

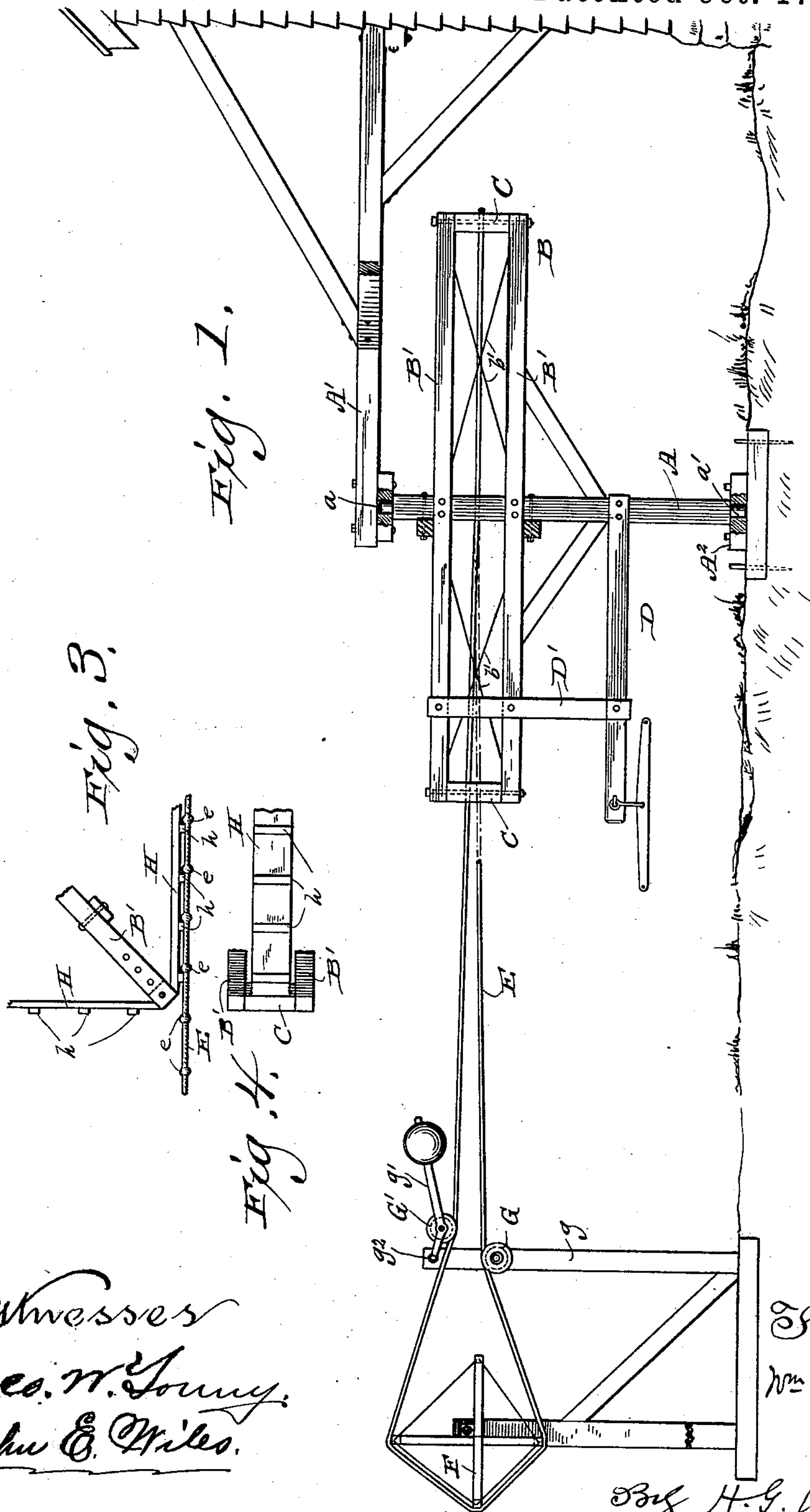
(No Model.)

2 Sheets—Sheet 1.

W. E. MITCHELL.
HORSE POWER MOTOR.

No. 506,924.

Patented Oct. 17, 1893.



Witnesses
Geo. W. Loring.
John E. Miles.

Inventor
Wm. E. Mitchell

By H. G. Underwood
Attorney

(No Model.)

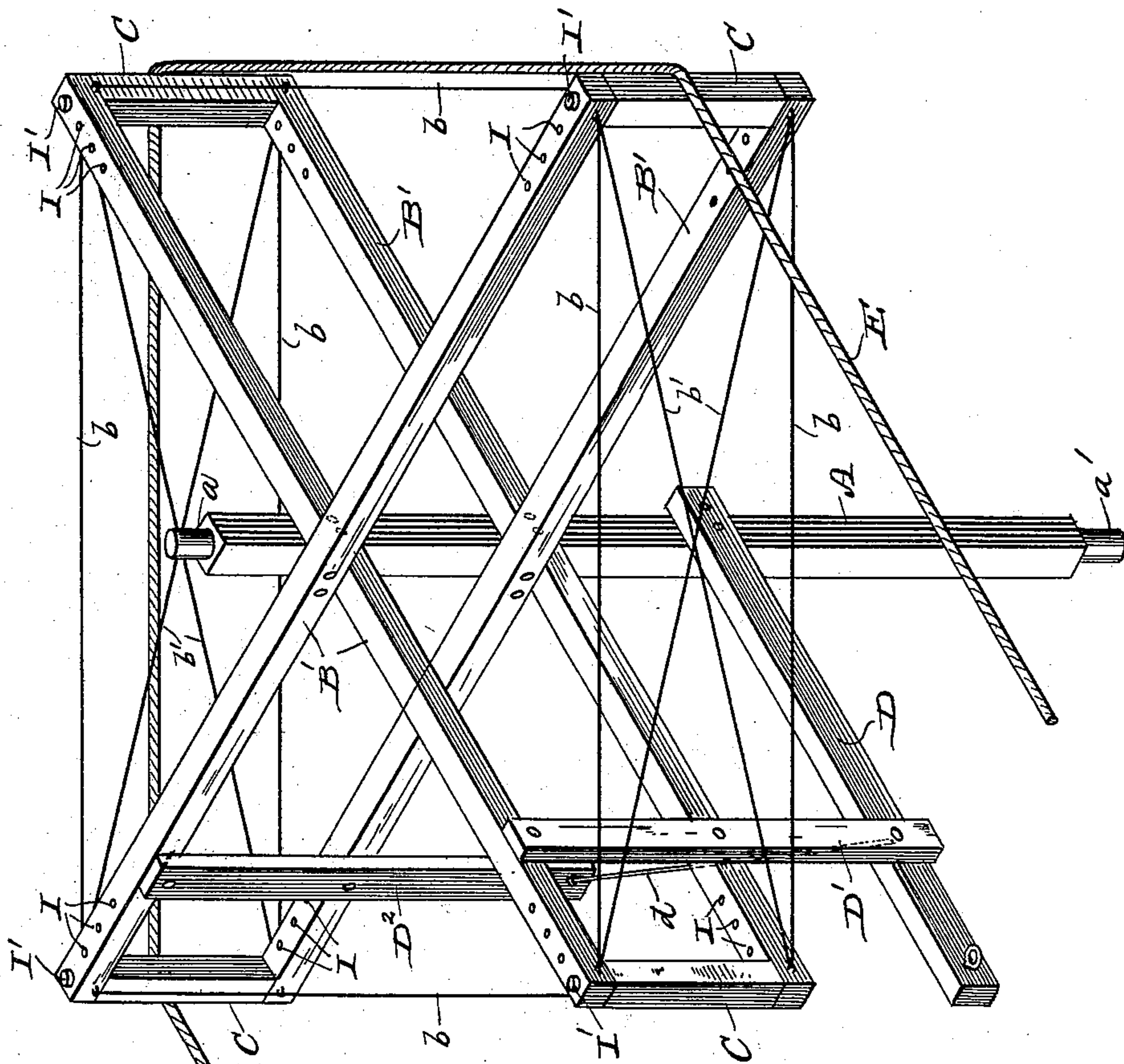
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Fig. 2.



Inventor

William E. Mitchell

By H. G. Underwood

Attorney

Witnesses,

Geo. W. Young

John E. Miles

UNITED STATES PATENT OFFICE.

WILLIAM E. MITCHELL, OF MERTON, WISCONSIN.

HORSE-POWER MOTOR.

SPECIFICATION forming part of Letters Patent No. 506,924, dated October 17, 1893.

Application filed January 10, 1893. Serial No. 457,906. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. MITCHELL, a citizen of the United States, and a resident of Merton, in the county of Waukesha, and in the State of Wisconsin, have invented certain new and useful Improvements in Mechanical Motors; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to certain new and useful improvements in mechanical motors, and more particularly to that class of motors known as "horse power motors," and my said invention consists in the matters hereinafter described and more particularly pointed out in the appended claims.

In the accompanying drawings illustrating my invention: Figure 1 is a side elevation of a device constructed according to my invention. Fig. 2 is a perspective view of the driving reel. Fig. 3 is a detail plan view illustrating a somewhat different form of construction. Fig. 4 is a side elevation of the same.

In said drawings: A designates a vertical post which is revolubly engaged at its upper and lower ends with bearings *a a'* in a suitable frame or brace *A'* and a base or support *A''*, respectively. A driving reel or pulley B, is secured to the post A, conveniently near its upper end, and said reel is conveniently made polygonal in form, and consists of suitable horizontally disposed bars *B' B'* secured to the post A, as shown, and arranged in pairs at different elevations upon the said post. Vertical cross pieces *C C* are secured between the ends of the said pairs of bars, one of said vertical cross pieces being located at each corner of the polygonal reel as shown in the drawings. The ends of each pair of bars are suitably braced against lateral movement or play, by suitable horizontally disposed wires or cords *b b* which extend from the ends of said pair of bars to the ends of the next adjacent pair of bars upon each side of the same, and is further braced by similar wires or cords *b' b'* extending diagonally between the ends of said pairs of bars. A sweep D is secured to the post A, below the reel B and carries at its outer end suitable means for the attachment of a horse or team of horses, in

the usual manner, and this sweep D is braced against lateral play by means of a suitable depending bar *D'* which is engaged at its upper end, with one pair of the arms *B'* and with said sweep at its lower end. A similar depending bar *D''* is secured at its upper end to an adjacent pair of the bars *B'* and a suitable wire or cord *d* extends from the lower end of said latter bar *D''* and the said bar *D'* to further stiffen and strengthen the same.

A driving rope, cable or belt E, is passed around the outside of the reel or pulley B, being stretched over the vertical cross pieces *C C* thereof as shown more particularly in Fig. 2. A reel or pulley F preferably smaller in diameter than the pulley B, but preferably made of substantially the same construction is journaled upon suitable supports *F'*, and the belt or cable E is trained over said pulley F so as to communicate rotary motion from the reel or pulley B, to the reel or pulley F, in an obvious manner.

Any suitable or desired take up device may be provided to engage with the belt or cable E, between the reel or pulley B and the reel or pulley F, the particular form of take up device shown, being a pair of pulleys arranged to engage with the said belt, one of said pulleys G, being journaled upon a suitable standard *g*, and the other pulley *G'*, journaled upon a weighted arm *g'* which is pivoted at one end to said standard, as at *g''*. By the adjustable arrangement of this latter pulley, an even tension upon the belt E, is preserved at all times.

In the particular construction illustrated in Figs. 1 and 2, the belt or cable E engages with the reel, only at the corners thereof, where said belt comes into engagement with the vertical cross pieces *C C*, but, in case it is desired to cause said belt or cable to more firmly engage with said driving reel or pulley, I may provide boards or strips *H H*, each arranged to extend between the ends of two pairs of the arms *B'*, and provided with transverse cleats *h h*, one of said boards or strips being arranged upon each side of the polygonal reel or pulley. In this form of construction, suitable knots or enlargements *e e* are provided upon the belt or cable, and are arranged to engage with the cleats *h h*, as is more particularly illustrated in Figs. 3 and 4.

If desired, the corner pieces C C, with which the belt engages, may be made adjustable, and to this end, I may provide a series of holes I I, in the ends of the arms B' B', and bolts or rods I' I' are passed vertically through certain of said holes and the bars C C, to detachably secure the same in place. By this construction, the bars C C may be adjusted nearer to or farther from the center, so as to give any desired speed to the belt or cable E.

The axis of the pulley F may be connected in any suitable manner with the machine which it is desired to drive, as by means of suitable pulleys secured to said axis.

My improved device is exceedingly simple in construction and cheap to manufacture, while at the same time being effective in its operation.

While I have shown the pulleys B and F as of quadrangular form, yet it will be understood that said pulleys may be made of any convenient shape, either with more or with less sides than those shown.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The herein described mechanical motor comprising a revoluble post, transverse bars secured to said post and carrying adjustably secured cross pieces at their outer ends, a sweep also secured to said post, for rotating the same, and a belt or cable, extending around the outer ends of said arms and engaging with said cross pieces, substantially as set forth.

2. A mechanical motor comprising a vertically disposed, revoluble post, a frame composed of transverse bars secured to said post and carrying adjustable cross pieces at their outer ends the said bars being provided with series of vertical perforations and the said cross-pieces being each provided with a vertical perforation, bolts or rods adapted to pass through said perforations, and secure the cross-pieces to the said bars in the desired adjustment, and suitable braces extending between the ends of said bars and a sweep secured to said post below said bars, for rotating

said post and frame, substantially as set forth.

3. A mechanical motor comprising a vertically disposed, revoluble post, a reel or frame carried by said post, and consisting of horizontally disposed arms or bars secured to said post and carrying at their outer ends, suitable cross pieces, boards or strips extending between the ends of said arms or bars, and provided with transverse cleats, a sweep engaged with said post below said frame for rotating said post and reel, a second reel or frame similar in construction to the first mentioned reel and adapted to be operatively engaged with the machinery to be driven, and a belt or cable trained over said reels and provided with suitable knots or enlargements for engagement with said cleats, substantially as set forth.

4. A mechanical motor comprising a vertically disposed, revoluble post, a reel or frame carried by said post, and consisting of horizontally disposed arms or bars secured to said post and carrying at their outer ends, suitable adjustable cross pieces, a sweep engaged with said post below said frame for rotating said post and reel, a second reel or frame similar in construction to the first mentioned reel and adapted to be operatively engaged with the machinery to be driven, a belt or cable trained over said reels, an independent vertical post, carrying a roller located between said reels and operatively engaged with said belt and a bell-crank lever, whose short arm is pivoted to said post, and whose long free arm is weighted at the end, said lever carrying a roller, also in engagement with said belt, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WILLIAM E. MITCHELL.

Witnesses:

JOHN E. WILES,
H. G. UNDERWOOD.