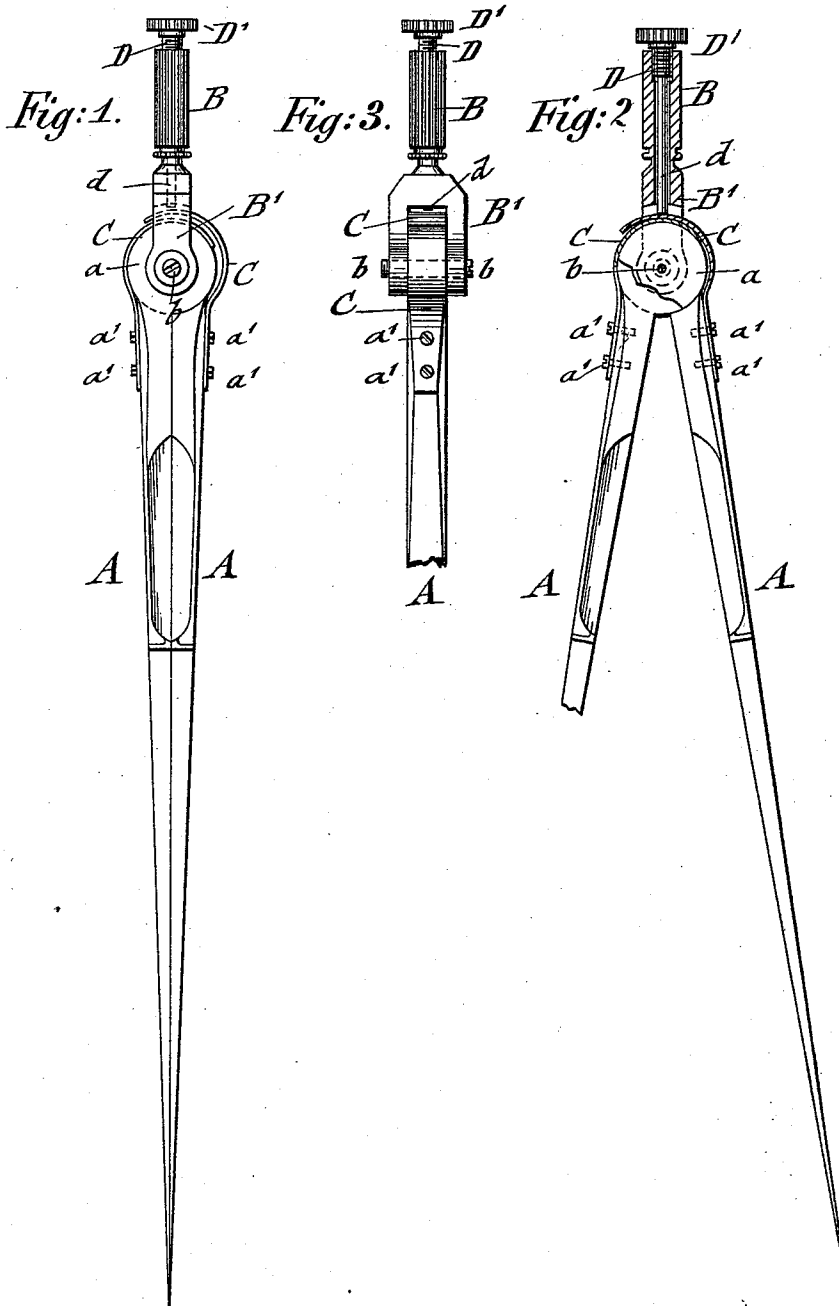


(No Model.)

A. HAFF.  
DIVIDERS.

No. 528,668.

Patented Nov. 6, 1894.



WITNESSES:

J. Nussblatt.  
A. R. Brennan

INVENTOR

Adolf Haff  
BY  
Lyonel R. Rogers  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

ADOLF HAFF, OF PFRONTEN, GERMANY, ASSIGNOR TO THE KEUFFEL & ESSER COMPANY, OF NEW YORK, N. Y.

## DIVIDERS.

SPECIFICATION forming part of Letters Patent No. 528,668, dated November 6, 1894.

Application filed April 17, 1894. Serial No. 507,859. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLF HAFF, a citizen of the Empire of Germany, residing in Pfronten, in the Kingdom of Bavaria and Empire of Germany, have invented an Improvement in Dividers, of which the following is a specification.

This invention relates to an improvement in dividers, compasses, calipers and similar instruments, which is designed with a view of permitting the quick and effective clamping of the legs of the instrument in any suitable position relative to each other whenever it should be required for the convenience of the draftsman; and the invention consists of a pair of dividers or similar instrument, the heads of both legs of which are acted upon by a screw, so as to press firmly upon both heads, said screw passing through the hollow or longitudinally bored out handle, which is pivoted to the head of the instrument. Between the heads of the legs and the screw are interposed flat springs or strips, by which the heads are protected against the frictional or clamping contact of the screw. The ends of the flat springs are made to overlap each other, said springs being extended around the heads to the legs and their shanks attached to the legs of the instrument. The ends of the springs are clamped by the screw or retained by the same, according as the legs of the dividers are to be clamped firmly to each other or to be released so as to permit the ready working of the same.

In the accompanying drawings, Figure 1 represents a front elevation of my improved pair of dividers, showing the same in closed position. Fig. 2 is a side-elevation, and Fig. 3 is a front-elevation, partly in section through the upper part or head of the instrument showing the legs clamped in position.

Similar letters of reference indicate corresponding parts.

In the drawings, A A are the legs of my improved pair of dividers, which legs are provided with the usual heads *aa* and connected by a pivot *b* to the lower forked end B' of a handle B, which extends above the heads and which serves to conveniently hold the dividers during the use of the same. The handle B is preferably made of cylindrical

cal shape, and provided with longitudinal grooves, so as to be conveniently held by the fingers. To the outside of the legs A A below the heads *aa* are attached by fastening-screws *a' a'*, the shanks of flat friction-springs C C, the free ends of which are curved so as to extend over the heads of the legs and overlap each other, as shown clearly in Figs. 1 and 3. The handle B is provided with a central longitudinal bore, through which extends the smooth shank *d* of a clamping screw D, which is provided with a screw-thread adjacent to its milled head D', said threaded upper portion engaging the interiorly-threaded upper end of the handle B, as shown clearly in Fig. 3, so that when the screw D is screwed down, the stem *d* presses on the overlapping ends of the friction-springs C C and presses them tightly together and on the heads of the legs A A, so that the legs are held firmly in the position to which they are adjusted and can be used in this position for setting off the distance between the points of the dividers. Whenever the special purpose, for which the dividers are clamped to each other, is accomplished, the screw is released from the free ends of the friction-springs by turning the screw in opposite direction, so that the inner end of the stem is withdrawn from the ends of the friction-springs and the latter released from each other and from the heads of the legs A A. As in this position no pressure is exerted on the springs, the dividers can be freely opened or closed, as then only the friction of the pivot-connection of the handle with the heads of the dividers has to be overcome in the usual manner.

By the term "dividers," it is desired to embrace ordinary compasses, but also dividers with pen and pencil-points and other attachments, calipers and similar instruments. The interposing of friction-springs to the legs and heads of the instrument, has given very satisfactory results, as not only a very effective clamping action is exerted on the overlapping ends of the springs and heads, but also the protection of the latter against the wearing action of the clamping-screw, is obtained. At the same time the clamping or releasing of the ends of the friction-springs and heads is produced quickly by the clamp-

ing-screw, and thereby a durable and comparatively inexpensive clamping attachment to dividers, compasses and calipers obtained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A pair of dividers or similar instrument, provided with a forked handle pivoted to the heads of the legs of the instrument, friction-springs, the shanks of which are attached to the legs while the free ends extend over the heads and overlap one another, and means for pressing the free ends of the friction-springs together and on the heads of the legs, so as to clamp the legs in any suitable position to each other, substantially as set forth.

2. A pair of dividers, provided with a handle, having a forked lower end, pivoted to the

heads of the legs, friction-springs the shanks of which are attached to the legs near the heads and the free ends of which extend over the heads and overlap one another, and a clamping-screw arranged in said handle and provided with a stem that extends through a central bore in the handle, so as to engage the ends of the friction-springs and clamp the same to the heads of the legs, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ADOLF HAFF.

Witnesses:

HERMAN ANGERER,  
HEINR. REICHART.