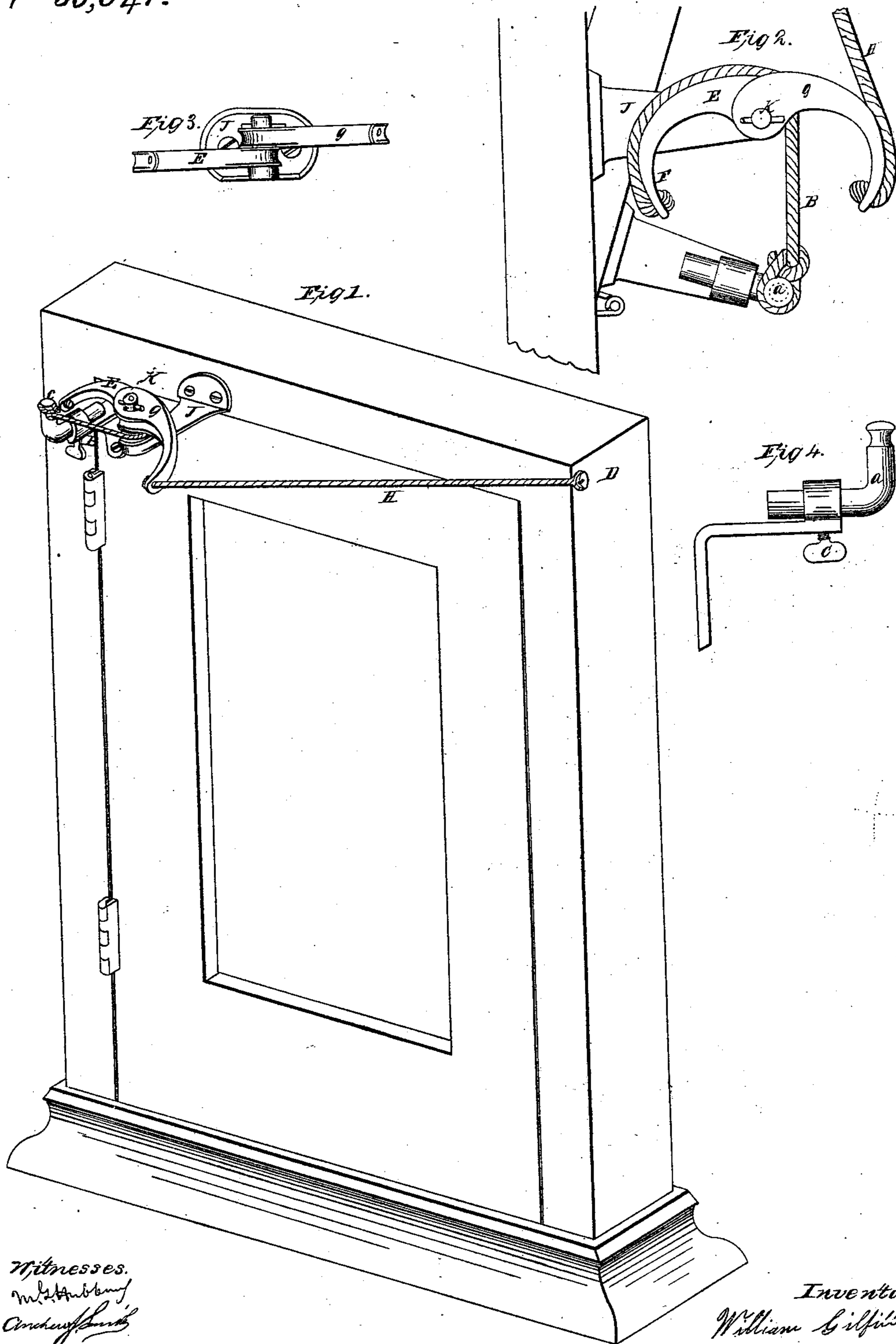


*W. Gilfillan,
Door Spring.*

N^o 36,647.

Patented Oct. 14, 1862.



*Witnesses.
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C. S. S. S. S.*

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UNITED STATES PATENT OFFICE.

WILLIAM GILFILLAN, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN DEVICES FOR CLOSING GATES.

Specification forming part of Letters Patent No. **36,647**, dated October 14, 1862.

To all whom it may concern:

Be it known that I, WILLIAM GILFILLAN, of the city of Syracuse, county of Onondaga and State of New York, have invented a certain new and useful Device for Closing Doors and Gates; and I do hereby declare and ascertain the same as follows, reference being had to the accompanying drawings, in which—

Figure 1 is an isometrical view of my device attached to a door complete. Fig. 2 is a plan or top view showing my device on a door partly open. Fig. 3 is a face view of the cam-levers. Fig. 4 is the adjustable stud.

Like letters refer to like parts in all the drawings.

The object of my invention is to make a device for closing doors, &c., which will operate more powerfully upon the door when it is closed than when it is wide open, and to accomplish this result in a cheap and practicable manner that will admit of its general application. Many attempts have been made to produce such a device, but so far as my observation extends they have either been too complicated or too expensive to admit of their general introduction or usefulness.

I have aimed to construct and arrange my new device so that it will accomplish precisely the desired object in the simplest possible manner, and with the cheapest and most durable materials.

The construction of my device is as follows, viz: I attach to the door at a point nearly over its upper hinge the ordinary adjustable stud, A, which serves as an adjustable lever to which the cord or chain B is attached. The position of this stud is regulated according to the force desired to be exerted on the door, and it is held in position by the set-screw C. To this stud I attach the cord B, which passes around the cam E and is affixed to its extreme end at F. The cam G is fastened firmly to the cam E, and to its extreme end I attach the elastic cord H, (or its equivalent,) which extends to some convenient point at the opposite side of the door-frame where it is attached at D. The double cam-roller thus formed by the union of the two cams E and G, is pivoted

at K to the standard I, which is fastened to the door-frame directly over the door and a short distance to one side of the stud A.

I generally place the standard I as close to the stud A as convenient, in order to admit of as long a cord, H, as practicable, so as to permit the use of any cheap elastic material for the cord H. This arrangement of the double cam-rollers E and G admits the use of any convenient elastic substitute for the cord H, provided the end which is attached to the cam G is sufficiently pliable to wind around it when the door is opened.

Of course the specific elements of this device may be varied both in form and material by any skillful mechanic; and I therefore do not confine the limits of my invention to the specific forms of its various elements, as described.

The operation of my device is as follows: When the door is opened, the stud A, which is attached to the door, draws on the cord or chain B, which acts directly upon the cam E, to which it is attached, and the cam E, being attached firmly to the cam G, causes the cam G to draw upon the elastic cord H, thus, although the tension of the elastic cord H is increased by the act of opening the door, its leverage is so rapidly diminished by the rotation of the double cam-roller formed by the union of cam E and G that the force with which it acts upon the door is very rapidly diminished in proportion as the door is opened. It will thus be seen that by a simple arrangement of parts which I have studied carefully to make of the cheapest possible form, a novel and valuable result is produced capable of very general and useful application.

Having thus fully described my invention, what I claim is—

The employment of the double cam E G, for the purpose of graduating the force applied to the door, constructed and arranged substantially as set forth.

WILLIAM GILFILLAN.

Witnesses:

M. G. HUBBARD,
ANDREW J. SMITH.