F. BRAUN.

SAFETY APPLIANCE FOR WOODWORKING MACHINERY.

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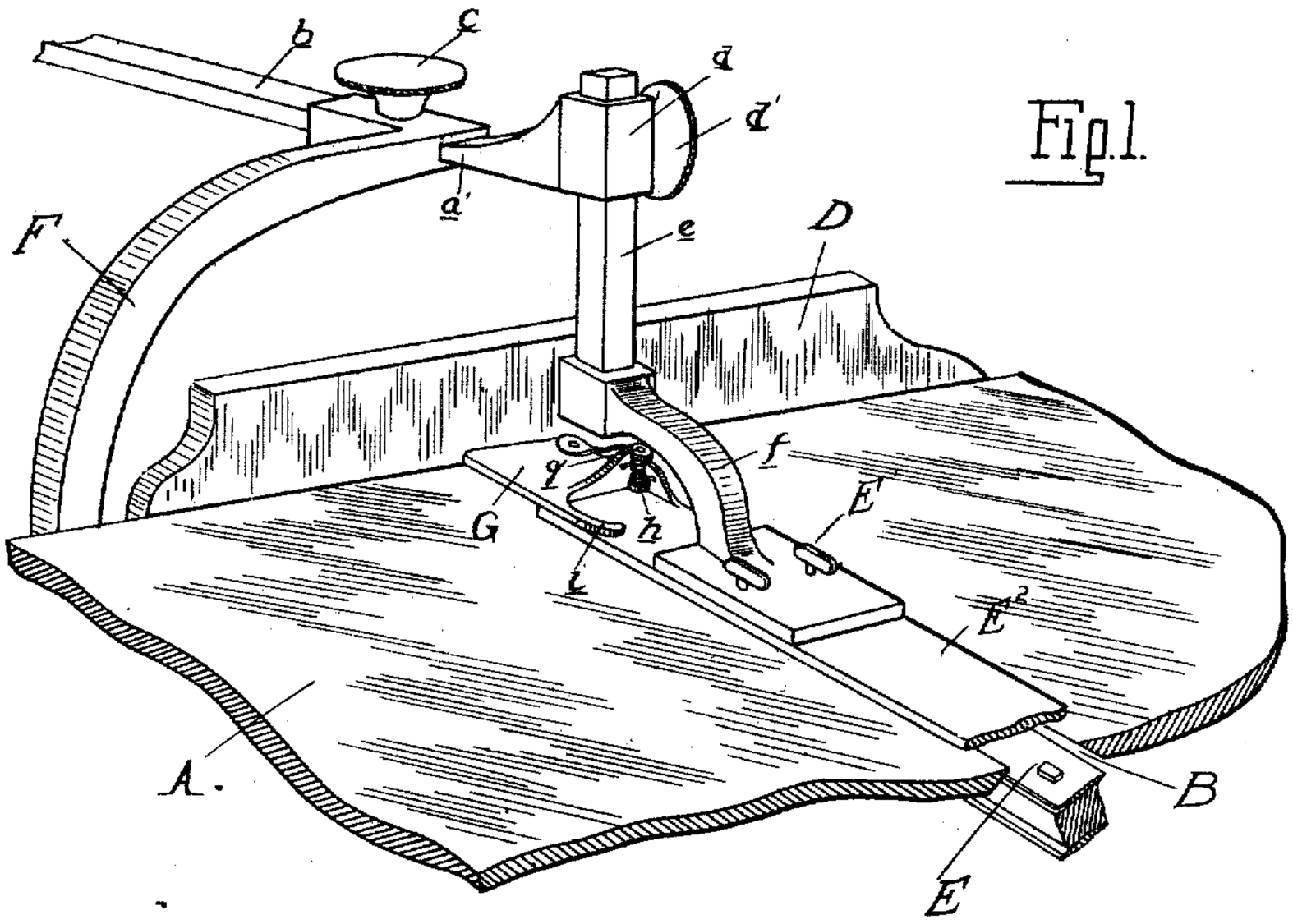

Fig. 1.

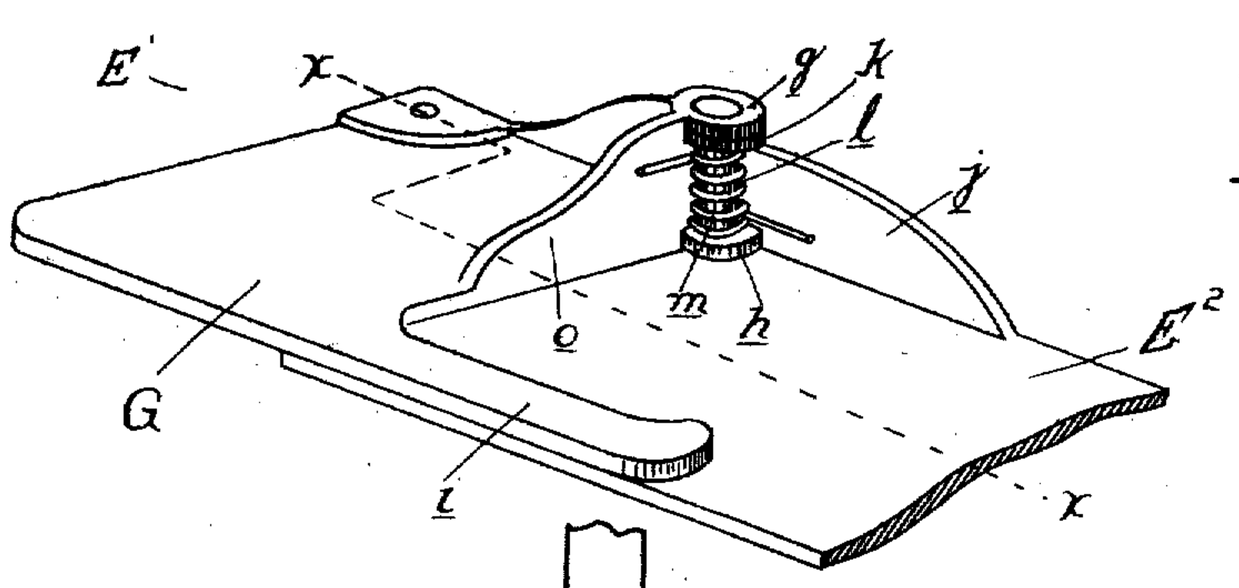

Fig. 2.

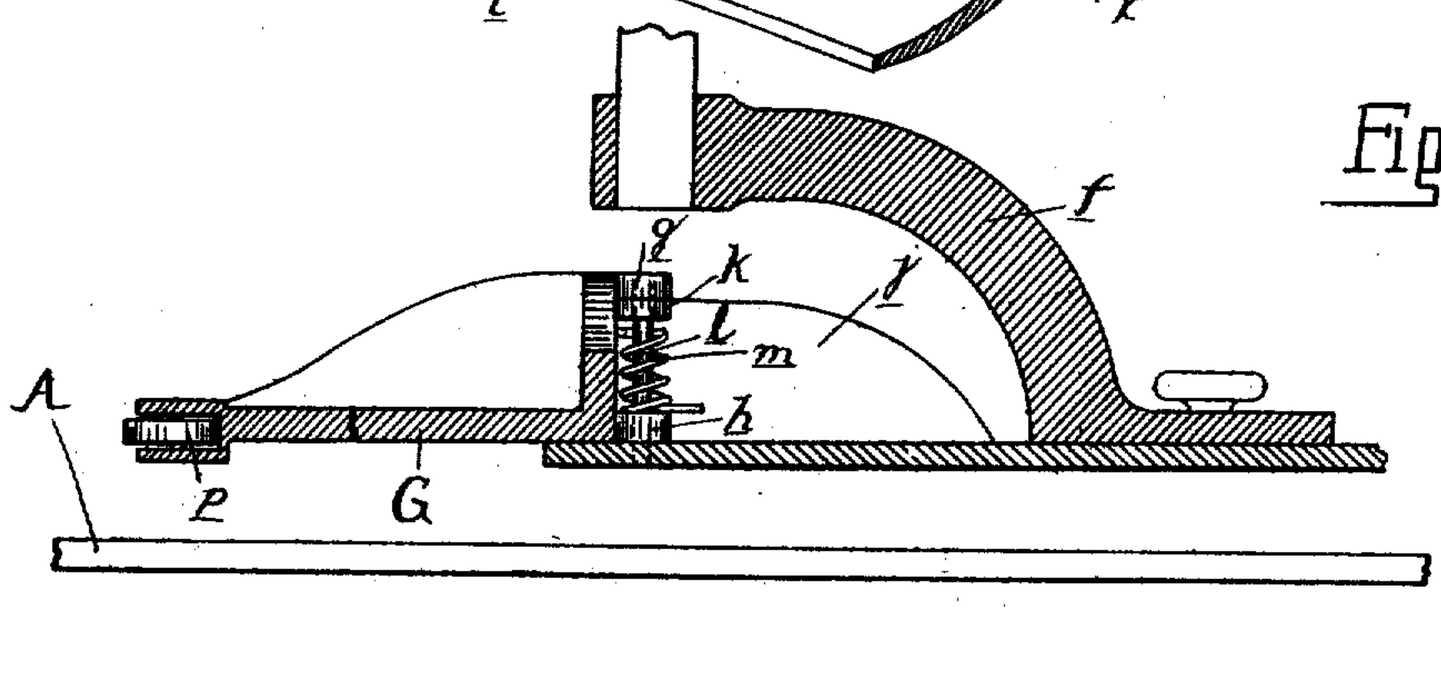

Fig 3.

Witnesses
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UNITED STATES PATENT OFFICE.

FRANK BRAUN, OF DETROIT, MICHIGAN.

SAFETY APPLIANCE FOR WOODWORKING MACHINERY.

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Application filed July 2, 1908. Serial No. 441,674.

To all whom it may concern:

Be it known that I, FRANK BRAUN, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Safety Appliances for Woodworking Machinery, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates generally to woodworking machines, and particularly to planers, and consists primarily in a safety appliance in the nature of a guard for the rotary cutter serving to protect the hands of the operator by preventing them from coming into contact with the knives.

The invention further consists in the peculiar arrangement and combination of the parts of the safety appliance, and still further in certain details of construction as will be more fully hereinafter described.

In the drawings,—Figure 1 is a sectional perspective view of a planer, with my safety appliance attached; Fig. 2 is a sectional perspective view of the appliance; and Fig. 3 is a section taken on line x—x of Fig. 1.

In the drawings thus briefly described, the reference letter A represents the bed of an ordinary planer, having the usual transverse opening or slot B therein, in which is mounted a suitable rotary cutter E, the knives of which project upwardly through the slot above the machine bed into contact with the work. Extending longitudinally of the bed and at one side thereof is a work guide or fence D, against which the work contacts during the operation of planing or smoothing.

E′ represents the safety appliance, which consists of a guard member E^2, arranged above the slot or opening in the bed and extending in close proximity to the work guide D. In planing the sides of the board, the latter is arranged face down on the bed and pushed beneath the guard over the knives, the guard serving in addition to a safety appliance or protector as a guide for the work, holding it in proper contact with the cutter knives.

F represents a curved standard attached in any suitable manner to the machine, terminating at its free end in a bearing a', through which extends a bar b adapted to be held in various positions of lateral adjustment by a suitable set-screw c. The bar in turn carries a vertical bearing d at its free end, through which extends an upright e carried by a bracket arm f bolted to the guard E^2. A suitable set-screw d' serves to hold the upright e in different positions of vertical adjustment.

From the mechanism described, it will be obvious that the guard may be raised or lowered any desired amount to receive the work, and may be also shifted laterally in relation to the guide board or fence D in special instances to permit large pieces of work to pass between the guard and the guide.

In many instances it is desirable not only to plane the sides or face portions of the boards, but also the edges, and I have therefore provided means permitting the edging of the work to be effected without the necessity of shifting the guard laterally. The preferable means for this purpose is a swinging section G, forming a part of the guard proper and arranged for movement in adjacence to the guide D, the swinging member being adapted to be operated by the work and to be moved by the latter out of operative position in relation to the cutter to permit the work to pass beside the guide over the cutter knives. The swinging section, as shown, is preferably in the form of a plate corresponding in width to the guard proper, and having at one corner spaced vertical bearings g h in alinement, and at an adjoining corner a laterally projecting finger section i that extends over and contacts with the body of the guard during its swinging movement. The guard body is provided in turn with a rib j and a vertical bearing k adapted to register with the bearings g h of the swinging section. A pivot pin l engages the several bearings, and forms a pivotal connection between the plate and guard proper.

For the purpose of automatically returning the swinging or yielding section of the guard to its initial position after movement by the work, I provide a coil spring m encircling the pivot pin as shown and having its ends contacting respectively with the rib j upon the guard proper and a corresponding rib o on the section.

It will be obvious from the foregoing description of the appliance that the guard, by extending over the entire working portion of the slot, affords proper protection to the hands of the operator, while the yielding section permits the edging of the work to be ef-

fected without the necessity of shifting the guard laterally to permit the passage of the work between the same and the usual guide or fence. It will also be noticed that the guard serves the double function of a protection member and of a holder for the work, and that the swinging section performs similar functions, the plate when moved against the tension of the spring bearing against the board while being edged, and holding it against the guide or fence. To lessen friction between the parts, I preferably provide the yielding section G at the corner contacting with the work with a suitable roller, as *p*.

In some instances, where the work to be edged is of greater width or thickness than the distance between the guide board and the guard proper, provision is made as heretofore described for adjusting the entire guard laterally.

Attention is directed to the fact that the safety appliance is adapted for use in connection with various types of planing machines, the upright being constructed to support the entire guard or safety appliance, and the standard in turn being readily attachable at any desired point to the machine.

What I claim as my invention is,—

1. In a woodworking machine, the combination with a bed, of the rotary cutter projecting upwardly therethrough, and a rigid guard member for the cutter provided with a swinging section yieldable to the work, having its path of movement in a plane parallel to the bed.

2. In a woodworking machine, the combination with a bed, of a rotary cutter extending upwardly through a slot within the bed, a work guide extending longitudinally of the bed, and a transverse guard member extending over the cutter in immediate proximity to the guide, and provided with a spring-pressed swinging section adjoining said guide and pivoted for movement in a plane parallel to the bed.

3. In a woodworking machine, the combination with a bed, of a rotary cutter projecting upwardly therethrough, a cutter guarding member for and extending over the cutter provided with a pivoted section yieldable to the work and having its path of movement in a plane parallel to the bed.

4. In a woodworking machine, the combination with a bed, of a cutter projecting upward therethrough, a guide on said bed, a cutter guarding member for and extending over the cutter provided with a pivoted section adapted to yieldably press the work against said guide.

5. In a woodworking machine, the combination with a bed, of a cutter projecting upward therethrough, a guide on said bed, a cutter guarding member for and extending over the cutter provided with a spring pressed pivoted section yieldable with the work, having its path of movement in a plane parallel with the bed, and adapted to yieldably press the work against said guide.

6. In a woodworking machine, the combination with a transversely slotted bed, of cutter knives arranged within the slot and projecting upward beyond the bed, a work guide extending longitudinally of the bed, a guard for the cutter comprising a member extending over said cutter and guarding the same, having a spring-pressed section mounted for swinging movement in a plane parallel with the bed adapted to be operated by the work, and an anti-friction member adapted to contact with the work during the passage of the latter over the cutter blades.

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

FRANK BRAUN.

Witnesses:

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JAMES P. BARRY.