

D. P. Munroe,

Windlass Water Elevator,

N^o 38,693.

Patented May 26, 1863.

Fig 1

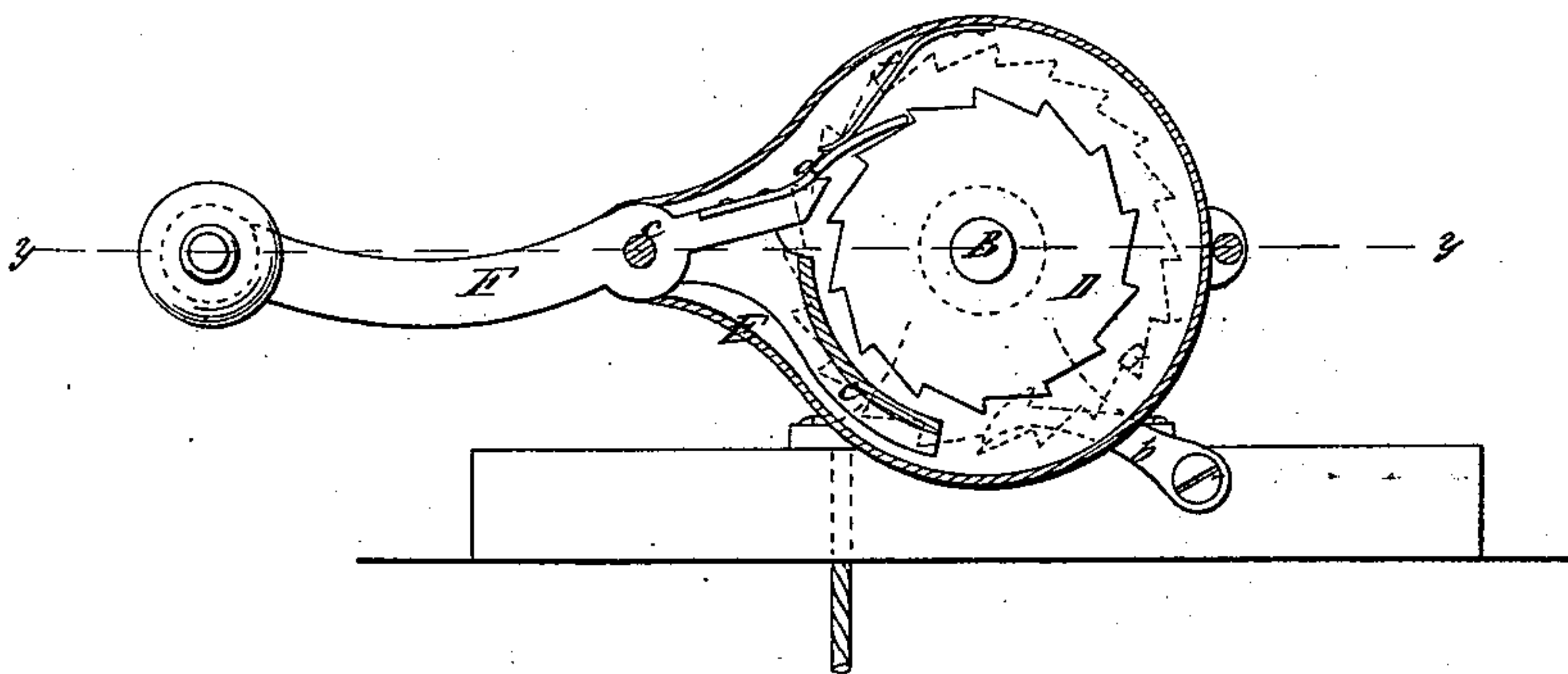
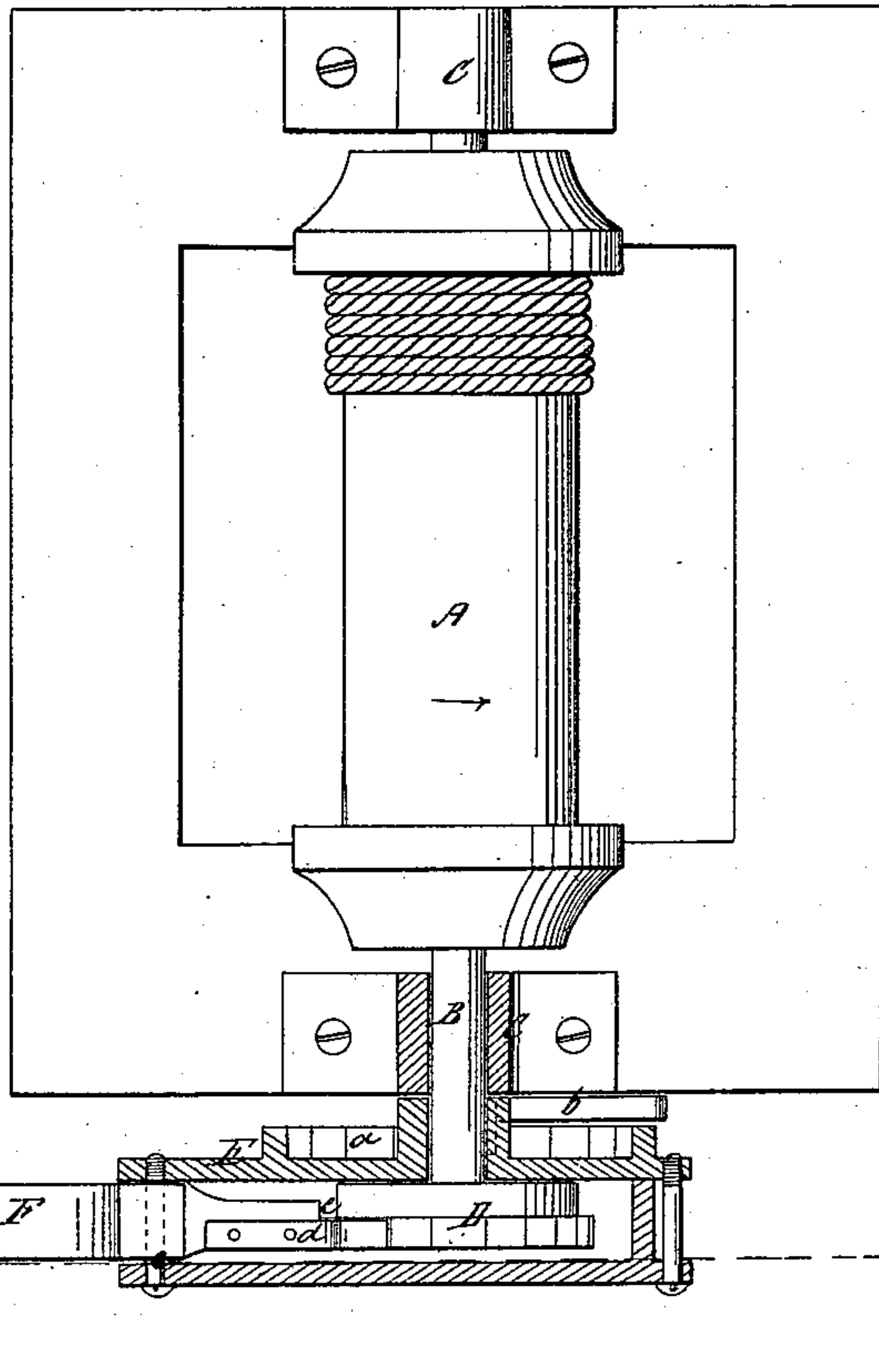


Fig 2



Witnesses
J. W. Coombs
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UNITED STATES PATENT OFFICE.

DAVID P. MUNROE, OF PLYMPTON STATION, MASSACHUSETTS.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 38,693, dated May 26, 1863.

To all whom it may concern:

Be it known that I, D. P. MUNROE, of Plympton Station, in the county of Plymouth and State of Massachusetts, have invented a new and Improved Combined Friction Brake and Ratchet; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a transverse vertical section of my invention, the line *x x*, Fig. 2, indicating the plane of section. Fig. 2 is a horizontal section of the same, taken in the plane indicated by the line *y y*, Fig. 1.

Similar letters of reference in both views indicate corresponding parts.

The object of this invention is to connect the winch with the drum of a windlass in such a manner that in raising an article the drum is not permitted to rotate independent of the winch, but in lowering an article the drum rotates independent of the winch, the latter serving as a brake to check the velocity of the descending article.

The invention consists in the arrangement of a case which revolves freely on a shaft of a windlass, being prevented from rotating in one direction by ratchet-teeth and a pawl, in combination with a winch which is attached to said revolving case by a pivot and which is provided with two arms, embracing a ratchet-wheel that is firmly secured to the end of the shaft of a windlass, one of said arms to form a pawl and the other a brake, in such a manner that by throwing the winch in one direction the pawl engages with the ratchet-wheel on the end of the shaft and a rotatory motion is imparted to the same and to the drum attached to it, and by throwing the winch in the opposite direction, the ratchet-wheel, shaft, and drum are permitted to rotate independent of the winch, and their motion can be retarded at pleasure by applying the brake with more or less power.

To enable those skilled in the art to make and use my invention, I will proceed to describe it.

A represents the drum of a windlass, which may be used for raising a well-bucket or any other article. This drum is firmly secured to a shaft, B, which has its bearings in suitable journal-boxes C, and to the end of which a ratchet-wheel, D, is firmly attached.

E is a case, cast of metal or made of any

other suitable material and arranged so that it rotates freely on a shaft, B, in either direction. This case is provided with ratchet-teeth *a*, and a pawl, *b*, which is pivoted to the frame or bed-plate of the windlass, prevents the case from rotating in one direction. The case E forms the bearing for the fulcrum-pin *c* of the winch F, and this winch is provided with two arms, *d e*, which embrace the ratchet-wheel D, the arm *d* to form a pawl and the arm *e* to form a brake. A spring, *f*, holds the arm *d* in contact with the teeth of the ratchet-wheel D. If the winch F is turned in the direction of the arrow marked near it in Fig. 1, the pawl *d* remains in contact with the teeth of the ratchet-wheel D and the motion of the winch is transmitted to the drum, causing the rope to wind upon the same. The pawl *b*, by dropping into the teeth *a*, in the case, prevents a backward motion of the drum. If the winch is thrown in the direction opposite to the arrow marked near it in Fig. 1, the pawl *b* arrests the case and the winch turns on its fulcrum. The arm *d* is thrown out of gear with the ratchet-teeth, and the arm *e* bears against the smooth surface on the inside of the teeth of the ratchet-wheel D. The drum is not at liberty to rotate in the direction of the arrow marked on it in Fig. 2 and the rope unwinds. If a heavy article is suspended from the rope, it is necessary to check the velocity of the drum to prevent a too rapid descent of said article, and the arm *e* is pressed against the smooth surface of the ratchet-wheel with more or less power, according to the weight and nature of the article suspended from the rope. By these means a well-bucket can be wound up in the usual manner by the winch in the direction of the arrow marked near it in Fig. 1, and by throwing the winch in the opposite direction the bucket is allowed to descend as rapidly as may be desirable.

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

The arrangement of the case E, with ratchet-teeth *a* and pawl *b*, in combination with the oscillating double-armed winch F, ratchet-wheel D, and drum A, all constructed and operating in the manner and for the purpose shown and described.

DAVID P. MUNROE.

Witnesses:

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