

No. 785,968.

PATENTED MAR. 28, 1905.

T. J. MERRYMAN.
FLY FRIGHTENER.

APPLICATION FILED DEC. 12, 1903

3 SHEETS—SHEET 1.

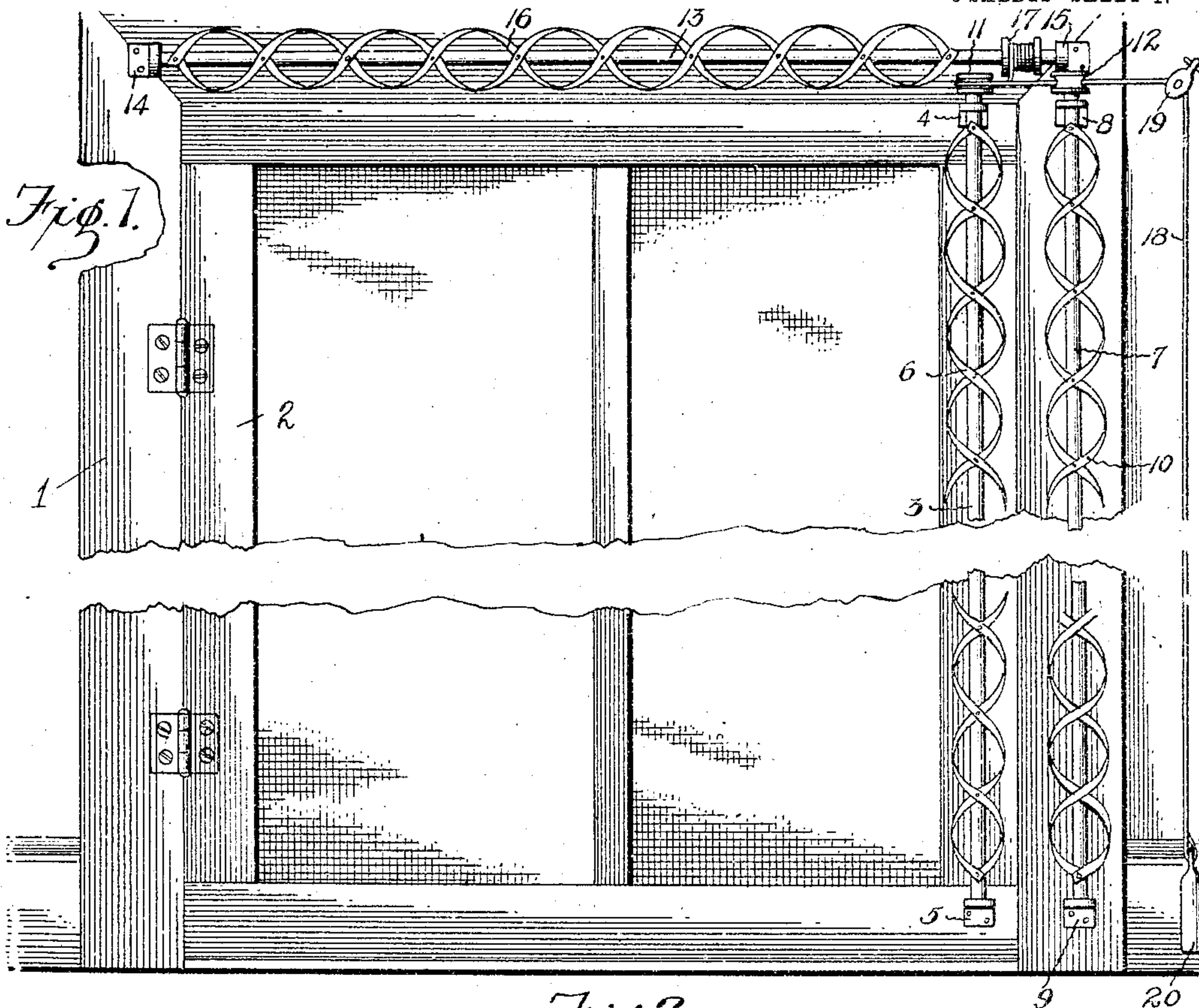
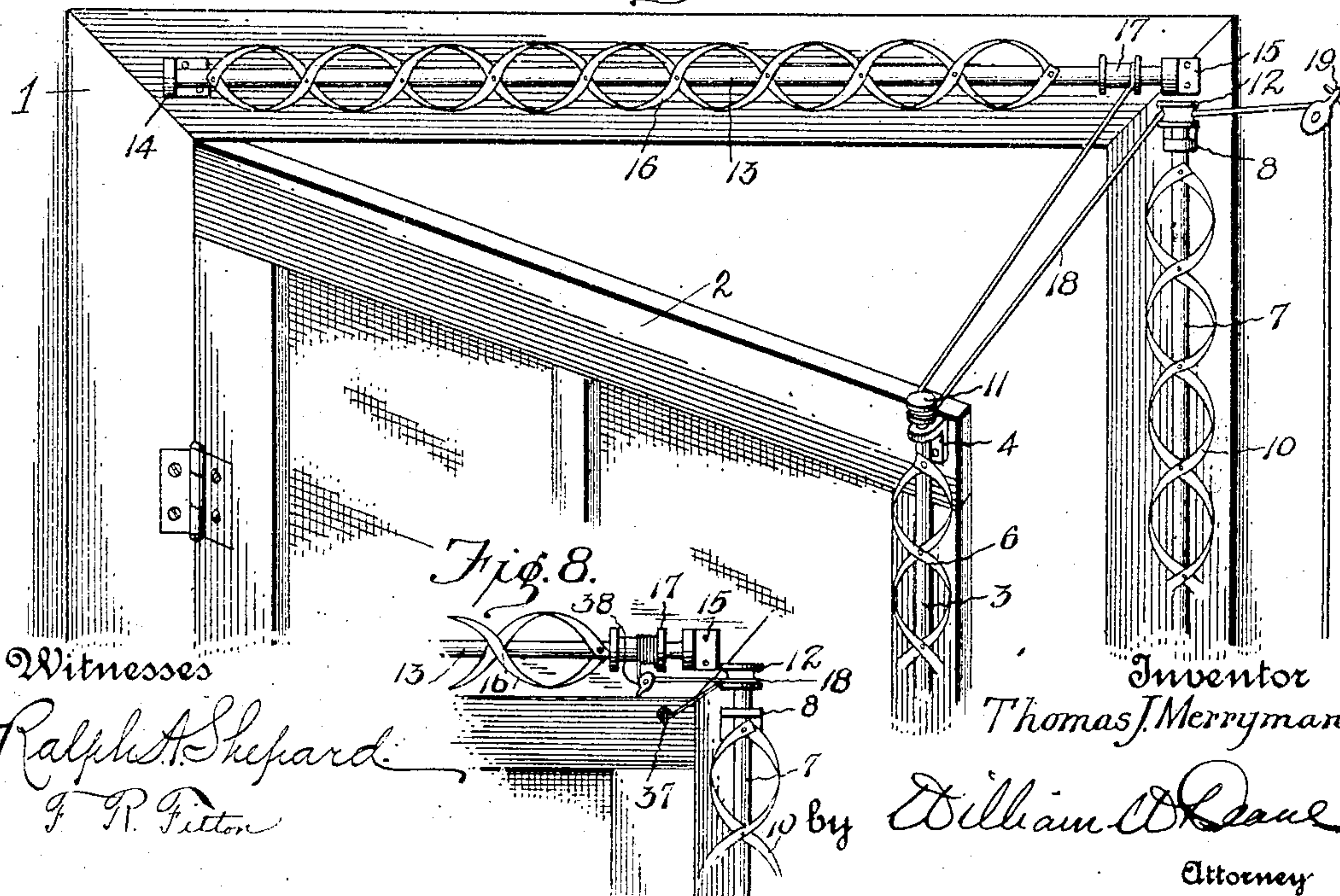


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

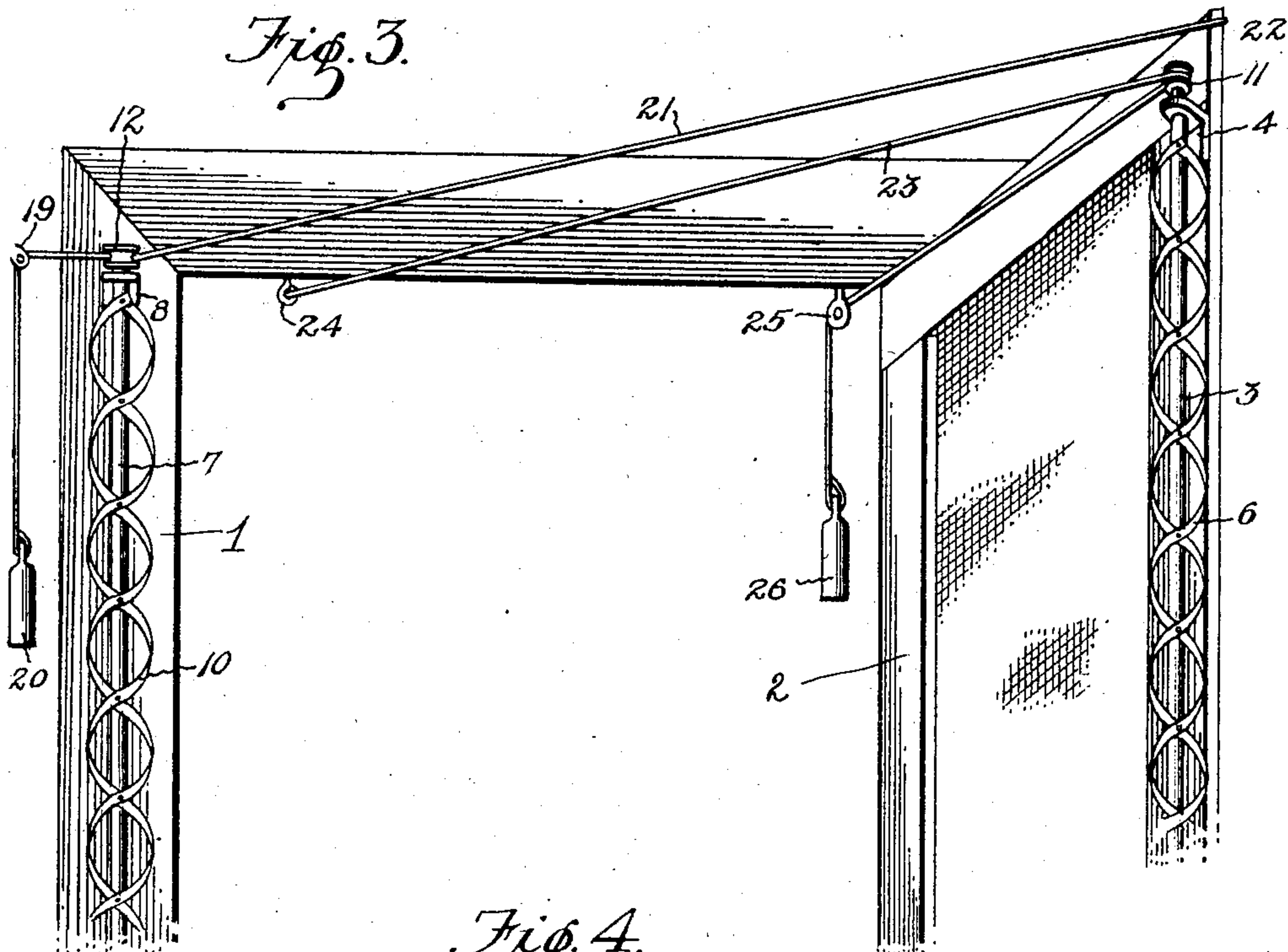
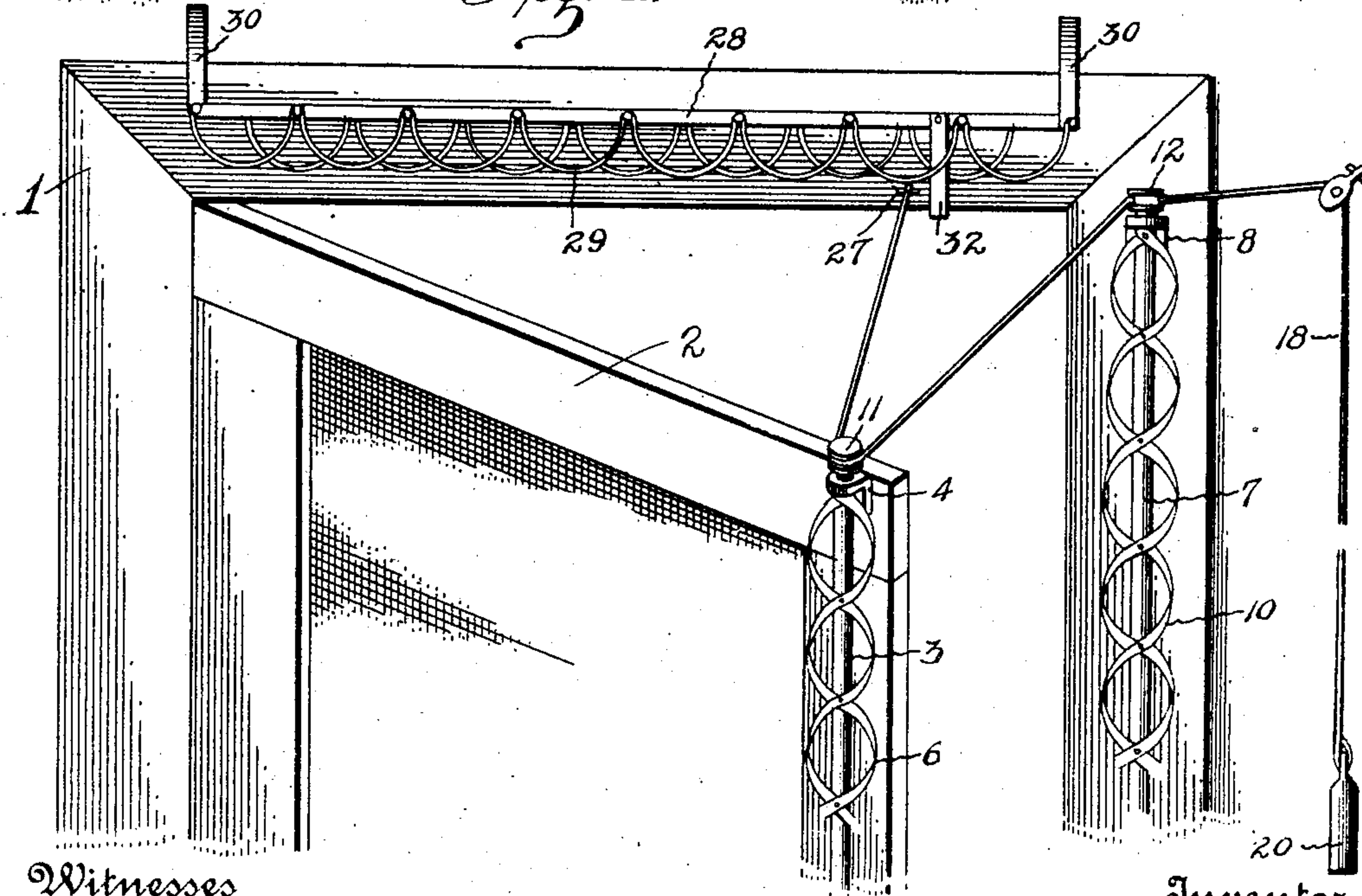


Fig. 4.



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3 SHEETS—SHEET 3.

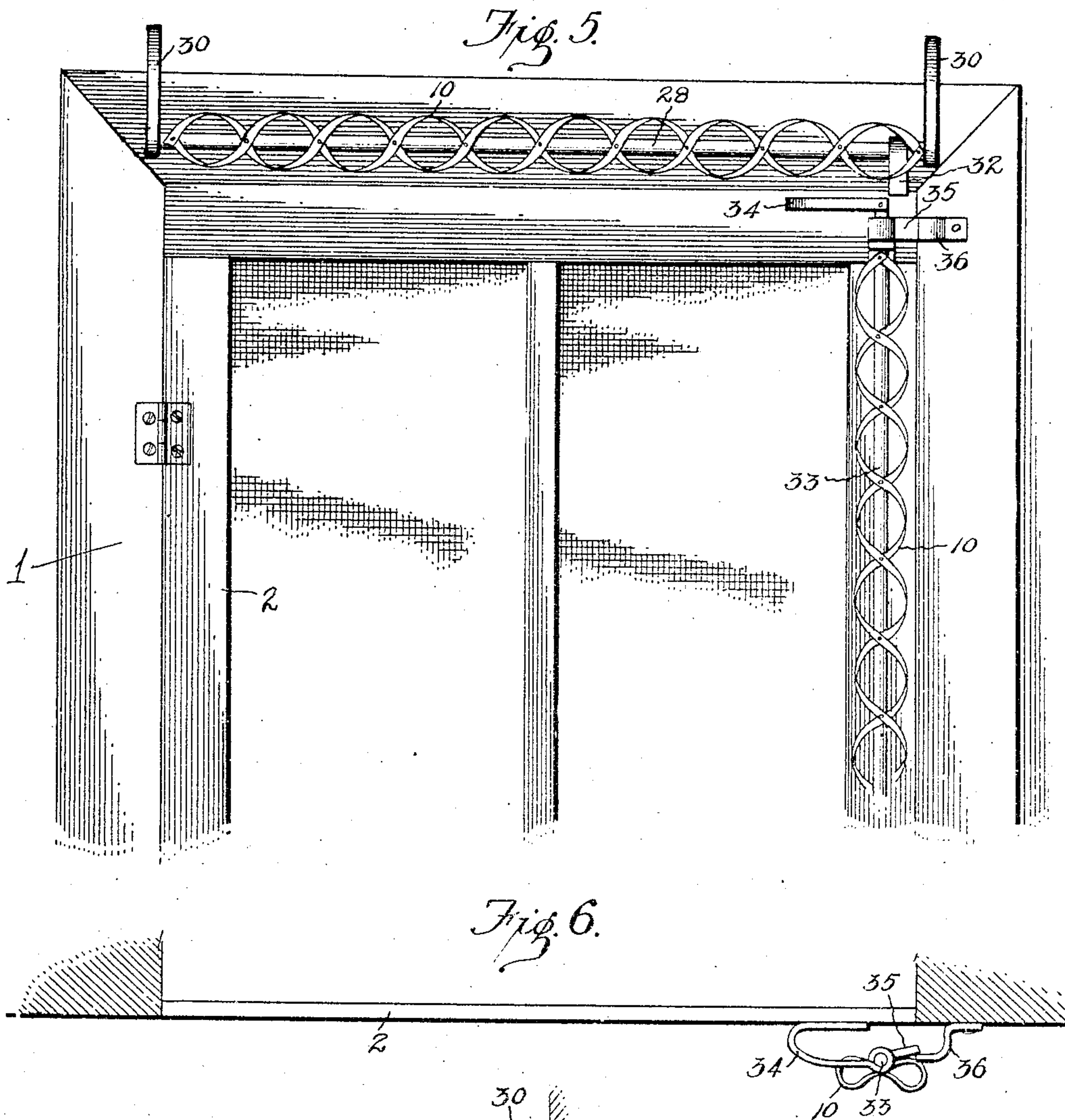
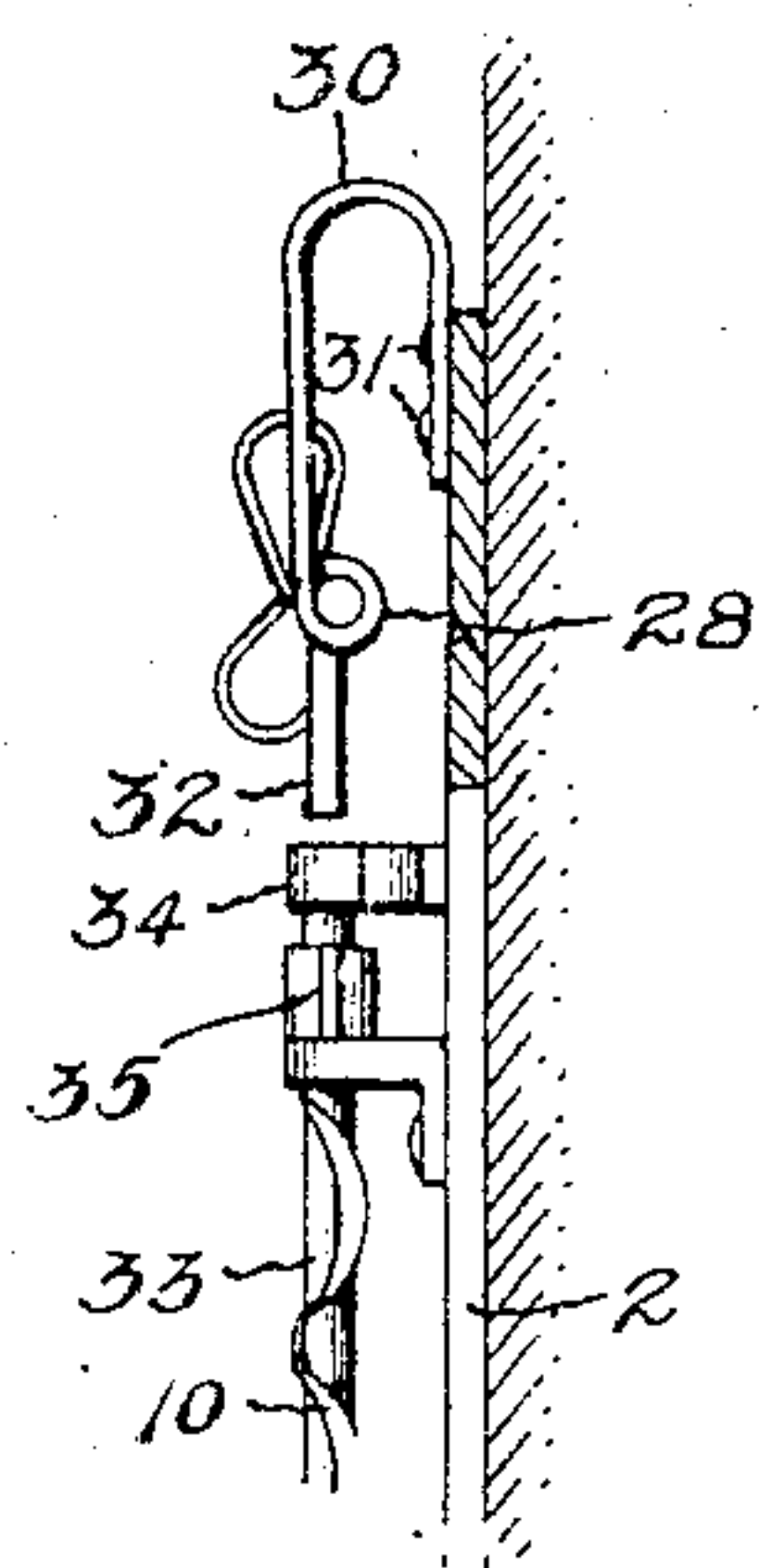


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS J. MERRYMAN, OF LINCOLN, NEBRASKA.

FLY-FRIGHTENER.

SPECIFICATION forming part of Letters Patent No. 785,968, dated March 28, 1905.

Application filed December 12, 1903. Serial No. 184,934.

To all whom it may concern:

Be it known that I, THOMAS J. MERRYMAN, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Fly-Frighteners, of which the following is a specification.

The object of the present invention is to provide for disturbing and frightening flies away from doorways by the opening and closing of the doors and to accomplish this result automatically without requiring any manipulation of the means other than the opening and closing of the door. It is furthermore designed to provide for applying the present apparatus to a doorway without altering or changing the door-frame and the door in any manner whatsoever and without interfering with the common or ordinary operation of the door to open and close the same.

Another object of the invention is to provide for mounting the fly-frightening devices at both the side and the top of the doorway and to have a continuous operation thereof during the movement of the door.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a front elevation, broken transversely, of a door and door-frame having the apparatus of the present invention applied thereto. Fig. 2 is a detail perspective view showing the door partly open. Fig. 3 is a detail perspective view showing the door open and a modified arrangement of operating means. Fig. 4 is a detail perspective view of a still further modified arrangement of the apparatus. Fig. 5 is an elevation of the upper portion of the door, showing a form of the apparatus wherein the weight is omitted. Fig. 6 is a detail plan view looking down upon the top edge of a door. Fig. 7 is an edge elevation of Fig. 5. Fig. 8 is a detail elevation of another modified arrangement of the apparatus.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

In order that the application and operation of the present invention may be adequately disclosed, I have shown in the accompanying drawings a door-frame 1 and a door 2, hinged thereto in any common or preferred manner.

By reference to Figs. 1 to 4, inclusive, it will be noted that an upright rotatable shaft or rod 3 is applied to the free edge portion of the door and journaled in upper and lower bearing-brackets 4 and 5. Extending from top to bottom of the shaft is a double spiral 6, of wire, leather, or other suitable material, to produce wings, the movement of which is designed to scare away flies and other insects. It will of course be understood that the bearing-brackets 4 and 5 are projected outwardly from the door a sufficient distance to permit rotation of the shaft, with its wings, without the latter striking against the door. A similar shaft 7 is mounted upon the door-frame adjacent to the free edge of the door and supported in brackets 8 and 9, as described for the shaft 3, and provided with similar spiral wings 10. On the upper ends of the shafts 3 and 7 are the grooved pulleys 11 and 12, respectively.

Above the door is a substantially horizontal shaft 13, mounted in suitable bearings 14 and 15 upon the door-frame and provided with double spiral wings 16, similar to those heretofore described. One of the journals of the horizontal shaft 13 is spring-actuated similar to an ordinary spring-actuated window-shade roller and is furthermore provided upon that end portion which is adjacent to the free edge of the door with a spool, drum, or pulley 17.

For simultaneously actuating the three shafts a cord, chain, or other suitable flexible device 18 has one end secured to and wound upon the drum or spool of the horizontal shaft 13, with an intermediate portion engaging the pulleys 11 and 12. From the pulley 12 the cord passes downwardly through a guide 19, applied to the adjacent wall or door-frame, preferably in the nature of a pulley,

and upon the lower free end of the cord is a suitable weight 20.

With the door closed, as in Fig. 1, and the weight 20 at its lowest limit upon opening the door the weighted end of the cord will be drawn upwardly and across the pulley 12, thereby rotating the shaft 7. At the same time the opposite end portion of the cord will be unwound from the drum of the shaft 13, thereby rotating the latter, and the movement of the cord upon the pulley 11 will in turn rotate the shaft 3, wherefore it will be understood that all of the shafts will be rotated during the opening of the door and the swiftly-moving spiral wings will tend to frighten away insects. When the door is being closed, the weight descends by gravity and the cord is rewound upon the spring-actuated shaft 13, whereby a reverse rotation of all of the shafts will take place. Hence all of the rotating devices will be continuously actuated during the opening and closing of the door.

A modified arrangement of the apparatus has been shown in Fig. 3 of the drawings, wherein the cord 21, which actuates the shaft 7 on the door-frame, has one end connected to the door, as at 22, while a separate cord 23 has one end connected to the door-frame, as at 24, thence passes around the pulley of the shaft on the door, thence through the doorway to a pulley 25, hung from the top of the door-frame, from which it depends and carries a weight 26. It will here be noted that the shaft 3 is carried upon the inner side of the door instead of at the outer side thereof. Of course the fastening 24 and the pulley 25 are located inwardly beyond the inner limit of the door, so as not to interfere with the opening and closing thereof, and the pulley 25 is located adjacent to the hinged edge of the door, so as not to obstruct the doorway.

In some instances it may not be desirable to operate the device across the top of the door by means of the cord, and I have provided for this contingency by an arrangement shown in Fig. 4 of the drawings, wherein the cord 18 operates the devices 3 and 7, as hereinbefore described, but has its upper end secured to the top of a door-frame, as at 27. Instead of employing a rotating device, as in Figs. 1 and 2, I have provided a swinging or oscillating device consisting of a bar 28, having pendent wings 29, with its opposite ends connected to the free ends of coiled or inverted-U-shaped spring-brackets 30, which have their other ends rigidly secured to the door-frame by means of suitable fastenings 31, as indicated in Fig. 6. A pendent trip projection 32 is carried by the bar 28 and lies in the path of the top edge portion of the door, so that when the door is pulled open it will strike the trip, and as it brushes by the same the free ends of the spring-brackets 30 will be forced outwardly, and as soon as the door

escapes from the trip the free portions of the brackets will swing back and forth, and thereby operate the bar 28 in a rapid manner. The same action takes place when the door is being closed.

To obviate the use of cords and weights, I propose to employ the arrangement shown in Figs. 5, 6, and 7, wherein a spring-actuated bar 28, similar to that shown in Fig. 4, is employed across the top of the door, and an upright bar 33 is carried by the free edge of the door with each end connected to the free end of a spring-bracket 34 in substantially the same manner as described for the bar 28. Upon the upper end portion of the upright bar 33 there is a lateral trip projection 35, which normally lies back of a keeper 36, carried by the door-frame, as best indicated in Fig. 6. By this arrangement when the door is opened the spring-bracket 34 will first be compressed, and when the trip 35 escapes from the keeper 36 the bracket will be freed and the bar 33 will be oscillated or swung back and forth. Instead of the form of wing indicated at 29 in Fig. 4 the spiral form may be employed with the swinging bars as well as with the rotating bar.

In Fig. 8 of the drawings there has been shown a modification of the arrangement illustrated in Fig. 2, wherein the shaft on the door has been omitted. One end of the cord 18 is fastened to the upper outer corner of the door, as indicated at 37, while the intermediate portion of the cord is run through a guide or pulley 38, applied to the door-frame.

From the foregoing description it is apparent that the apparatus of the present invention is very simple in nature and is effective to frighten insects away from the top and sides of a doorway without interfering with the opening and closing of the door and without annoyance to the party passing through the door. Moreover, in the forms employing the cord and weight the same tends to automatically close the door when released in addition to actuating the oscillating devices.

While I have entered into various details in disclosing the invention, it will of course be understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a device of the class described, the combination with a door-frame and door, of an insect-frightening device mounted on the door-frame, an insect-frightening device mounted on the door, one of said devices consisting of a shaft, spiral wings arranged longitudinally of and secured to the shaft, said wings having looped portions projecting on op-

posite sides of the shaft, and means for simultaneously operating the frightening devices upon the opening of the door, said means having an engagement with the shaft for actuating the same.

2. In a device of the class described, the combination with a door-frame and door, of a plurality of rotatable insect-frightening devices mounted one upon the door and the other upon the door-frame, and common means for simultaneously rotating said devices.

3. In a device of the class described, the combination with a door-frame and door, of a movable insect-frightening device separately mounted on each, each of said devices including a rotary shaft having a pulley, and a single cable passing about the pulleys of both shafts and having a movable resistance at one end.

4. In a device of the class described, the combination with a door-frame and door, of an insect-frightening device mounted on the door-frame and including a vibratory shaft having a drum, another insect-frightening device mounted on the door and including a shaft having a pulley, a cable having one end wrapped upon the drum, said cable passing

about the pulley, and a weight attached to the other end of the pulley.

5. In a device of the class described, the combination with a door-frame and door, of a shaft journaled along the top of the frame and having wings secured thereto, an upright shaft journaled along one side of the frame and having wings, a shaft journaled upon the door and having wings, and a cable having a movable end, said cable passing about the various shafts to simultaneously operate the same when the door is moved.

6. In a device of the class described, the combination with a door-frame and door, of movable insect - frightening devices, one mounted upon the vertical side of the door-frame and outside thereof, and the other mounted upon the top of said door-frame and outside thereof, and a continuous cable wound around both said devices and attached to said door.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS J. MERRYMAN.

Witnesses:

EMMA J. HEDGES,
A. G. WOLFENBARG.