

T. M. Richardson.
Steering Apparatus.
N^o 18,663. Patented Nov. 17, 1857.

Fig. 2.

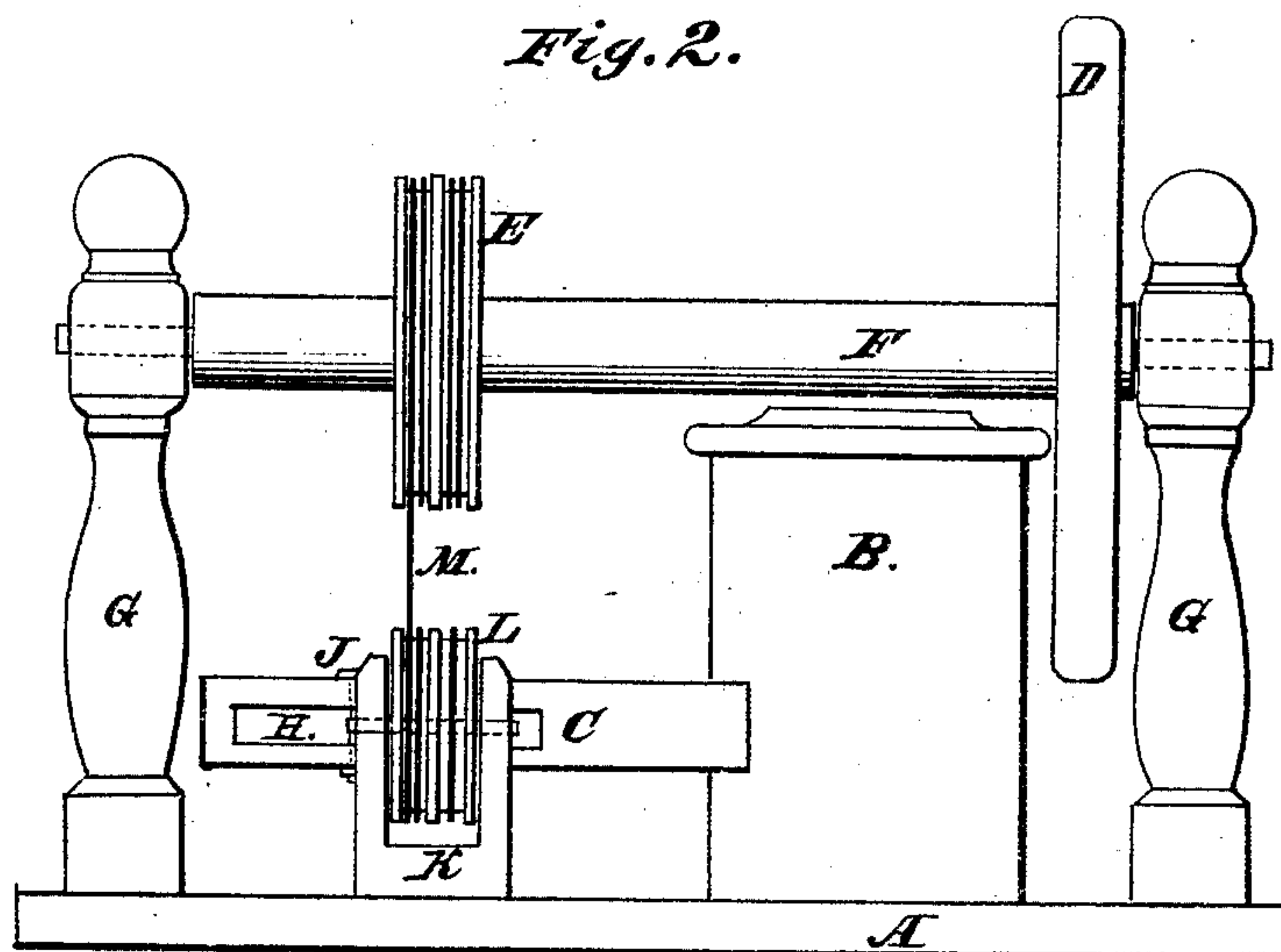
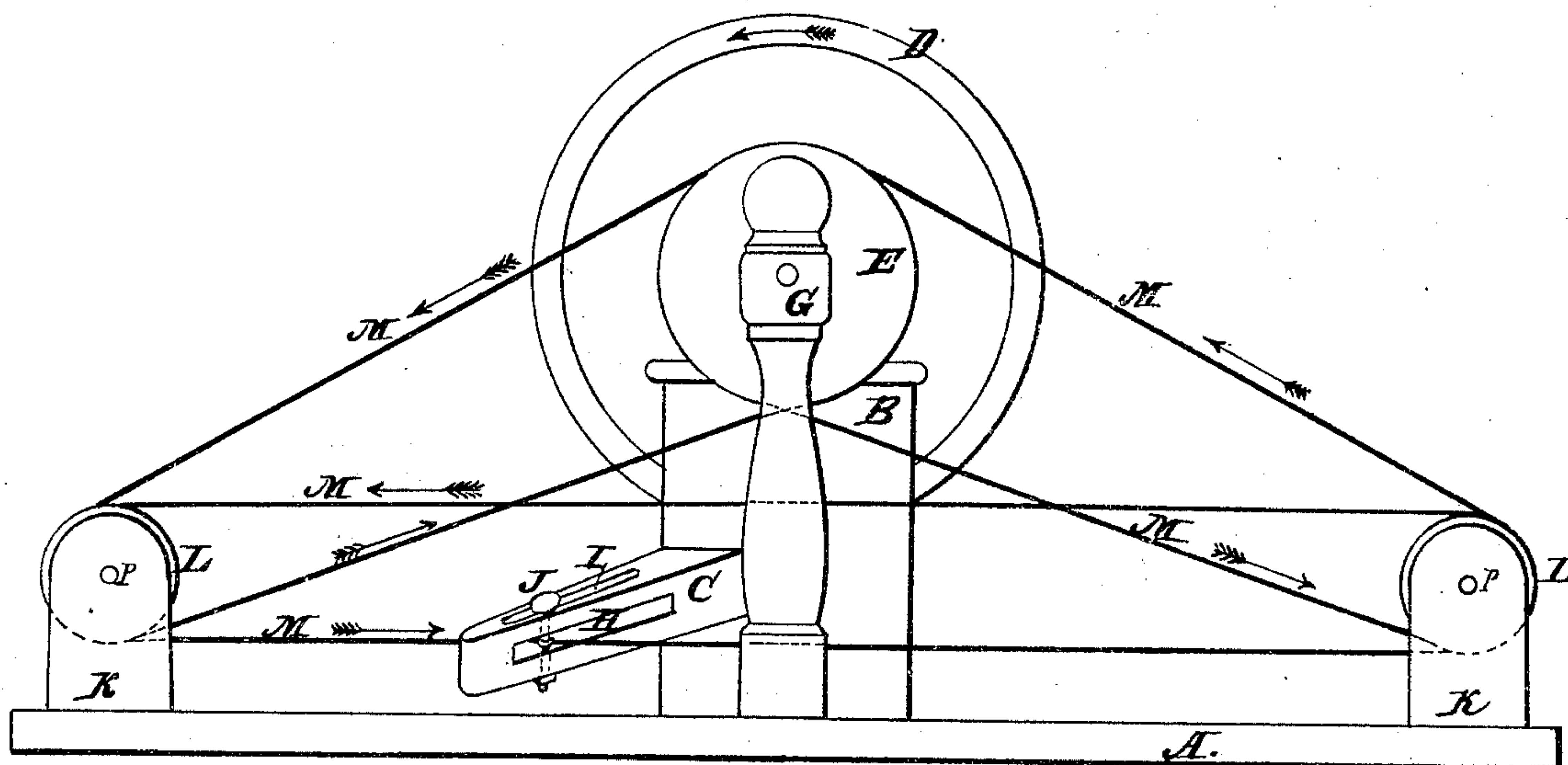


Fig. 1.



UNITED STATES PATENT OFFICE.

T. M. RICHARDSON, OF SEARSPORT, MAINE, ASSIGNOR TO HIMSELF AND I. W. HAVNER,
OF SAME PLACE.

STEERING APPARATUS.

Specification of Letters Patent No. 18,663, dated November 17, 1857.

To all whom it may concern:

Be it known that I, T. M. RICHARDSON, of Searsport, in the county of Waldo and State of Maine, have invented a new and useful
5 Steering Apparatus for Ships; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings,
10 forming a part of this specification, in which—

Figure 1 is a front view, and Fig. 2, a side view.

Similar letters refer to like parts in both
15 figures.

To enable others skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

A is the deck of a ship.

20 B is the head of the rudder-post.

C is the tiller through which there are two slots, H and I, the one horizontal, the other vertical. Through slot I, passes a pin J, to the center of which pin is fastened the rope
25 or chain M, which plays freely in the horizontal slot H.

K K are studs fast to the deck A, toward each side of the ship, and in a line with the center of the slot H, when the tiller C, is
30 parallel with the keel.

L L are sheaves, or pulleys, turning on pins P P, in the studs K K. Around the peripheries of these sheaves, as seen in Fig. 2, are two grooves for the rope or chain M
35 to work in.

G G are studs, fore and aft of the rudder-head, fast to the deck A, and forming a frame, or bearings, for the axle F.

40 D is the "steering wheel" fast to axle F, and constructed like those in common use.

E is a pulley attached to axle F, as seen in Fig. 2, whose periphery is grooved to correspond with the grooves in the sheaves L L. This pulley may be of greater or less
45 diameter, according to the power required;

the smaller its diameter compared with that of the wheel D, the more power will be given by the latter to the former.

The rope, or chain, M, as will be seen by inspecting the figures, passes once and a half 50 around in each of the grooves of pulley E; once and a half around in each of the "fore" grooves of the sheaves L L, and once around in each of the "aft" grooves of the same. Thus it is evident that the friction of the 55 rope or chain on the pulleys, will prevent the former from slipping, and that, if the steering wheel D is turned in the direction indicated by the arrow, the rope and tiller will also move in the directions indicated by the 60 several arrows, and vice versa.

Fig. 1 represents the tiller C as being a little turned to one side, showing also the manner in which M and J slide in the slots H and I, as the position of the tiller varies. 65

Thus it will be seen that my invention is very simple, cheap and efficient. Its power may be indefinitely increased by diminishing the diameter of the pulley E, or by increasing that of the steering wheel D, while 70 it not only allows the rudder and tiller to rise and fall, but also, what is very desirable, when a heavy sea strikes the rudder, the apparatus will yield just enough to prevent an injurious rack or strain. 75

I do not claim the slotted tiller, as that was patented Nov. 28, 1842, by P. T. Share; nor do I claim any of the parts separately considered; but

What I do claim as my invention and desire to secure by Letters Patent, is— 80

Substantially the above described combination and arrangement of the rope, or chain, M, with the stationary grooved sheaves, L, L, and the grooved pulley, E.

T. M. RICHARDSON.

Witnesses:

GEO. M. McLELLAN,
N. AMES.