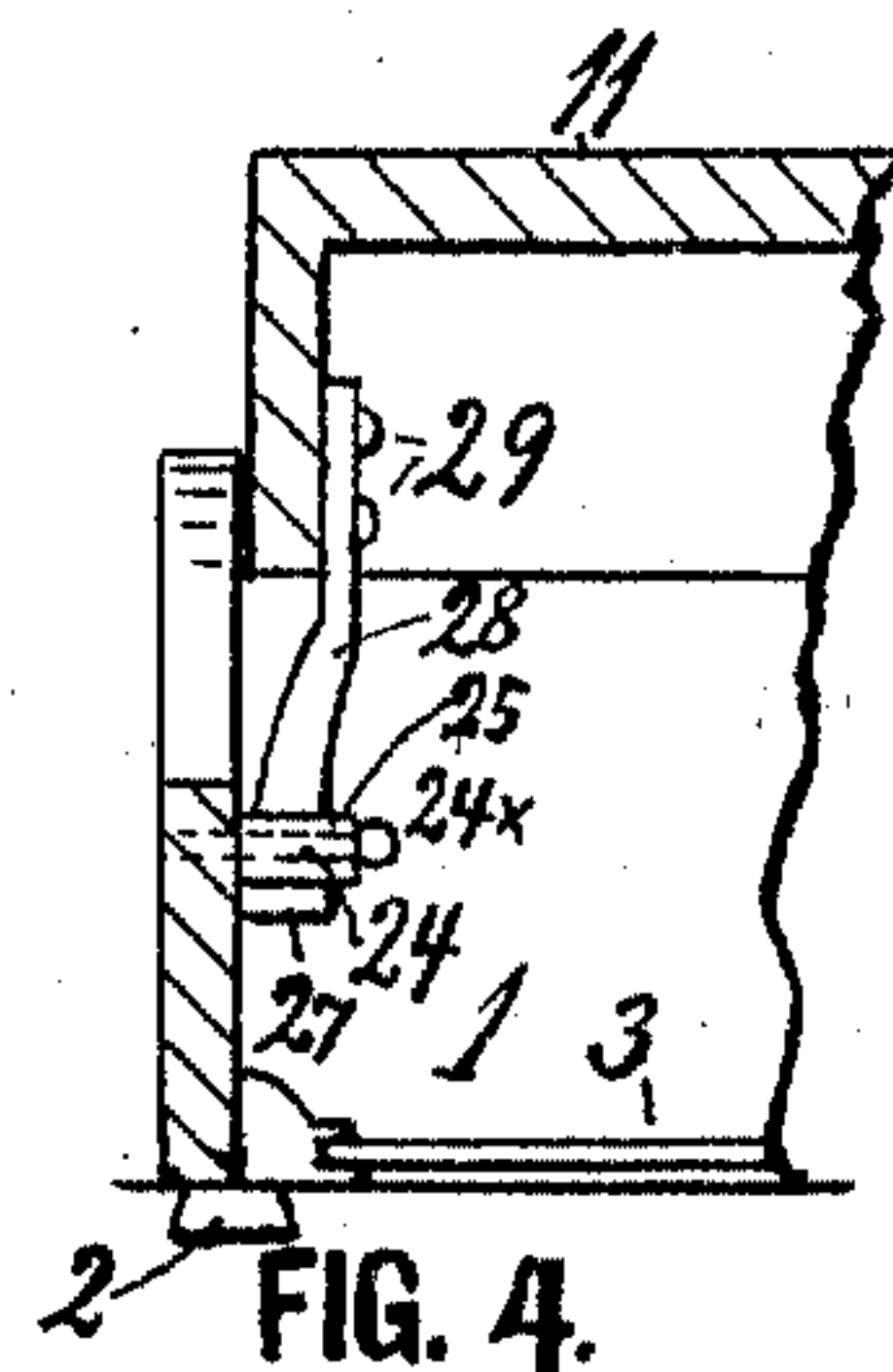
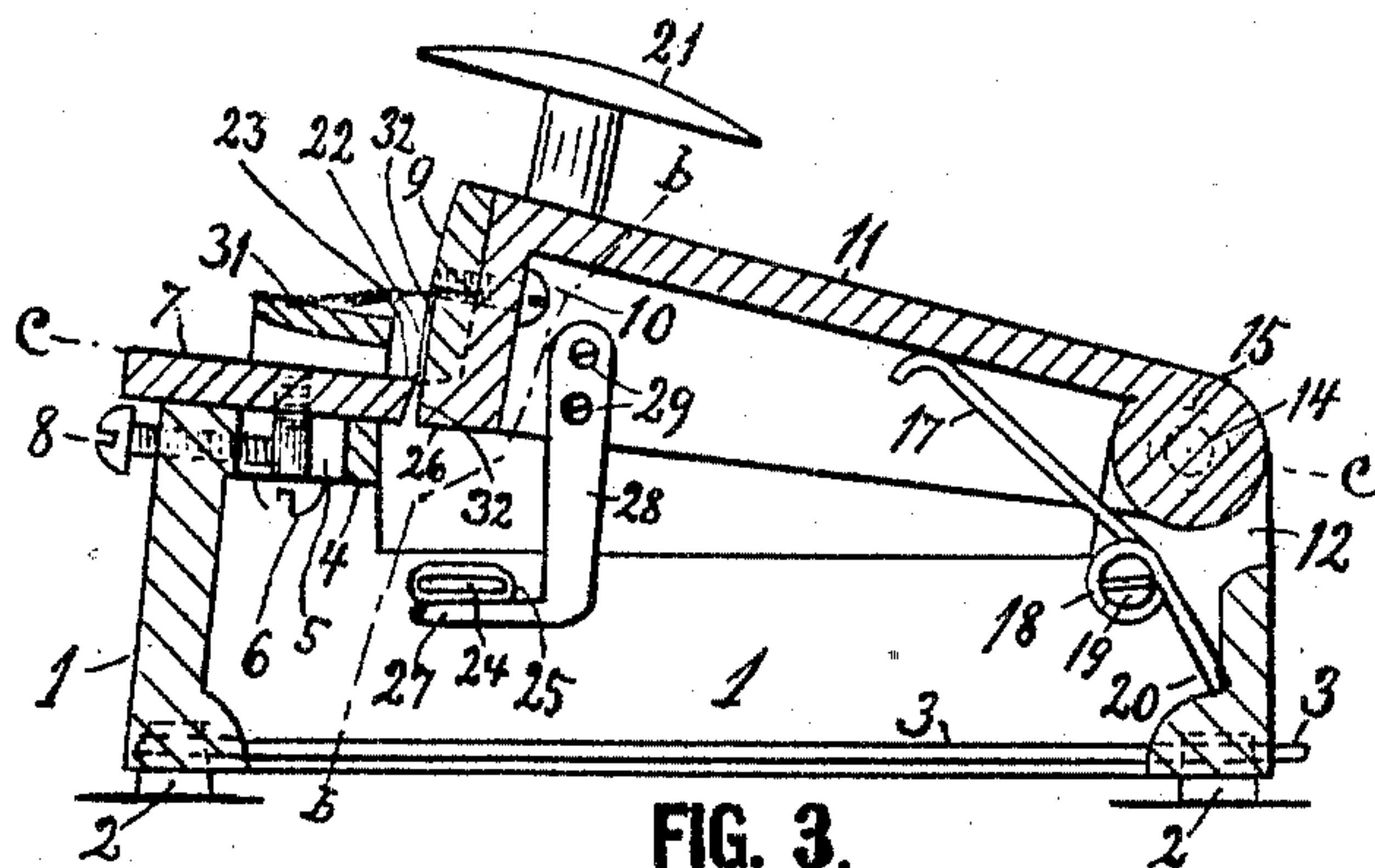
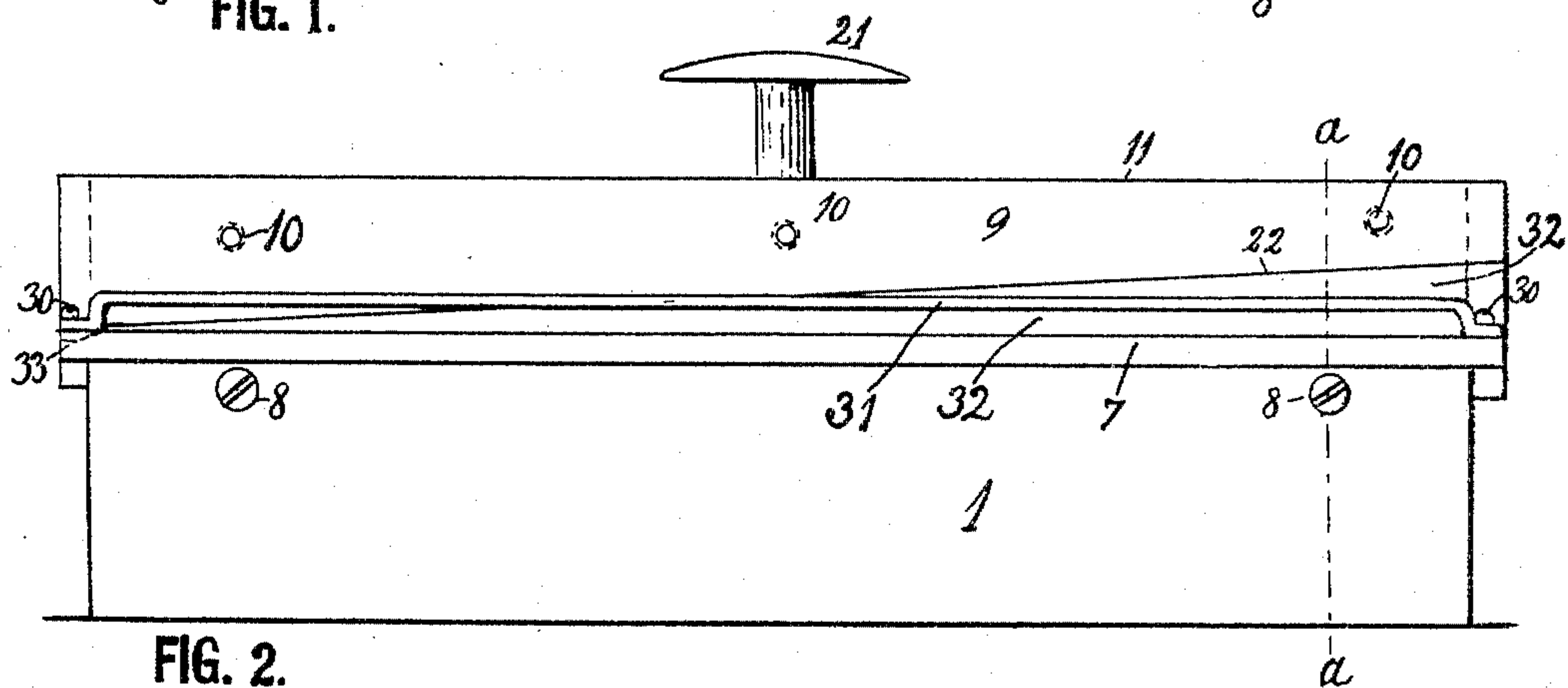
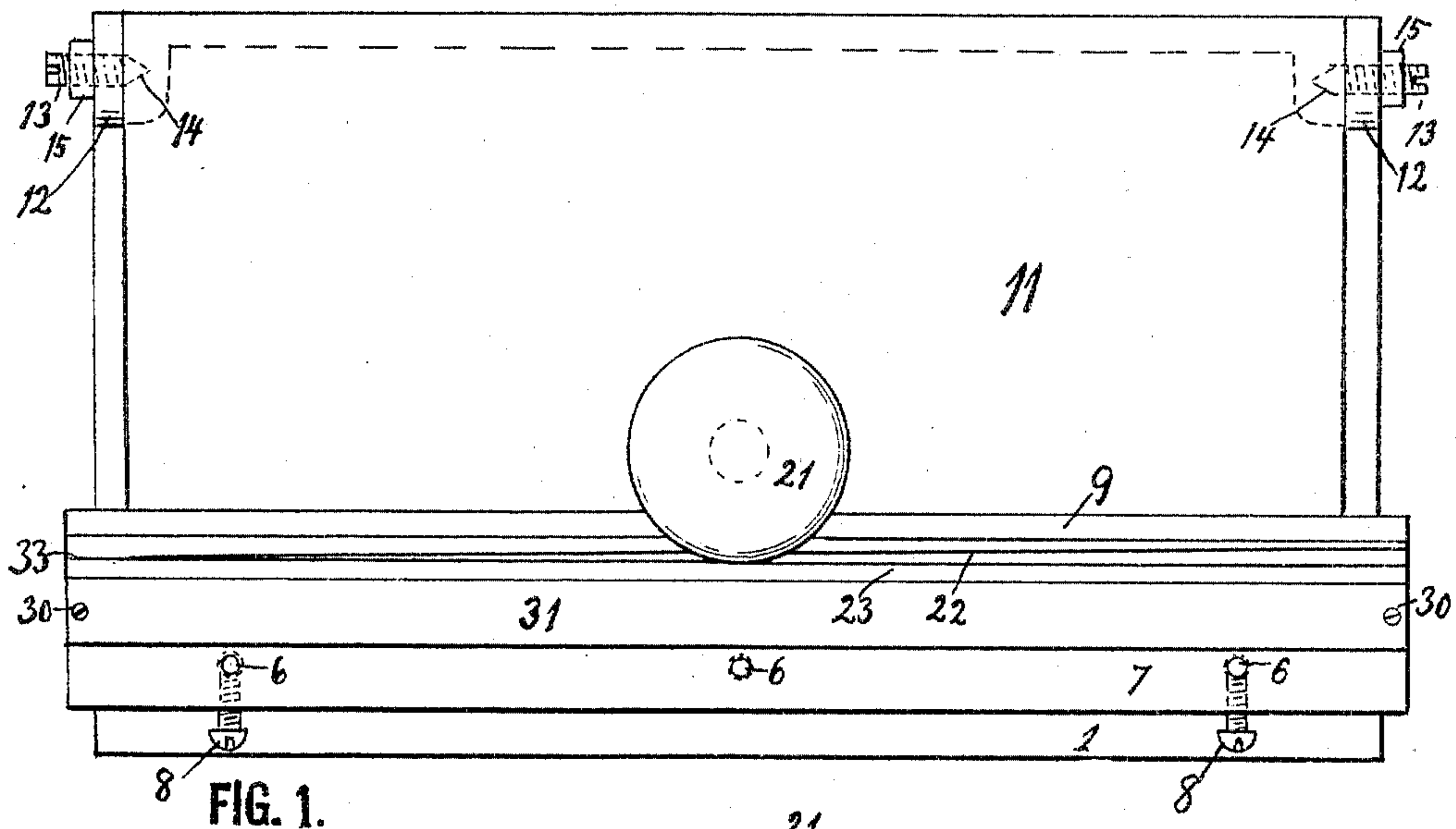


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WITNESSES:

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UNITED STATES PATENT OFFICE.

NELS J. BLOMGREN, OF NORWAY, MICHIGAN.

ENVELOP-OPENER.

SPECIFICATION forming part of Letters Patent No. 784,136, dated March 7, 1905.

Application filed March 23, 1904. Serial No. 199,549.

To all whom it may concern:

Be it known that I, NELS J. BLOMGREN, a citizen of the United States, residing at Norway, in the county of Dickinson and State of Michigan, have invented certain new and useful Improvements in Envelop-Openers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in envelop-openers; and the general object of the invention is to provide an envelop-opener which will overcome the general defects with earlier-constructed devices in this line—namely, that they either get out of order by a short wear of their parts, or their cutting edges stand at an obtuse angle to each other, or the pivot-joint of the cutters is so located that the envelop is pushed away by the approaching knife, and thus not properly cut, or they are objectionally hard to operate by having the operating-handle too near the pivot-joint of the cutters, or they have no means for guiding or holding the envelop in position so that the knife will get a proper hold on it, or there is no proper mechanical adjustment of the cutters or no proper chance to adjust the cutting edges when they wear, or the cutting-blades are so placed that they may spring during the cutting, and thus not cut properly. All of the said defects I overcome by the novel construction and combination of parts illustrated in the accompanying drawings, in which—

Figure 1 is a top view of my envelop-opener. Fig. 2 is a front elevation of same. Fig. 3 is a right-hand sectional view on the line *a a* in Fig. 2. Fig. 4 is a sectional front view of a portion of the machine on the line *b b* in Fig. 3.

Referring to the drawings by reference-numerals, 1 designates the lower and main frame of the machine. It is of a rectangular elongated somewhat-box-shaped form, open inside, and rests on rubber legs 2, secured in its four corners, and has a horizontally-slidable bot-

tom 3, which may be easily opened in emptying the clippings of the envelopes out of the frame. The front of the frame is formed with a shelf 4, having slots 5, through which extend upwardly screws 6, by which is held upon the shelf a heavy steel blade 7. This blade or lower cutter is adjustable rearwardly by the screws 8, threaded in the front of the frame and pressing with their points against the screws 6, so that the front cutter 7 may be very accurately and easily adjusted and then firmly held toward the rear and upper cutter or blade 9, which is secured by the screws 10 in a substantially vertical position upon the front side of a swinging upper frame 11, pivoted at its rear corners to the rear corner posts or lips 12 of the lower frame by screws 13, having conical points 14 engaging the upper frame and jam-nuts 15 to hold the screws firmly in such adjusted position as from time to time may be required by the wear of the joint.

The upper frame 11 is normally held in an elevated position by the upper arm 17 of a spring 18, held by a screw 19 and having its lower end 20 resisted by the rear wall of the lower frame. 21 is a striking plate or button secured upon the front edge of the upper frame for the operator to strike on in cutting the envelop open by the shearing edges 22 23 of the cutters. The motion of the upper frame is limited by a flat-headed stud 24, secured in the lower frame and encircled by a flexible cushion 25, which when the upper frame descends meets its left side front corner 26 and when the frame ascends said cushion meets the lower arm 27 of an L-shaped hook 28, secured at 29 to the upper frame.

Upon the lower cutter 7 are secured by screws 30 the ends of a guide 31, between which and the lower cutter the edge of the envelop to be opened is inserted and forced against the segmental guiding front face 32 of the upper frame.

The cutting edge 22 of the upper cutter is so considerably slanted as to produce an easy shearing cut and has its lower end 33 always in overlapping contact with the lower cutter, so that the cutters may always be closely adjusted without any danger that the upper one

may catch upon the lower one, and the top surface of the lower cutter is slanted down and rearwardly to a plane not higher than the pivot-points 14.

5 From the above description it will be understood that in the operation of the machine the strip or guide 31 not only helps to keep the envelop from slipping upward when forced against the upper frame, but it also helps to
10 flatten down the often-rounded edge of a well-filled envelop, and its third function is to straighten down to a plane envelops that have got pressed into various curved forms in the mails. The bringing of the top of the cutter
15 7 to a line with the pivots 14, as indicated by the line *c c*, or even below the pivots causes the upper cutter to swing at right angles with the face of the lower cutter, and thus to cut the envelop from the side and not to drive the
20 envelop away, as in earlier cutters, in which the front knife is level and the frame-joint far below such level. The fact that I have drawn the line *c c* below the centers 14 is to indicate that I may further slant or incline the envelop-supporting surface of the cutter 7, and
25 thereby cause the upper cutter to pull on the envelop while cutting it, and thus prevent its escape even when the cutters may be quite dull. It will also be seen that by making the
30 stud 24 flat and broad its cushion 25 is not liable to get cut to pieces by the contact of the frame, and the head 24^x of the stud prevents the cushion from coming off, if loosened. The upper cutter 9 by being placed edgewise
35 toward the envelop has no chance to spring upward in cutting, and rearward springing is prevented by the upper frame. The latter points are mentioned in contradistinction to earlier experiments, in which the upper cutter
40 has been screw-fastened flat side down upon the top of the upper frame and has then sprung upward between the screws enough to prevent proper cutting of the envelop, and such arrangement has also necessitated the placing of
45 the striking plate 21 so far back on the frame that most of the blow of the hand upon the plate has been removed from the cutters, where it would be useful to the pivots 14, where it does damage by undue wear, and
50 thus getting them out of order.

In the operation of the machine the envelop is placed with either end or long edge upon the lower cutter 7 and pushed in under the guide 31 till it touches the surface or face 32

and held in that position with one hand while 55 a blow or quick pressure of the other hand is imparted upon the plate or button 21. The cutters will then shear off an extremely narrow strip of the envelop, and thereby open it.

I am aware that envelop-openers of similar 60 general appearance have been constructed prior to my invention. I therefore do not claim the construction of such machines in general; but

What I do claim as new, and desire to protect 65 by Letters Patent, is—

1. An envelop-opener comprising, in combination, a stationary frame with a cutting-blade screw-fastened upon its front portion, a vertically-swinging hand-operated frame pivoted 70 to the rear corners of the stationary frame, and having its front part extending downward and then forward to form a segmental guiding-surface against the envelop, a vertically-disposed shearing-blade screw-fastened 75 with its flat side against the front side of the vertical portion of the swinging frame above the forward extension and coacting with the blade on the stationary frame in cutting the edge off of the envelop and means for raising 80 the swinging frame and for controlling its motion, said stationary frame having its blade secured in place by screws passing through slots in the frame, and adjustment-screws acting 85 against the front sides of the securing-screws for adjusting the blade rearwardly on the frame and holding it in the adjusted position.

2. An envelop-opener comprising in combination, a main frame and a swinging frame pivoted thereto and a cutting-blade upon each 90 frame to coact in cutting the envelop, a spring actuating the swinging frame in one direction and a button or plate to strike on to actuate the frame in the other direction, a broad stud upon the main frame, a flexible lining or 95 cushion embracing the stud, an L-shaped hook extending from the swinging frame and engaging the lower broad side of the stud, while the other side of the stud meets a portion of the swinging frame whenever it is operated 100 by the hand.

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

NELS J. BLOMGREN.

Witnesses:

A. M. CARLSEN,
D. E. CARLSEN.