J. H EICKERSHOFF.

MINE PROP.

APPLICATION FILED JULY 13, 1909.

**969,851.** **Patented Sept. 13, 1910.**

FIG. 1

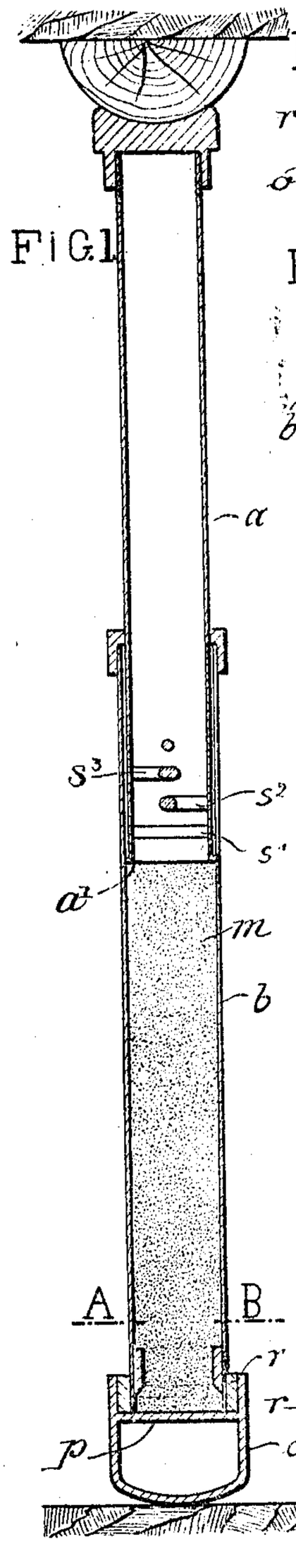


FIG. 4, C-D.

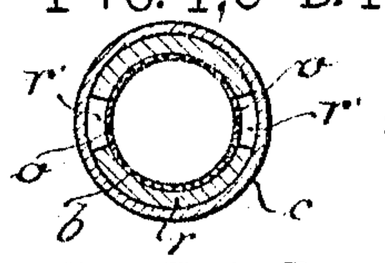


FIG. 5, E-F.

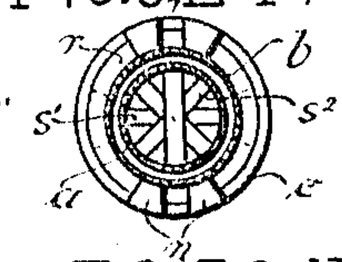


FIG. 3, A-B.

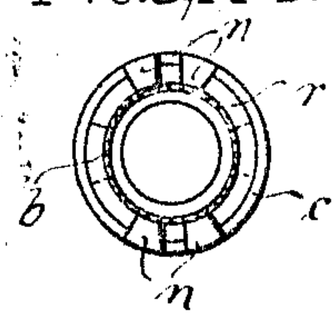


FIG. 7, G-H

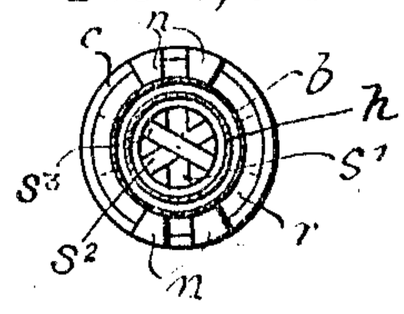


FIG. 2.

FIG. 6.

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# UNITED STATES PATENT OFFICE.

JOHN H. EICKERSHOFF, OF DUSSELDORF, GERMANY.

## MINE-PROP.

969,851. Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed July 13, 1909. Serial No. 507,374.

*To all whom it may concern:*

Be it known that I, JOHN H. EICKERSHOFF, a citizen of the United States, residing at Dusseldorf, Germany, have invented new and useful Improvements in Mine-Props, of which the following is a specification.

This invention relates to a mine prop composed of a lower tubular member containing a granular charge and of an upper tubular member telescoped by the lower member and supported by said charge. The construction is such that as the upper member is forced into the lower member by the load pressure, the area of the pressure bearing surface presented by the upper member to the granular charge is gradually increased, and that an increase of such pressure must take place prior to any subsequent change in the length of the prop.

In the accompanying drawing: Figure 1 is a longitudinal section of my improved mine prop; Fig. 2 a similar section through part of the prop, showing the parts in a different position; Fig. 3 a cross section on line A—B, Fig. 1; Fig. 4 a cross section on line C—D, Fig. 2; Fig. 5 a cross section on line E—F, Fig. 2; Fig. 6 a longitudinal section of a modification of the prop; and Fig. 7 a cross section on line G—H, Fig. 6.

The prop is composed essentially of a pair of telescoping tubular members *a*, *b*, of which the lower member *b*, is filled with a charge of sand or similar granular material. Within the lower end of upper member *a*, are fitted a number of braces shown to consist of a series of horizontal bars or traverses $s'$, $s^2$, $s^3$, arranged in different vertical planes and traversing member *a*, in different diametric directions.

In its initial position the lower edge $a'$, of member *a*, will rest upon the surface of the sand *m*, contained in member *b*. Upon an increase of pressure, member *a*, will be forced into the sand until the lowermost brace $s'$, comes into contact therewith. In this position the prop will be retained until it is subjected to an additional pressure, when member *a*, will sink into the sand up to brace $s^2$. Thus, it will be seen that the area of the pressure bearing surface is increased by a descent of the upper prop member, and that an increase of load pressure must take place before the length of the prop is changed.

Lower member *b*, is supported upon the false bottom plate *p*, of a hollow foot *c*. The upper end of foot *c*, encompasses the lower end of member *b*, and is of such a diameter as to form an intervening recess adapted for the accommodation of an annular valve *r*. This valve is provided with openings $r'$, adapted to register simultaneously with diametrically arranged outlet openings *o*, of member *b*, and with inlet openings $p'$, of plate *p*. When valve *r*, is so turned by its handles *n*, that communication is established between the interior of member *b*, and the interior of foot *c*, the sand will flow from the former into the latter, thus shortening the prop to such an extent that it may be readily released from its supporting position. Upon tilting the prop upside down, the sand may be made to reenter member *b*, so that any waste of sand is prevented.

In Figs. 6 and 7, a tubular sleeve *h*, is fitted into lower end of member *a*, so as to project into member *b*, and find a bearing upon the sand with its lower edge *f*. Sleeve *h*, has a flange *g*, engaged by member *a*, and a shoulder $f'$, that constitutes an additional bearing surface adapted to come into action after the sleeve has been partly pressed into the sand. Above shoulder $f'$, the sleeve is provided with the superposed diametrically extending braces $s'$, $s^2$, $s^3$, previously described.

I claim:

A mine prop comprising a lower tubular member, an inclosed granular charge, an upper tubular member telescoped by the lower member, and a series of spaced superposed braces extending diametrically across the upper member and adapted to successively enter the charge.

JOHN H. EICKERSHOFF.

Witnesses:

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