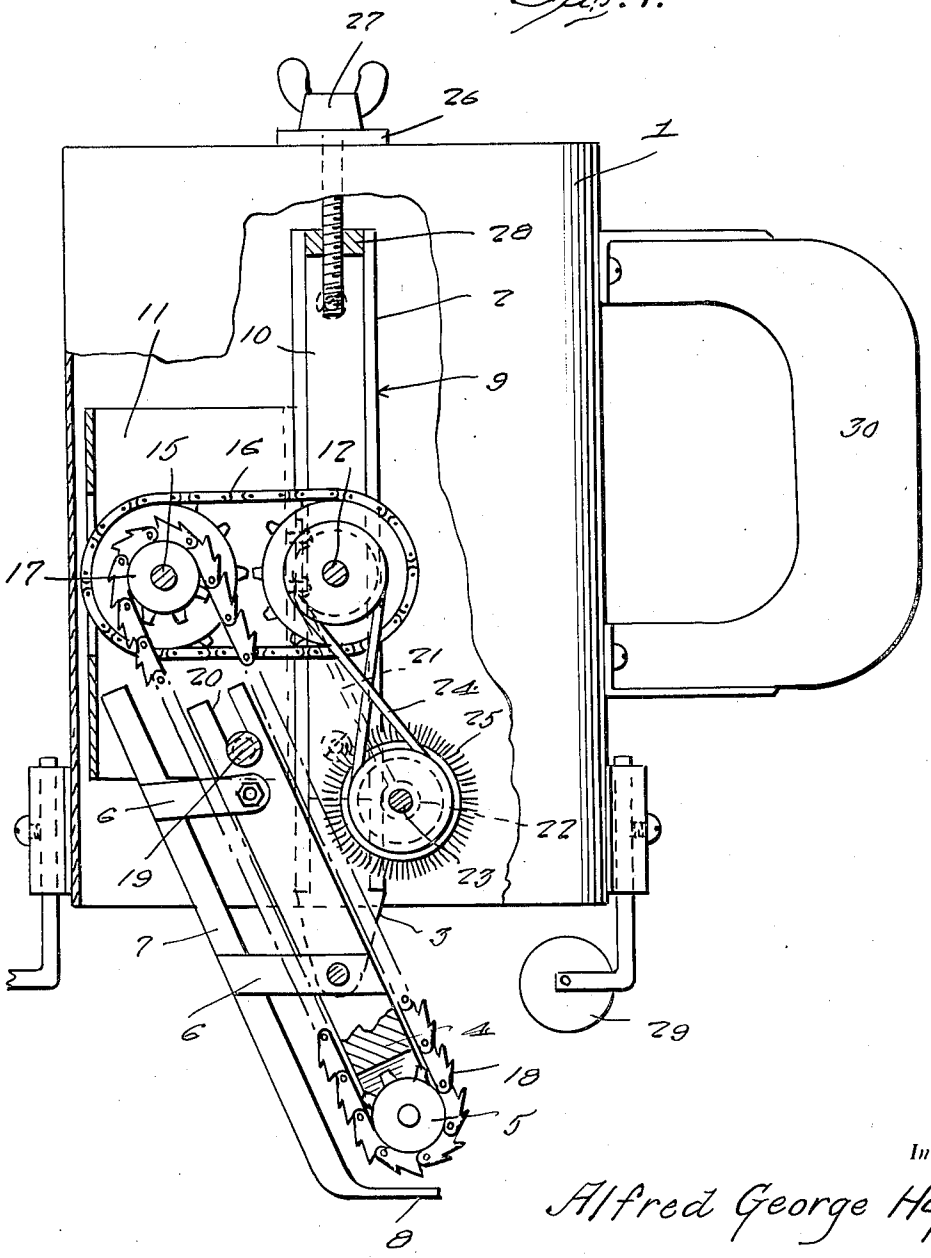
July 28, 1942. A. G. HOPE 2,291,470

PLASTER CAST CUTTER

Filed May 21, 1941 3 Sheets-Sheet 1

Fig. 1.



Inventor

Alfred George Hope

By Clarence A. O'Brien

Attorney

July 28, 1942. A. G. HOPE 2,291,470

PLASTER CAST CUTTER

Filed May 21, 1941 3 Sheets-Sheet 2

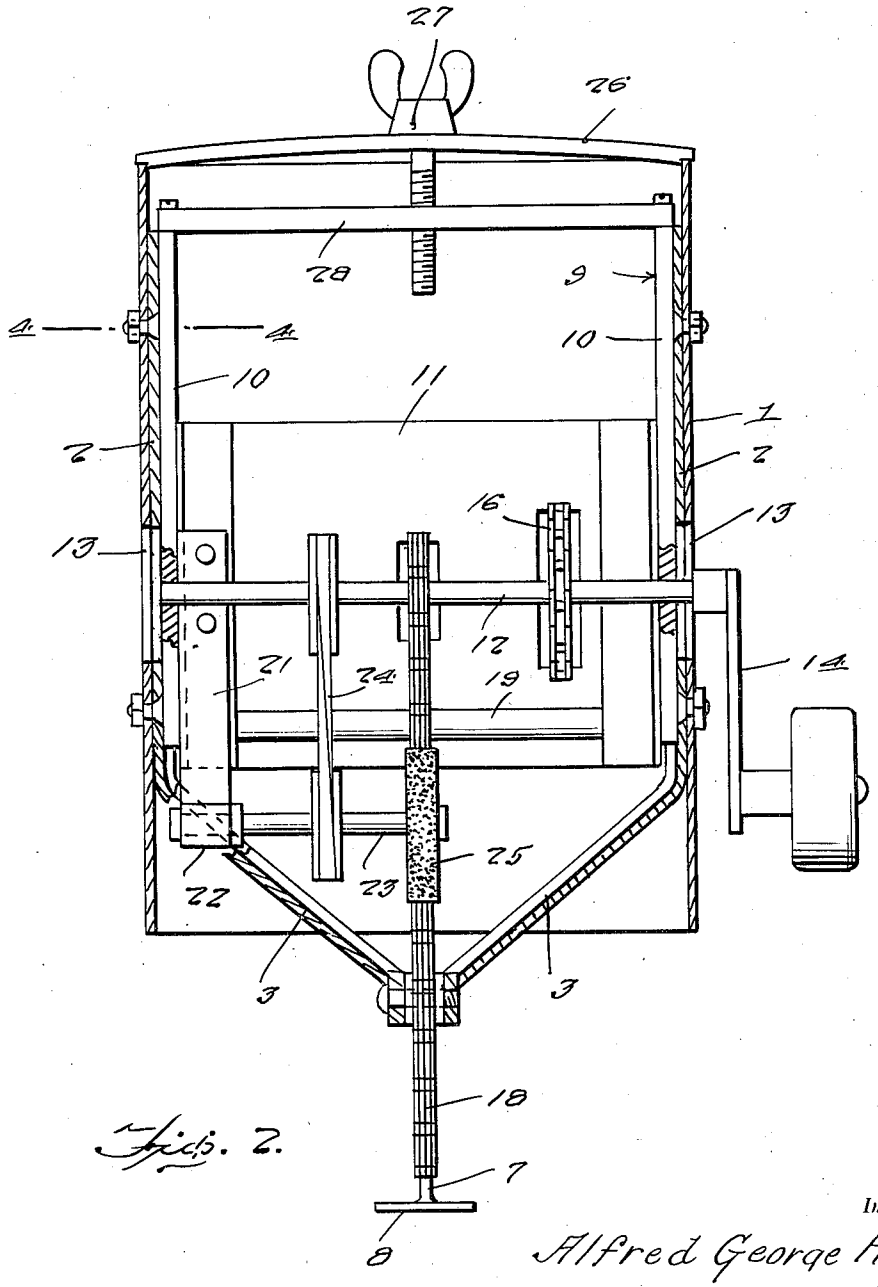


Fig. 2.

Inventor

Alfred George Hope

By Clarence O'Brien

Attorney

July 28, 1942. A. G. HOPE 2,291,470

PLASTER CAST CUTTER

Filed May 21, 1941 3 Sheets-Sheet 3

Fig. 3.

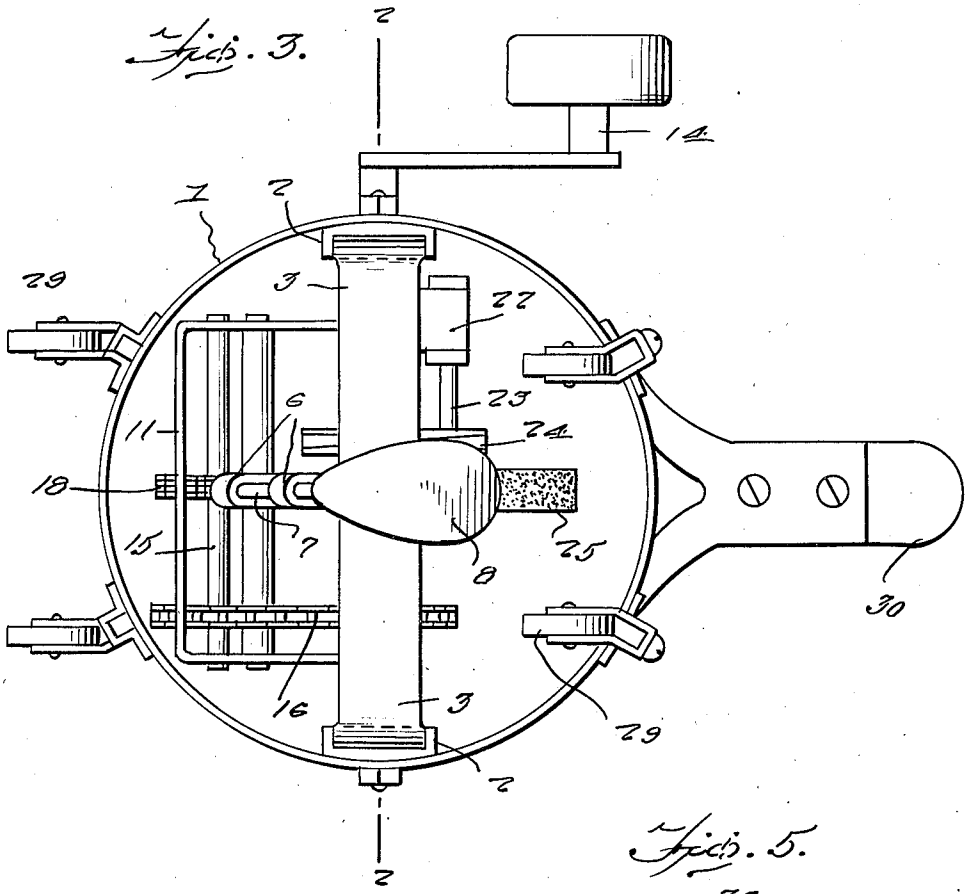


Fig. 4.

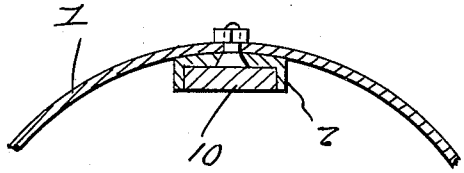
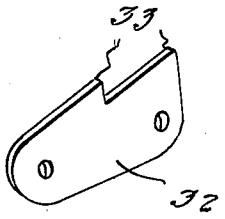


Fig. 5.



Inventor

Alfred George Hope

By Clarence O'Brien

Attorney

Patented July 28, 1942

2,291,470

UNITED STATES PATENT OFFICE

2,291,470

PLASTER CAST CUTTER

Alfred George Hope, Flint, Mich.

Application May 21, 1941, Serial No. 394,551

2 Claims. (Cl. 30—166)

The present invention relates to new and useful improvements in plaster cast cutters and has for one of its important objects to provide, in a manner as hereinafter set forth, a device of this character comprising an endless chain saw for performing the cutting operation, together with novel means for manually actuating said saw.

Another very important object of the invention is to provide a plaster cast cutter of the aforementioned character which embodies unique means whereby the tension of the endless chain saw may be expeditiously adjusted or regulated as desired.

Still another very important object of the invention is to provide a plaster cast cutter of the character described comprising means for cleaning the saw.

Other objects of the invention are to provide a plaster cast cutter which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, safe and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view partially in vertical section and partially in side elevation, showing a plaster cast cutter constructed in accordance with the present invention.

Figure 2 is a vertical sectional view through the device, taken substantially on the line 2—2 of Figure 3.

Figure 3 is a bottom plan view.

Figure 4 is a fragmentary view in horizontal section, taken substantially on the line 4—4 of Figure 2.

Figure 5 is a detail view in perspective of one of the toothed links of the endless chain saw.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a vertical cylindrical casing 1 of suitable material and dimensions, said casing being open at its upper and lower ends. Secured on diametrically opposite sides of the cylindrical casing 1 is a pair of substantially channel-shaped, vertical guides 2. The lower portions of the guides 2 are turned inwardly in a manner to provide converging arms 3 having secured therebetween an inclined saw frame 4. Journaled on the lower end portion of the frame 4 is a sprocket 5. Secured by arms 6 on the back of the frame 4 and in spaced relation thereto is a guard 7. At its lower end, the guard 7 terminates in a forwardly projecting foot 8.

Slidably mounted for vertical adjustment in the guides 2 is a substantially U-shaped frame 9. Mounted on the vertical legs 10 of the U-shaped frame 9 is a rearwardly projecting bracket or the like 11. Journaled in the legs 10 of the frame 9 is a drive shaft 12. Vertical slots 13 in the cylindrical casing 1 accommodate the end portions of the drive shaft 12. Fixed on one end portion of the shaft 12 is an operating crank 14. The guides 2 are also vertically slotted for the end portions of the shaft 12.

Journaled in the bracket 11 is a transverse shaft 15 which parallels the shaft 12. The shaft 15 is driven from the shaft 12 by a chain and sprocket connection 16.

Fixed on the shaft 15 is a sprocket 17. Trained over the sprockets 5 and 17 is an endless chain saw 18. It will be noted that the frame 4 extends between the flights of the endless chain saw 18. It will also be observed that the saw 18 is operatively connected to the shaft 12 for actuation thereby. The guard foot 8 extends forwardly beneath the lower end portion of the saw 18. Mounted transversely in the lower portion of the bracket 11 is a circumferentially grooved rod 19 which is engaged in a vertical slot 20 which is provided therefor in the upper end portion of the frame 4. The rod 19 constitutes a brace for steadying the upper end portion of the frame 4.

Extending downwardly and forwardly from one side portion of the bracket 11 is a hanger 21. Journaled in a bearing 22 on the lower end of the hanger 21 is a shaft 23. A belt and pulley connection 24 drives the shaft 23 from the shaft 12. Fixed on one end portion of the shaft 23 is a brush 25 for cleaning the saw 18.

Mounted on top of the cylindrical casing 1 is a bar 26. Rotatably mounted in the bar 26 is a thumb screw 27. The thumb screw 27 is threadedly connected to the upper bar 28, of the substantially U-shaped frame 9 for raising and lowering said frame with the elements mounted thereon. When this occurs the shaft 12 moves vertically in the slots 13.

Adjustably mounted on the lower end portion of the casing 1 is a plurality of supporting wheels or rollers 29. Mounted on the front of the casing 1 is a handle 30.

It is thought that the operation of the device

will be readily apparent from a consideration of the foregoing. Briefly, the handle **30** is gripped with one hand and the device is pulled over the cast to be cut on the supporting wheels or rollers **29**. The foot **8** travels between the cast and the patient. As the device is thus drawn over the cast the shaft **12** is actuated with the other hand for driving the endless chain saw **18**. In this manner the cast is expeditiously but safely cut. As the saw **18** leaves the cast the rotary brush **25** removes any plaster and other matter that may adhere to the teeth and links of said saw. By turning the thumb bolt **27** the frame **9** with the parts assembled thereon may be raised or lowered for regulating the tension of the endless chain saw **18**. There is enough looseness or play between the rod **19** and the frame **4** and between other parts to permit sufficient movement in this manner. As seen in Figure 5 of the drawings, the endless saw **18** comprises pivotally connected links **32**, each link having formed thereon two teeth **33**.

It is believed that the many advantages of a plaster cast cutter constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. A plaster cast cutter comprising a vertical, cylindrical casing open at its ends, a pair of vertical guides mounted in said casing, inturned arms on the lower ends of said guides, a frame mounted on said arms and projecting from the lower end of the casing, a sprocket journaled in the lower end portion of said frame, a frame slidably mounted in the guides, a sprocket journaled in the second named frame, an endless chain saw trained over the sprockets, means for shifting the second named frame in the guides for regulating the tension of said saw, a rotary brush mounted on the second named frame and engageable with the saw for cleaning same, and common means mounted on the second named frame for actuating the saw and the brush.

2. A plaster cast cutter comprising a vertical, cylindrical casing open at its ends, a pair of substantially channel-shaped diametrically opposite guides mounted vertically in said casing, the casing having vertical slots therein, converging arms on the lower ends of the guides, an inclined frame mounted between the arms and projecting downwardly from the casing, a substantially U-shaped frame slidably mounted in the guides, a shaft journaled in the second-named frame and operable in the slots in the casing, means for actuating said shaft, a bracket mounted on the second-named frame and operable therewith in the casing, a sprocket rotatably mounted on the bracket, means operatively connecting the shaft to said sprocket, a sprocket rotatably mounted on the lower end portion of the first-named frame, an endless chain saw trained over the sprockets, a bar mounted on the upper end of the cylinder, and a screw member rotatably mounted in said bar and threadedly connected to the second-named frame for raising and lowering same for regulating the tension of the chain saw.

ALFRED GEORGE HOPE