

No. 624,341.

Patented May 2, 1899.

F. KARR.
SPRING BED BOTTOM.

(Application filed June 29, 1898.)

(No Model.)

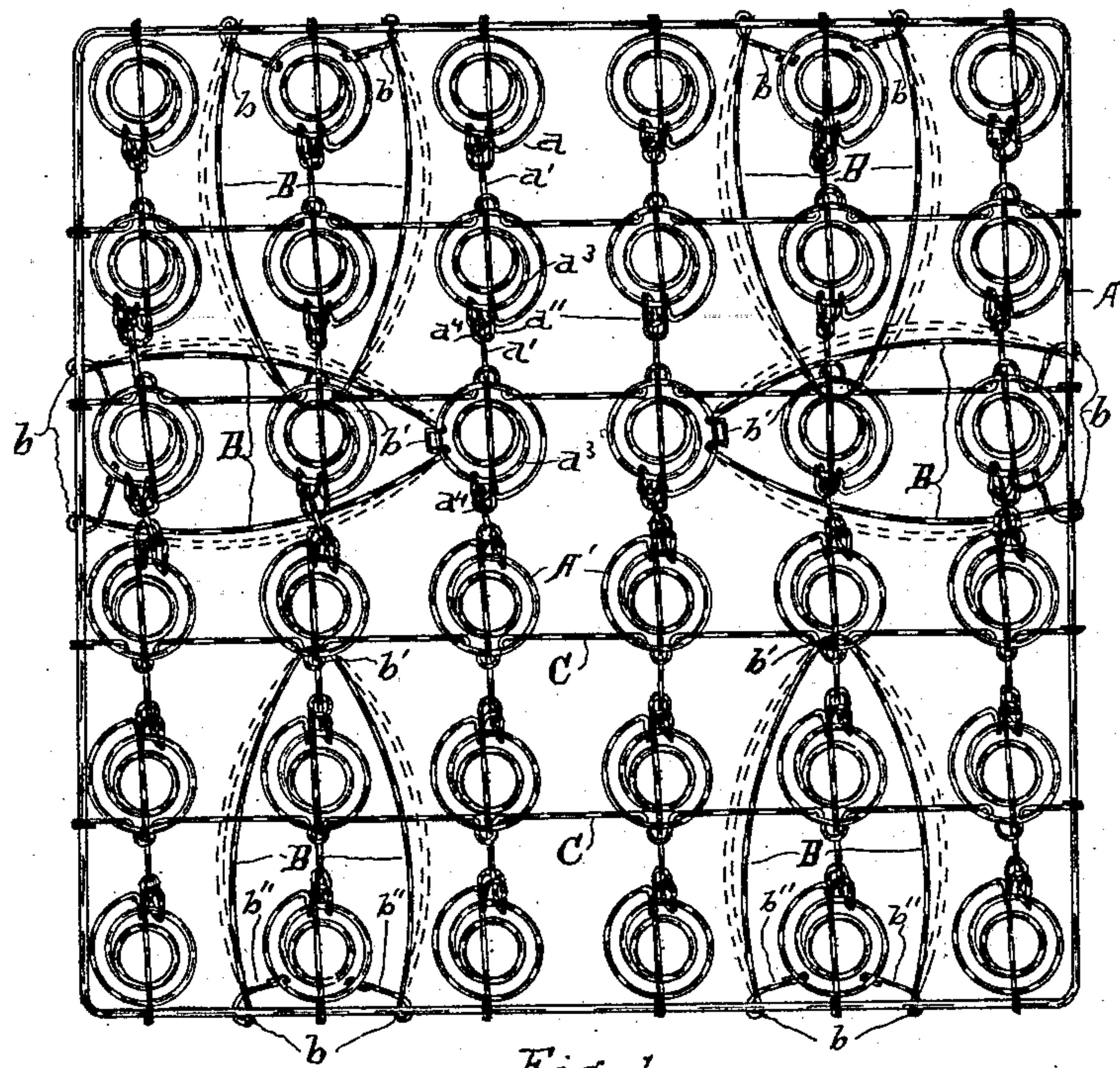


Fig. 1.

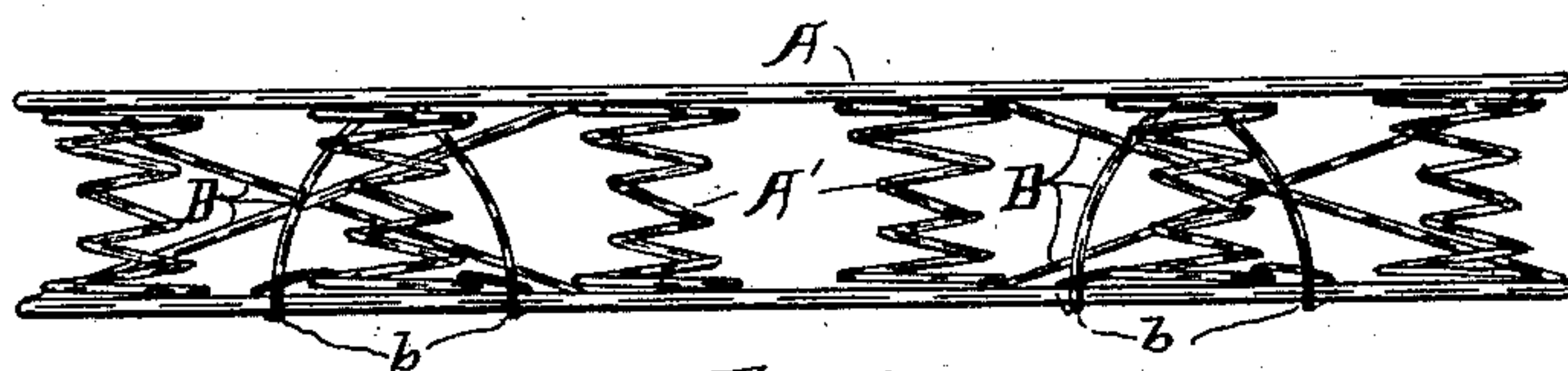


Fig. 2.

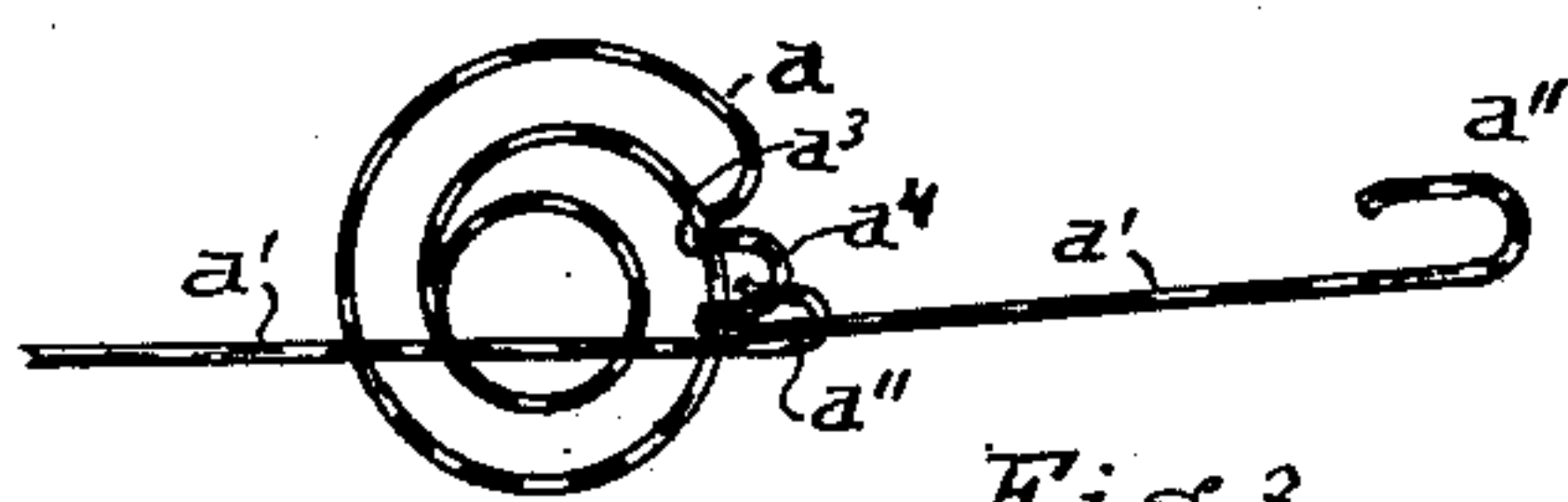


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE

FRANCIS KARR, OF HOLLAND, MICHIGAN, ASSIGNOR TO BENJAMIN KARR,
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SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 624,341, dated May 2, 1899.

Application filed June 29, 1898. Serial No. 684,770. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS KARR, a citizen of the United States, residing at Holland, in the county of Ottawa and State of Michigan, have invented certain new and useful Improvements in Spring Bed-Bottoms, of which the following is a specification.

My invention relates to improvements in bed-bottoms constructed with a series of spiral vertical springs known in the market as "single and double deck" springs; and its objects are, first, to avert the danger of the springs leaning or sagging sidewise; second, to prevent the several coils of the springs from clashing and making an unpleasant grinding noise, and, third, to so extend the upper coil of each spring that it will engage and support the next succeeding spring. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan of a spring bed-bottom embodying the several features of my invention. Fig. 2 is an end elevation of the same; and Fig. 3 is a plan of a detached spring, showing the manner of interlocking the springs.

Similar letters refer to similar parts throughout the several views.

In the accompanying drawings, A represents the top or border of the spring, and A' represents the spring.

My invention consists first and primarily of the form and application of the wishbone-shaped braces B. These braces are of a single piece of wire bent at the point b' to form a spring, the sides of which diverge to a point somewhat beyond the longitudinal center, when they again approach each other slightly to the ends, forming two springs substantially the shape laterally of a wishbone. The bow portion at b' is secured to the surface structure of the springs in the body of the bed-bottom, and the ends are secured to the borders of an opposite surface structure, as at b'' , being spread some distance apart, so that any pressure on the top of the springs will cause the curved sides of the braces to diverge at the centers, as indicated by the dotted lines in Fig. 1, so that they are continually effective without distorting the bed-bottom, and as some of the braces incline in one direction

and others in an opposite direction and they incline from every side of the spring bed-bottom it can be readily seen that the action of the spiral springs must be vertical and with no inclination to bend or throw over to the right or the left. This feature is the direct result of the peculiar form of the brace, and as the action of the springs is thus rendered absolutely vertical it is impossible for the coils of the springs to scrape by each other, and by this means the usual unpleasant grating noise so common in springs of this class after they have been used for a time is wholly averted and the life of the spring is prolonged. I further facilitate the action of these braces by the peculiar construction and bracing of the spiral springs. This feature of my invention is more fully indicated in Fig. 3 and is as follows: The knot of the end or face coil a of a spiral spring is formed by bending back around the second coil a^3 , forming a loop or bow a^4 , and its prolonged end projecting thence out to form the arm a' , which passes across the end or face coil of the next adjacent spring and terminates in a hook a'' , that passes under the beginning of the prolongation of the arm a' of the next adjacent spring and hooks back into its similar knot. By this means I have a continuous series of ties and locks crosswise of the bed-bottom, while with the ordinary tie-rods C, which stand at right angles therewith, I have a thorough bracing of the extremities of the springs, and the braces B, hereinbefore described, connecting the top coil of one set of springs with the bottom coil, substantially, of another set of springs, and extending from the one to the other diagonally, the bed-bottom is so thoroughly braced that "lopping" and friction of the spiral springs are wholly prevented.

I prefer that the broad ends of the braces B be carried by and attached to an end or face coil of a spiral spring, as at b'' in Fig. 1, as by this means the brace is held in position to render chiefly a lateral springing motion of its curved sides when weight is placed upon the bed—that is to say, the pressing down of the ends of the braces, as a matter of course, shortens the distance between the points b and b' , and to meet this difference of distance

the curved sides of the braces diverge later-
ally, as indicated by the dotted lines, instead
of bending chiefly up or down, and thus ex-
ercise a more even and continued exertion on
5 the springs to hold them to place and with less
danger of causing humpy and uneven places
in the bed than would be possible with the
springs so arranged that the spring of the
braces B would act either up or down, besides
10 avoiding uncertain or erratic action of the
braces that would cause noise from interfer-
ence thereof with the interior coils of the
springs or with the surface of the structure.

Having thus fully described my invention,
15 what I claim as new, and desire to secure by
Letters Patent of the United States, is—

1. In combination with a spiral-spring bed-
bottom, braces having outwardly-curved sides
connected to and passing diagonally from one
20 surface to the other so that vertical compres-

sion of the springs will cause the curved sides
of the braces to diverge, substantially as and
for the purpose set forth.

2. In combination with a spiral-spring bed-
bottom, lateral braces having outwardly- 25
curved sides, said braces connected to and
passing from one surface of the bed-bottom
diagonally so that vertical compression of the
springs will cause the curved sides of the
braces to diverge, and spiral springs having 30
their end coils prolonged to extend across the
surface of, and be secured to the end coils of
adjacent springs to form surface braces over
said adjacent springs, substantially as and
for the purpose set forth.

FRANCIS KARR.

In presence of—

ITHIEL J. CILLEY,
WALTER E. MOORE.