

(No Model.)

A. McMICHAEL & F. B. WILDMAN.
KNITTING MACHINE.

No. 453,290.

Patented June 2, 1891.

FIG. 1

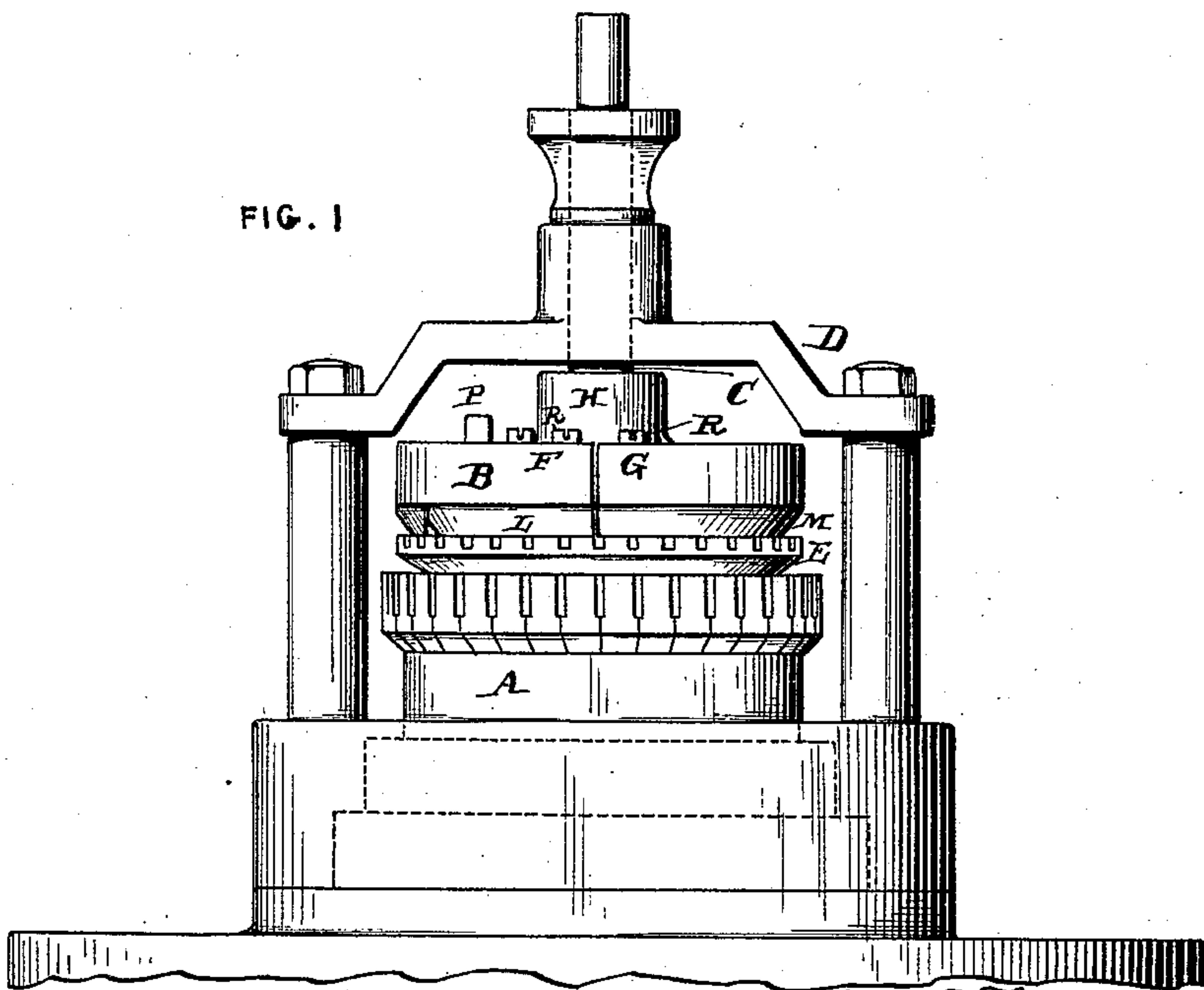


FIG. 2

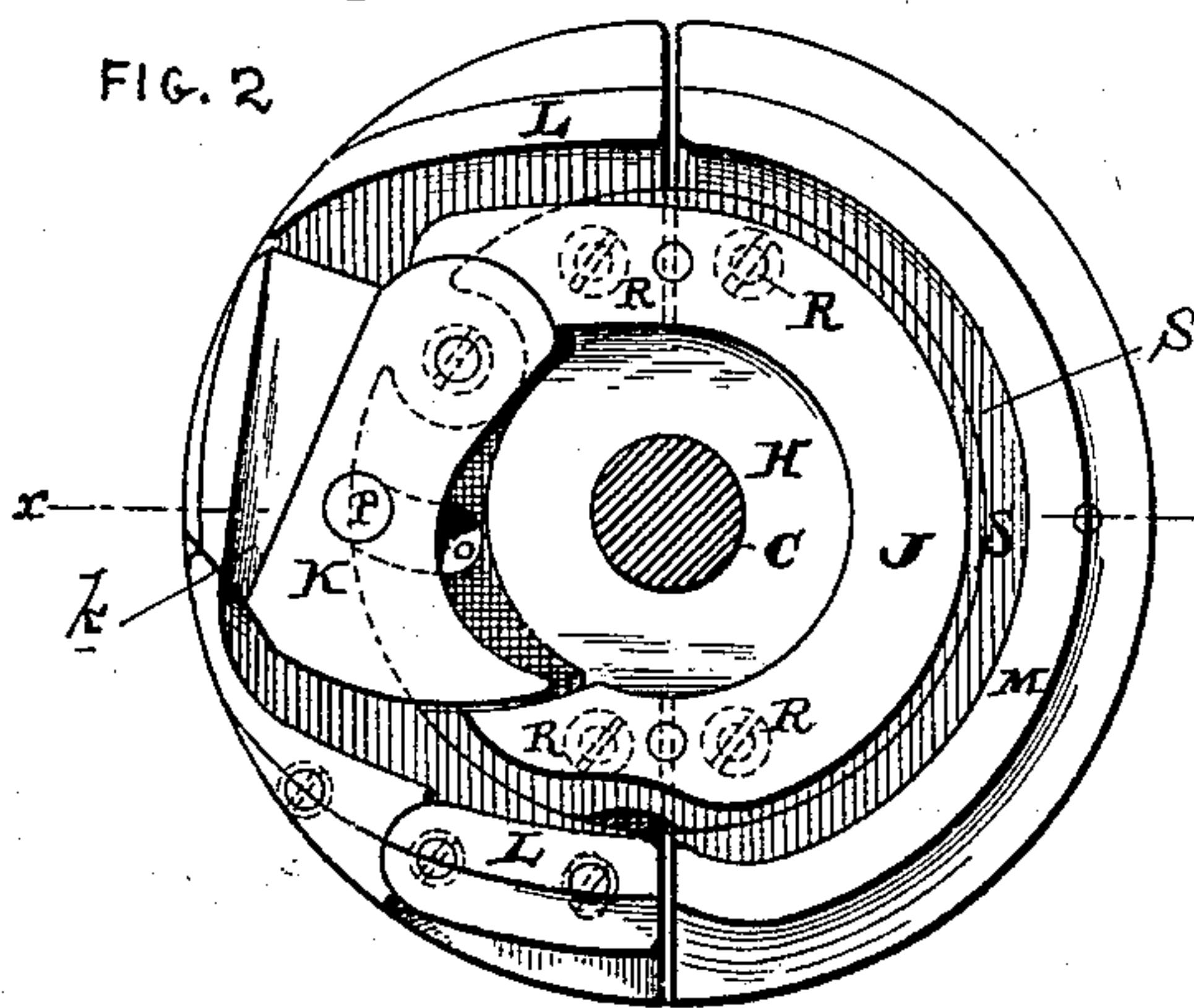


FIG. 3

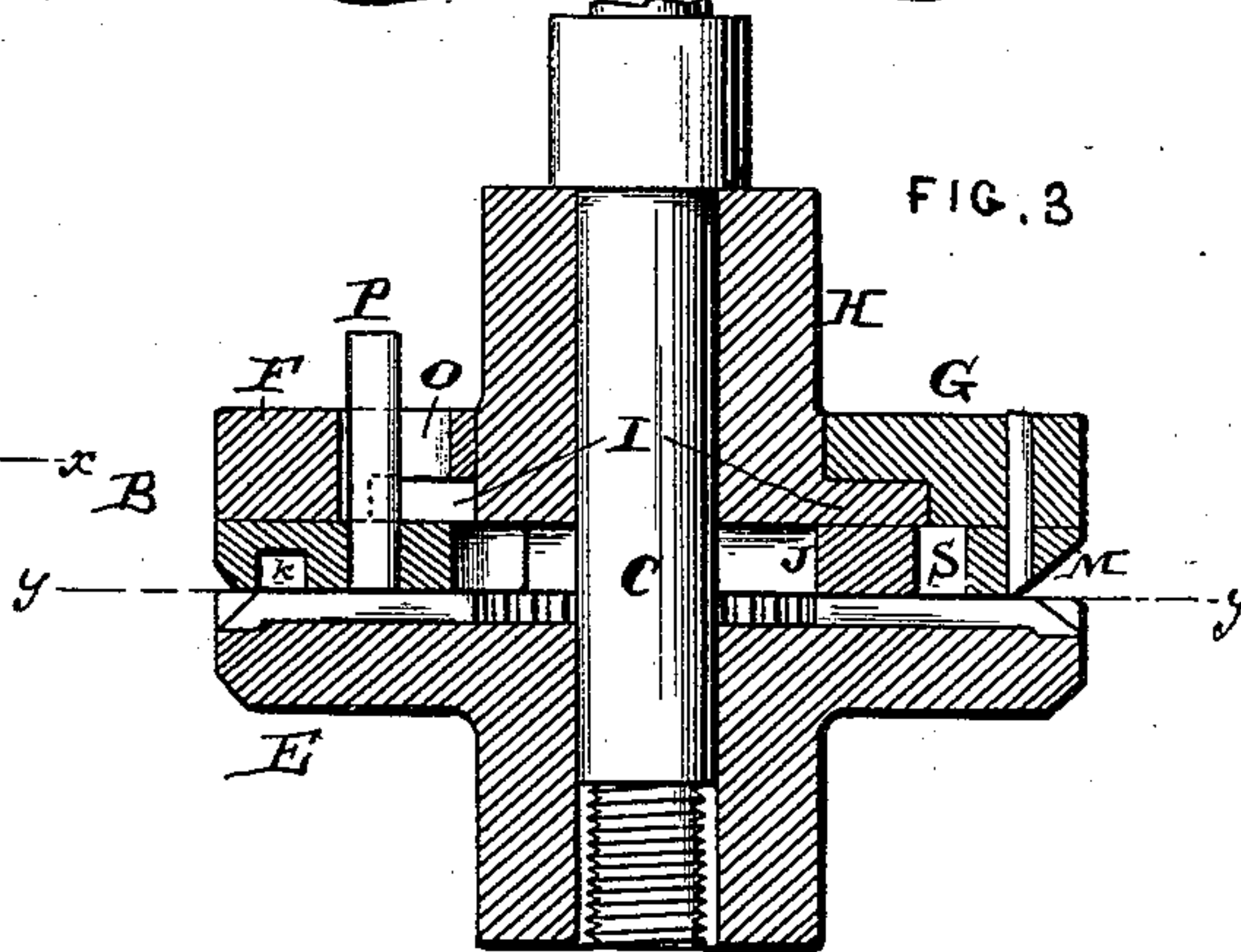
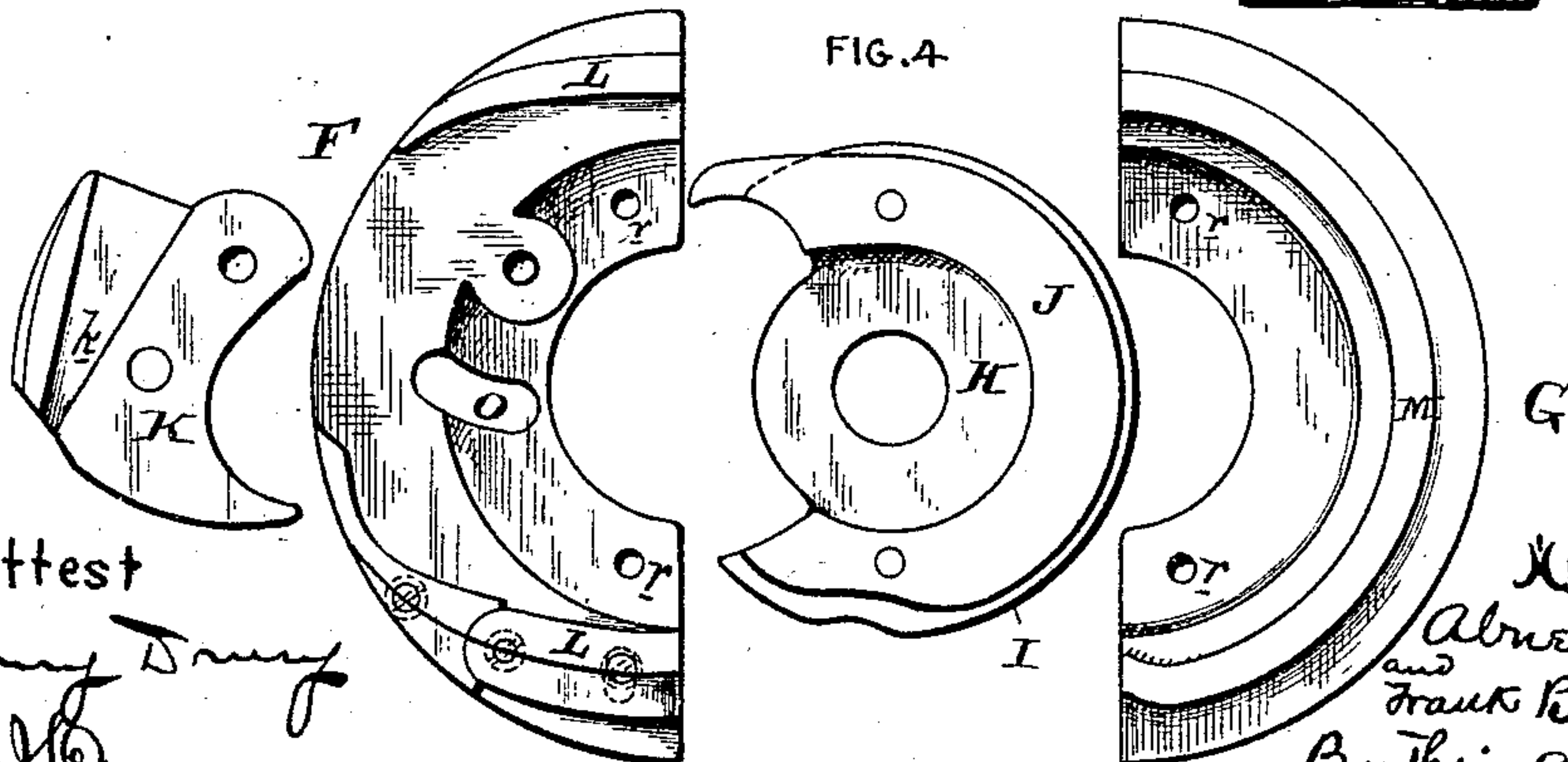


FIG. 4



Attest
Henry D. Dwyer
Albany

Inventors:
Abner McMichael
and
Frank B. Wildman
By Their Attys.
J. M. Smith

UNITED STATES PATENT OFFICE.

ABNER McMICHAEL AND FRANK B. WILDMAN, OF NORRISTOWN,
PENNSYLVANIA.

KNITTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 453,290, dated June 2, 1891.

Application filed September 24, 1890. Serial No. 365,952. (No model.)

To all whom it may concern:

Be it known that we, ABNER McMICHAEL and FRANK B. WILDMAN, both of Norristown, in the county of Montgomery and State of Pennsylvania, have invented an Improvement in Knitting-Machines, of which the following is a specification.

Our invention has reference to knitting-machines; and it consists of certain improvements, which are fully set forth in the following specification, and shown in the accompanying drawings, which form a part thereof.

This invention relates to improvements upon the class of machines set out in our application, Serial No. 339,836, filed February 10, 1890, and comprehends particularly improvements in the horizontal cam-disk, whereby the cams thereof may be readily exposed or dismantled for examination, cleaning, and removal of broken needles.

Heretofore the cam-disks in machines of this class have been made of complete disks fitted upon the central shaft or support, and to obtain access to the needle-grooves, which may become clogged owing to the breakages in the needles, it has always been necessary to dismantle the entire upper part of the machine, and after removing the shafts separate the portions constituting the dial and cam-disks. By our improvements the dismantling of the machine is entirely overcome and that portion holding the needles remains in its normal position, while the cam portions are readily removed for repairs or cleaning without in any wise disturbing the remaining portions of the machine.

In carrying out our invention we make the portions holding the cams divisible, so as to be bolted to or removed from a suitable hub carried upon the central shaft. The cam-disk in practice is preferably split across its diameter, and may be removed in two or more sections.

The construction will be more fully understood by reference to the accompanying drawings, in which—

Figure 1 is an elevation of the upper part of a knitting-machine embodying our invention. Fig. 2 is an inverted plan view of the cam-disks on line *yy* of Fig. 3. Fig. 3 is a sectional elevation of the dial-head and cam-disks on line *xx* of Fig. 2; and Fig. 4 is a view

similar to Fig. 2, with the several parts disconnected and separated for the purpose of showing how easily they may be removed from the central portion, which is permanently fitted to the supporting-shaft.

A is the needle-head for the vertically-reciprocating needles.

B is the dial-head for the horizontally-reciprocating needles. This dial-head consists of the lower disk or dial E, having radial grooves, as is usual, in which the needles are guided. The part E is secured to the central shaft C, carried in the frame D of the machine.

Fitted to the central shaft C is a hub H, the lower portion of which is provided with a flange I, to the underside of which is secured the cam J. Fitted to this hub H and resting upon the flange I thereof are two semi-annular pieces G and F, forming the cam-disks, which are provided with holes *r*, through which clamping-screws R pass for the purpose of clamping the said parts F and G rigidly to the flange of the hub. The semi-annular piece G is provided with a curved cam portion M, which, in conjunction with the cam portion J, constitutes the camway S. The semi-annular part or cam-disk F is provided on its under surface with the parts L L and pivoted cam K, provided with the throat *k*, formed in the usual manner. The part K is provided with an upright operating-pin P, extending through a slot O in the part F, whereby the cam portion K may be automatically operated by suitable mechanism, as set out in our application hereinbefore referred to.

In practice considerable trouble is experienced from broken needles clogging the small throat *k* of the cam part K and wedging in in such a manner as to stop the proper operation of the machine. When such accidents take place, it is simply necessary with our construction to remove more or less of the screws R and take off the semi-annular pieces F and G, or either of them, exposing the needles without disturbing them and permitting the cam portions to be thoroughly cleaned or repaired. By this it is evident that no dismantling of the machine is required, as has heretofore been necessary.

We do not limit ourselves to the particular line of division herein shown of the cam-disks,

as it may be made in two or more parts, as desired, and secured to the central shaft C or support in any suitable manner.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a knitting-machine, a dial-head formed of several parts, two parts of which above the needle-dial are separable with respect to each other on a plane transversely to the plane of the needles to expose the needles in the needle-dial, a support for said dial-head, and means to secure the several parts rigidly together, but with provision for their separation.

2. In a knitting-machine, the combination of the needle-dial with the cam-disk divided into parts transversely to the plane of the needle-dial, a support for the needle-dial, and a detachable connection between the several parts of the cam-disk and the support for the needle-dial, whereby the cam-disk may be detached in sections without disturbing the support for the needle-dial.

3. The combination, in a knitting-machine, of a needle-dial E, supported upon a central

shaft C, a fixed hub H, carried by said central shaft C, and semi-annular cam-segments F and G, detachably secured to said hub H.

4. The combination, in a knitting-machine, of a needle-dial E, supported upon a central shaft C, a fixed hub H, carried by said central shaft C and having a flange I, semi-annular cam-segments F and G, detachably secured to said hub H and resting upon its flange, and screws or bolts R, passing through said semi-annular segments and flange.

5. In a knitting-machine, the combination of the needle-dial and its support with the adjustable cam K and a cam-segment supporting said adjustable cam and detachably secured to the support for the needle-head and removable from said support without disturbing its position in the machine.

In testimony of which invention we have hereunto set our hands.

ABNER McMICHAEL.

FRANK B. WILDMAN.

Witnesses:

E. S. HUNSICKER,

EDW. F. KUNS.