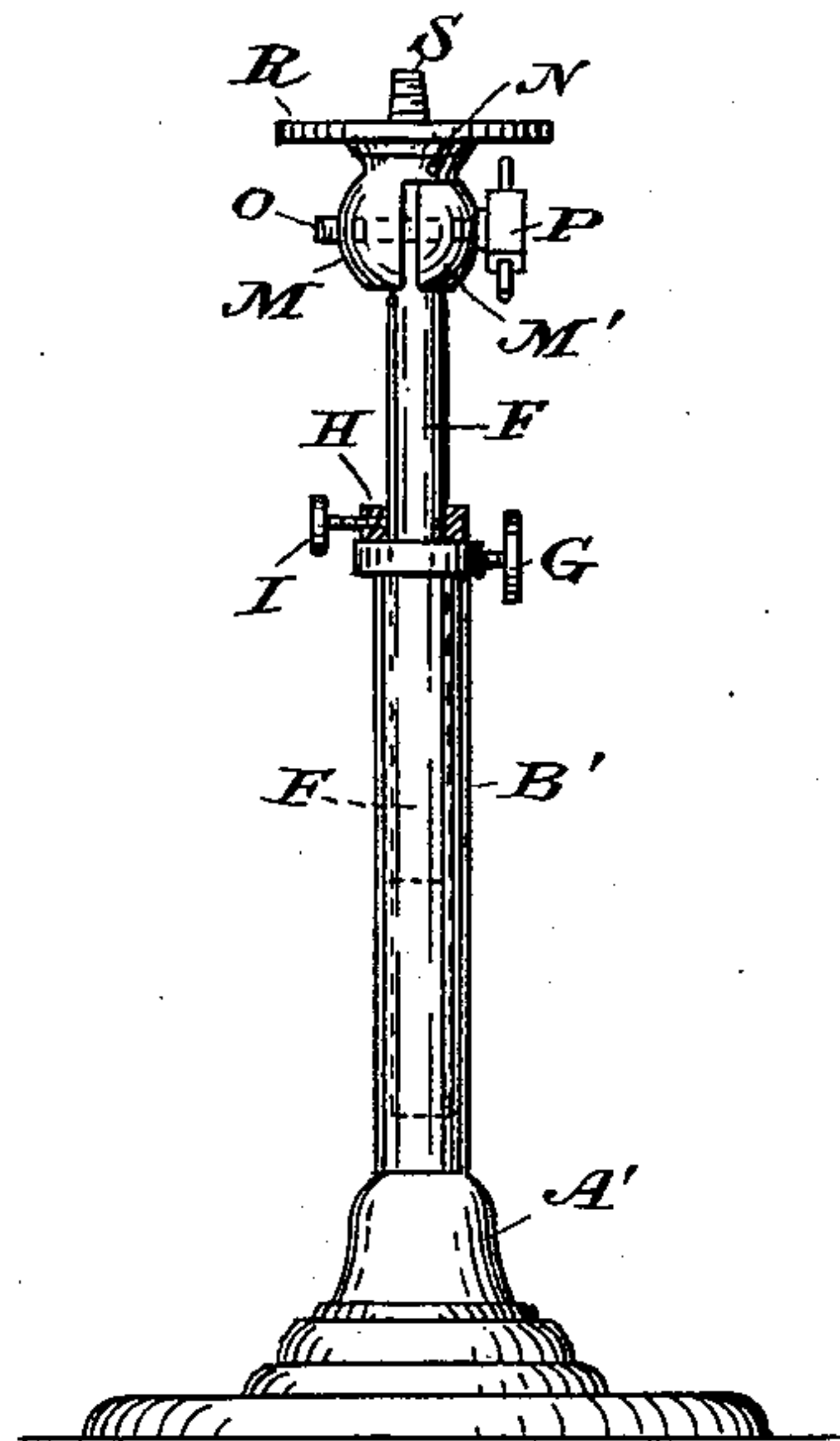


Fig. 3.

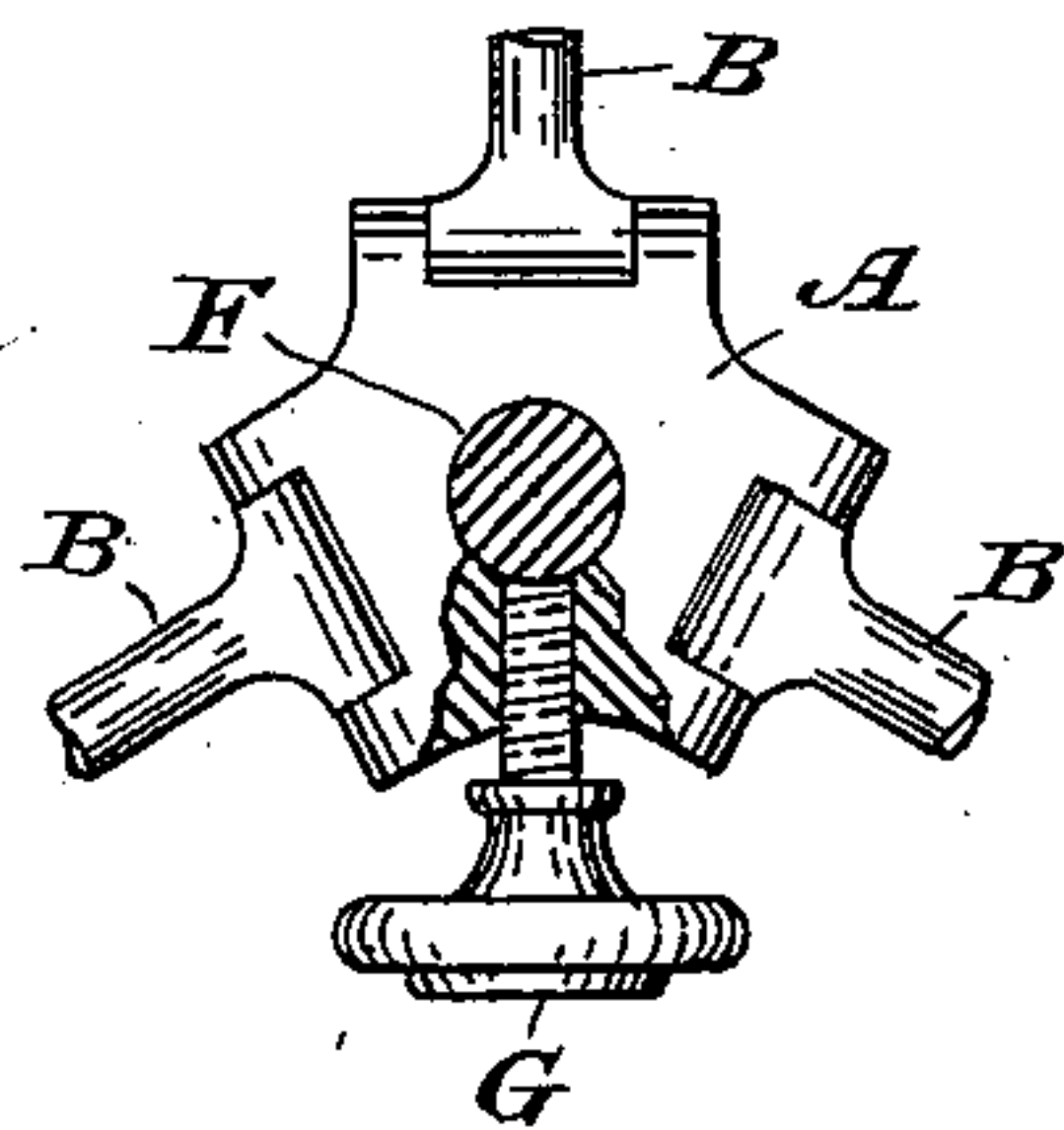
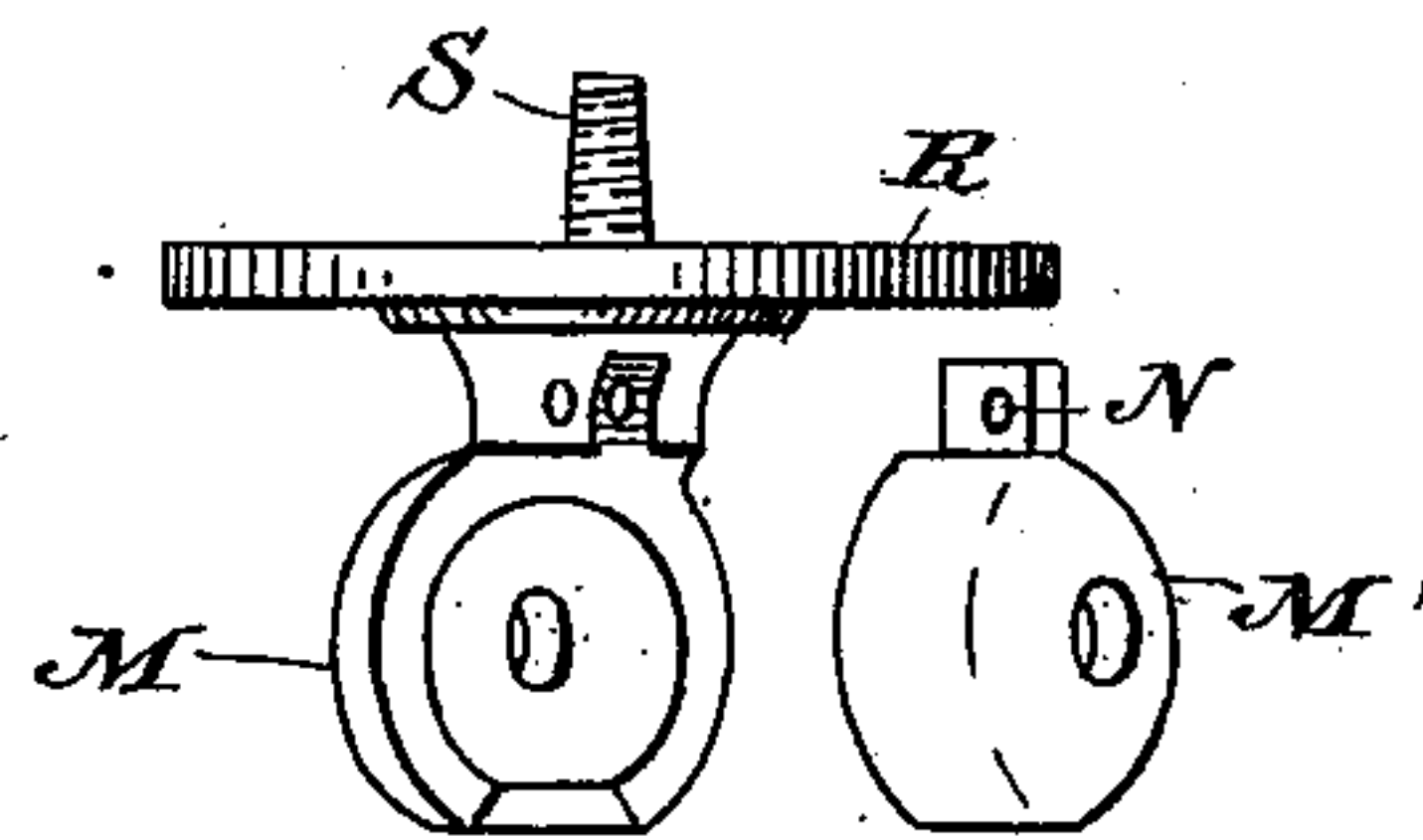


Fig. 4.



Witnesses:

E. B. Bolton

E. Simpson.

Inventor

Athol B Macklin

By

Phillips Abbott  
his Attorney.

# UNITED STATES PATENT OFFICE.

ATHOL B. MACKLIN, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO  
ISABELLE LIEBENSTEIN AND JOHN D. ABRAHAM, OF SAME PLACE.

## PHOTOGRAPHIC OR SURVEYOR'S STAND.

SPECIFICATION forming part of Letters Patent No. 563,496, dated July 7, 1896.

Application filed February 7, 1896. Serial No. 578,409. (No model.)

*To all whom it may concern:*

Be it known that I, ATHOL B. MACKLIN, a citizen of the Dominion of Canada, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Improved Photographic or Surveyor's Stand, of which the following is a specification.

The invention consists in so constructing the stand that the instrument may be quickly and conveniently adjusted or "leveled," as it is technically called in the use of surveyors' instruments, that is to say, brought into a proper position either to make the exposures, in the case of a photographic instrument, or the observations, in the case of a surveyor's instrument, and the instrumentalities employed by me are such that the stand or tripod may be made to secure the desired position irrespective of the character of the supporting-surface, that is to say, whether even or the reverse, and also additional devices are supplied whereby the niceties of adjustment may be conveniently secured after the greater inequalities have been corrected through the construction of the tripod, thus enabling the operator to accurately "level" his instrument, in other words, bringing the horizontal and vertical lines into proper rectangular relation.

My invention also includes devices whereby the instrument can be rotated, as on a vertical axis, thus enabling an exposure or observation to be made toward any desired point of the compass.

In the drawings hereof, Figure 1 illustrates an elevation of the apparatus. Fig. 2 illustrates an elevation, partly in section, of a modified construction, wherein a part only of my improvements are employed. Fig. 3 illustrates a plan view, partly in section, of the hub of the apparatus shown in Fig. 1. Fig. 4 illustrates a detail of the socket.

Referring first to Figs. 1 and 3, A is the hub or top casting of the tripod. B B B are three tubular legs pivoted to the hub A, as shown. They preferably have reinforcing-collars C at their lower ends, whereby the metal is thickened, so that the threaded set-screws D D may have a sufficient bearing to prevent stripping of the threads.

E E are rods adapted to slide within the tubular legs B, thus constituting in effect extendible legs for the device. The extendible portions E E may be clamped at any desired degree of extension by the set-screws D D, &c.

F is a rod, which may be tubular, which passes upwardly through an axial boring made in the hub A.

G is a set-screw threaded into the hub, and which takes a bearing upon the rod F to maintain it at any desired elevation.

H is a collar adapted to slide upon the rod F, and which is provided with a set-screw I, whereby it is clamped to the rod F in any desired position.

J is a ball formed on the upper part of the rod F, the base or neck of which is undercut, as at K.

L (see especially Fig. 4) is a socket composed of two parts M and M'. The part M' is pivoted to the part M at N, as shown, and a binding-screw O, provided with a cross-bar or thumb-piece P, passes through the pivoted side M' of the socket, thence through a hole Q in the ball J, which is preferably reamed on a double taper, as shown, and is threaded into the fixed part M of the socket.

R is a platen or table upon which the apparatus, either a photographic mechanism or a surveyor's instrument, is attached, as usual, by a screw S.

The operation of the device is as follows: In photographic galleries, especially since they are ordinarily located in the upper portions of buildings, the floors are apt to be uneven, and frequently so much so that it is impossible to locate the instrument so that the proper relation exists between the vertical and horizontal lines, and in the use of photographic apparatus in the field great inconvenience is occasioned by this same trouble, because of the uneven character of the ground upon which the photographer has to locate his tripod, and this same difficulty in fieldwork is encountered by the surveyor; also, in both surveying and photographic work it is frequently desirable to tilt the instrument upon its support, so that it may take in subjects or features at various angles relative to the horizon.

Any inequalities in the floor, ground, or



other support for the apparatus is roughly compensated for by projecting or withdrawing the extendible members E of the legs, and the instrument is thus given a firm reliable support. The more exact adjustments may be attained by tilting the instrument upon the universal ball-and-socket joint already described, and when found to be in the proper position it may be locked therein by manipulation of the screw-bolt P, which causes the movable member of the socket to clamp the ball, thus holding the parts firmly in their then position, and if any other presentation than a horizontal one is desired it is obvious that the instrument may be tilted upon the universal ball-and-socket joint, so as to give any and all desired inclinations. If greater elevation is desired than the tripod will afford, then the rod F, which supports the instrument, may be slid vertically through the boring in the hub and set at any desired elevation by the screw G, and, if desired, the instrument may be swiveled to any point of the compass by locking the collar H when resting upon the upper end of the hub to the rod F by means of the set-screw I, and then, the set-screw G being loosened, the instrument may be swiveled upon its supporting-rod F as an axis, the proper elevation being maintained by the collar H.

In order to prevent slipping of the legs if they rest on a hard, smooth surface, I sometimes apply rubber or other cushioning tips or sockets to the ends of the legs, as shown at X in Fig. 1. It is there applied to one of the legs only, merely as illustrative of the method of applying them to all the legs. This feature is particularly useful in connection with small photographic, microscopic, and similar apparatus, which frequently rest upon a table, a piano, or similar support having a hard, smooth, or polished surface.

In Fig. 2 I show a form of my apparatus in which a part only of my invention is employed.

In it I do not use a tripod with extendible legs. On the contrary, a base A', which supports a vertical tubular shaft B', within which the rod F is received, takes the place of a tripod. This form of instrument is particularly adapted to photographic apparatus intended to be used in galleries.

It will be obvious to those who are familiar with this art that modifications may be made in the details of construction which I have described and illustrated without departing from the essentials of my invention. I, therefore, do not limit myself to such details, excepting as they may be hereinafter specifically claimed.

I claim—

1. A tripod embodying legs pivoted to a hub, extendible leg-sections, means to lock the legs and the sections together, a vertically-adjustable rod supported solely by said hub, which sustains the instrument, a ball-and-socket joint on said rod, and a collar adapted to be clamped to said rod, to maintain it in an elevated position, for the purposes set forth.

2. In a stand for photographic or like purposes a vertically-adjustable rod, which passes through and is supported by a hub, means fastened to the rod, but not to the hub, whereby the rod may be maintained in any desired vertical position, and yet have rotation about its axis, a ball-and-socket joint upon the upper end of the rod, and legs, pivoted to the hub, having extendible sections, and means to lock the extendible sections to the legs proper, for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 5th day of February, A. D. 1896.

ATHOL B. MACKLIN.

Witnesses:

PHILLIPS ABBOTT,  
D. SOLIS RITTERBAUD.