

(No Model.)

W. B. PLESS.
BOOM FOR DREDGES.

No. 512,898.

Patented Jan. 16, 1894.

Fig. 1.

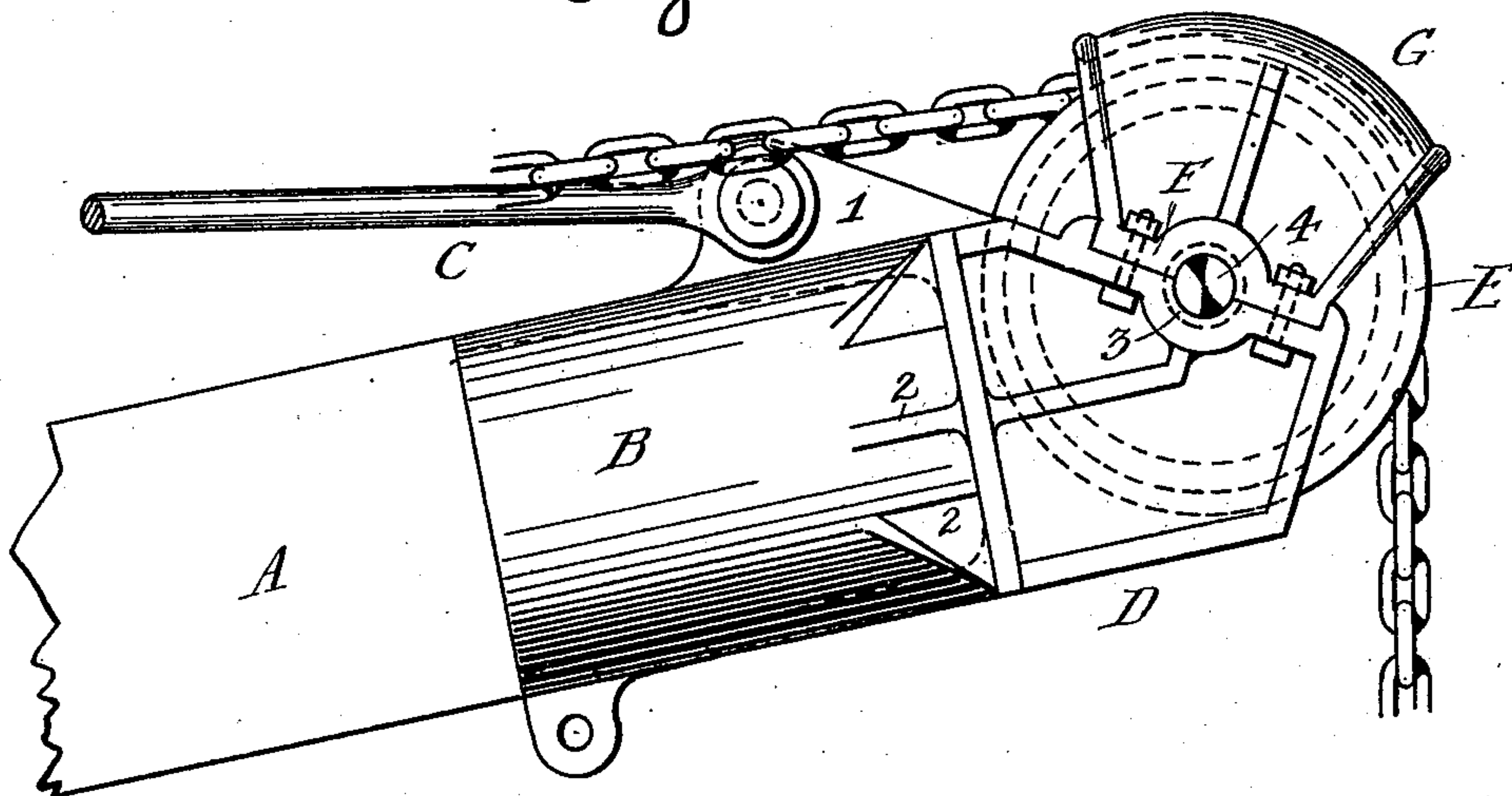
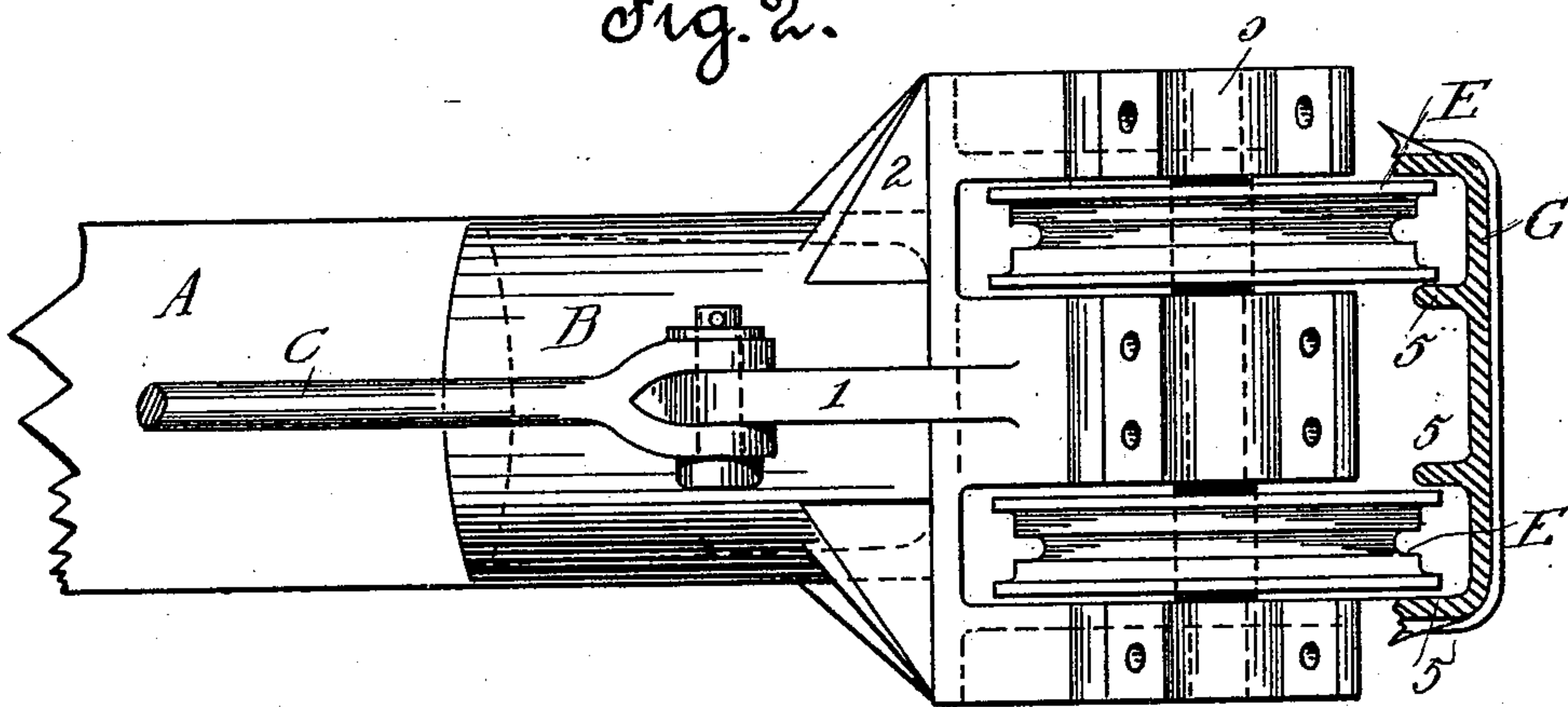


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM B. PLESS, OF STOCKTON, CALIFORNIA, ASSIGNOR TO THE PLESS
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BOOM FOR DREDGES.

SPECIFICATION forming part of Letters Patent No. 512,898, dated January 16, 1894.

Application filed June 6, 1893. Serial No. 476,739. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. PLESS, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Booms for Dredgers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to dredgers of the class ordinarily known as clam-shell dredgers in which an excavating bucket is suspended by means of a swinging boom from chains which pass over the end of the boom and are connected to winding machinery upon the hull of the dredger.

My present invention relates particularly to an improved construction of the parts at the end of the boom, the object being to invariably preserve the alignment of the chains no matter to what extent the boom itself should become twisted by the strain put upon it.

A further object is to prevent any danger of the suspension chains slipping off the sheaves over which they pass.

My invention consists in certain details of construction all of which are fully hereinafter described, and are shown in the accompanying drawings, in which—

Figure 1, is a side elevation of the end of the boom; Fig. 2, a plan view of the same.

It should be understood that in dredgers of this type as ordinarily constructed, the suspension chains of the buckets are led through one or more holes in the boom itself and thence to the winding machinery. Besides causing an injurious amount of wear to the timber of the boom and rendering it weaker to a certain extent by cutting holes in it, the main objection to this manner of carrying the chains is, that the boom under the strains to which it is subjected, and sometimes by exposure to the elements, is warped or twisted to such an extent that the holes through which the chains pass are brought out of their proper vertical alignment, so that the chains can no longer pass freely through them. My invention obviates these defects in the way which will now be described.

In the drawings A, represents the boom of a dredger formed of a single piece of timber, usually of square cross section. Where my

construction is employed the extreme end of the boom as shown in the drawings, is formed into cylindrical shape for a short distance. Upon this cylindrical portion fits a sleeve B. This sleeve is cast with a lug 1, to which is bolted the forward link of the hog chain C, which, as is well understood, extends back and is swiveled to the casting at the top of the mast and a frame of the dredger.

Cast with the sleeve and projecting forward is an open frame D, braced by strengthening wings or ribs 2. In this frame are formed bearings 3, 3, to receive the transverse pin 4, upon which pin are loosely journaled the sheaves E, E. The upper part of the bearings for the pin is formed by a plate F, to which is secured an overhanging hood G, which rises above the sheaves when the latter are in place, and partly incloses them. This hood is at a sufficient distance from the sheaves, as shown in Fig. 2, to give a good clearance for the chains passing over the sheaves, and at the same time to prevent them from slipping off in any direction. For better security the hood is provided with flanges 5, 5, Fig. 2, which extend down to, or a little beyond, the extreme periphery of each sheave. When the parts are in place, the square portion of the boom will prevent the sleeve from sliding upon the cylindrical portion. The weight of the chains and bucket will always keep the sleeve in engagement with the boom while at the same time any twist or warping on the part of the boom will be made independently of the sleeve on account of the parallel cylindrical bearing between the two parts. The alignment of the sheaves with the chains is thus always preserved, so that the chains will under all circumstances run freely over the end of the boom.

The only advantage possessed by the old manner of carrying the chains through holes in the boom itself is to insure the retention of the chains on the boom; and the same advantage is here produced together with greater freedom of movement for the chains by using sheaves with deep flanges in connection with the hood or guard.

What I claim is—

1. In combination with the boom of a

dredger, and with its supporting hog chain or tension rod a loose sleeve fitting the cylindrical end of the boom, a frame forming part of said sleeve, sheaves for the dredger chains
5 journaled in said frame, and a hood or guard for retaining said chains on the sheaves, substantially as set forth.

2. In combination with the boom of a dredger, a frame or box on the end of the
10 boom, sheaves supported in said frame, a

guard or hood, and ribs or flanges projecting from said guard into the space between the sheaves, substantially as described.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 26th 15 day of May, 1893.

WILLIAM B. PLESS.

Witnesses:

CLARENCE T. CLEVE,
A. MCKENZIE.