

(No Model.)

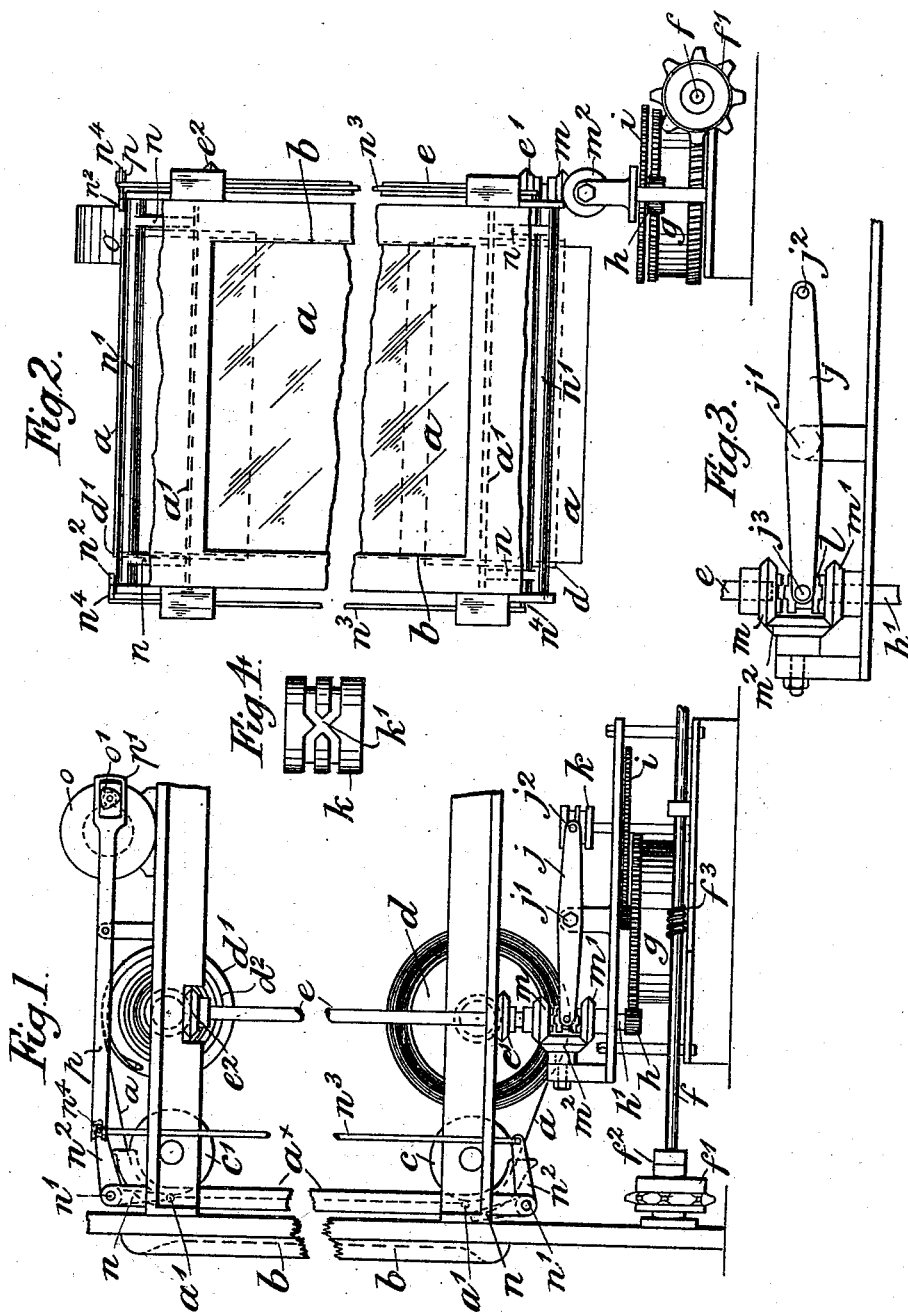
2 Sheets—Sheet 1.

A. M. MARSDEN.

MECHANISM FOR ADVERTISING PURPOSES.

No. 553,415.

Patented Jan. 21, 1896.



Witnesses,  
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Robert Emmett.

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Fig. 7.

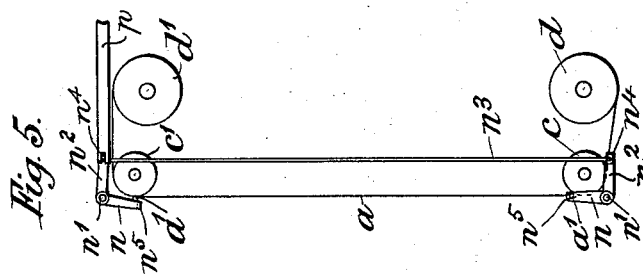
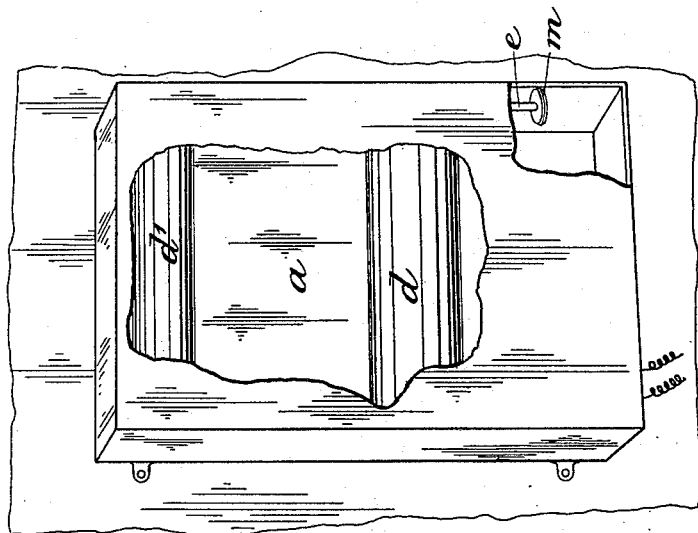
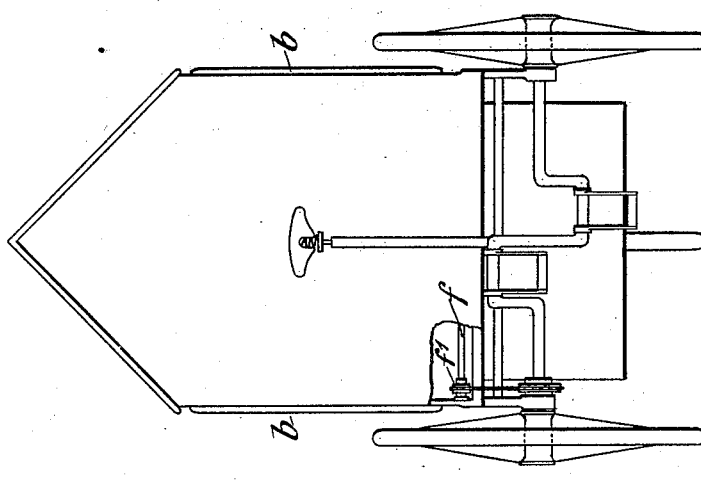


Fig. 6.



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# UNITED STATES PATENT OFFICE.

ALGERNON M. MARSDEN, OF LONDON, ENGLAND.

## MECHANISM FOR ADVERTISING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 553,415, dated January 21, 1896.

Application filed July 15, 1895. Serial No. 556,071. (No model.)

*To all whom it may concern:*

Be it known that I, ALGERNON MOSES MARSDEN, a subject of the Queen of Great Britain and Ireland, residing at London, England, have invented certain new and Improved Means or Mechanism for Advertising Purposes, of which the following is a specification.

My invention relates to improved means or mechanism for advertising purposes, and is designed to provide, in an efficient manner, for the display of a succession of advertisements, which may be printed, painted, or otherwise applied upon a band or length of suitable material wound upon drums and caused to travel to and fro, with a step-by-step or intermittent movement, within a suitable casing or framing. This casing or framing may advantageously be mounted upon a tricycle or other wheeled vehicle adapted to be propelled by foot-power or by an electric or other motor or be drawn by horses.

The power for actuating the band is, in this case, derived from the means of propulsion, and is transmitted through a suitable reversing device. The step-by-step movement of the band is controlled by an automatic escapement arrangement operated by a clock-movement. The advertisements are thus exhibited one by one, each of them being allowed to remain in view a sufficient period to enable it to be readily perceived.

To permit the display of the advertisements during temporary stoppages of the vehicle, a certain amount of the power used for actuating the band is suitably stored up, as hereinafter described; or the said mechanism, together with its casing or framing, may be applied to a wall or to a hoarding or be placed in the window of a shop or other building and be operated by any suitable motor.

The advertisements may be illuminated at night by electric or other lamps, and, if desired, may be on a diaphanous or transparent material.

To allow of my invention being better understood, I will describe the same fully with reference to the annexed drawings, in which—

Figures 1 and 2 are elevations at right angles to each other, showing my improved means or mechanism. Fig. 3 is a detail view of a reversing device which I find advantageous to employ for effecting the to-and-fro

movement of the band or length of material. Fig. 4 shows a cam for use in conjunction with this reversing-gear. Fig. 5 is a detached view showing an escapement arrangement for effecting the step-by-step movement of the band or length of material. Fig. 6 shows a tricycle to which my improved means or mechanism is applied, and Fig. 7 illustrates in perspective the application of the said means or mechanism to a hoarding.

$a$  is the band or length of material upon which are the advertisements, and which is arranged in the example shown behind a glazed aperture  $b$  in a casing or framing. This band travels over a pair of guide-rollers  $c$   $c'$ , by which it is held close up to the aperture  $b$ . It is wound upon drums  $d$   $d'$  of equal diameter, the latter of which is provided, after the manner of a spring-barrel, with a tension-spring  $d^2$  to keep the band constantly tight and allow for the variations in the effective circumferential speeds of the two drums owing to the alternate winding and unwinding of the band. The drums are driven synchronously from a vertical shaft  $e$  by bevel-gears  $e'$   $e^2$ , and this shaft derives its motion from a main shaft  $f$ , through the medium of a suitable reversing-gear, in the following manner: The shaft  $f$  is rotated continuously by any suitable means, such as by a chain-wheel  $f'$  and friction-clutch  $f^2$ , the latter being so adjusted as to slip and allow the shaft to remain at rest should the resistance become sufficiently great. This shaft  $f$  drives by means of a worm  $f^3$  a spring-barrel  $g$ , in which a certain amount of power is stored up for the purpose before stated, and which barrel in turn communicates motion in an increasing ratio to a pinion  $h$ , whose axle  $h'$  is in alignment with the shaft  $e$ , and in a diminishing ratio to a wheel  $i$ , the ratios being such, for example, that while the spring-barrel  $g$  makes ten revolutions the pinion  $h$  makes fifty, and the wheel  $i$  makes one, and consequently each revolution of this latter wheel corresponds to fifty of the pinion.

Above the spring-barrel is mounted a rocking arm  $j$ , pivoted at  $j'$ , and having at one end a pin  $j^2$  engaging in a cam  $k$ . This cam  $k$  is mounted on the axle of the wheel  $i$  and is formed, as shown more clearly in Fig. 4, with a pair of parallel grooves connected by

crossways, as at  $k'$ , so that the rocking arm  $j$  is kept stationary during the greater part of each revolution of the cam, but is raised or lowered, as the case may be, as soon as its pin enters the part  $k'$  of the cam. At its other extremity the rocking arm  $j$  has a pin  $j^3$  engaging in a groove in the rotary and sliding part or sleeve  $l$  of a clutch-reversing device (shown more clearly in Fig. 3) by which motion is transmitted between the axle  $h'$  and the shaft  $e$ . The sleeve  $l$  is arranged to engage one or other of a pair of clutches formed upon pinions  $m$   $m'$ , the former of which is fast on the extremity of the shaft  $e$ , while the latter is loose on the axle  $h'$ , and these pinions are in common engagement with an intermediate pinion  $m^2$ . It will thus be seen that if the sleeve  $l$  is in its upper position and in engagement with the clutch  $m$  the shaft  $e$  will be driven direct from the axle  $h'$ , whereas if the sleeve is in its lower position the said shaft will receive a motion the opposite of the axle.

From what has just been described it will be seen that the direction of movement transmitted from the shaft  $f$  to the shaft  $e$  will be reversed every time the latter shaft has made fifty revolutions or any other desired number for which the motion-work may be arranged. It will also be seen that by reason of the interposition of the friction-clutch  $f^2$  the chain-wheel  $f'$  (or other driving arrangement) can go on rotating continuously without fear of injuring the mechanism.

The automatic escapement arrangement which I find it convenient to use for controlling the step-by-step movement is shown more clearly in Fig. 5, and comprises arms or stops  $n$ , arranged in pairs on shafts  $n'$ , situated above and below the aperture  $b$ . At the ends of each shaft are secured arms  $n^2$ , connected by rods or links  $n^3$ , working on pins  $n^4$ , carried by the arms  $n^2$ . At intervals along the band  $a$ , between the different advertisements, are arranged horizontal bars  $a'$ , whose ends project beyond the edges of the band and work in guides  $a^x$ . The arms or stops  $n$  are situated at each side of the band  $a$  in proximity to the guide-rollers  $c$   $c'$ , so that they can engage with the ends of the bars  $a'$  and arrest the movement of the band. They are operated by a clock-movement arranged in a casing  $o$  and serving to rotate a three-throw cam  $o'$ , which actuates a pivoted lever  $p$ . This cam works in a loop or stirrup  $p'$  on the lever and is mounted on an arbor or spindle carrying a pinion in gear with any suitable wheel of the clock-movement. The other end of the lever is forked and engages with the pin  $n^4$  of one of the arms  $n^2$ . The clock-movement is so adjusted that the lever  $p$ , and consequently the arms or stops  $n$ , are caused to rock and to disengage the band  $a$  at predetermined intervals—say once every ten seconds—thereby shifting the different advertisements in regular succession.

The arrangement of the arms  $n$  is such that

only the upper or lower pairs are in the engaging position at one time, and their extremities  $n^2$  are hooked or bent over, so as to engage the ends of the bars  $a'$ , no matter in which direction the band  $a$  may be traveling. When the shafts  $n'$ , carrying the arms  $n$ , are operated by the clock-movement through the lever  $p$ , that pair of arms which was in engagement with one of the horizontal bars  $a'$  is disengaged, and the band immediately travels sufficiently far to carry this bar past the said arms. On the shafts  $n'$  returning to their former position the movement of the band continues until the succeeding bar comes against the end of the same pair of arms  $n$ . This, however, takes very little time, and the change of the advertisements appears to a passer-by to be practically instantaneous.

Instead of employing a pair of arms or stops  $n$ , with connected parts, both above and below the glazed aperture  $b$ , I may, in some cases, employ only one pair, say that above the said aperture.

The application of the improved means or mechanism for advertising to a wheeled vehicle—as, for instance, to a tricycle, as shown in Fig. 6—is effected by fitting the same in a suitable frame or casing and by arranging a driving-chain between the chain-wheel  $f'$  and a corresponding chain-wheel on the crank-axle. In this case the clock-movement for operating the escapement permits the change of the advertisements to go on continuously, even when the vehicle is at rest, and, furthermore, enables the change of the advertisements to take place regularly, no matter at what speed the vehicle may be traveling. Two sets of the herein-described mechanism may be arranged one at each side of the frame or casing, or, if desired, only one set of mechanism may be used, and as many sets of drums and rollers may be driven therefrom as may be required.

The interior of the framing or casing may be adapted to hold parcels or the like, so that the tricycle or vehicle can serve at the same time as a medium for the delivery of goods, &c. The clock-movement may be provided with a dial and hands, arranged outside the vehicle, so as to indicate the time as the vehicle travels along.

In applying the invention to a hoarding the mechanism may be arranged in a suitable casing or framing, and be secured to the back of the hoarding, as shown in Fig. 7, portions of the said casing being broken away to more clearly show certain of the parts. As in the preceding figures,  $a$  is the band;  $d$   $d'$ , the drums;  $e$ , the vertical shaft for driving them, and  $m$  the bevel-wheel on said shaft. This latter is driven by means of an electric or other suitable motor, arranged in or upon the casing, or otherwise, through the medium of a similar reversing device to that shown in Figs. 1 and 3. In an arrangement of this kind an aperture may be formed in the hoarding corresponding to the aperture  $b$ , Fig. 2,

to enable the advertisements to be seen, or the band may be arranged to pass through slits in the hoarding and travel over the outer face thereof.

5 The change of the advertisements may be controlled either by an escapement and a clock-movement, as above described, or by an escapement operated by a finger or other suitable device on or connected with some  
10 convenient moving part of the motor. The clock-movement may likewise be provided with a dial and hands, if desired.

When applying this arrangement to a wall I prefer to place it on the front thereof.

15 It is obvious that instead of the band being arranged to travel to and fro it may be an endless one and travel intermittently always in the same direction, in which case the reversing device would be dispensed with.

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

1. In means or mechanism for advertising purposes, the combination of a pair of drums  
25 carrying a band bearing advertisements, a shaft geared with said drums, a spring barrel for actuating said shaft, automatic cam controlled reversing mechanism intermediate said drum actuating shaft and spring barrel,  
30 means for gearing the spring barrel with a motor shaft, and an escapement for controlling the movements of the advertising band, substantially as described.

2. In means or mechanism for advertising  
35 purposes, the combination of a pair of drums having attached thereto a band for carrying advertisements, a tension spring in one of said drums, a pair of guide rollers for the band, a shaft geared with said drums to drive  
40 them simultaneously, a spring barrel for actuating said shaft, a reversing clutch intermediate said shaft and spring barrel, a rocking arm engaged with a sliding part of said reversing clutch, and a cam actuated from the  
45 spring barrel and controlling said rocking arm, substantially as described.

3. In means or mechanism for advertising purposes, the combination of a pair of drums having attached thereto a band for carrying

advertisements, rods or bars secured trans- 50  
versely on said band and projecting beyond the same, means for rotating the said drums simultaneously, two shafts having mounted thereon arms or stops adapted to engage the  
55 rods or bars on the advertising band, links that connect arms on the two shafts whereby they may be rocked together, a rocking lever for operating said shafts, a cam for actuating the rocking lever, and a clock movement for rocking the said cam, substantially as de- 60  
scribed.

4. In means or mechanism for advertising purposes, the combination of a case or framing having a glazed aperture, a pair of drums having attached thereto a band carrying ad- 65  
vertisements at the rear of said glazed aperture, rods or bars secured transversely on said band and projecting beyond the same, means for rotating the drums first in one direction and then in the other, two shafts 70  
adapted to be rocked together and having mounted thereon arms or stops arranged to engage the rods or bars on the advertising band, guides for the ends of said rods or bars, a rocking lever for operating the shafts, a cam 75  
for actuating the rocking lever, and a clock movement for rocking said cam, substantially as described.

5. In means or mechanism for advertising purposes, the combination of a pair of drums 80  
carrying a band bearing advertisements, a tension spring in one of the drums, a spring barrel and reversing mechanism for driving the said drums, an escapement arrangement for controlling the movements of the band, a 85  
clock movement for operating said escapement, a worm-shaft for winding up the spring barrel, and a friction clutch for transmitting motion to the said shaft, substantially as described. 90

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALGERNON M. MARSDEN.

Witnesses:

H. ASHBY HARRIS,  
FRED C. HARRIS.