

Jan. 2, 1923.

C. S. GRASSETT ET AL.
ADVERTISING MEDIUM.
FILED JAN. 9, 1922.

1,440,916.

2 SHEETS—SHEET 1.

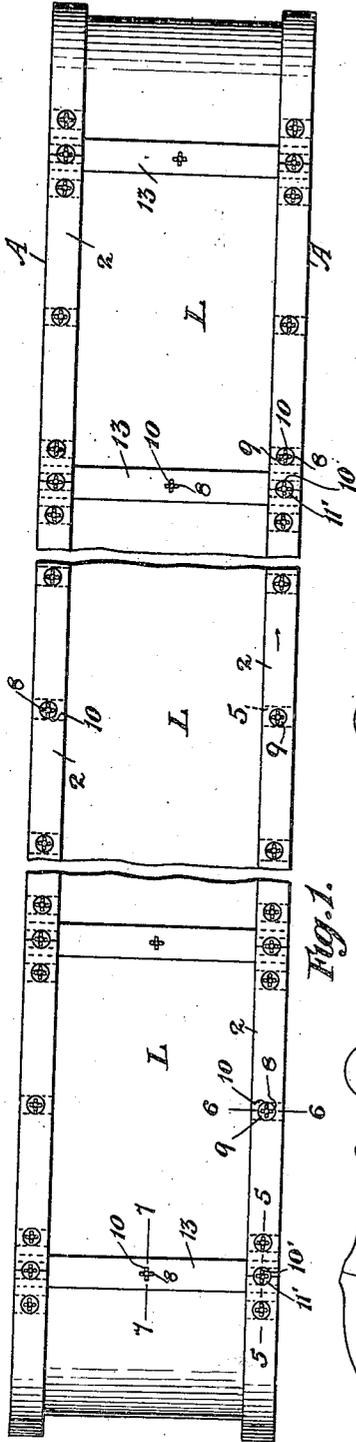


Fig. 1.

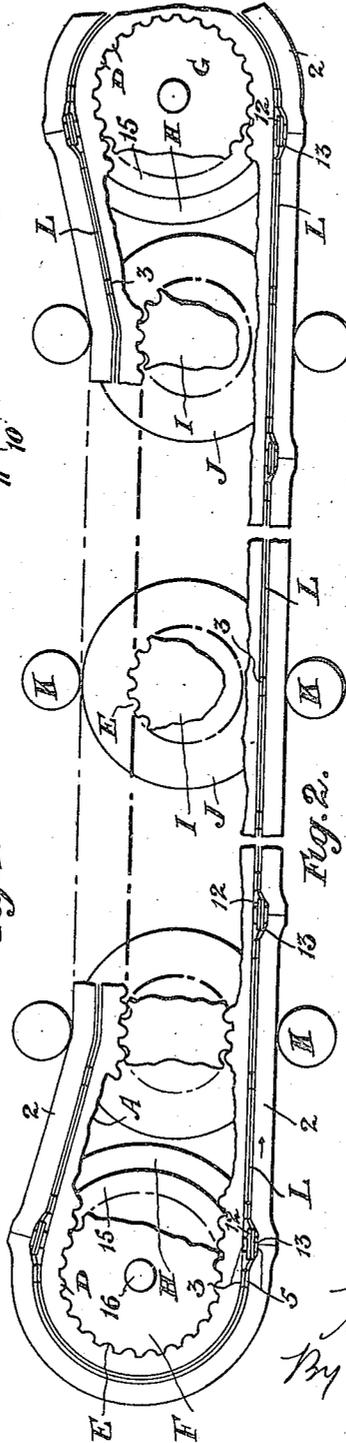


Fig. 2.

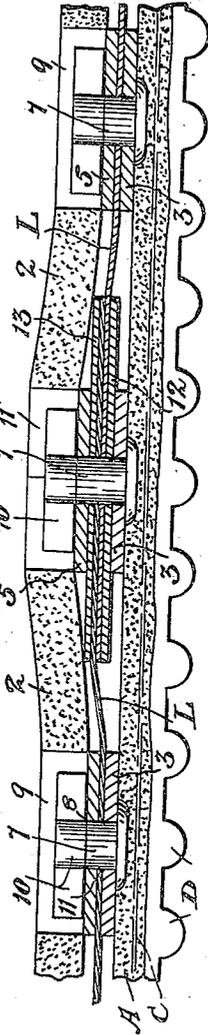


Fig. 5.

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2 SHEETS—SHEET 2.

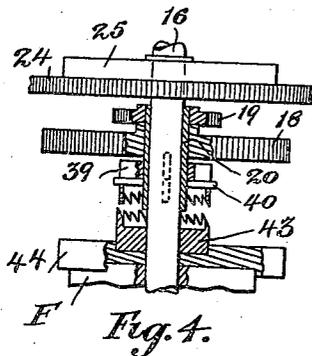
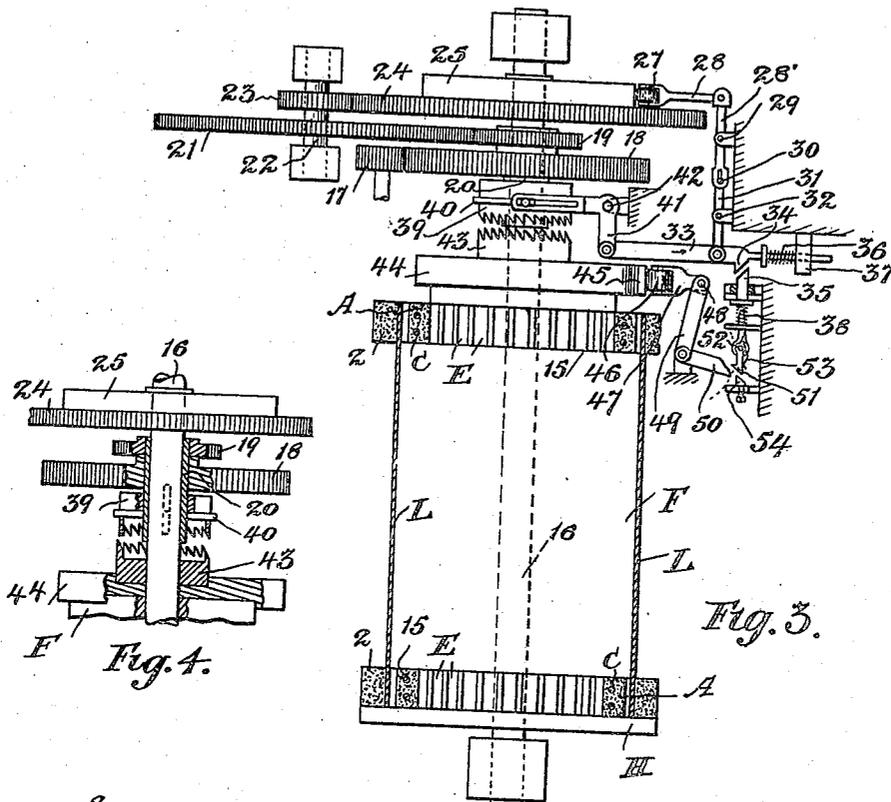


Fig. 4.

Fig. 3.

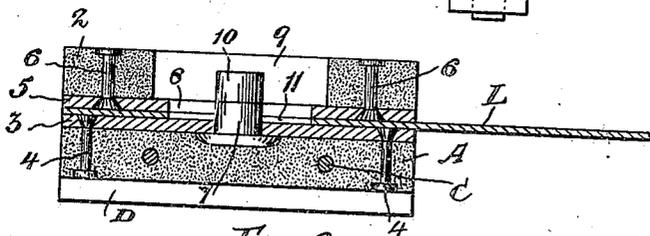


Fig. 6.

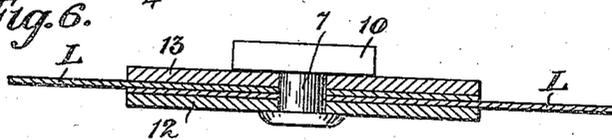


Fig. 7.

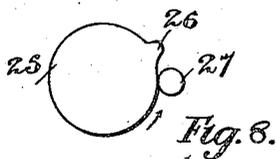


Fig. 8.

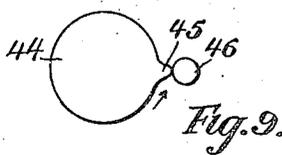


Fig. 9.

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UNITED STATES PATENT OFFICE.

COLIN SUTHERLAND GRASSETT AND ANDREW TUDHOPE CLARK, OF TORONTO,
ONTARIO, CANADA.

ADVERTISING MEDIUM.

Application filed January 9, 1922. Serial No. 527,881.

To all whom it may concern:

Be it known that we, COLIN SUTHERLAND GRASSETT and ANDREW TUDHOPE CLARK, both subjects of the King of Great Britain, and both residing in the city of Toronto, county of York, Province of Ontario, Canada, have jointly invented certain new and useful Improvements in Advertising Mediums, of which the following is a specification.

Our invention relates to improvements in advertising mediums, and relates more particularly to mechanically-moved advertising mediums, whether for indoor or outdoor use, and the objects of our invention are: 1st, to increase the publicity for the advertisements carried by the carrying means therefor, particularly in street cars and railway coaches and the like, by moving the advertisements from one end of the vehicle to the other, and at the same time practically doubling the effectiveness of any given length of advertising space in vehicles of the character set forth; 2nd, to provide a particular carrier for the advertisement-carrying means which will permit of the removal and substitution of any or all of the said advertisement-carrying means to permit of change of advertisements, and to associate with said carrier suitable driving mechanism whereby the carrier will be preferably intermittently moved in order to intermittently shift the positions of the advertisement-carrying means; 3rd, to removably mount the advertisement-carrying means, such as cards, so that they will be supported at their ends and sides and thus temporarily become part of the carrier itself, and in the following specification we shall disclose one species within our invention, and suitable driving mechanism, and what we claim as new will be set forth in the claims forming part of this specification.

Fig. 1 is an elevation of our preferred form of carrier, partly broken away, showing associated therewith the advertisement-carrying means, which are blank. Fig. 2 is a plan elevation of the carrier shown in Fig. 1, showing in addition plan views of certain pulleys and rollers co-acting therewith. Fig. 3 is a side elevation of a suitable form of driving mechanism for the carrier, which latter is shown in cross-section. Fig. 4 is, in part, a vertical central longitudinal section through certain operating parts of the driving mechanism shown in Fig. 3.

Fig. 5 is a longitudinal section, on an enlarged scale, on the line 5—5, Fig. 1. Fig. 6 is a cross-section, on an enlarged scale, on the line 6—6, Fig. 1. Fig. 7 is a longitudinal section, on an enlarged scale, on the line 7—7, Fig. 1, and Figs. 8 and 9 are diagrammatic views of certain cams and rollers co-acting therewith, to illustrate certain movements in the driving mechanism.

In the drawings, like characters of reference refer to the same parts.

In our preferred disclosure, our carrier comprises a pair of endless belts A, spaced apart and tied together by suitable removable means. These belts are preferably made of rubber compound, and imbedded therein to prevent the stretching of these belts, are metal wires C, preferably made of steel. The inner side of each belt is provided with a plurality of corrugations D spaced equi distant, and substantially of the same width and height. These corrugations co-act with corresponding depressions E formed in the pulleys F and G, near the upper and lower ends thereof. F is the drive pulley driven by any suitable mechanism, and G is the tail pulley. Since the carrier is to be preferably intermittently moved through certain given distances which will practically correspond to the length of the advertisement-carrying means, positive driving means must be had, and the corrugations D and depressions E, are the preferred means whereby movement is transmitted from the pulley F to the carrier.

In order to support the carrier, the lower belt passes over flanges H at the lower ends of the pulleys F and G. Intermediate these pulleys are a plurality of idler pulleys I, which are provided with the depressions E with which co-act the ribs D. These idlers are each provided with a flange J to give support to the lower belt A, or the lower side of the carrier, at the required positions, intermediate the pulleys F and G.

In order to hold the carrier against undue movement owing to the lateral movement of the vehicle, rollers K are located preferably in pairs, and these rollers are positioned in respect of the idlers I so as to effect the purpose in view.

Since it does not enter into our invention, we do not disclose any particular way of mounting the idlers I and rollers K, nor the pulley G, as this can be done in many ways.

and according to the conditions determining installation.

L are the advertisement-carrying means, for example, cards, and the preferred manner of mounting said advertisement-carrying means in respect of the belts A, is as follows: Associated with each belt A, and substantially of the same width, are a plurality of clamps 2, preferably made of rubber compound, and so associated as to be practically continuous. These clamps are for the purpose of clamping the sides of the advertisement-carrying means each to its associated belt A. The preferred manner of associating these clamps with the belts A, is as follows: Coupled to each belt A, and at the required places, are metal plates 3, secured each to its associated belt by any suitable means, such as rivets 4. These plates are located on the outer side of each belt. Also coupled to each clamp 2 are plates 5, substantially of the same size as the plates 3. Any suitable fastening means is used to couple the plates 5 in place, for example, the rivets 6. As will be seen upon referring to Figs. 2 and 5, the plates 3 and 5 lie in pairs at intervals. The sides of the advertisement-carrying means L are held between the plates 3 and 5, and of course are positioned against the plates 3 before the clamps 2 and their associated plates 5 are placed in position. Suitable fastening means is employed to couple the clamps 2 to the belts A, such as the following: Mounted in each plate 3 is a flange-provided stud 7, which projects beyond said plates, and through slots 8 formed in the plates 5 and into pockets 9 formed in the clamps 2. Each stud is provided with a swivel head 10. The side of each advertisement-carrying means or card L is provided with a plurality of slots 11 shaped to more or less correspond to the shape of the swivel heads 10, as are also the slots 8. When the advertisement-carrying means L are placed in position as well as the clamps 2, the heads 10 are turned to lie transversely of the slots 8 and 11. The studs 7 are of course well-known and require no further description.

The plates 3 and 5 are of such width as not to interfere with the movement of the carrier around the pulleys.

The ends of the advertisement-carrying means preferably overlap as shown in Figs. 5 and 7, and they are clamped together intermediate the belts A by the means used to tie these belts together: This means is preferably in the form of a pair of metal plates 12 and 13 somewhat wider than the plates 3 and 5, and intermediate said belts any number of the fastening studs 7 may be employed, and of course it will be understood that the plates 12 and 13, as well as the ends of the advertisement-carrying means will be slotted as already described in con-

nection with the coupling of the sides of these advertisement-carrying means to the belts.

The plates 12 and 13 are located between their associated pair of plates 3 and 5 (see Fig. 5), and of course in the preferred construction illustrated the ends of the advertisement-carrying means are located between these plates. Because of the added number of parts at the ends of the advertisement-carrying means L, the studs 7' are somewhat longer than the studs 7.

Formed in each end of each clamp 2 are slot-sections, and these slot-sections, when adjacent clamps are placed end to end form slots 11' in which operates the swivel head 10' of each stud 7'.

A pair of clamps 2 is of course used with each advertisement carrying means, and sufficient has been illustrated and described to show that any or all advertisement-carrying means may be removed, as desired, and without much trouble, and replaced by like means carrying the required advertisement.

The corrugated portions of the pulleys F and G are of less diameter than the rest of the pulleys, thus enabling the advertisement-carrying means L to contact with the outer surface of these pulleys, so that the flexing thereof will be reduced as much as possible. The construction just described provides the said pulleys with shoulders 15 at the top and bottom, so that the belts A will ride upon the upper shoulders, and below the lower shoulders. The upper shoulders 15 provide additional support to the belt in preventing sagging.

As before-mentioned, our carrier is preferably given an intermittent movement, and the distance the carrier is moved will practically correspond to the length of the advertisement-carrying means, such as the cards L. We shall now describe a convenient driving mechanism for the carrier, though of course it will be understood that any suitable driving mechanism may be used: in the exemplary form of driving mechanism disclosed, the pulley F is loosely mounted on a shaft 16, mounted in suitable bearings. 17 is a pinion driven by any suitable means which is constantly in mesh with the toothed wheel 18 which, together with the toothed wheel 19 is keyed to the sleeve 20 which is loosely mounted on the shaft 16. 21 is a toothed wheel keyed to a shaft 22, and constantly in mesh with the wheel 19. Also keyed to the shaft 22 is a toothed wheel 23 which is constantly in mesh with the toothed wheel 24 mounted on the shaft 16. 25 is a cam coupled to the wheel 24. The parts described are constantly in motion. When the nose 26 of the cam 25 comes in contact with the roller 27 carried by the link 28, pivotally connected to lever 28' which is pivoted at

29, this lever is moved and through the medium of the pin 30 operates the lever 31 pivoted at 32 and so moves the latch 33 to the right. During this movement the tooth 34 of said latch depresses the spring-held bolt 35, and compresses the spring 36 mounted on said latch and intermediate a stop carried thereby and the bearing 37 for one end of said latch. When the tooth 34 escapes the bolt 35, the spring 38 returns said bolt to normal position to be in the path of movement of the tooth 34, and latch 33 after it has completed the described movement. Feathered on the sleeve 20 is a clutch-member 39, and associated with this is the usual runner 40 and bell-crank lever 41 which is pivoted at 42. This bell-crank lever is pivoted to the latch 33, and during the movement of said latch the clutch member 39 is moved to co-act with the clutch member 43 loosely mounted on the shaft 16 and firmly coupled in any suitable manner to the cam 44, which cam is suitably secured in any suitable manner to the upper portion of the pulley F. This pulley is immediately driven, and of course the carrier is given movement. Forming part of the cam 44 is a nose 45 with which co-acts a roller 46 mounted in a link 47 which is pivotally supported as at 48 by the bell-crank lever 49, in such manner as to have a limited range of movement. When the pulley F is started, the roller 46 occupies the position shown in Figs. 3 and 9 in respect of the nose 45, and as this nose escapes the roller 46, the same moves into contact with the lower surface of the cam, thus moving the lever 49 so as to bring its arm 50 above the latch 51 which is pivoted at 52 to the lower end of the bolt 35, and thus position the arm 50 so that when the nose 45 of the cam 44 again comes in contact with the roller 46, the arm 50 will engage with the latch 51 thus moving the bolt 35 to release the latch 33, when the spring 36 will shift this latch and so operate the bell-crank lever 41 to throw the clutch out of engagement and so bring the pulley F and the carrier to rest.

The latch 51 is provided with a spring 53, which permits the arm 50 to move upwardly into operative position.

The latch 51 is provided in any well-known manner with means to co-act with the bolt 35 to limit its range of movement in the direction of the force exerted by the spring 53, and as means for this purpose is abundantly shown in the various arts, and forms no part of our invention, we have not described it specifically, though such stops are shown in the drawings.

54 is a stop adjustably mounted to regulate the time of tripping of the latch 51. The toothed wheels 18 and 19 and sleeve 20, and clutch member 39 are driven at constant speed, while the toothed wheels 24 and cam

25 are driven at reduced speed. The pulley F and cam 25 are made to rotate at the speed of the toothed wheel 18.

While we have described what we consider to be the best embodiments within our invention, it must be understood that the principle thereof may be embodied in various other forms and we desire not to be limited beyond the requirements of the prior art and the terms of our claims.

What we claim is:

1. An advertising medium comprising a flexible carrier embracing two substantially parallel endless flexible belts spaced apart; pairs of transverse plates removably coupled at their ends each to its associated belt; flexible advertisement-carrying means; removable flexible clamping means securing the sides of said advertisement-carrying means each to its associated belt, the ends of said advertisement-carrying means being removably clamped between said pairs of plates.

2. An advertising medium comprising a flexible carrier embracing two substantially parallel endless flexible belts spaced apart; a plurality of flexible clamps; means whereby said flexible clamps are removably coupled each to its associated belt; spaced pairs of transverse plates removably coupling said belts and their associated clamps, laterally together, and advertisement-carrying means removably clamped at their ends between said transverse plates and at their sides between said belts and their associated clamps.

3. An advertising medium comprising a flexible carrier embracing two substantially parallel endless flexible belts spaced apart and provided at their inner sides with corrugations; a plurality of flexible clamps; means whereby said flexible clamps are removably coupled each to its associated belt; spaced pairs of transverse plates removably coupling said belts and their associated clamps, laterally together; advertisement-carrying means removably clamped at their ends between said transverse plates and at their sides between said belts and their associated clamps; pulleys provided with depressions to receive said corrugations of said belts, and further adapted to support said carrier against vertical displacement, and suitable mechanism adapted to intermittently drive said carrier through the medium of one of said pulleys.

4. An advertising medium comprising a flexible carrier embracing two substantially parallel endless flexible belts, spaced apart; fastening means carried thereby and projecting beyond the outer sides thereof; a pair of transverse plates coupled at their ends each to its associated belt, by certain of said fastening means; flexible advertisement-carrying means each having its end located between said transverse plates and

apertured to permit of the passage there-
through of said certain fastening means;
and flexible clamping means located at each
side of the outer face of said advertisement-
5 carrying means, certain of the fastening
means carried by each of the said belts pro-
jecting through apertures formed in the sides
of said advertisement-carrying means, and
through apertures formed in said flexible
10 clamping means, to hold these parts together,
for the purpose specified.

5. An advertising medium comprising a
flexible carrier embracing two substantially
parallel endless flexible belts spaced apart
15 and provided at their inner sides with cor-

rugations; a plurality of flexible clamps;
means whereby said flexible clamps are re-
movably coupled each to its associated belt;
spaced pairs of transverse plates removably
coupling said belts and their associated 20
clamps, laterally together; advertisement-
carrying means removably clamped at their
ends between said transverse plates and at
their sides between said belts and their
associated clamps, and pulleys provided with 25
depressions to receive said corrugations of
said belts, and further adapted to support
said carrier against vertical displacement.

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