

No. 763,468.

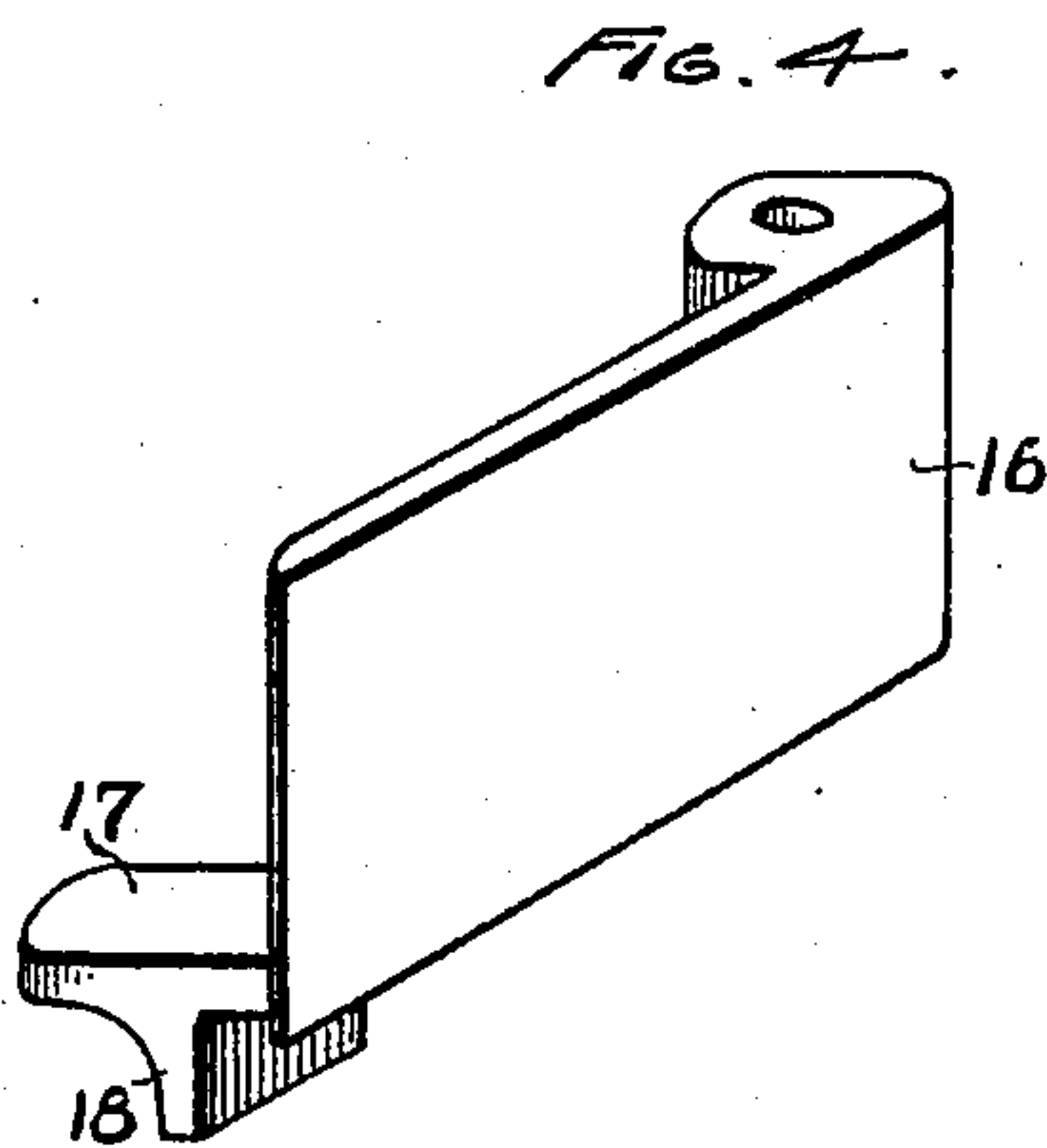
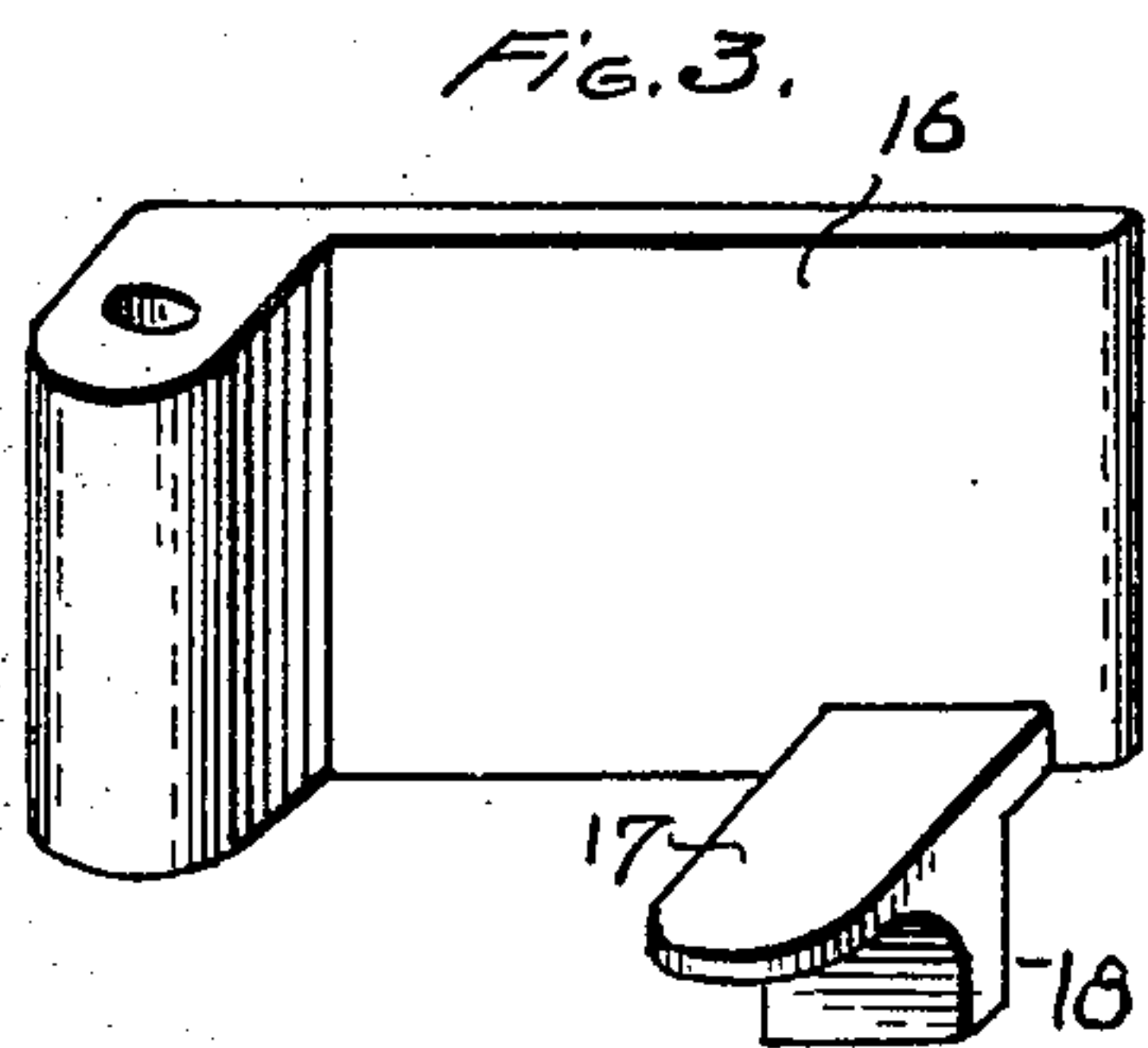
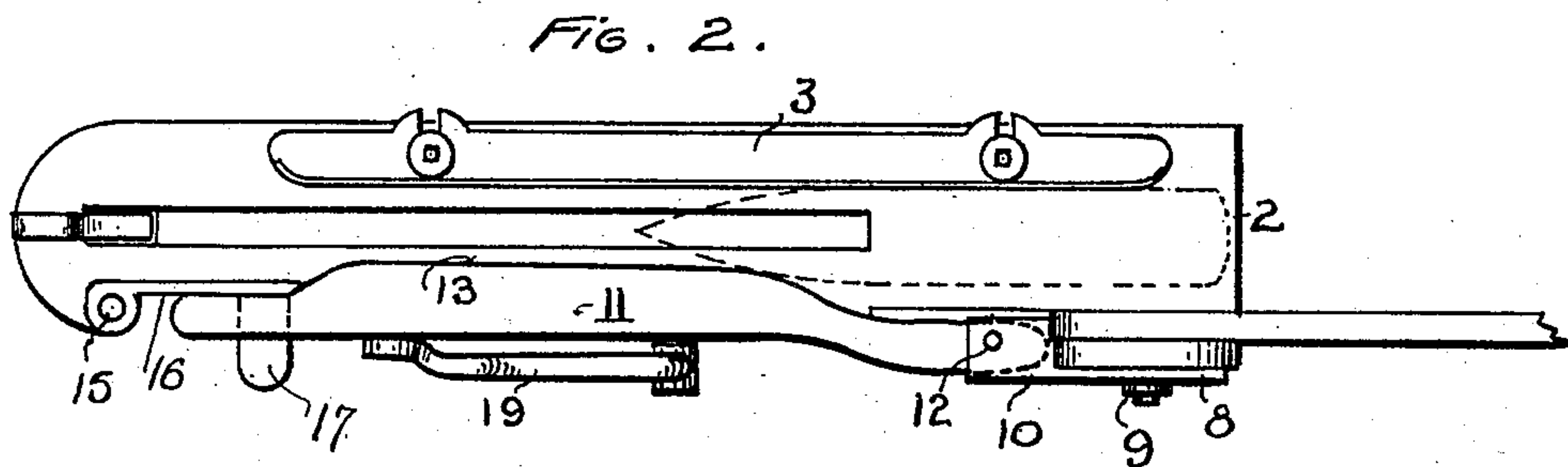
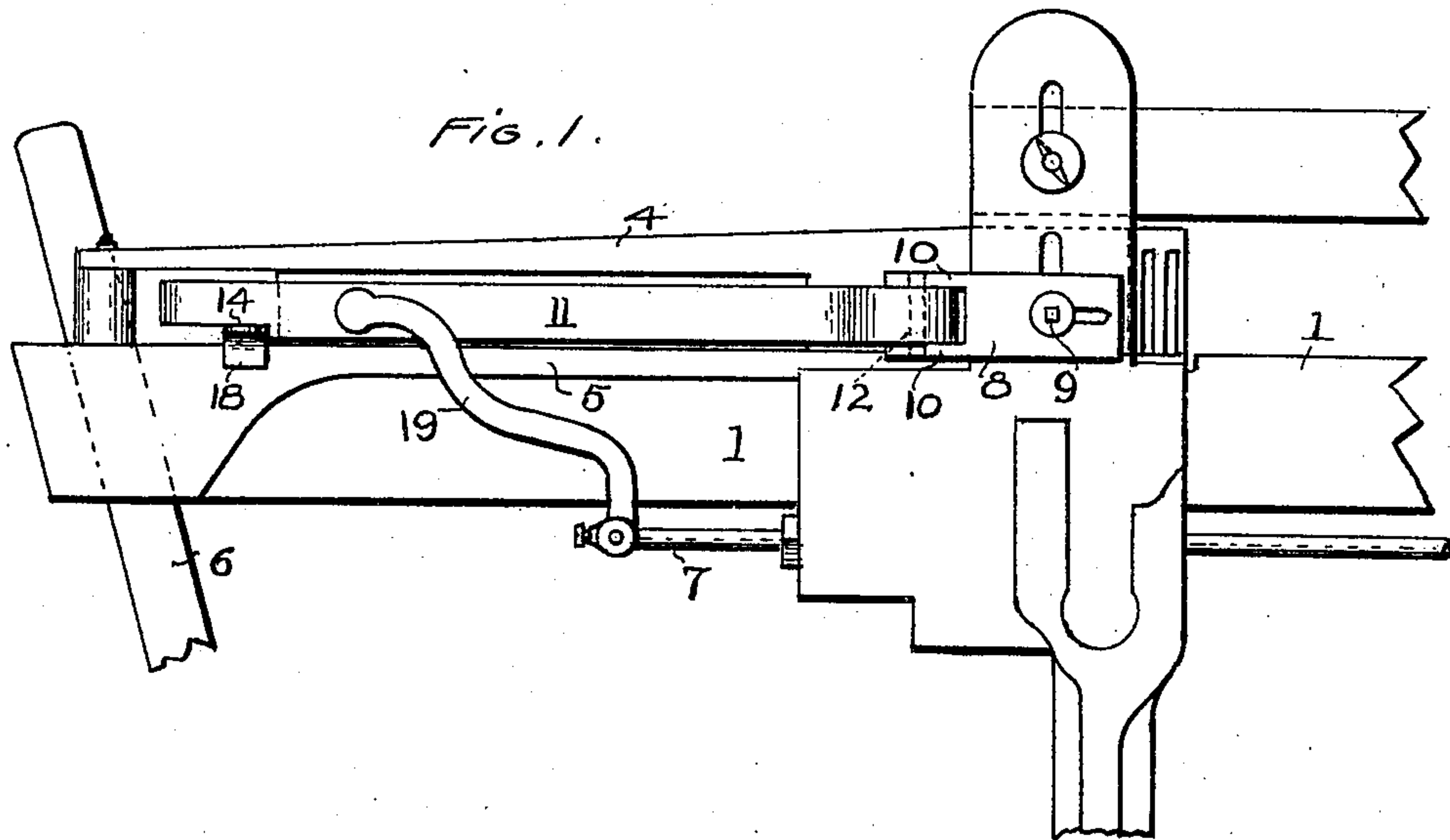
PATENTED JUNE 28, 1904.

M. DUCKWORTH & J. SUNDERLAND.

SHUTTLE SWELL.

APPLICATION FILED OCT. 19, 1903.

NO MODEL.



WITNESSES

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# UNITED STATES PATENT OFFICE.

MENCSFIRTH DUCKWORTH AND JOHN SUNDERLAND, OF FALL RIVER,  
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## SHUTTLE-SWELL.

SPECIFICATION forming part of Letters Patent No. 763,468, dated June 28, 1904.

Application filed October 19, 1903. Serial No. 177,542. (No model.)

*To all whom it may concern:*

Be it known that we, MENCSFIRTH DUCKWORTH and JOHN SUNDERLAND, citizens of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented new and useful Improvements in Shuttle-Swells, of which the following is a specification.

Our invention relates to shuttle-swells.

Heretofore shuttle checks or swells for receiving the shuttle at the end of its movement have generally been pivoted so that they open from the front end of the lathes, so that the shuttle strikes the free end of the swell or check when it first hits it and presses against the swell as it advances; but it has also been proposed to pivot or hinge the swell or check so that the pivotal point will be located where the shuttle first strikes the swell or check, permitting the shuttle to open the outer end of the check instead of the end where it strikes, pressing against the swell as the shuttle advances into the box. This latter type of shuttle swell or check has advantages over the swell or check which has its pivotal point toward the end of the lathe, because the checking action is more gradual and even and less power is required to put the shuttle in the box and to pick it from the box, while with the type of swell which is pivoted toward the end of the lathe the shuttle is pinched tighter the farther it goes in, which requires more power to place it in and to pick it from the box, besides having a tendency to cause its deviation.

Our invention relates to that type of shuttle swell which has its pivotal point at the point where the shuttle first strikes the swell; and our object is to provide an improved and novel shuttle swell or check, pivotal connection therefor, stop for the free end of the swell or check, and an improved pressure-finger for the swell to hold it to the shuttle, whereby the entire device can be applied to any of the looms in general use, without necessitating changes, at a minimum expense.

The primary object of our invention is to save waste in the operation of the loom (a very considerable item of expense) and also

to insure an increase in the speed of the loom and minimize the power required to operate it.

The invention comprises certain novel constructions, arrangements, and adaptations of parts set forth in detail hereinafter and recited in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation illustrating the use of the invention; Fig. 2, a plan view, and Figs. 3 and 4 details of the stop for the swell or check.

The numeral 1 designates a portion of the frame of an ordinary loom, and 2 is the bottom of the shuttle-box, having the usual box-front 3 and box-back 4 at the top thereof, while 5 is the race-plate, and 6 is a picker-stick. What is known as the "protection-rod," which operates each time the shuttle enters the box and lifts the dagger to clear the frog and is commonly used on looms, is shown at 7.

We employ a hinge-plate 8, which has a slot receiving a bolt 9, which secures the hinge-plate to the upper part of the frame 1 in a manner to permit horizontal and vertical adjustment. This hinge-plate has ears 10 abutting the edge of the frame 1, and the shuttle swell or check 11 has one end pivotally connected to these ears by a bolt 12, said swell being adapted to play through the opening in the box-back 4. This check or swell has a gradually-swelled inner face 13, against which the shuttle strikes. The free end of the check or swell 11 is undercut at 14.

The bracket or stop shown in detail in Figs. 3 and 4 is employed to check the movement of the free end of the swell 11, said bracket being connected by a bolt 15 to the box-back 4 and the bottom of the shuttle-box and having a portion 16, which forms a continuation of the box-back 4 and against which the end of the swell or check 11 is adapted to strike. Projecting laterally from the part 16 is a shelf 17, having a downwardly-extending flange 18 offset from the part 16 and abutting the side of the shuttle-box bottom. The undercut portion 14 of the check 11 rests upon the shelf 17.

The numeral 19 designates a pressure-finger which is secured on the protection-rod 7, and its free end bears against the back of the



shuttle swell or check 11. This finger 19 serves to hold the shuttle check or swell in position so that it will yieldingly engage the shuttle as the latter enters the box.

5 It will be seen that owing to the peculiar shape of the finger 19 it is adapted to be secured to the ordinary protection-rod 7 of a loom, thus obviating any change of the loom in that respect when the present invention is  
10 applied to a loom.

When the shuttle enters the shuttle-box, it presses against the face 13 and gradually is checked or made to come to a state of rest, the free end of the shuttle swell or check mean-  
15 while sliding outwardly on the shelf 17. With the present invention the shuttle is pinched easier the farther it advances into the box, instead of being pinched tighter, as is the case with those shuttle-swells which have their piv-  
20 otal point located toward the outer end of the lathes, and the even action of the swell is also due to the fact that its pivotal or hinge connection is a rigid connection instead of a spring-hinge connection. The stop-bracket  
25 construction for the free end of the check or swell we also consider of valuable practical utility, as it supports the end of the check or swell, thus relieving the strain on the pivotal

connection in addition to acting as a stop for the swell. We also consider the use of the 30 peculiarly-shaped finger on the protection-rod of great practical value and an improvement over the art, because the use of a new protection-rod is obviated.

Having thus described our invention, what 35 we claim as new, and desire to secure by Letters Patent, is—

In a shuttle swell or check, the combination with a shuttle-box, of a shuttle check or swell pivotally mounted, and a stop to limit the 40 movement of the shuttle swell or check comprising an upright stop, resting on the bottom of the shuttle-box, a lateral shelf projecting from said upright stop and adapted to support the shuttle-swell, and a downwardly-extend- 45 ing flange engaged with the side of the bottom of the shuttle-box.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

MENCSFIRTH DUCKWORTH.  
JOHN SUNDERLAND.

Witnesses:

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EDMUND DOMINGUE.