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(54) **Improved squeegee particularly for washing floors and/or tiled walls.**

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Description

The present invention relates to a squeegee of the kind disclosed in GB-A-2 055 040, particularly for washing floors and/or tiled walls.

Squeegees are known for washing floors which are constituted by an elongated rigid plate downwardly covered with a rubber or sponge element, and having a device to which a handle is articulated.

A gauze or anti-static cloth is associated with said plate.

The length of the plate may be about at least half a meter, so as to be able to perform a cleaning action on a wide floor surface.

However, this entails a considerable disadvantage, due to the fact that floor tiles, which are usually squares of 20 cm x 20 cm, are not always arranged with perfect co-planarity.

For this reason the squeegee does not make contact with the floor along its entire length but only at the highest resting points.

The cleaning action is therefore not optimum, since dirt remains accumulated in particular in the connecting regions between tiles placed at different heights and requires, for its removal, further passes with cloths or other cleaning means.

This same disadvantageous phenomena occurs also in the case of other types of pavements or floor coverings which have a surface that is not level.

A mop of the kind defined in the preamble of the present claim 1, with an improved head is known from GB-A-2 055 040. The improved mop head comprises a central member with two lateral spring biased panels which are pivotably connected to the central member, a yoke being provided for pivoting the two panels towards each other. However, in the solution proposed by GB-A-2 055 040 the pivoting arrangement of the panels is complicated and is not suitable for economical production.

An other squeegee is known from AT-B-199 341. In this squeegee the panel members, though pivotable, are secured in a predetermined position and thus not oscillable during cleaning operation. Therefore, again such squeegee fails to perform in an efficient manner if used for cleaning surfaces that are not level.

The aim of the present invention is to solve the disadvantage described above in the known art by providing an improved squeegee which allows an excellent cleaning action even on uneven floors.

A consequent primary object is to provide an improved squeegee which can also be conveniently used for cleaning tiled walls.

Another important object is to provide an improved squeegee which can be produced at low cost with conventional thermoplastic injection-molding systems.

This aim, these objects and others which will become apparent hereinafter are achieved by an improved squeegee particularly for washing floors, as defined in claim 1.

Further characteristics and advantages of the invention will become apparent from the detailed description of an embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a partially sectional side view, taken in a median region, of the improved squeegee according to the invention;

figure 2 is an enlarged perspective view of the squeegee according to the invention associated with a handle, without the lower covering element;

figure 3 is an exploded perspective view of the median portion of the improved squeegee according to the invention.

With reference to the above figures, the improved squeegee particularly for washing floors is generally indicated by the reference numeral 1 and comprises three substantially plate-like aligned elements, respectively indicated by the reference numerals 2, 3 and 4, preferably produced by injection-molding thermoplastic materials.

Two parallel tabs, respectively 5 and 6, extend from the central element 3, at a median region thereof, and an insertion seat 100 is provided therebetween for a cylindrical element 7. The element 7 has an axial hole 8 within which a central spring 9 pushes two lateral dowels, respectively 10 and 11, so as to cause them to become inserted into respective seats 12 and 13 provided in the element 3, when the element 7 is inserted into the seat 100.

The cylindrical element 7 is therefore rotationally coupled to the element 3, and a tab 14 extends therefrom; a handle 15 is expediently oscillably coupled to said tab 14.

According to the invention, pairs of laminae 18 and 19, preferably having a substantially rectangular cross section, extend in a co-planar manner from the smaller opposite surfaces 16 and 17 of the element 3. Each lamina ends with a respective rounded raised portion or lugs 20, 21 which extends in a slightly downward direction.

Said pairs of laminae 18,19, which extend from the corresponding smaller surfaces defined at the end portions of the lateral elements 2 and 4, are adapted to be inserted in snap-together engagement relationship in respective seats 22, 23.

Each seat 22, 23 advantageously has an appropriately shaped transverse cross section, e.g. rectangular, which decreases from the outside towards the inside due to the inclination of the lower sur-

face and leads, at a cross section which is slightly greater than the cross section of the laminae 18 and 19, into expansions 24 and 25 which are open downwardly and are adapted to accommodate said raised portions or lugs 20 and 21.

The length of the seats 22 and 23 is conveniently smaller than the length of the laminae 18 and 19, so that the elements 2 and 4 are oscillably coupled to the element 3 and can perform small rotations in an exclusively downward direction.

As can be seen in the figures, the entire squeegee 1 has, on its upper surface, an annular perimetral seat 26 which can accommodate a corresponding overturned edge 27 extending from a rubber element 28 which covers the lower surface and may be downwardly provided with longitudinal laminae 29.

An auxiliary cleaning element such as a cloth or a gauze can be fixed so as to wrap around the squeegee by means of known plug devices, respectively 30 and 31, provided upwardly on the elements 2 and 4.

From what has been described it can thus be seen that the squeegee according to the invention is capable of adapting to the uneven regions of floors since it is composed of elements which are mutually articulated.

The fact that the lateral elements can perform only downward oscillations with respect to the central element allows the force imparted on the handle by the operator to be transmitted in any case on the entire extension of the squeegee.

It has thus in practice been observed that the invention has achieved the intended aim and objects.

The invention can furthermore be produced in large numbers at low cost with conventional thermoplastic material injection systems.

In practice, the materials employed, so long as compatible with the contingent use, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. Improved squeegee particularly for washing floors, comprising at least three substantially plate-like aligned elements (2-4) being covered downward with a cleaning element (28) made of a soft material, said plate-like elements (2-4) including at least two lateral elements (2,4) coupled to a central element (3), said central element (3) having means (7,14) for coupling with a handle (15), said lateral elements (2,4) being oscillably coupled to said central element (3) such that to perform downward oscillation with respect to said central element (3), characterized in that said central element (3) includes pairs of parallel co-planar laminae (18,19) extending from the opposite smaller surfaces (16,17) of said central element (3), each of said co-planar laminae (18,19) ending with a rounded raised portion (20,21) which extends slightly downward, said co-planar laminae (18,19) being insertable in respective seats (22,23) which extend from the corresponding smaller surfaces of the lateral elements (2,4), each seat (22,23) having a transverse cross section which decreases from the outside inward due to the inclination of the lower surface, each seat (22,23) leading, at a cross section which is slightly greater than that of the respective lamina (18,19), into an expansion (24,25) adapted to accommodate a respective one of said rounded terminal raised portions (20,21), said expansion (24,25) constituting the rotation seat for said rounded raised portion (20,21).

2. Squeegee according claim 1, characterized in that the seats (22,23) for the coupling of said lateral elements (2,4) to said co-planar laminae (18,19) of said central element (3) have a smaller length than said laminae (18,19), such that to allow slight oscillations of said lateral elements (2,4) exclusively downward with respect to said central element (3).

3. Squeegee according to claims 1-2, characterized in that said at least three elements (2-4) are preferably produced by injection-molding thermoplastic materials.

4. Squeegee according to one or more of the preceding claims, characterized in that it further comprises means (30,31) for at least temporarily fixing at least one auxiliary cleaning element thereto.

5. Squeegee according to one or more of the preceding claims, characterized in that it further comprises at least two tabs (5,6) rigidly associated with said central element (3), at least one cylindrical element (7) rotatably with said tabs (5,6), and means (14) for rotatably connecting said cylindrical element (7) to said handle (15).

6. Squeegee according to claim 5, characterized in that said tabs (5,6) have seats (12,13) formed therein, and in that said cylindrical element (7) has formed therein an axial hole (8), at least two dowels (10,11) being at least partially accommodated in said axial hole (8) and rotatably engaging said seats (12,13), elastic biasing means (9) being interposed between said dowels (10,11).

Patentansprüche

1. Verbessertes Reinigungsgerät, insbesondere zur Reinigung von Fußböden, bestehend aus mindestens drei im wesentlichen plattenförmigen, ausgerichteten Elementen (2 - 4), die unten mit einem Reinigungselement (28), das aus weichem Material besteht, abgedeckt sind, wobei die plattenförmigen Elemente (2 - 4) mindestens zwei seitliche Elemente (2, 4) aufweisen, die mit einem mittleren Element (3) verkoppelt sind, wobei das mittlere Element (3) eine Einrichtung (7, 14) zum Anschluß eines Handgriffes (15) aufweist, und die seitlichen Elemente (2, 4) mit dem mittleren Element (3) schwenkbar so gekoppelt sind, daß sie in bezug auf das mittlere Element (3) eine Abwärtsbewegung durchfuhren, **dadurch gekennzeichnet**, daß das mittlere Element (3) ein Paar paralleler , koplanarer Plättchen (18, 19) aufweist, die von den sich gegenüberliegenden kleineren Flächen (16, 17) des mittleren Elementes (3) abstehen, wobei jedes der koplanaren Plättchen (18, 19) in einem abgerundeten, verdickten Teil (20, 21) endet, welches leicht nach unten geneigt ist, und die koplanaren Plättchen (18, 19) in entsprechende Aufnahmen (22, 23) einsteckbar sind, welche von den entsprechenden kleineren Flächen der seitlichen Elemente (2, 4) abgehen, wobei jede Aufnahme (22, 23) einen schrägen Querschnitt aufweist, welcher sich von außen nach innen, infolge der Neigung der unteren Fläche, verengt, und jede Aufnahme (22, 23) mit einem Querschnitt, welcher etwas größer als der des entsprechenden Plättchens (18, 19) ist, in eine Erweiterung (24, 25) führt, die so gestaltet ist, daß sie einen entsprechenden der abgerundeten verdickten Endteile (20, 21) aufnehmen kann, und die Erweiterung (24, 25) die Drehlagerung für das abgerundete, verdickte Teil (20, 21) bildet.

2. Reinigungsgerät nach Anspruch 1, **dadurch gekennzeichnet**, daß die Aufnahmen (22, 23) zur Ankopplung der seitlichen Elemente (2, 4) an die koplanaren Plättchen (18, 19) des mittleren Elementes (3) eine kürzere Länge als die Plättchen (18, 19) aufweisen, so daß sie geringfügige Schwenkbewegungen der seitlichen Elemente (2, 4) im Verhältnis zum mittleren Element (3) ausschließlich nach unten zulassen.

3. Reinigungsgerät nach den Ansprüchen 1 oder 2, **dadurch gekennzeichnet**, daß mindestens drei Elemente (2 - 4) vorzugsweise durch Spritzgießen thermoplastischer Materialien hergestellt werden.

4. Reinigungsgerät nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet**, daß es weiterhin Mittel (30, 31) zur zumindest zeitweisen Befestigung mindestens eines Reinigungshilfselementes an diesem aufweist.

5. Reinigungsgerät nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet**, daß es weiterhin mindestens zwei Nasen (5, 6), die fest mit dem mittleren Element (3) verbunden sind, mindestens ein zylindrisches Element (7), das drehbar mit den Nasen (5, 6) verbunden ist, und eine Einrichtung (14) zur drehbaren Verbindung des zylindrischen Elementes (7) mit dem Handgriff (15) aufweist.

6. Reinigungsgerät nach Anspruch 5, **dadurch gekennzeichnet**, daß in den Nasen (5, 6) Lager (12, 13) eingeformt sind, daß in dem zylindrischen Element (7) eine axiale Bohrung (8) vorhanden ist, und daß mindestens zwei Bolzen (10, 11), zumindest teilweise in der axialen Bohrung (8) aufgenommen sind, und drehbar in die Lager (12, 13) eingreifen, sowie ein elastisch vorgepanntes Teil (9), zwischen den Bolzen (10, 11) angeordnet ist.

Revendications

1. Outil à raclette amélioré, particulièrement pour laver des sols, comprenant au moins trois éléments (2-4) sensiblement alignés en forme de plaque, recouverts vers le bas d'un élément de nettoyage (28) réalisé en une matière souple, lesdits éléments en forme de plaque (2-4) incluant au moins deux éléments latéraux (2,4) accouplés à un élément central (3), ledit élément central (3) ayant des moyens (7, 14) pour coopérer avec un manche (15), lesdits éléments latéraux (2,4) étant accouplés, de façon oscillante, sur ledit élément central (3) de façon à réaliser une oscillation vers le bas par rapport audit élément central (3),
caractérisé en ce que ledit élément central (3)

comporte des paires de lamelles coplanaires parallèles (18, 19) s'étendant des surfaces opposées plus petites (16, 17) dudit élément central (3), chacune desdites lamelles coplanaires (18, 19) se terminant par une partie en saillie arrondie (20, 21) qui s'étend légèrement vers le bas, lesdites lamelles coplanaires (18, 19) étant insérables dans des sièges respectifs (22, 23) qui s'étendent des surfaces correspondantes plus petites des éléments latéraux (2,4), chaque siège (22, 23) ayant une section transversale qui diminue de l'extérieur vers l'intérieur à cause de l'inclinaison de la surface inférieure, chaque siège (22, 23) aboutissant à une section transversale qui est légèrement plus grande que celle de la lamelle respective (18, 19), dans un espace (24, 25) adapté pour recevoir une desdites parties en saillie terminales arrondies (20, 21), ledit espace (24, 25) constituant le siège de rotation pour ladite partie arrondie en saillie (20, 21).

2. Outil à raclette selon la revendication 1, caractérisé en ce que les sièges (22, 23) pour le couplage desdits éléments latéraux (2, 4) auxdites lamelles coplanaires (18, 19) dudit élément central (3) ont une longueur plus petite que lesdites lamelles (18, 19), de façon à permettre de légères oscillations desdits éléments latéraux (2,4) exclusivement vers le bas par rapport audit élément central (3).

3. Outil à raclette selon les revendications 1-2, caractérisé en ce que lesdits trois éléments (2-4) sont de préférence produits par moulage par injection de matières thermoplastiques.

4. Outil à raclette selon l'une ou plusieurs des revendications précédentes, caractérisé en ce qu'il comprend, de plus, des moyens (30, 31) pour fixer au moins temporairement au moins un élément auxiliaire de nettoyage à celui-ci.

5. Outil à raclette selon l'une ou plusieurs des revendications précédentes, caractérisé en ce qu'il comprend, de plus, au moins deux pattes (5,6) associées rigidement audit élément central (3), au moins un élément cylindrique (7) rotatif par rapport auxdites pattes (5,6), et des moyens (14) pour relier, de façon rotative, ledit élément cylindrique audit manche (15).

6. Outil à raclette selon la revendication 5, caractérisé en ce que lesdites pattes (5,6) ont des portées (12, 13) formées dans celles-ci, et en ce que ledit élément cylindrique (7) présente, formé dans celui-ci, un trou axial (8), au moins deux goupilles (10, 11) étant au moins partiellement logées dans ledit trou axial (8) et engageant, de façon rotative, lesdites portées (12, 13), des moyens de sollicitation élastiques (9) étant interposés entre lesdites goupilles (10, 11).

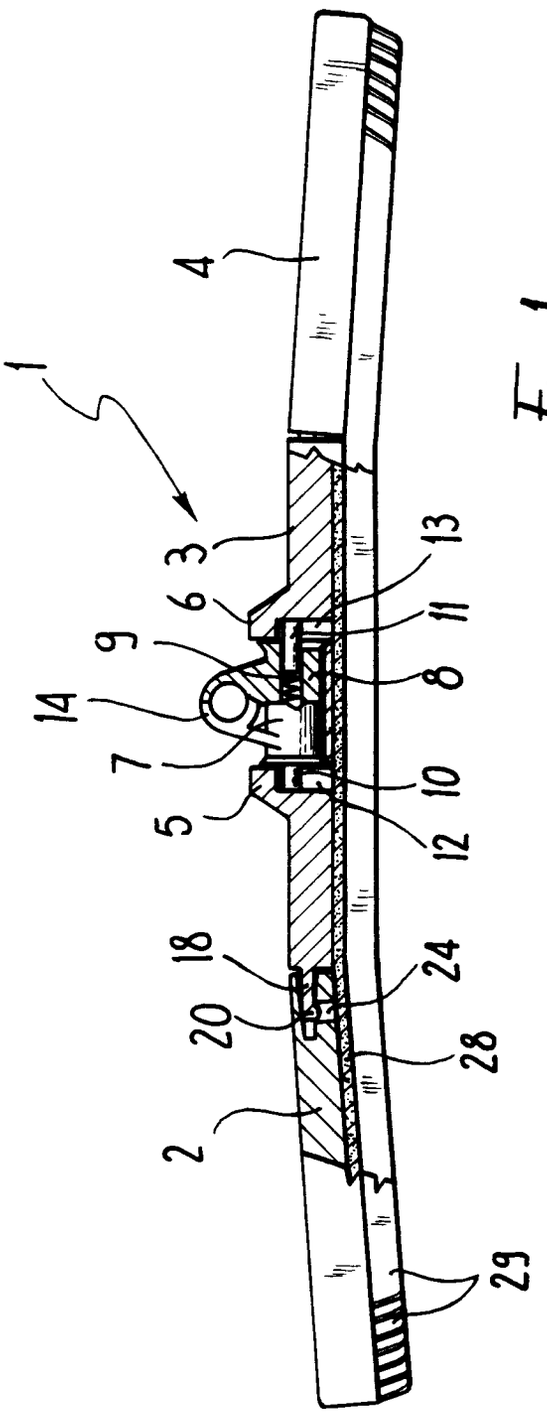


Fig. 1

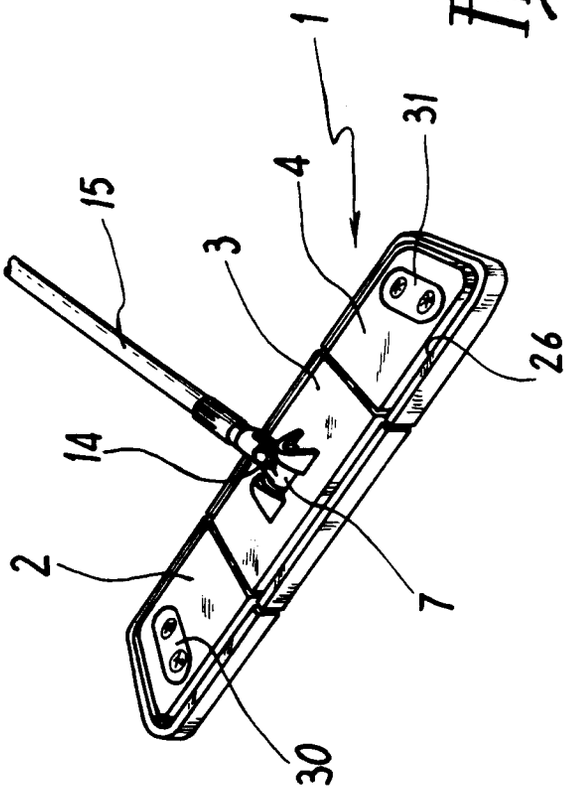


Fig. 2

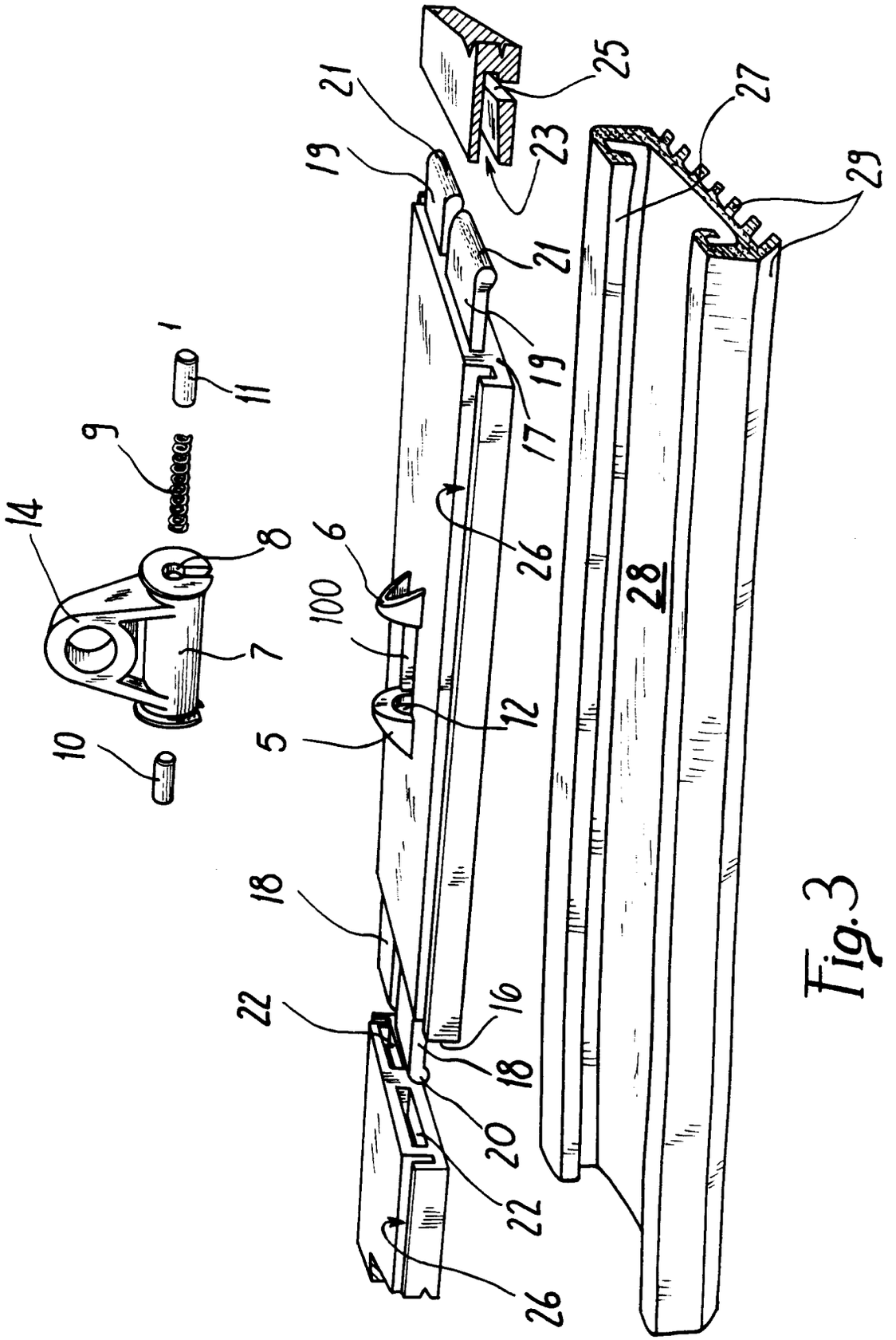


Fig.3