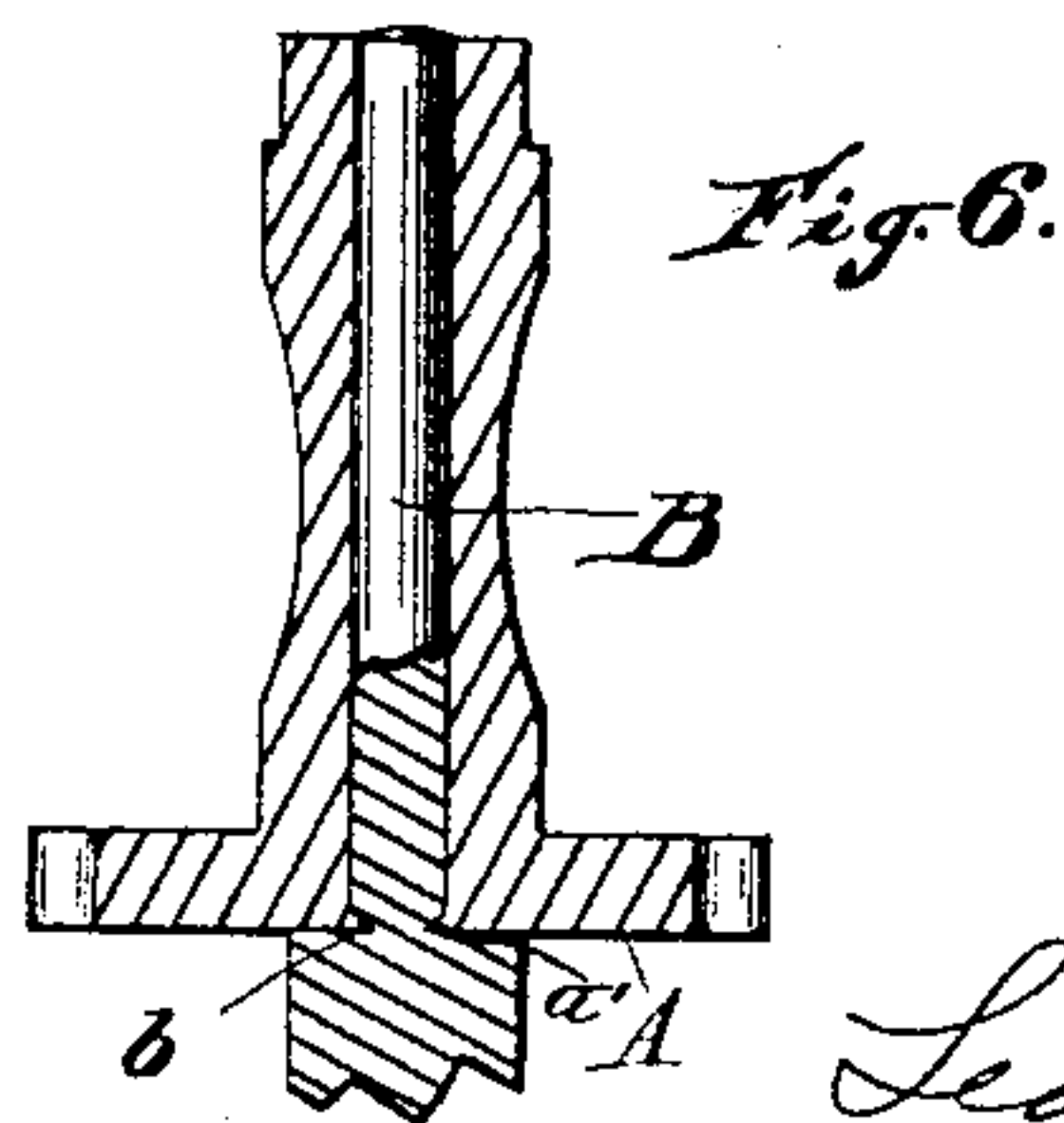
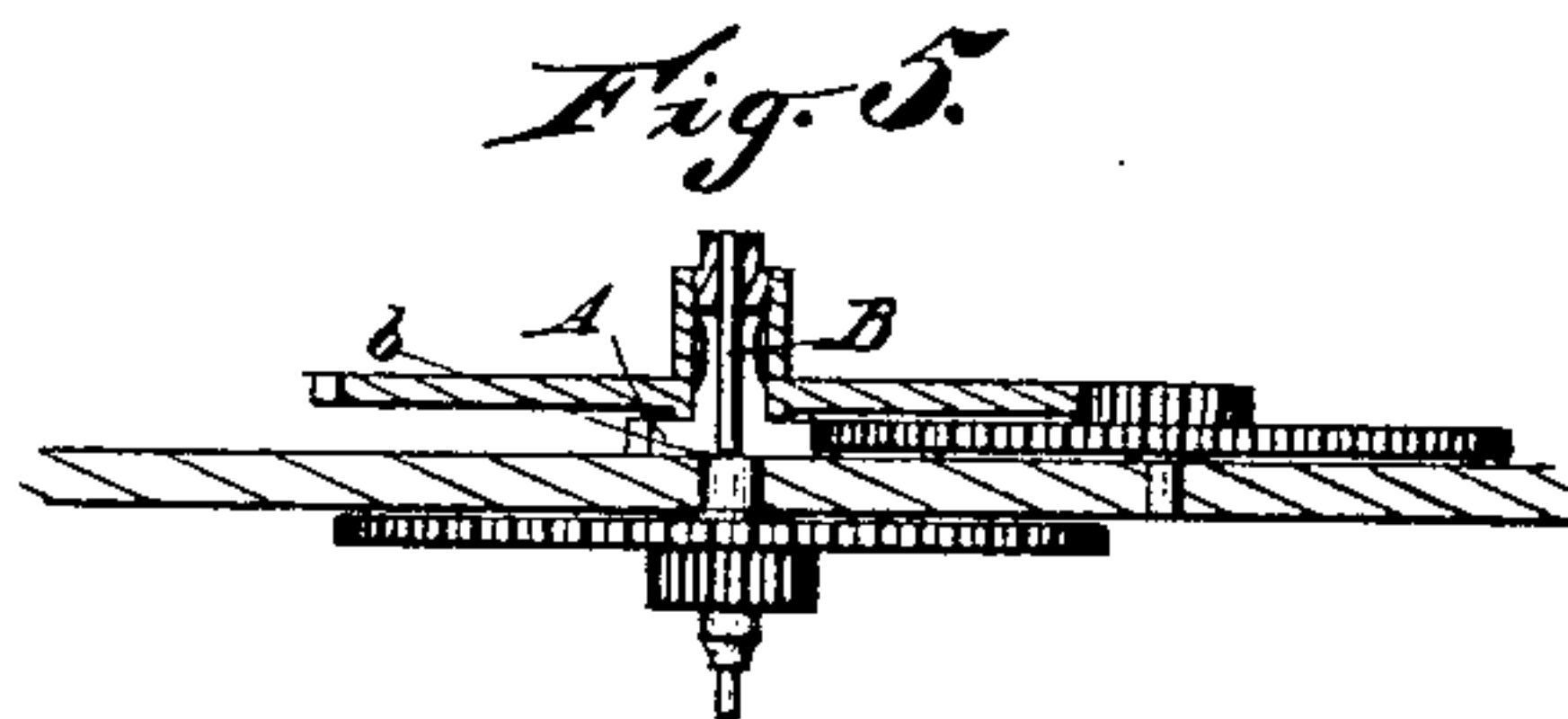
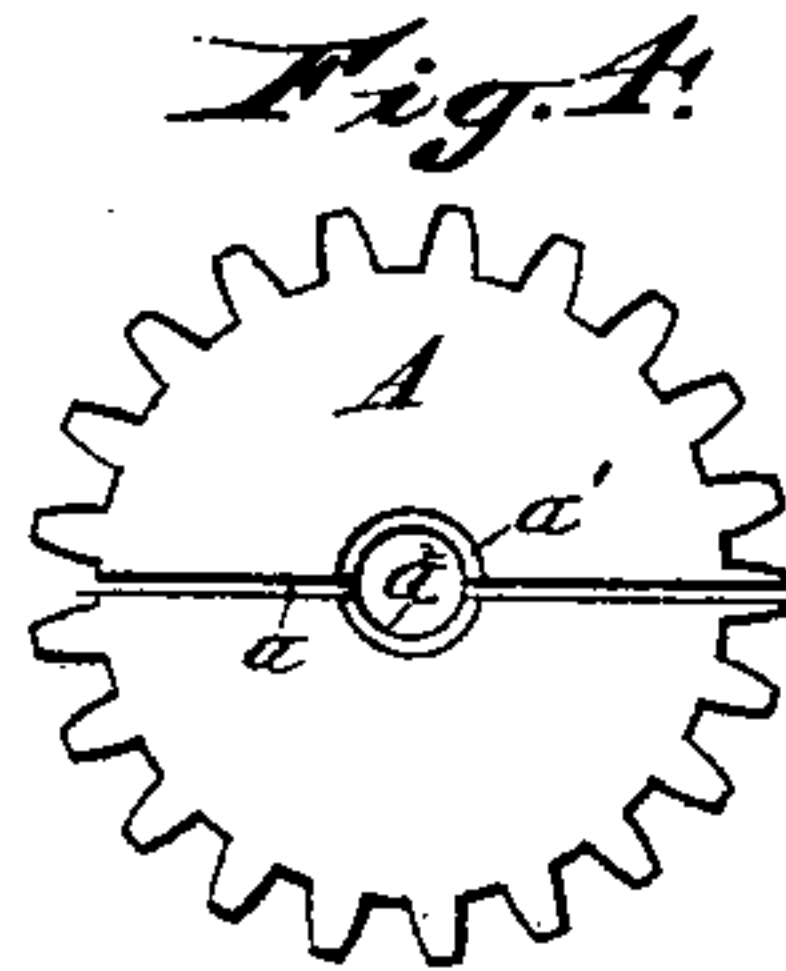
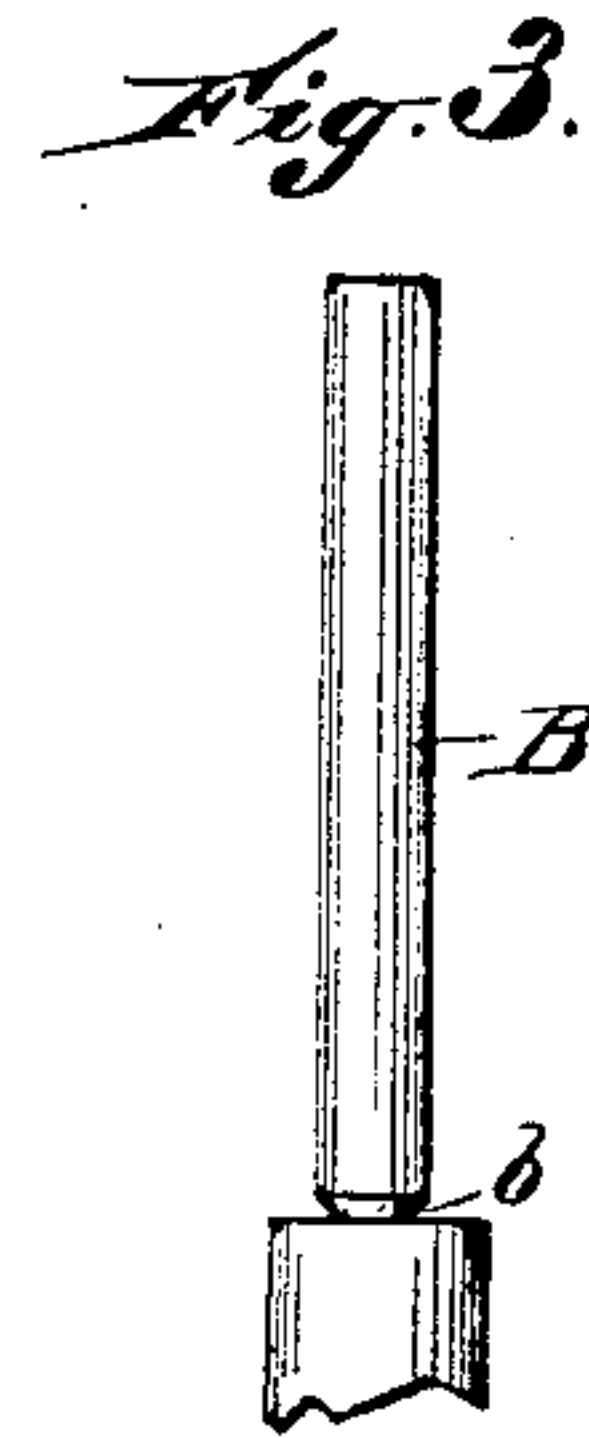
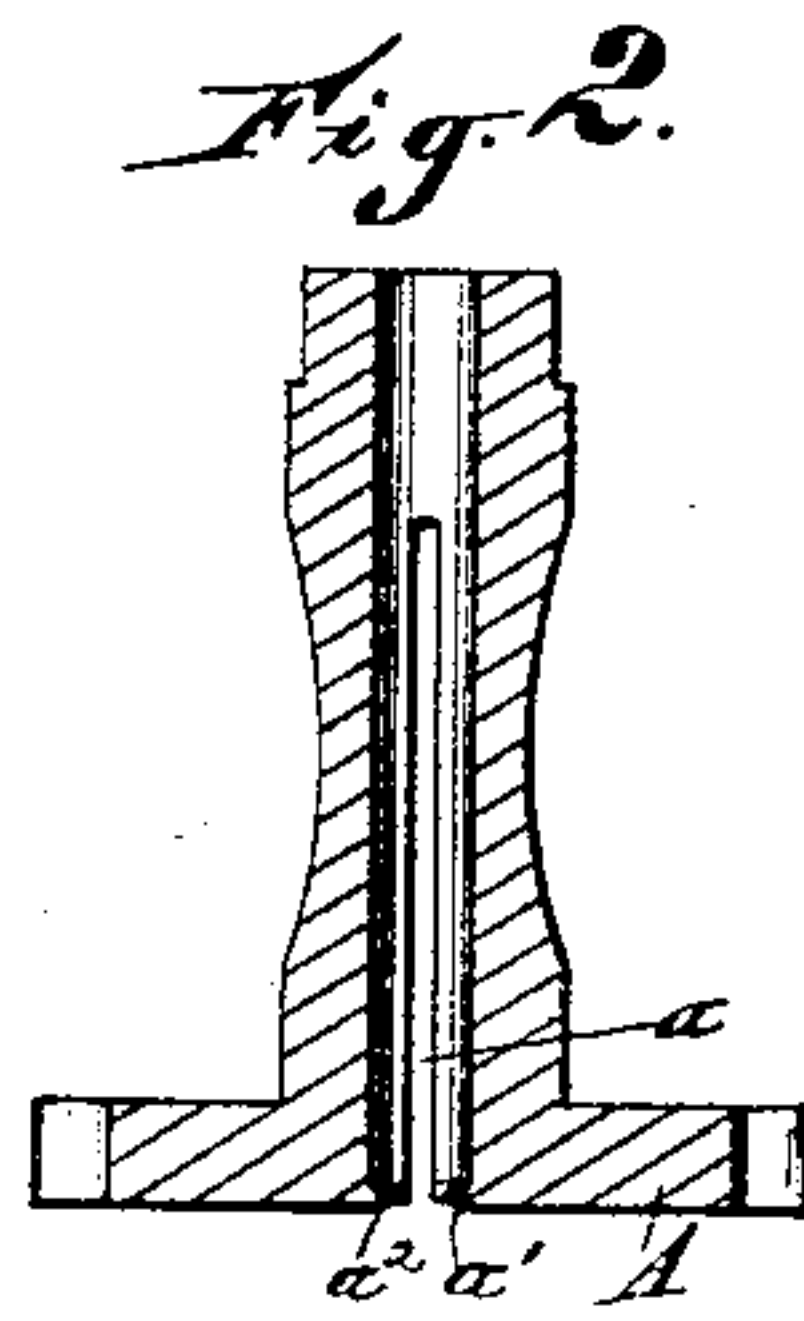
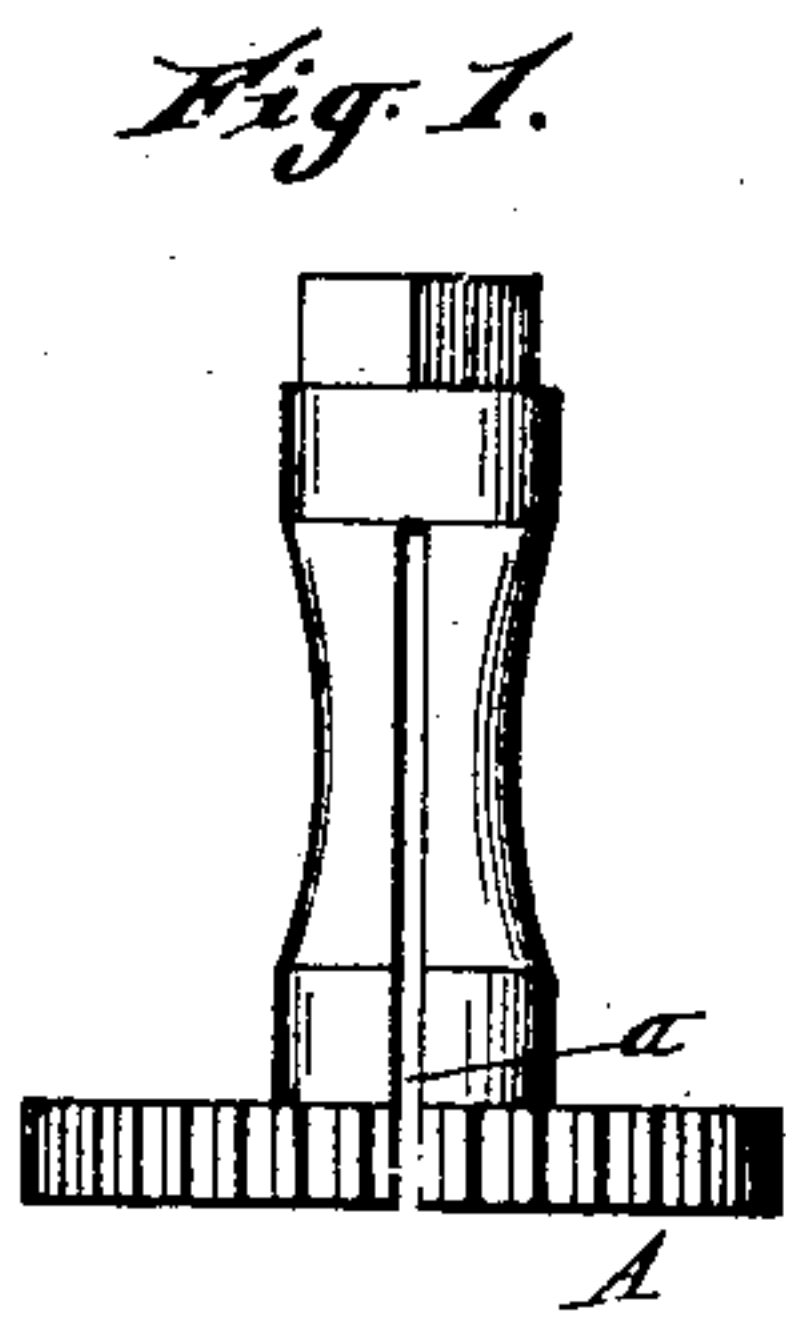


(No Model.)

L. C. BRIGGS.
CANNON PINION FOR WATCHES.

No. 388,625.

Patented Aug. 28, 1888.



WITNESSES,

John E. Wiles.
Th. B. O'Dogherty.

INVENTOR,

Leonard C. Briggs.
By W. W. Fegget.
Attorney.

UNITED STATES PATENT OFFICE.

LEONARD C. BRIGGS, OF EAST SAGINAW, MICHIGAN.

CANNON-PINION FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 388,625, dated August 28, 1888.

Application filed December 22, 1887. Serial No. 253,765. (No model.)

To all whom it may concern:

Be it known that I, LEONARD C. BRIGGS, of East Saginaw, Saginaw county, and State of Michigan, a citizen of the United States, have
5 invented certain new and useful Improvements in Cannon-Pinions; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the
10 same, reference being had to the accompanying drawings, which form a part of this specification.

In the said drawings, Figure 1 is a view in elevation of a cannon-pinion embodying my
15 invention. Fig. 2 is a sectional view of the same. Fig. 3 is a side elevation of the journal for the pinion. Fig. 4 is an inverted plan. Fig. 5 represents the pinion in use. Fig. 6 is an enlarged sectional view illustrating the
20 pinion upon its journal.

Heretofore in the construction of cannon-pinions various means have been devised for confining the pinion upon its journal. To this end the hub of the pinion upon its lower side
25 has been split and provided with a dovetailed recess in the bore of the pinion, near its lower end, adapted to set down over a sharp dovetailed shoulder on the journal. This, however, has required that the pinion be spread
30 at the lower end of the hub by a screw driver or other tool, so as to spring it out over this abrupt dovetailed shoulder. This results frequently in so springing the material of the hub that it will set and not return to its proper
35 position, and so not hug closely upon the journal. Such a condition destroys the utility of the cannon-pinion, and if it cannot be sprung back it is rendered useless. Again, the arbor end of the pinion has also been split and pro-
40 vided upon its interior with an annular dovetailed recess adapted to be sprung over a corresponding dovetailed projection on the surface of the journal. This, however, has proved a source of considerable annoyance, for not
45 only is the split portion liable to become set by putting it over the said shoulder, but this being the arbor, the slightest spring prevents the ready adjustment of the hands upon the arbor. In both the cases above cited it is an
50 expensive and difficult matter to turn a groove upon the interior of the hub of the cannon-

pinion, either at its lower end or at its arbor end.

It is the purpose of my invention to produce a construction which is at once simple 55 and efficacious, and is in no way liable to injure the said pinion, and is so inexpensive in its construction as to add little or nothing to the expense.

To this end, A represents a cannon-pinion; 60 B, its journal. I split the hub of the cannon-pinion on its under side, as shown at *a*, and either before or after splitting the hub I produce the annular indentation *a'* at the lower end of the bore of the hub. By thus indent- 65 ing the metal the metal itself is upset, so as to throw in a slight burr or flange, *a''*, into the interior of the bore. The journal B is of the usual uniform dimensions from top to base of the pinion-seat; but at the base of the pinion- 70 seat I turn a slight groove, *b*, and this is sloped or beveled downward, substantially as shown. It is now apparent that no expanding operation by a tool of any kind is necessary. On the other hand, the pinion is simply slipped 75 down over the journal and its inwardly-turned annular burr *a''* springs into the groove *b*; but this groove being beveled, as shown, the tendency is for the pinion to crowd itself snugly downward against its seat. Now when 80 it is desired to remove this cannon-pinion it is only necessary to give a slight pull with the hand, and off it comes without the use of any tool in either operation. While this is described solely in connection with a cannon- 85 pinion, it is of course clearly applicable in any similar locality where a pinion of this character is to be loosely journaled in a fixed position upon a shaft, and I would have such use of my invention treated as an equivalent. 90

What I claim is—

The combination, with a journal, B, of uniform dimensions from top to base of the pinion-seat, with the exception of a groove, *b*, of a pinion having at the lower end of its split 95 hub an indentation, *a'*, and an inwardly-turned flange or burr, substantially as described.

LEONARD C. BRIGGS.

Witnesses:

D. W. LE VALLEY,
JENNER E. MORSE.