(No Model.)

J. O. PEARSON.

TOOL FOR CUTTING PLASTER CASTS.

No. 590,163. Patented Sept. 14, 1897.

Fig. 1.

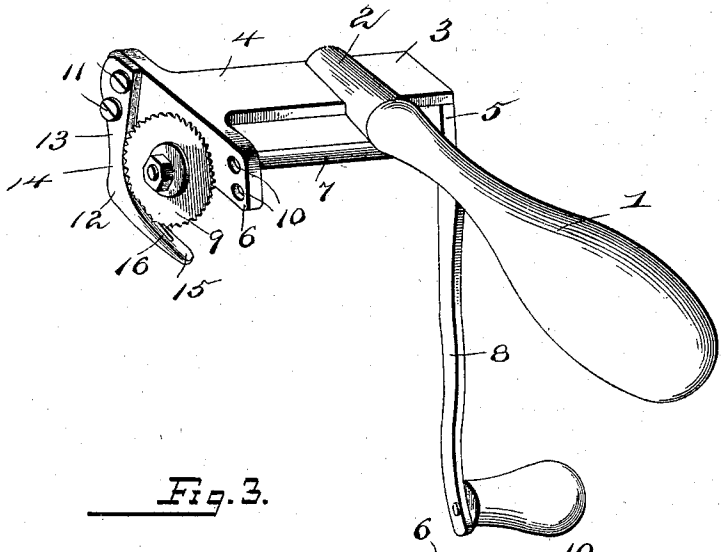


Fig. 3.

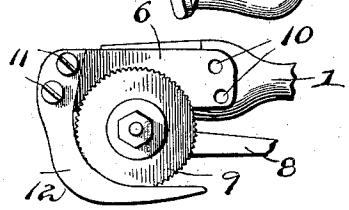


Fig. 5.

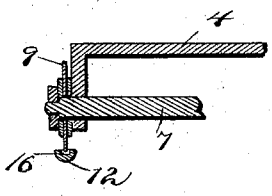


Fig. 2.

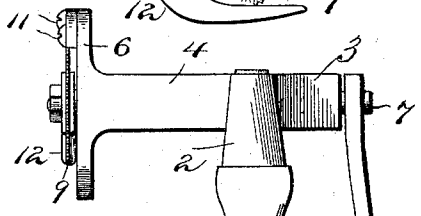
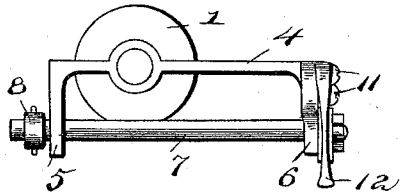
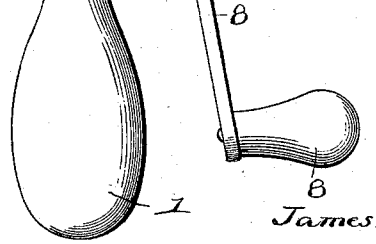


Fig. 4.





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TOOL FOR CUTTING PLASTER CASTS.

SPECIFICATION forming part of Letters Patent No. 590,163, dated September 14, 1897.

Application filed May 7, 1897. Serial No. 635,610. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. PEARSON, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and useful Tool for Cutting Plaster Casts, of which the following is a specification.

This invention relates to tools for cutting plaster casts that have been applied to broken limbs of patients, in order that the cast may be easily removed from the limb when necessary; and the object of the invention is to provide a tool of this character that will cut the cast rapidly and at the same time be effectually prevented from cutting the flesh of the patient.

With this object in view the invention consists in the several details of construction and combination of parts hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my improved tool. Fig. 2 is a plan view. Fig. 3 is a side elevation. Fig. 4 is an end view. Fig. 5 is a vertical section on the line *x x* of Fig. 3.

Similar reference-numerals indicate similar parts in the several figures.

The handle of the tool is represented by 1 and is preferably of wood. The front end of the handle is provided with a ferrule firmly secured thereto, and from this ferrule extend on opposite sides arms, (indicated by 3 and 4, respectively.) The arm 4 is longer than the arm 3 in order that the cutter, which is supported adjacent to the outer end of this arm, may be sufficiently removed from the handle to permit the tool to be easily operated. The outer ends of each of these arms have depending ears, (indicated by 5 and 6, respectively,) and these ears serve as bearings for the shaft 7. The ends of the shaft project beyond its bearings, and the end of the shaft adjacent to the ear 5 is provided with a crank-handle 8, by means of which the shaft may be rotated. The opposite end of the shaft carries a circular saw, (indicated by 9.)

The ear 6 is elongated and projects at each end beyond the periphery of the saw 9. Each end of the ear 6 is provided with threaded holes (indicated by 10) for the reception of screws 11, by means of which the guard 12 may be attached to either end, the object being to make the guard reversible, in order that the tool during the cutting operation may be pulled toward the operator or pushed from him.

The guard 12 is substantially in the form of an angle-bar, and the vertical arm 13, which is attached to the ear 6, is so reduced in thickness at its lower end, as indicated at 14, that this portion of the arm will pass freely through the cut made by the saw 9. The foot 15 of the guard tapers slightly, both vertically and transversely, from its rear to its front end, and all the edges of the foot are rounded in order that it may move freely between the cast and the limb of the patient. The upper face of the foot is provided with a longitudinal slot 16, in which the saw works, thereby enabling the plaster cast to be cut entirely through its thickness.

From the foregoing description it will be seen that by the use of this tool the plaster cast can be cut entirely through its thickness, and at the same time the saw cannot possibly come into contact with the flesh of the patient, since the foot 15 of the guard is always between the plaster cast and the flesh of the patient. The guard may be reversed and thereby permit the tool to be pulled toward the operator or pushed from him, as may be most convenient to effect the cutting, and the cutting can be effected very rapidly, since no special care will have to be exercised to avoid cutting the flesh of the patient. Furthermore, as this tool will make a clean incision through the plaster cast, it is obvious that a portion of the cast may be cut out and removed should the surgeon desire to inspect the limb, and the cut-out portion can then be replaced and secured in position without disturbing the main portion of the cast.

It will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim is—

1. In a tool for cutting plaster casts, the combination with a frame, of a shaft journaled to rotate in the frame, a circular saw mounted on the shaft outside of the frame,

and a guard secured to the frame and extending below the saw and in advance thereof, the front end of said guard being tapered and adapted to be inserted between the plaster cast and the flesh of the patient, substantially as described.

2. In a tool for cutting plaster casts, the combination with a frame, of a shaft journaled to rotate in the frame, a circular saw mounted on the shaft outside of the frame, and a guard secured to the frame and extending below and in advance of the saw, the front end of said guard being tapered and adapted to be inserted between the plaster cast and the flesh of the patient, said guard being provided with a groove in its upper face within which the lower portion of the saw rotates, substantially as described.

3. In a tool for cutting plaster casts, the combination with the frame, of a shaft journaled to rotate in said frame, a circular saw mounted on the shaft outside the frame, a guard secured to the frame, said guard being in the form of an angle-bar with its vertical arm secured to the frame and its foot portion extending beneath and in advance of the circular saw, the vertical arm being reduced in thickness at its lower portion to permit it to pass freely through the cut in the plaster cast formed by the saw, substantially as described.

4. In a tool for cutting plaster casts, the combination with the frame, a shaft journaled therein, a crank-handle secured to one end of the shaft and a saw mounted upon the other end of the shaft, of a guard secured to the frame and extending below the saw, said guard being adapted to be reversed and secured to the frame either in front or in the rear of the saw, substantially as described.

5. In a tool for cutting plaster casts, the combination with a frame provided with a handle, a shaft journaled in said frame, a crank-handle on one end of said shaft and a saw mounted on the opposite end of the shaft, of a guard secured to the frame, said guard being in the form of an angle-bar, the vertical arm of which is reduced in thickness near its lower end for the purpose specified, and the horizontal or foot portion of the guard tapering from its rear to its front end and being provided with a slot within which the lower portion of the saw rotates, substantially as described.

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

JAMES O. PEARSON.

Witnesses:
CHARLES R. KREIDLER,
GEO. W. HAGADORN.