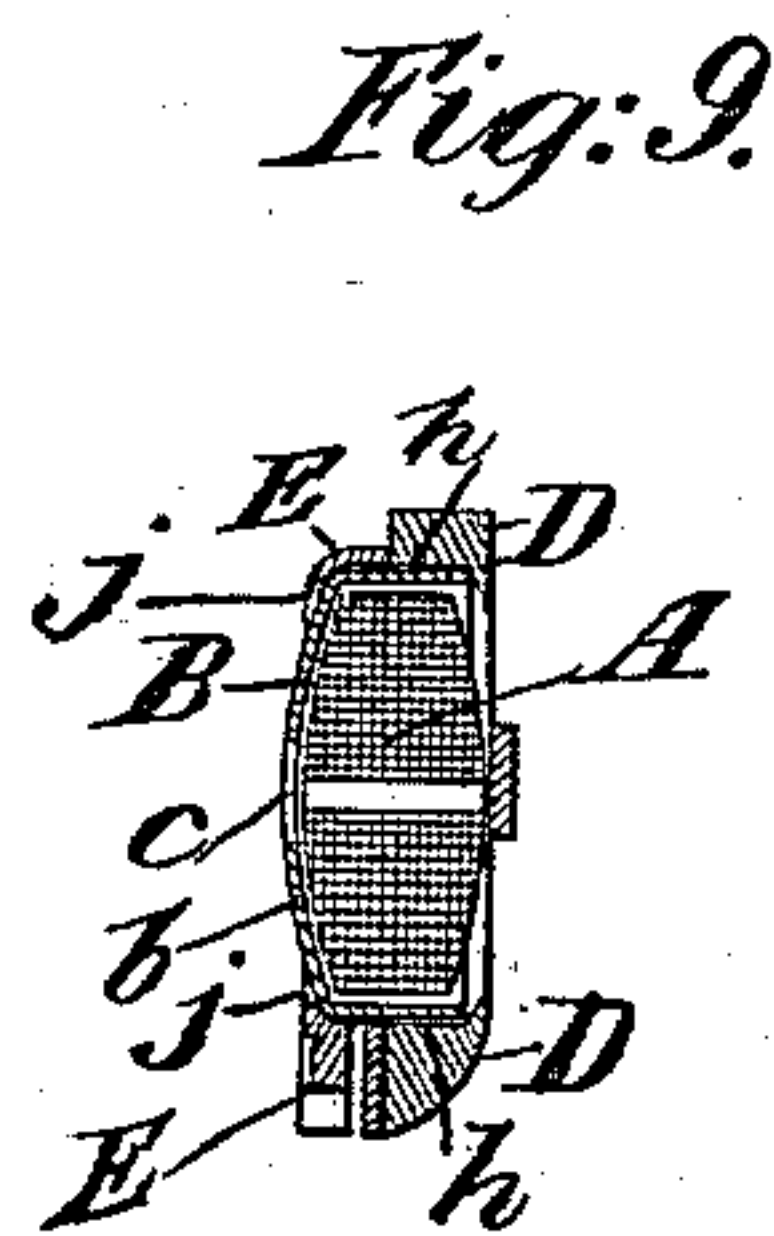
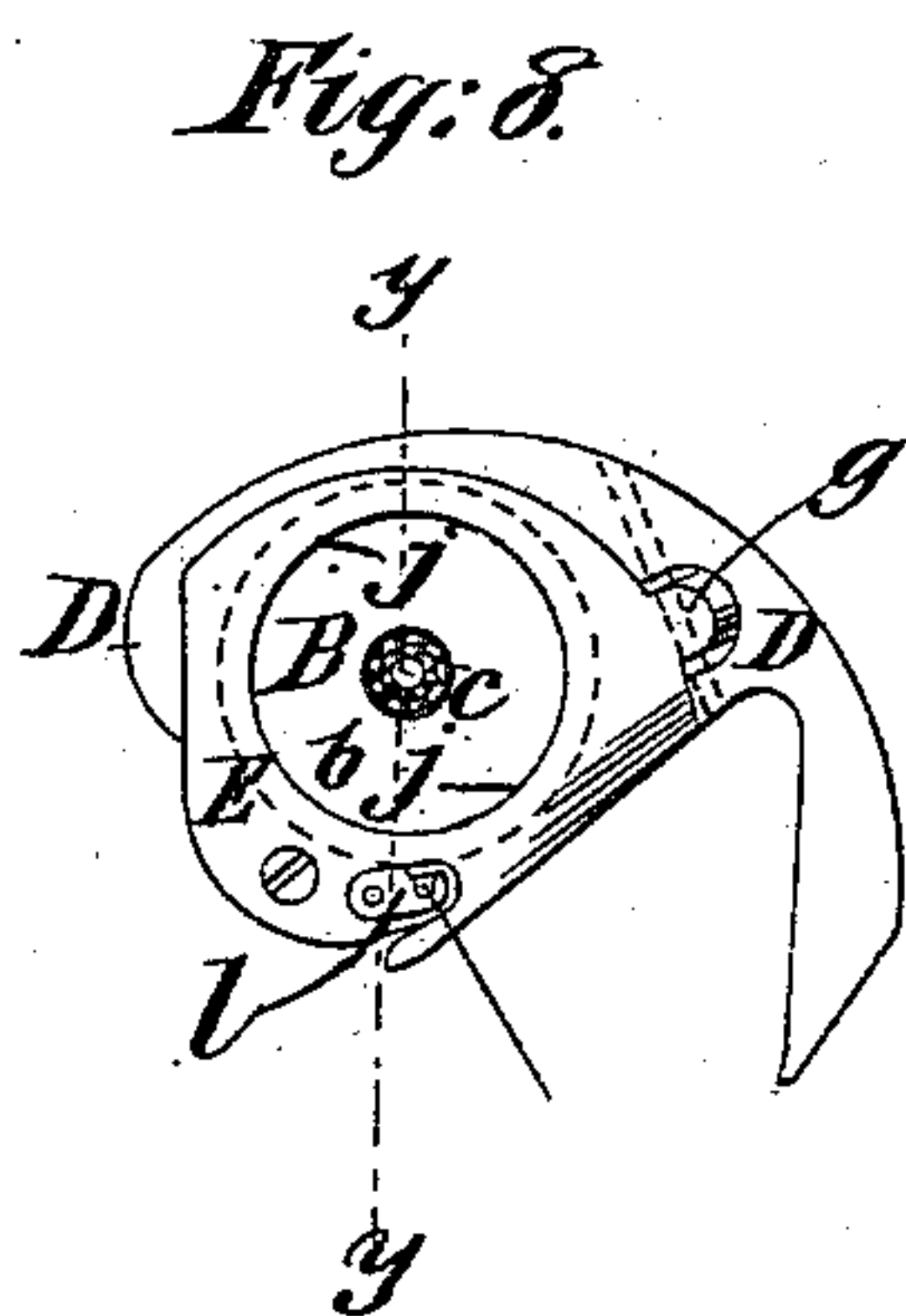
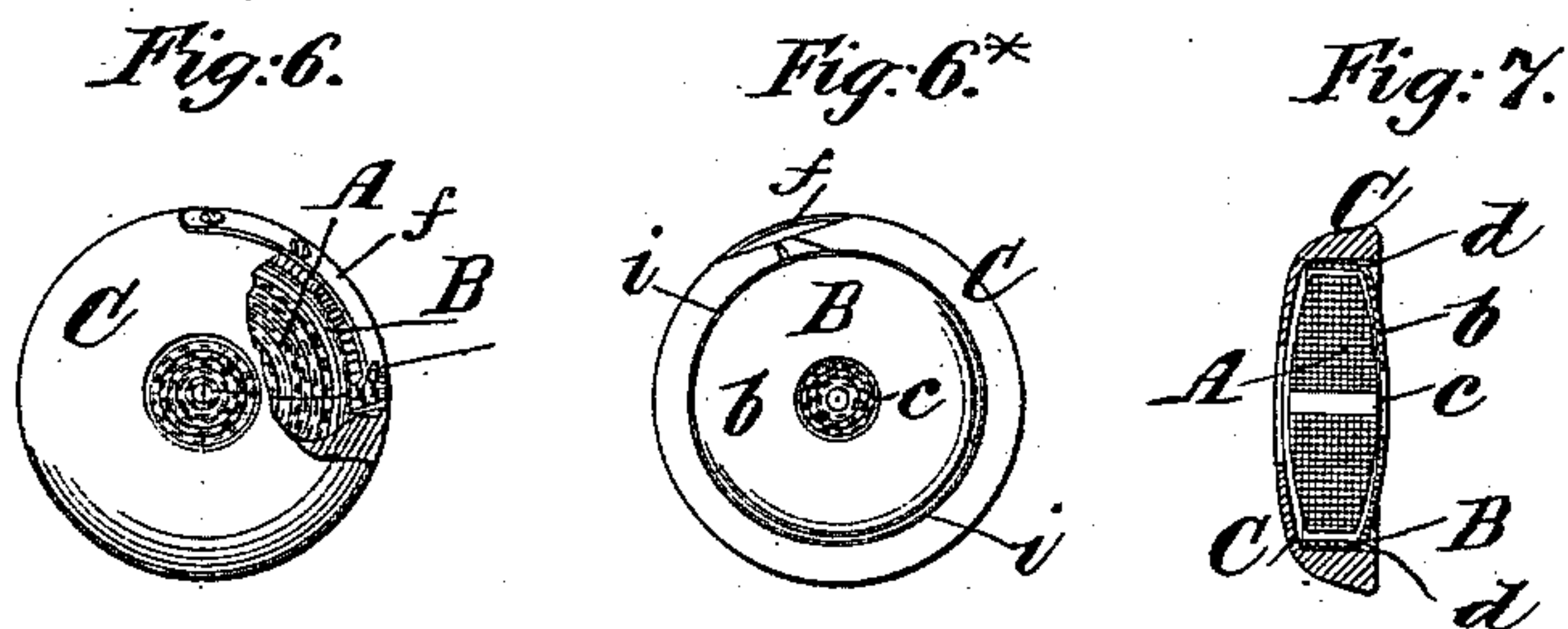
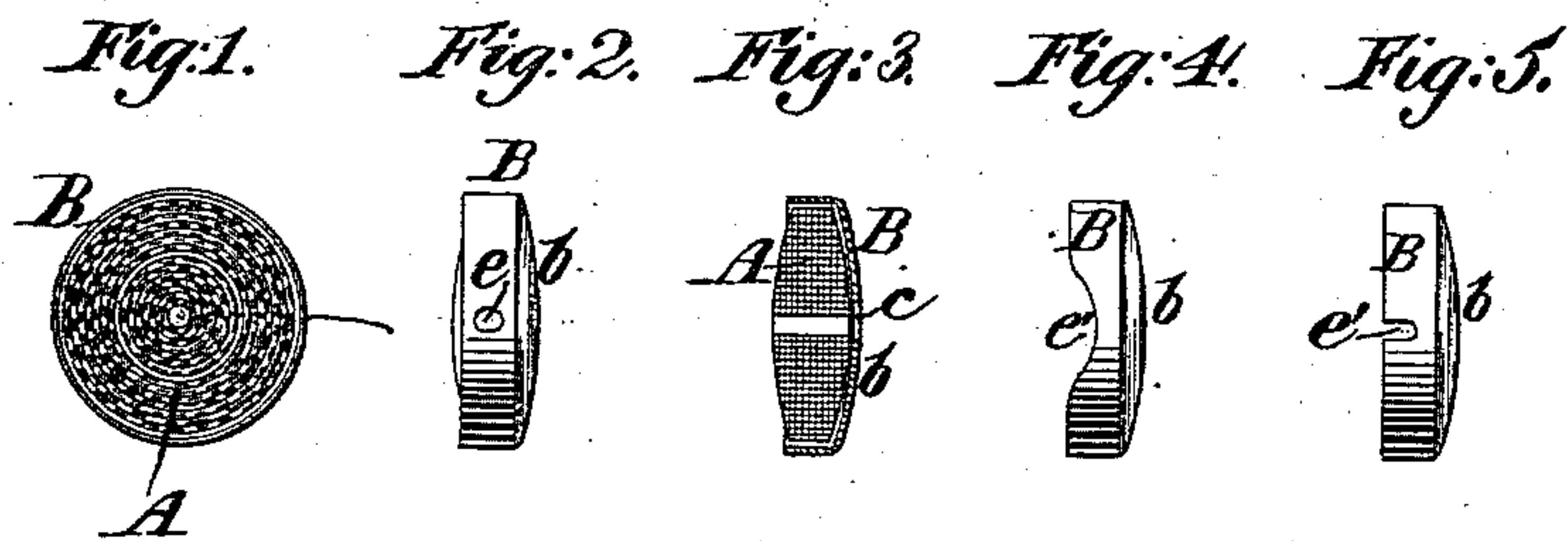


(No Model.)

C. E. WILKINSON.
SHUTTLE FOR SEWING MACHINES.

No. 379,353.

Patented Mar. 13, 1888.



Witnesses.
Emil Hertel
O. Sundgren.

Inventor.
Charles E. Wilkinson.
by his attorneys.
Brown & Hall.

UNITED STATES PATENT OFFICE.

CHARLES E. WILKINSON, OF MATTEAWAN, NEW YORK.

SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 379,353, dated March 13, 1888.

Application filed May 11, 1886. Serial No. 201,803. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WILKINSON, of Matteawan, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Cop-Holders for Sewing-Machines, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings.

The shuttles now most commonly employed in sewing-machines have each a cavity for containing a bobbin of thread and which is of a diameter larger than its depth; and my invention relates to shuttles of that character which are severally constructed with a circular and unobstructed cavity to receive a cop of thread from the interior of which the thread unwinds, and a cop-holder into which the cop is placed and which is placed with the cop into the shuttle-cavity.

The invention consists in the combination, with a sewing-machine shuttle for containing and supplying the under thread of a two-thread machine, which is provided with a substantially circular and unobstructed cavity open at one side and of a diameter greater than its depth, of a cop-holder consisting of a box or shell, also of a diameter greater than its depth, open at one end and closed at the other, and placed in said cavity with its closed outer end toward the open side thereof, the box or shell affording within it an unobstructed space for the reception of a cop from the center of which thread may be unwound.

In the accompanying drawings, Figure 1 is an inner face view of my cop-holder and of a cop within it. Fig. 2 is a side view, and Fig. 3 is an axial section corresponding with Fig. 1. Figs. 4 and 5 are external side views of the cop-holder, illustrating slight modifications. Figs. 6, 6*, and 7 illustrate the application of my invention to a Wheeler & Wilson rotating-hook sewing-machine, Fig. 6* representing an outside or face view of what is called the "bobbin-case" of that machine and of the cop-holder within it, Fig. 6 representing an inside face view of the said bobbin-case, having a portion broken away to represent part of my cop-holder and the contained cop, and Fig. 7 representing an axial section of the bobbin-case and contained cop-holder and cop. Figs. 8 and 9 illustrate the application of my inven-

tion to the oscillating shuttle of the Singer sewing-machine, Fig. 8 being a front view of the shuttle and contained cop-holder, and Fig. 9 representing a transverse section in the line *yy* of Fig. 8 of the shuttle, the cop-holder, and the cop.

Similar letters of reference indicate corresponding parts in the several figures.

Referring first to Figs. 1, 2, 3, 4, and 5, A designates the cop, and B designates the cop-holder.

The cop A, in order that it may be made as large as possible to contain all the thread that can be put into the shuttle or bobbin-case of a sewing-machine, should be of about the same form as the exterior of the bobbin commonly employed—viz., a cylinder with convex ends—and it is wound nearly solid, leaving only a very small opening in the center whence to draw the thread. The said cop is made only just so much smaller than the cavity in the shuttle or bobbin-case as is necessary to make room for the cop-holder B.

The cop-holder is simply a cylindrical box or cap, of which one end or face is entirely open for the introduction of the cop and the drawing out of the thread therefrom, and the other end, *b*, of which might be entirely closed, though it is preferably made with a small central opening, *c*, but otherwise closed. This closed end *b* is preferably made of concavo-convex form that it may contain greater thread-space and present a smooth rounded surface to the loop of the needle-thread passing over it. This cop-holder may be made of metal or other suitable material, but preferably of metal, in order that it may be made very thin, to occupy the least possible room. Its exterior fits snugly but loosely within the cavity of the bobbin-case, bobbin-holder, or shuttle of the sewing-machine, and the cop, when full, fits snugly within the interior, wherein an unobstructed space is afforded for the reception of the cop. In the periphery of this cop-holder is an opening in the form of a small hole, as shown at *e* in Fig. 2, for the exit of the thread; or, instead of such a hole, the opening for the thread may be a simple notch or recess in the edge, as shown at *e'* in Figs. 4 and 5. The cop-holder thus constructed is, with the cop within it, put directly into the shuttle, bob-

bin-case, or bobbin-holder of the sewing-machine in the place ordinarily occupied by the bobbin, the closed end *b* being always presented outward that it may present a smooth
5 surface to the passage of the loop of the needle-thread and protect the cop from the friction of that thread.

In Figs. 6, 6*, and 7, C designates the bobbin-case now commonly employed in the Wheeler
10 & Wilson sewing-machine, consisting of a cup or box having a circular cavity open at the outer side, as indicated at *i i* in Fig. 6*. The cop-holder and cop fit exactly within the unobstructed interior cavity, *d*, of this bobbin-
15 case where the bobbin is commonly received, the closed end being presented outward and the open end inward. It will be observed that this bobbin-case is destitute of any post or journal at the center of its cavity, such as is
20 often provided when a bobbin is to be used in the case. The thread passes out from the center of the cop, between the back thereof and the back of the cavity of the bobbin-case, and thence out through a hole or notch, *e* or *e'*, of
25 the case and through the tension device *f*.

In Figs. 8 and 9, D designates the shuttle-shell of the Singer shuttle, and E represents the cap or cover, hinged, as usual, at *g* to the
30 shell D, that it may open for the insertion of the bobbin. The cavity *h* for the bobbin is partly formed in the shell and partly in the cap or cover, and the ordinary or any suitable tension device, *l*, is provided. The cavity *h* is unobstructed—that is to say, it is des-
35 titute of any post or journal with which it is often provided for the support of a bobbin when the bobbin is to be used. My cop-holder, with the contained cop, is placed in this cavity *h* in the same way as the bobbin is
40 placed therein, the closed end *b* of the holder being outward opposite the circular opening *j*, always provided in the cap or cover, and being nearly flush with the exterior of the cap or cover, and the said holder and cap occupies
45 precisely the same position within and in relation to this shuttle as does the bobbin commonly employed. The thread is drawn out from the central opening of the cop and passes
50 between the back of the cop and the back of the cavity *h* of the shuttle, and out through the opening provided for it in the periphery of the cop-holder, as described with reference to Figs. 2, 4, and 5, and thence to and through the tension device *i* of the shuttle.

55 It may be understood that this cop and cop-holder may be applied to any two-thread sewing-machine by adapting them to fill the place commonly occupied by the bobbin which carries the under thread.

Among the advantages to be derived from 60 my invention may be mentioned the following: It provides for the supply of the thread in convenient ready-wound form to the users of sewing-machines, and so saves them the trouble
65 of winding on bobbins. It enables a greater quantity of thread to be placed in the shuttle or other device provided for containing the under thread, because my cop-holder occupies
70 less room than any bobbin that could be put in its place. It provides for the delivery of thread almost absolutely free from friction and without such friction as is involved in the use
75 of a bobbin, which must rotate, and without such irregularity of friction and draft as results from the varying quantity of thread on a bobbin, and so it leaves the draft and tension free to be adjusted without variation by a proper adjustable tension device.

I am aware of the patent, No. 110,730, granted
80 January 3, 1871, to F. W. Boland, and I do not desire to include in my invention anything which is therein shown and described. That shuttle has a long barrel-like or cylindric cavity, in which a cylindric cop having a length
85 two or three times as great as its diameter is placed. That cop is placed in a paper shell, and the paper shell or cop-holder, with the cop within it, is placed in the shuttle-cavity, so that the closed end of the cop-holder is at the
90 closed end of the shuttle-cavity. In my shuttle the circular and unobstructed cavity is greater in diameter than in depth, and the cop-holder is also greater in diameter than in depth, and I arrange the cop-holder within the shuttle-
95 cavity so that the closed end of the cop-holder is at the open side of the cavity, and consequently the cop is completely inclosed.

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

The combination, with a sewing-machine 100 shuttle for containing and supplying the under thread of a two-thread machine, the shuttle having in it a substantially circular and unobstructed cavity open on one side and of a diameter greater than its depth, of a cop-holder
105 consisting of a box or shell, also of a diameter greater than its depth, open at one end and closed at the other, and placed in said cavity with its closed outer end toward the open side thereof, the box or shell affording within it
110 an unobstructed space for the reception of a cop from the center of which the thread may be unwound, substantially as herein described.

CHARLES E. WILKINSON.

Witnesses:

FREDK. HAYNES,
EMIL HERTER.