

No. 842,770.

PATENTED JAN. 29, 1907.

P. F. CONNELLY.  
ADJUSTABLE TROWEL.  
APPLICATION FILED MAY 8, 1906.

Fig. 1.

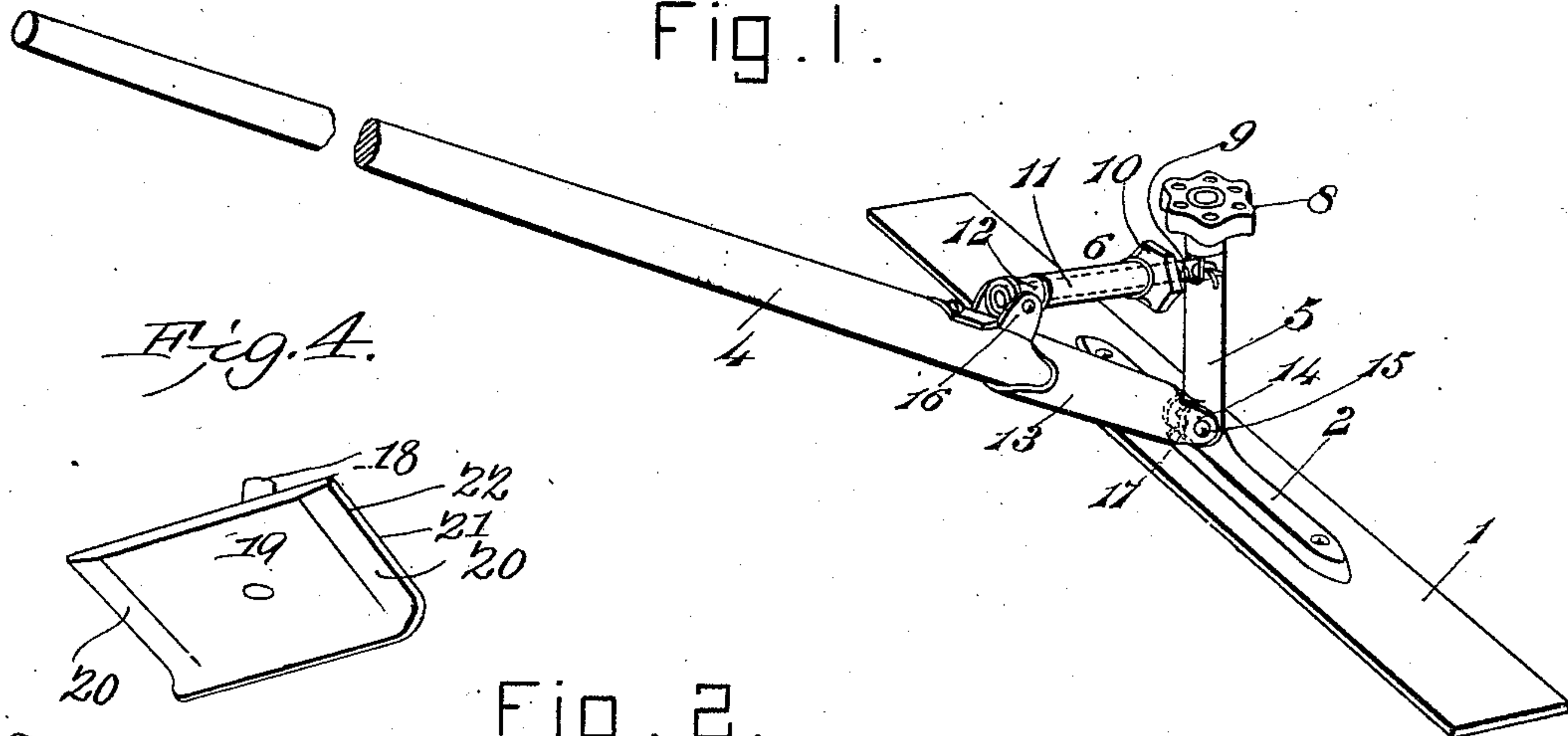


Fig. 4.

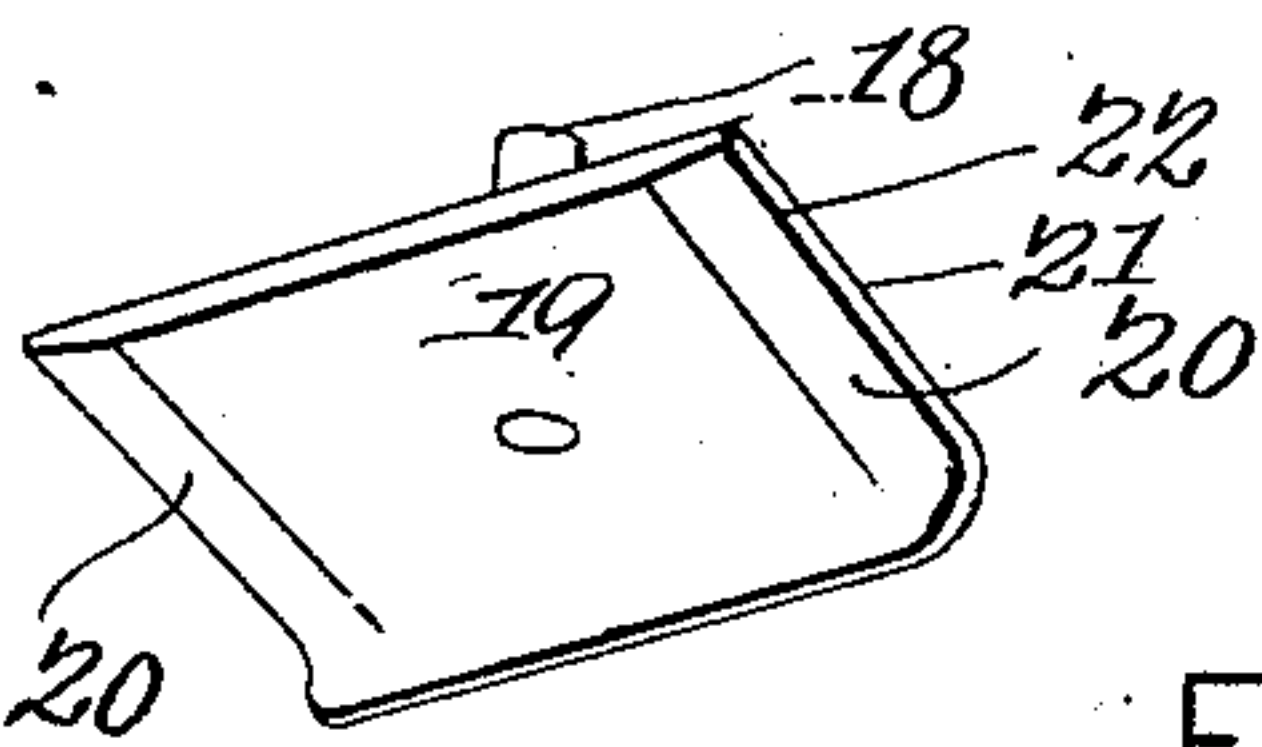


Fig. 2.

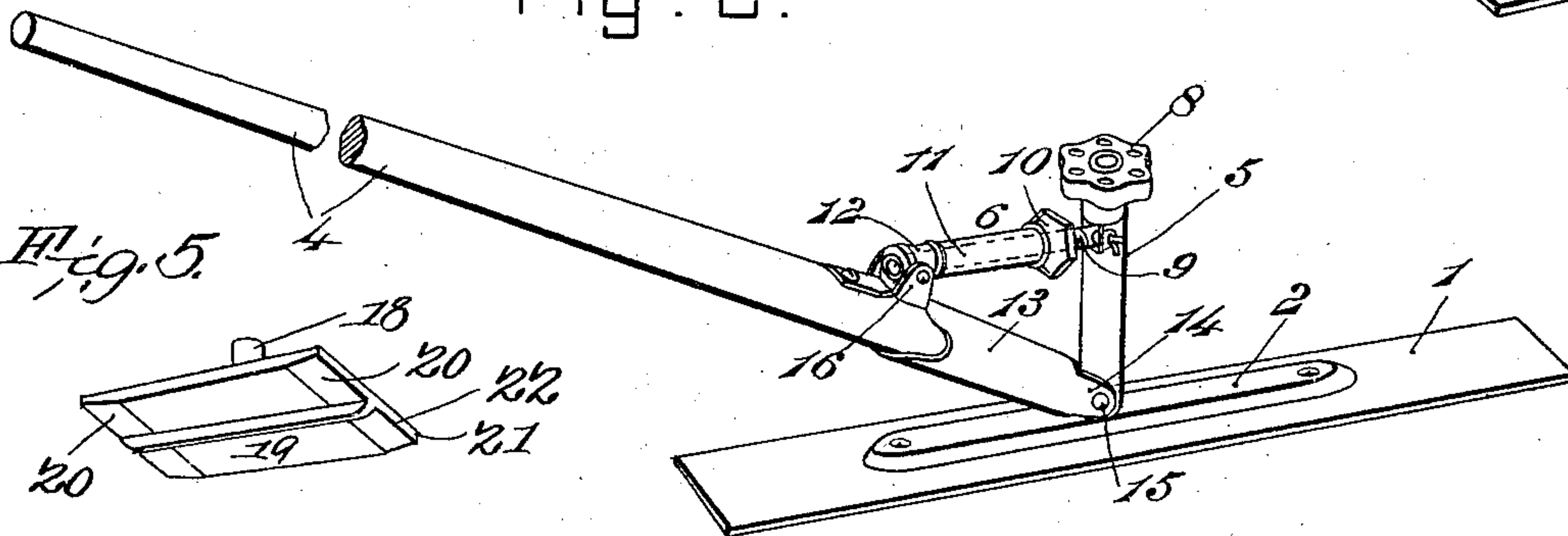


Fig. 5.

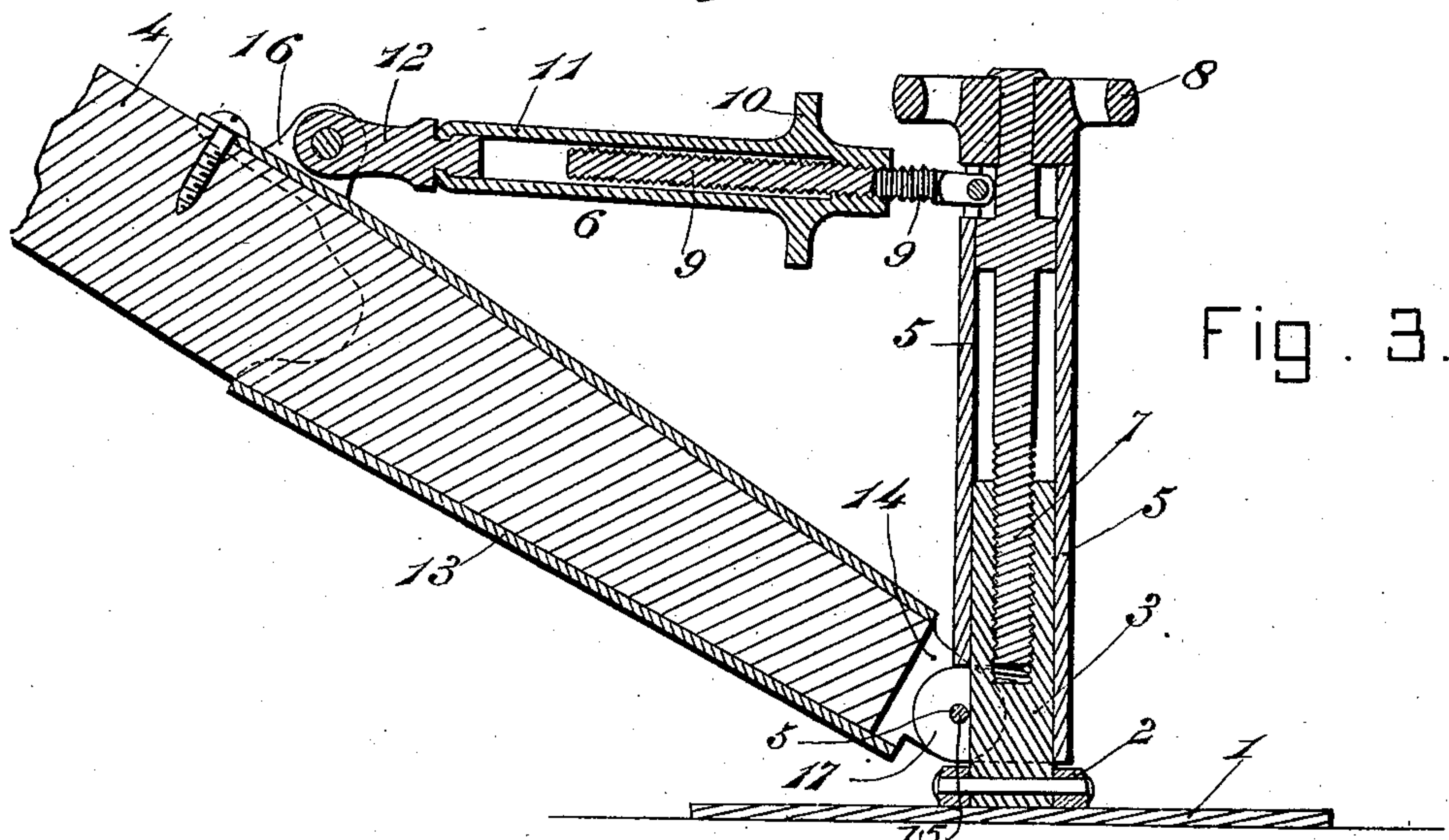
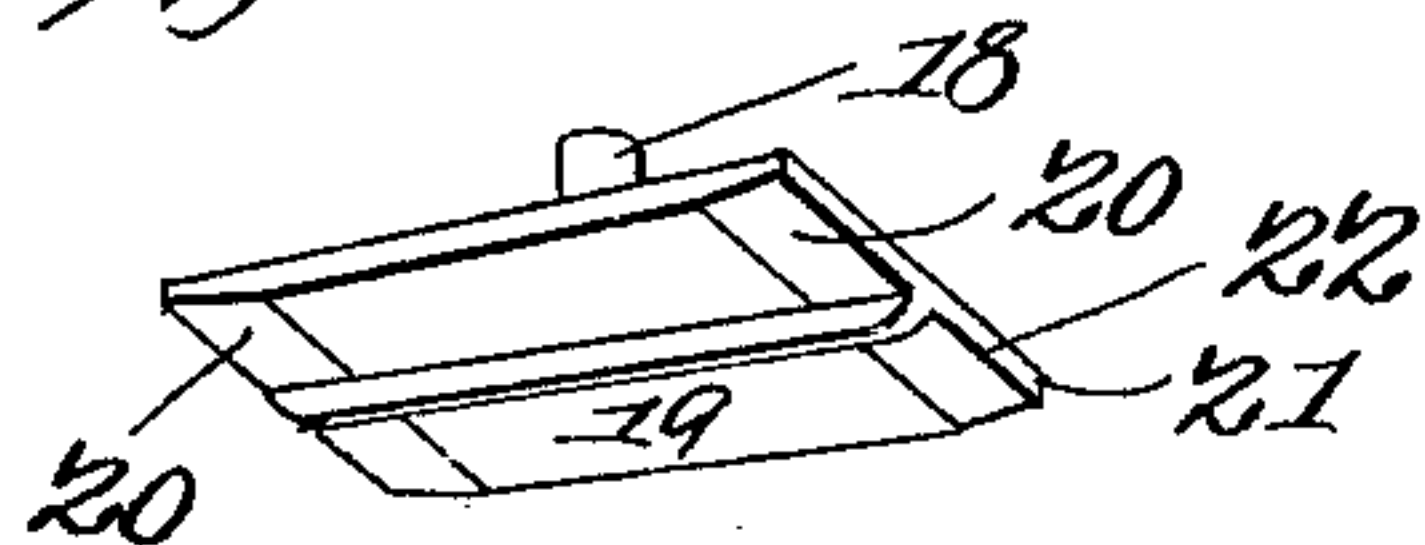


Fig. 3.

WITNESSES:

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*Patrick F. Connelly*, INVENTOR.

By

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ATTORNEYS



# UNITED STATES PATENT OFFICE.

PATRICK FRANCIS CONNELLY, OF SIOUX FALLS, SOUTH DAKOTA.

## ADJUSTABLE TROWEL.

No. 842,770.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed May 8, 1906. Serial No. 315,837.

*To all whom it may concern:*

Be it known that I, PATRICK FRANCIS CONNELLY, a citizen of the United States, residing at Sioux Falls, in the county of Minnehaha and State of South Dakota, have invented a new and useful Adjustable Trowel, of which the following is a specification.

The present invention relates to an adjustable trowel or surface-finisher, edge-tool, and jointer for sidewalks, floors, and walls made of cement, concrete, lime, or other plastic materials; and it has for its object to provide a device of this character equipped with an adjustable handle, whereby work with the same can be done conveniently and expeditiously.

In work of the character above referred to it has been customary to lay and finish small sections or blocks at a time, for the reason that hand-trowels, edge-tools, and jointers are used. This necessitates the workmen assuming a crouched or kneeling position and working inwardly from the sides of the sections or blocks being finished, which is obviously an inconvenient and tiresome condition under which to work. Furthermore, the knees of the workmen become wet, so that rheumatism or other physical disorders often result. I overcome these objections by mounting the trowel-blade, edge-tool, and jointer upon a long handle, so that the work can be done in a standing position. By actual practice I have found that an ordinary workman can with less fatigue accomplish as much or more work than is done by five workmen using the ordinary hand-tools. It will thus be seen that the trowel, edge-tool, and jointer is advantageous both on the score of economy in the amount of work capable of being done and in the saving of physical exertion on the part of the workmen.

In the following description, taken in connection with the accompanying drawings, the details of construction and arrangement of parts will be fully set forth, while the features of novelty will be specified with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a perspective view of my improved trowel, showing the blade in position for working on surfaces of large area. Fig. 2 is a similar view showing the blade set for working on narrow surfaces. Fig. 3 is a transverse section. Fig. 4 is a perspective view of

an edging-blade. Fig. 5 is a similar view of a jointer-blade.

Referring to the drawings, 1 represents a blade made of suitable sheet metal, which is of considerable length comporting with its width. The blade is reinforced on its upper surface by a rib 2, riveted or otherwise secured thereto in a central position. Extending upright from the rib is a central post 3, Fig. 3, which supports the blade on the handle 4. Fitted over the post and capable of turning thereon is a vertical sleeve 5, to which the handle 4 is attached, the latter being braced with respect to the sleeve by means of the members 6.

The sleeve, with the handle 4, is secured to the blade of the trowel by means of the screw 7, that extends downwardly through the sleeve from the upper end thereof and engages in the threaded bore of the post 3. The screw is actuated by a hand-wheel 8 at the upper end thereof, the hub of the hand-wheel binding on the upper end of the sleeve and securely holds the latter in place.

With the construction thus far described it is possible to adjust the blade so that the long dimension of the latter extends at right angles to the plane of the handle, which position is shown in Fig. 1, or parallel with the plane of the handle, as shown in Fig. 2, the object of such adjustment being to permit the trowel to be used for surfaces of large area on the one hand or for surfaces more or less narrow on the other hand. It is also advantageous to adjust the angle between the plane of the blade and the axis of the handle so as to obtain the proper set for finishing work at a greater or less distance from the edge of the particular section or block of flooring being finished—that is to say, when finishing that portion of the work at a greater distance from the edge or at a greater reach the blade is set at a less angle to the axis of the handle, so as to facilitate the finishing, and vice versa when finishing portions closer to the edge. To permit of such adjustment, the member 6 between the sleeve-handle 4 and the sleeve 5 preferably takes the form of turnbuckle connection, and the lower end of the handle is pivoted to the sleeve adjacent its base, the turnbuckle connection comprising a screw 9, pivoted to the upper end of the sleeve 5 and carrying the adjustable nut 10. The nut is secured on a tubular member 11, into which the



screw telescopes and which is swiveled at the end opposite from the nut in a pivotally-mounted anchor-piece 12. With this construction the angle of the blade is readily adjusted by turning the nut 10 by hand in the direction desired.

From the above description it will be seen that the handle of the trowel is capable of differential adjustment—that is to say, that it is adjustable about an axis at right angles to the plane of the blade and also about an axis parallel thereto, thus permitting the trowel to be used in a great variety of positions.

For attaching the handle to the sleeve and to the turnbuckle connection I employ a very simple and inexpensive ferrule construction, the same comprising a sheet-metal body 13, formed into a tube and brazed or otherwise secured at its meeting edges. The lower end of the ferrule is provided with projecting lugs 14, through which extends the pivot 15, attaching the handle to the sleeve 5, and at the upper end of the ferrule are also integral lugs 16, suitably positioned to receive the pivotally-mounted anchor-piece of the turnbuckle connection. The lower end of the sleeve 3 is slotted at one side and the adjacent portions turned outwardly into a tangential position, and over these lugs 17 those on the lower end of the ferrule extend and are riveted or pivoted thereto.

The invention has been described thus far as to some of its features in connection with a flat-blade tool or trowel for finishing plane surfaces; but it is obvious that other blades may be employed, such as an edging-blade or a jointer-blade, which are shown, respectively, in Figs. 4 and 5. Each of these blades is provided with a central post 18, corresponding to posts 5 of the trowel-blade and similarly constructed, so that the edging or jointer blades can be used interchangeably with the trowel-blade on the adjustable handle. As put up for the market the tool may and preferably will consist of one of these adjustable handles with any number of blades of different character, as desired.

I have found in practice that with edging and jointer blades made according to the usual construction it is extremely difficult to polish the surface being finished. This is due to the fact that one or both ends of the edging or jointer blade are turned out of the plane of the blade, so as to permit the tool to be tilted on the turned edge during the polishing operation; but by reason of the end or ends being turned or curved a suction is produced when they are run over the surface of the plastic material, thereby leaving the surface rough and unpolished. I successfully overcome this difficulty by making the end portions of the blades slightly beveled on a straight line. This makes a blade having a flat central surface 19 with angularly-dis-

posed plane or flat end surfaces 20. The surfaces 20 form with the end surfaces 21 obtuse angles with sharp edges 22. This is an important feature, since suction is thereby practically eliminated. Such a tool permits the work of polishing to be done in the usual manner by the operator pulling the tool toward him while the blade is tilted on one end and reversing and pushing it away while tilted on the other end of the blade; but as the entire area of the flat beveled portion is in contact with the surface being polished no suction is produced, thereby permitting a high polish to be given to the work.

I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof; but I desire to have it understood that the apparatus shown is merely illustrative and that the invention can be carried out by other means.

What is claimed is—

1. In a tool, the combination of a blade, a post permanently secured thereto and provided with a screw-thread at its upper end, a sleeve surrounding the post, a threaded member engaging the thread of the post and adjustably securing the sleeve to the latter, a handle pivoted to the sleeve to move on an axis at right angles to that of the post, and an adjustable device between the handle and sleeve for varying the angular relation of the handle with the blade.

2. In a tool, the combination of a blade, a post on the blade arranged at right angles to the plane thereof, a sleeve disposed over the post independently turnable thereon, a set-screw for securing the sleeve and post together, and a handle attached to and movable with the sleeve.

3. In a tool, the combination with a blade, a central upright post mounted stationary thereon, a sleeve rotatable on the post, means for securing the sleeve and post together, a handle pivoted on an axis at right angles to that of the sleeve and movable with the latter around the post, and a bracing means connected with the handle and the sleeve.

4. In a tool, the combination of a blade, an upright post thereon having a tapped bore, a sleeve mounted on the post to turn, a screw extending into the sleeve and threaded into the post, a hand-wheel on the screw which abuts the upper end of the sleeve for clamping the blade and sleeve together, a handle pivoted at its lower end on the sleeve to move on an axis at right angles to the latter, and an adjustable connection between the upper end of the sleeve and another part of the handle for bracing the latter with respect to the sleeve and changing the angular relation of the handle with the blade.

5. In a tool, the combination of a blade, a sleeve pivoted thereon which is disposed with its axis at right angles to the blade, a handle



pivoted to the lower end of the sleeve and mounted to turn on an axis at right angles to that of the latter, and a turnbuckle for varying the angular adjustment of the handle with respect to the blade.

6. In a tool, the combination of a blade, a central upright post secured thereto which is provided with a tapped bore, a sleeve arranged at one end over and rotatable about the post, a set-screw extending through the sleeve which engages the thread on said post and abuts the end of the sleeve to hold the same in position, a handle pivoted at its lower end to the sleeve to turn about an axis parallel to the plane of the blade, and a turnbuckle connection between the sleeve and handle for adjusting the latter about its pivot.

7. In a tool, the combination of a blade, an upright post arranged centrally thereof and provided with a screw-thread, a sleeve arranged over and rotatable about the post, a set-screw extending through the screw which engages the thread from the post and holds the sleeve in position, a handle, a ferrule on the handle having lugs formed thereon, pivots connecting the lugs with the sleeve, and an adjustable connection between the sleeve and handle.

8. In a tool, the combination of a blade, a sleeve rotatively mounted thereon which is provided with a lug, means for clamping the post and sleeve together, a handle, a ferrule

thereon which is provided with a lug, a fixed post on the blade disposed at right angles thereto, a pivot connecting the lugs of the ferrule and handle which permits the handle to be adjusted about the same and turned with the sleeve, and adjustable members between the sleeve and handle.

9. In a tool of the class described, the combination of a blade, a post thereon, a member sleeved on the post, means for adjustably attaching the sleeve to the post, and a handle adjustably connected with the sleeve, the side of the blade opposite from the post having two flat surfaces arranged in contiguous relation and one of the surfaces terminating in a sharp edge at one end of the blade.

10. A tool for working plastic material comprising a blade having its under face provided with a comparatively large flat surface for smoothing the work, and with a relatively small flat portion adjacent each end of the blade for polishing the work disposed at an angle to the first portion and arranged contiguous therewith, the said polishing-surfaces terminating in a sharp edge at the ends of the blade.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PATRICK FRANCIS CONNELLY.

Witnesses:

T. W. SEXTON,  
W. I. CHAPPELL.