(No Model.) 2 Sheets—Sheet 1.

D. C. CHADDOCK.

HAY RAKE AND LOADER.

No. 475,752. Patented May 31, 1892.

Fig 1

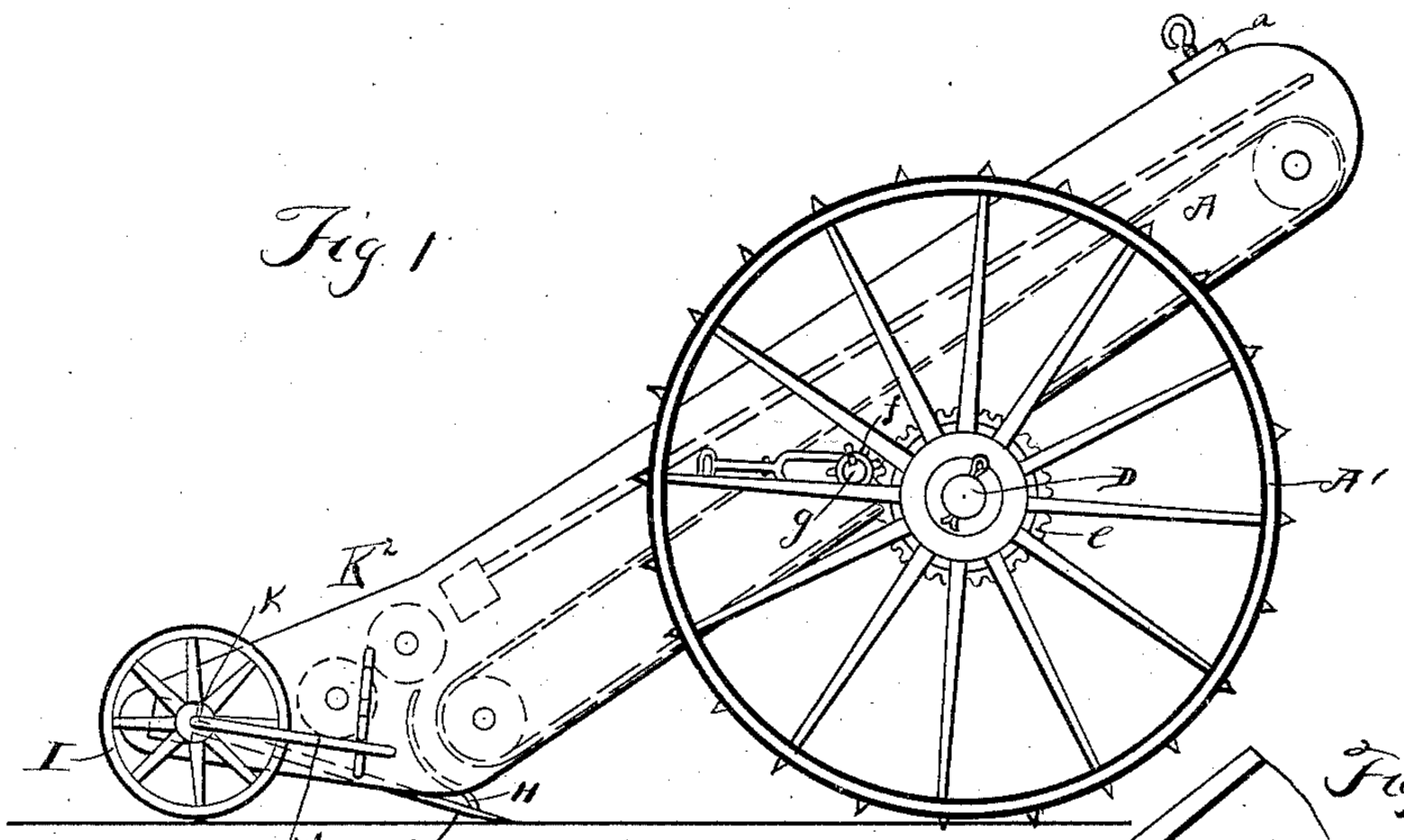

Fig. 2

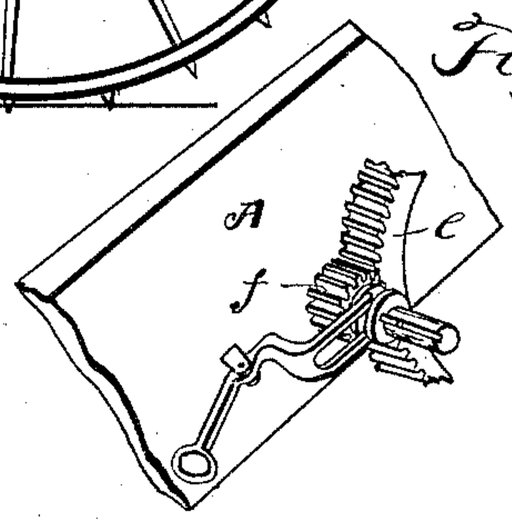

Fig. 3

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4

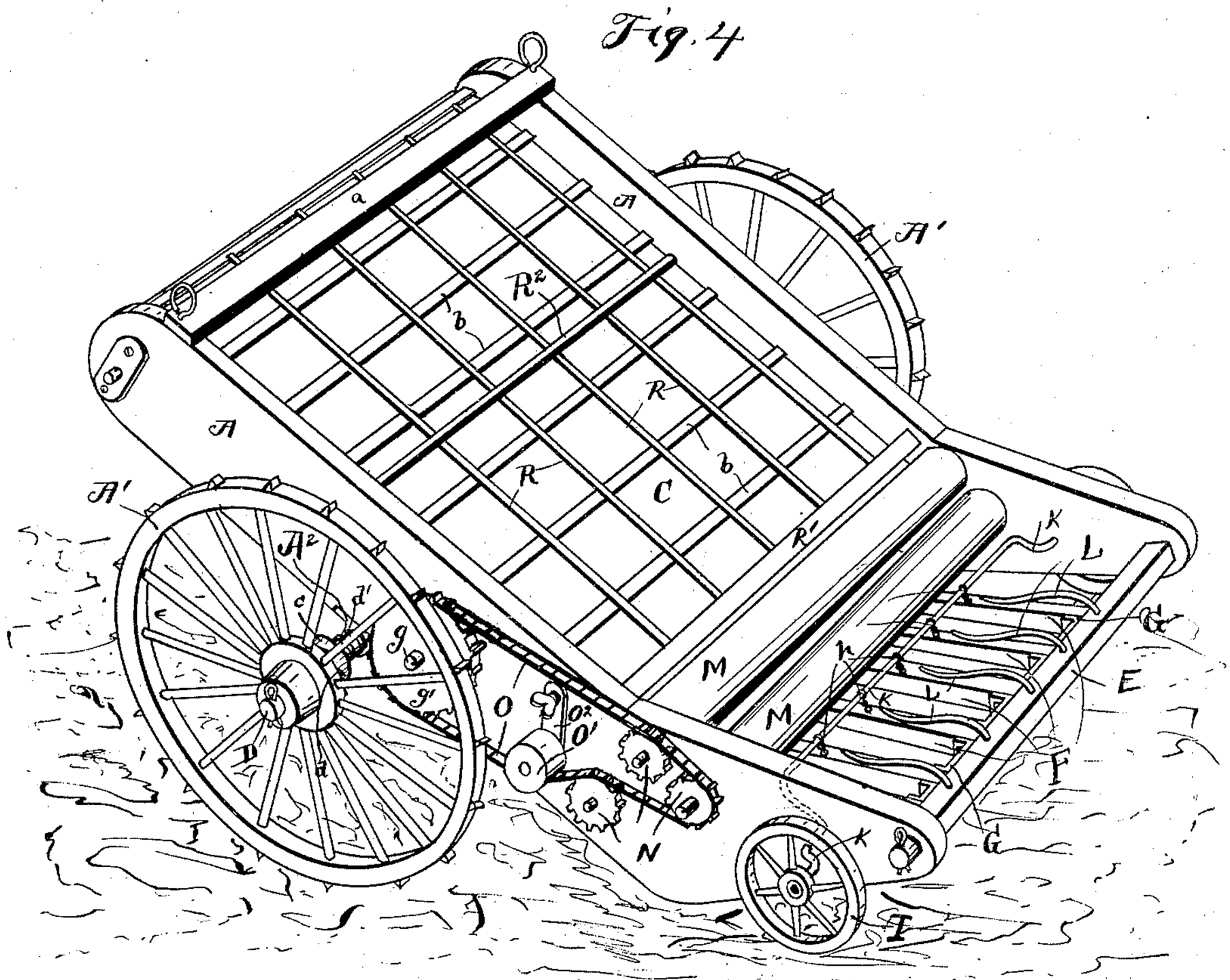

Fig. 8.

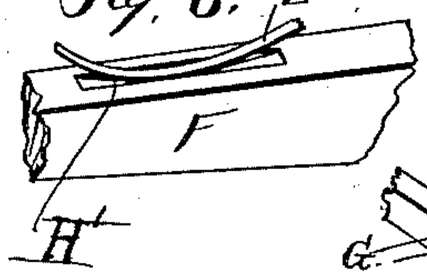

Fig. 5

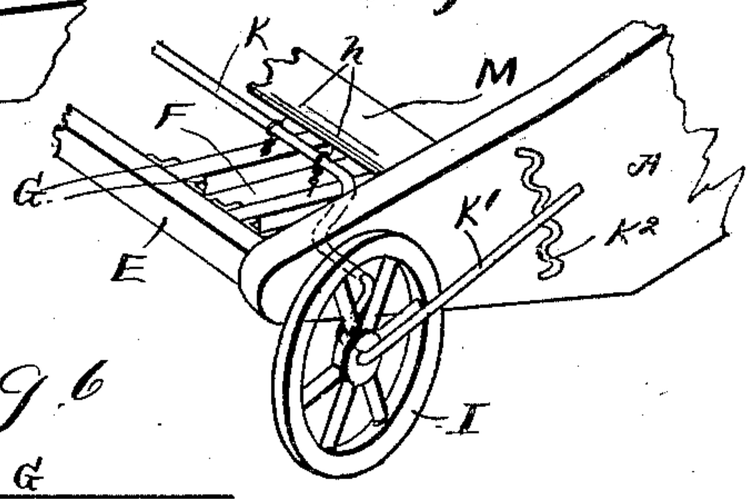

Fig. 7

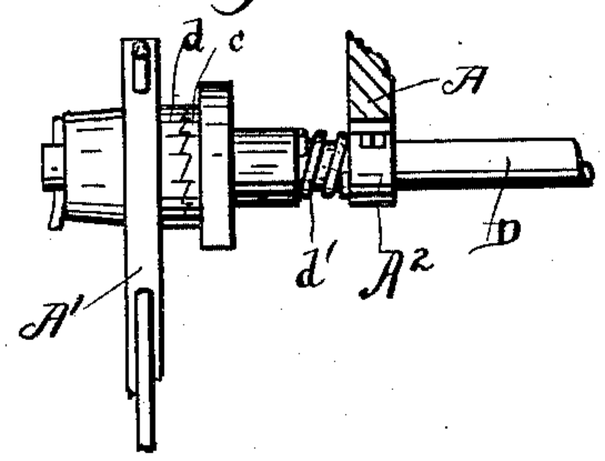

Fig. 6

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UNITED STATES PATENT OFFICE.

DAVID C. CHADDOCK, OF MINERVA, OHIO.

HAY RAKE AND LOADER.

SPECIFICATION forming part of Letters Patent No. 475,752, dated May 31, 1892.

Application filed November 14, 1891. Serial No. 411,842. (No model.)

To all whom it may concern:

Be it known that I, DAVID C. CHADDOCK, a citizen of the United States, residing at Minerva, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Hay Rakes and Loaders; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation showing the device set in proper position for raking and elevating hay or other material. Fig. 2 is a detached view showing a portion of the web-propelling wheel and its pinion, together with the yoke for throwing said pinion in and out of gear. Fig. 3 is a longitudinal section of the elevating-web and a transverse section of the rollers. Fig. 4 is a perspective view. Fig. 5 is a view showing a portion of one of the side pieces and one of the rear wheels, together with portions of the tooth elevating and lowering bar and a portion of the tooth-bar. Fig. 6 is a detached view of a portion of the tooth-bar, showing portions of two teeth properly attached thereto. Fig. 7 is a side view of one of the interlacing clutches or ratchets. Fig. 8 is a detail showing the groove in one of the rake-teeth for engaging the spring.

The present invention has relation to hay rakes and loaders; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, A represents the side pieces, which are held the desired distance apart by means of suitable cross-pieces, such as *a*, any desired number of cross-pieces being employed to securely hold the side pieces together. To the side pieces A are journaled the rollers B and B′, around which rollers is placed the elevating-web C, which web is provided with any desired number of cleats, such as *b*.

To the axle D are securely attached the ratchets *c*, said ratchets being so secured that they will move a short distance back and forth on the axle D and at the same time rotate the axle in one direction by means of the ratchets *d* interlocking with the ratchets *c*, the springs *d′* being for the purpose of normally holding the ratchets *c* and *d* together, as illustrated in Fig. 7. To the axle D is securely attached the cog-wheel *e*, which cog-wheel is for the purpose of communicating rotary motion to the pinion *f*, which pinion rotates the shaft *g*, the opposite end of said shaft *g* being provided with the sprocket-wheel *g′*. (Best seen in Fig. 4.) The rear portions of the side pieces A are extended upward, substantially as shown in Fig. 4, and to the rear ends of said side pieces A is attached the tooth-bar E, to which bar are pivotally attached the rake-teeth F, by means of the brackets G and the bolts G′.

The rake-teeth extend forward, substantially as shown in Figs. 1 and 3, and to the front or forward portions of said rake-teeth are securely attached the bent or curved arms H, which bent or curved arms are for the purpose hereinafter described.

For the purpose of supporting the rear ends of the side pieces A and the different parts attached thereto the traveling wheels I are provided, which traveling wheels are journaled to the bent or curved axle K. The portion of said axle to which the traveling wheels I are journaled is located below the pivotal point of said axle K in the frame A, and the portion of the axle located between the side pieces A being above its pivotal point.

To the axle K are attached in any convenient and well-known manner the chains *h*, and the bottom or lower ends of said chains are securely attached to the teeth F, said chains being for the purpose of elevating the front or forward ends of the rake-teeth F, as hereinafter described. To the axle K is securely attached the lever or arm K′, which lever or arm is for the purpose of imparting a rocking movement to the axle K, and for the purpose of holding the axle K at any desired point of adjustment the notched rack K^2 is provided, which rack is attached in any desired manner to one of the side pieces A.

When it is desired to place the teeth F in a position to rake, the free end of the lever or arm K′ is lowered, which in turn elevates the traveling wheels I and lowers the portion of

the axle K located between the side pieces A, and to which portion the chains *h* are attached, thereby permitting the teeth F to turn upon their pivotal points. It will be understood that as the traveling wheels I are elevated the rear ends of the side pieces A will be lowered to the same extent that said traveling wheels are elevated, or substantially so.

For the purpose of preventing the teeth F from sticking and at the same time causing said teeth to drop in unison the springs L are provided, which springs are securely attached at their rear ends to the bar E and extend forward, substantially as illustrated in Fig. 4, and are so adjusted that they will press or bear upon the top or upper sides of the rake-teeth F at points forward of the pivotal point of said rake-teeth.

For the purpose of assisting in guiding the hay or like material onto the web C the rollers M are provided, which rollers are journaled to the side pieces A and are located substantially as illustrated in Fig. 3. For the purpose of communicating rotary motion to the rollers B′ and M the sprocket-wheels N are provided, which sprocket-wheels are rotated by means of the drive-chain O, which drive-chain leads from the sprocket-wheel *g′*.

For the purpose of holding the sprocket-chain O tight the idler O′ is provided, which idler is journaled to the arm O^2, which arm is so attached that it can be swung so as to bring the idler O′ at the desired point of adjustment.

It will be understood that the rollers M are to be rotated in the opposite direction from the traveling wheels A′, thereby causing the bottom or under faces of the rollers M to move toward the elevating-web C, thereby assisting in moving the hay or like material forward onto the web.

The roller B′ is rotated in a direction that causes the top or upper part of the web C to move forward, thereby carrying its load forward.

For the purpose of preventing the hay from being blown from the web C as it is being elevated the spring-bars R are located above said web, substantially as illustrated in Fig. 4, and their bottom or lower ends attached to the bar R′, and for the purpose of assisting in holding the spring-bars R in proper position with reference to each other the cross-bar R^2 is provided, and to which cross-bar the spring-bars R are attached in any convenient and well-known manner. The spring-bars R are preferably formed of wood and are formed thin, so that they will easily bend in the event of large bunches of hay accumulating upon the web C.

The side pieces A are securely attached to the brackets A^2, to which brackets the axle D is properly journaled.

The bent or curved arms H are for the purpose of holding the hay or other material up against the elevating-web C, and thereby cause the elevating-web to remove the hay from said bent or curved arms. It will be understood that by my peculiar arrangement of the teeth F, I am enabled to adjust the points of said teeth to or from the ground and hold the same at any desired point of adjustment, and thereby prevent dirt from being gathered with the hay.

For the purpose of preventing the springs L from becoming detached from the teeth F the grooves H′ are provided and are formed on the top or upper sides of said teeth F, as illustrated in Fig. 8. For the purpose of avoiding confusion the grooves H′ are not shown in Fig. 4.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the side pieces or frame A, having journaled thereto the rollers B, B′, and M, the elevating-web provided with the cleats *b*, the axle D, the ratchets *c d*, the traveling wheels A′, the cog-wheel *e*, the pinion *f*, the shaft *g*, the sprocket-wheels *g′* and N, the drive-chain O, the pivoted rake-teeth F, provided with the bent or curved arms H, located behind the roller B, the springs L, and means for adjusting the rake-teeth.

2. The combination of the side pieces A, having journaled thereto the rollers B, B′, and M, the elevating-web C, and means for communicating motion to said web, the rake-teeth F, pivoted to the bar E, the bent or curved axle K, having journaled thereto the traveling wheels I below the pivotal point of said axle K in the frame A, the chains *h*, connected to said axle K and to the rake-teeth F, and the lever or arm K′, substantially as and for the purpose specified.

3. The combination of the side pieces A, an elevating-web, the pivoted rake-teeth F, provided with the arms H, the springs L, the bent or curved axle K, provided with the traveling wheels I and the lever or arm K′, the notched rack K^2, and the chains *h*, or their equivalents, substantially as and for the purpose specified.

4. In a hay rake and loader, the combination of the pivoted teeth F, provided with the arms H and the grooves H′, the springs L, the bent or curved axle K, and the chains *h*, or their equivalents, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DAVID C. CHADDOCK.

Witnesses:
CHAS. M. STANDS,
F. W. BOND.