Jan. 24, 1933. J. J. STALEY 1,895,053

PROP FOR MINES AND MEANS FOR WITHDRAWING THE SAME

Filed Feb. 27, 1931

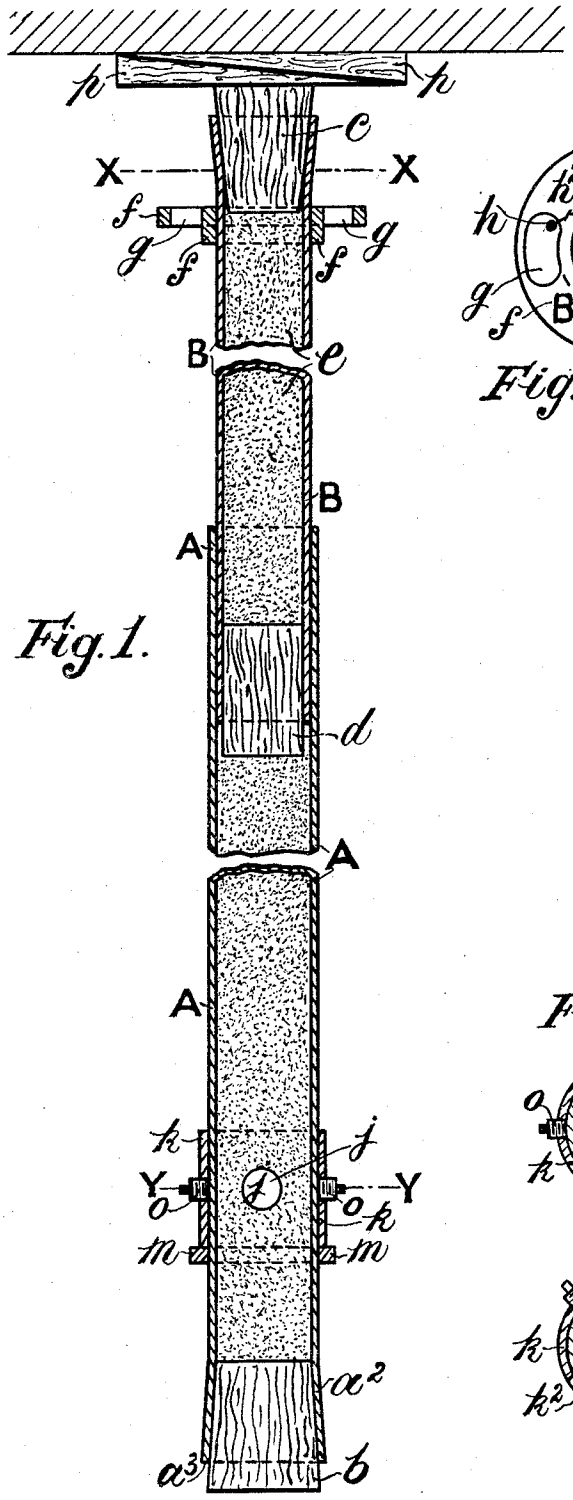


Fig. 1.

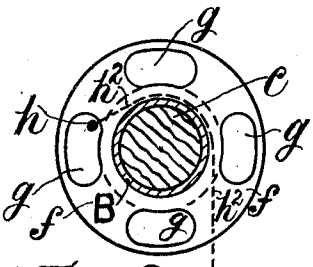
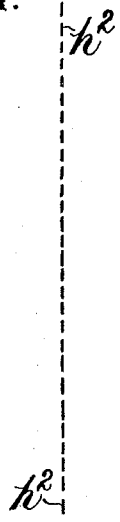
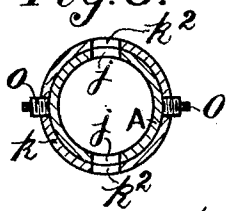


Fig. 2.







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UNITED STATES PATENT OFFICE

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PROP FOR MINES AND MEANS FOR WITHDRAWING THE SAME

Application filed February 27, 1931, Serial No. 518,802, and in Great Britain July 15, 1930.

An application has been filed in Great Britain July 15, 1930.

My invention relates to a new or improved prop for mines and means for withdrawing the same, the object being to provide a prop of a durable character and one which can be easily fixed in position and safely withdrawn when necessary.

My invention consists essentially of a pit prop comprising two tubular metal parts, the upper part being filled with a suitable strengthening material and having a wood plug or block projecting at the upper end thereof, the upper tubular portion of the prop being slidable and also rotatable inside the lower metal portion which is charged with a fine filling material; said lower tubular portion being provided with discharge holes normally covered by a rotatable or movable perforated cap or cover; a wood plug or block projecting at the lower end of the bottom tube to make firm contact with the ground; the prop being secured in position by forcing a wooden wedge, or wedges between the head of the prop and the roof, lid, or bar.

My invention will be fully described with reference to the accompanying drawing.

Description of the drawing

Fig. 1 is a sectional elevation of my improved prop which is shown broken off for convenience in drawing, but it will be understood that the prop can be constructed to any desired length,

Fig. 2 is a sectional plan through X—X of Fig. 1,

Fig. 3 is a cross section through Y—Y of the lower portion of the prop illustrating the discharge holes open, and

Fig. 4 is a similar view to Fig. 3 showing the discharge holes closed by a cap or cover.

My improved pit prop is constructed of two tubular parts A and B, the upper part B being of a slidable fit in the lower portion A. The lower end of the tubular prop is of conical formation at a^2 closed by a hard wood plug or block b arranged to project a sufficient distance from the edge a^3 of the tube. The hard wood plug or block b is of greater diameter or size at its lower end so as to make firm contact with the ground. The lower portion A of the prop is partly filled with sand or similar fine material.

The upper tubular portion B of the prop has its upper end of conical formation to accommodate a projecting hard wood plug or block c. The lower end of the said tube being closed by a wood plug d after the sand or fine filling material e has been placed therein to strengthen same.

On the upper portion B of the prop is fixed a collar f (see sectional plan Fig. 2) having slots g preferably of elongated formation, four of these slots being shown at Fig. 2. The said slots g enable a hook h on a chain h^2 to engage therewith when it is desired to draw the prop as will be herein described.

The lower tubular portion of the prop is provided with two discharge holes j, these holes being normally closed by a movable cap or cover k having holes k^2, the cap or cover k resting on a fixed ring m. Fig. 3 shows the holes k^2 in the cap or cover k opposite the discharge holes j of the lower tubular portion A and Fig. 4 shows the cap covering the discharge holes j, to prevent the discharge of fine material, this closed position being when the prop is supporting the load.

As illustrated at Fig. 2 the chain h^2 passes round the face of the filled tubular portion B the hook engaging the slot at the left hand side of Fig. 2 so that when the long chain h^2 is pulled the upper tubular portion B is sufficiently rotated to displace a quantity of the filling material through the discharge holes by which means the height of the prop is reduced and it falls. When the prop is required for use again the lower portion is again partly filled with fine filling material and the upper portion is placed inside the bottom portion of the prop, the discharge holes j in the bottom portion of the prop being now covered by the cap or cover k which may be fixed in position by grub screws o or other suitable fastening.

The holes g in the flange f enable the miner's lamp to be easily suspended from the prop, when the hook of the lamp has been passed through one of the holes.

My new pit prop is operated as follows:— Assuming the prop has been charged with the necessary quantity of fine filling material and is of the required height it is firmly fixed in supporting position by the use of two oppositely inclined wood wedges p driven between the head of the prop and the roof, lid, or bar.

To withdraw the prop the cap or cover is partly rotated until the holes are opposite the discharge holes j in the tubular portion. The long chain h^2 (Fig. 2) having its hook connected to the hole g is drawn tight and a gradual pull is exerted in order to partly rotate the upper portion of the prop, the action of which expels a quantity of the fine filling material through the discharge holes j, consequently reducing the height of the prop and it falls. The chain h^2 may be connected to the usual prop drawer or be operated in any suitable way. The use of a long chain h^2 enables the prop to be withdrawn from a distance, there being no necessity for anyone to go near to the prop after it has been connected for drawing.

When the prop has been drawn in the manner described the lower tubular part is again partly filled with fine filling material, the upper portion of the prop is placed with its lower end inside the lower portion and in contact with the filling material when it is ready for use again.

Instead of employing the collar f with slots g therein for the hook h of the chain to take into, the collar f may be provided with suitable lugs or projections or other suitable means to connect the chain.

What I claim as my invention and desire to secure by Letters Patent is:—

In props for mines, the combination of a tubular member having a flared end, a tapered wooden or like plug disposed in the flared end of said member, a wooden or like plug disposed in the opposite end of said tubular member, a second tubular member into which the first tubular member is adapted to telescope, said tubular member having a flared end, a tapered wooden or like plug adapted to be disposed in the flared end of said tubular member and a slotted collar mounted on the first mentioned tubular member to which can be connected the prop withdrawing means.

In testimony whereof I have hereunto set my hand.

JOHN JAMES STALEY.