(No Model.)

W. V. FISCHER.

LINER FOR MACHINERY.

No. 409,676. Patented Aug. 27, 1889.

Fig. 1.

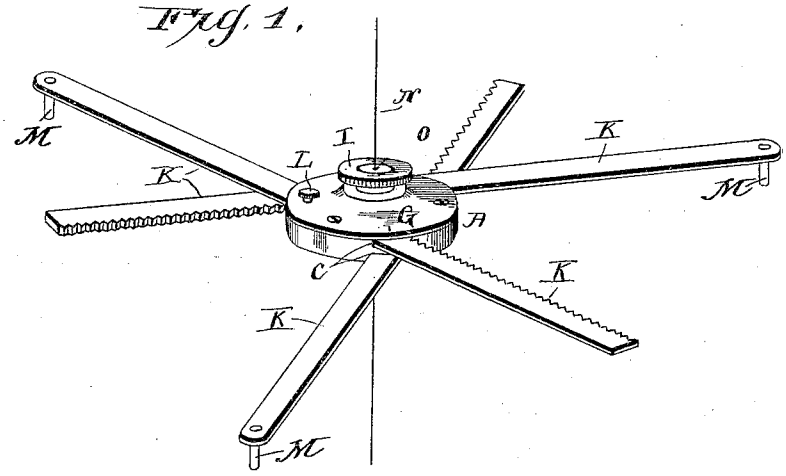


Fig. 2.

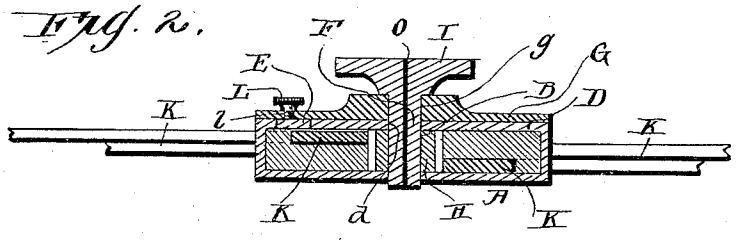
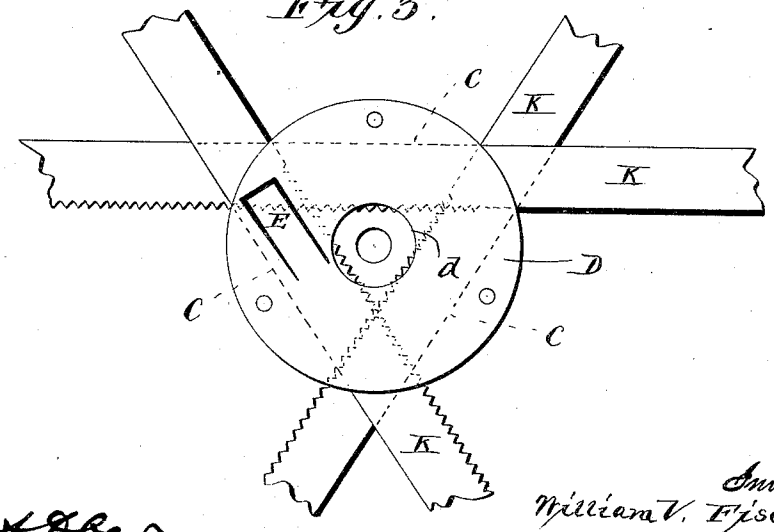


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM VICTOR FISCHER, OF KNOXVILLE, TENNESSEE.

LINER FOR MACHINERY.

SPECIFICATION forming part of Letters Patent No. 409,676, dated August 27, 1889.

Application filed April 10, 1889. Serial No. 306,701. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VICTOR FISCHER, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in a Liner for Machinery, of which the following is a specification.

My invention relates to a liner for machinery designed to enable a mechanic to quickly and accurately align the various parts of a machine or engine without resorting to the usual tedious method of measuring and calculating to ascertain the centers.

The invention consists in a certain novel construction and combination of devices, fully set forth hereinafter in connection with the accompanying drawings, and specifically pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of the liner. Fig. 2 is a transverse sectional view thereof. Fig. 3 is a plan view with the face-plate removed.

Referring by letter to the drawings, A designates the body or case of the device, which is provided with a central opening B and a series of channels C C, arranged at a tangent to the said central opening, and over the said channels is arranged a thin plate D, provided with a central opening *d*, which registers with the central aperture in the case. A tongue E is cut in the plate D over one of the channels, and is connected to the plate at one end, thereby forming a spring which bears downward or into the channel, for a purpose to be hereinafter explained.

F represents an axial shaft, which is located in the central opening B and extends through the opening in the plate D, and also through a central registering opening *g* in the face-plate G, which covers the said plate D. This shaft is provided within the case with a pinion H, which entirely fills the opening B, and I represents a thumb hold or handle on the outer end of the said shaft, whereby the pinion may be rotated by the operator.

K K represent radial rack-arms, which are arranged in the channels in the body or case and engage the pinion, whereby, when the latter is rotated, the said arms are extended or retracted.

In a threaded aperture *l* in the face-plate is mounted a set-screw L, which, when tightened, bears at its inner end on the spring-tongue E, whereby the latter is forced down on the rack-arm within the channel to clamp the said arm in position. It is obvious that when one of these arms is clamped the pinion is prevented from rotating, and therefore all the movable arms are clamped.

To ascertain the exact center of a cylinder, extend or contract the rack-arms by rotating the thumb-hold until the pins M M on the outer ends of the arms K fit snugly in the same; then tighten the set-screw to lock the said arms in their adjusted position, and pass a fine lining-wire N (which is shown in Fig. 1) through the axial perforation O in the shaft F. This wire determines the center of the cylinder, after which the proper adjustment of the latter is easily accomplished.

It will be seen that all measurement and calculation of sizes and centers are by the use of this instrument obviated, and therefore the proper alignment of machinery is more quickly and easily accomplished.

Having described the invention, I claim—

1. The combination of the body or case provided with a series of channels at a tangent to a central opening, the pinion mounted in the central opening, the rack-arms arranged in the channels and engaging the pinion, and the spring-tongue arranged over one of the said channels and bearing on the rack-arm therein, substantially as specified.

2. The combination of the body or case provided with suitable channels arranged tangent to a central opening, the spring-tongue arranged over one of the channels, the pinion mounted axially in the said central opening, the rack-arms arranged in the said channels and engaging the pinion, and the set-screw mounted in the body or case and bearing on the said spring-tongue, substantially as and for the purpose specified.

3. In a liner, the combination of the body or case provided with a face-plate, and having an axial centrally-perforated shaft mounted

therein, the rack-arms arranged in suitable channels in the body or case and engaging with a pinion on the said shaft, and the set-screw mounted in the face-plate adjacent to one of the rack-arms and adapted to clamp the same in the desired position, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM VICTOR FISCHER.

Witnesses:

JNO. W. GREEN,

JAMES COMFORT.