Aug. 23, 1938. R. HUSTON ET AL. 2,127,997

CHANGEABLE SIGN

Original Filed July 15, 1935

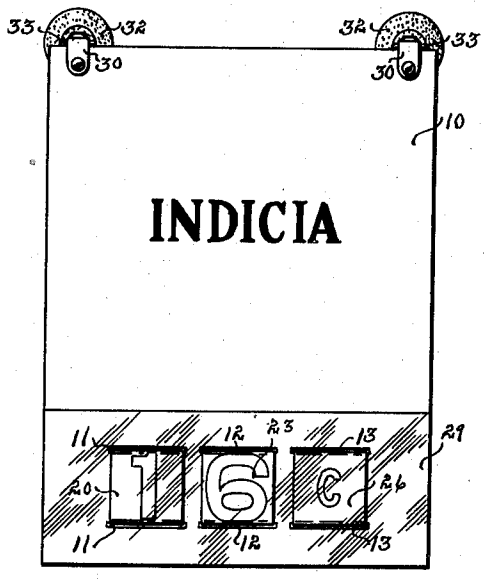


Fig. 1.

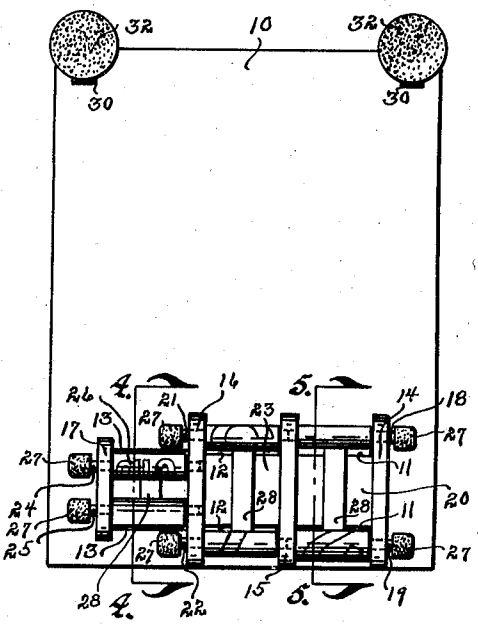


Fig. 2.

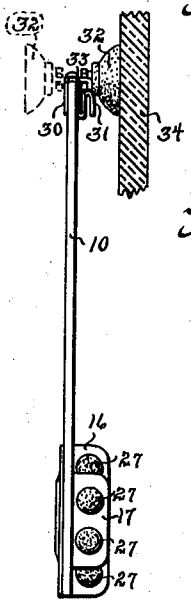


Fig. 3.

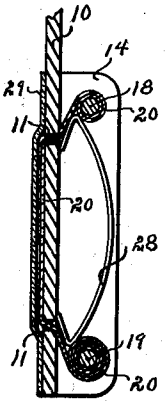


Fig. 5.

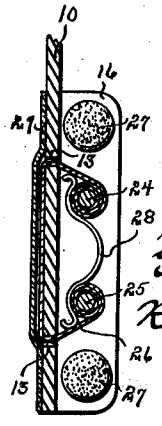


Fig. 4.

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UNITED STATES PATENT OFFICE

2,127,997

CHANGEABLE SIGN

Robert Huston and Edward C. Sonne,
Davenport, Iowa

Application July 15, 1935, Serial No. 31,434
Renewed July 23, 1937

3 Claims. (Cl. 40—86)

The principal object of our invention is to provide a sales or like sign that is capable of having its price or like numerals quickly and easily changed at will by the user or owner.

A further object of this invention is to provide a changeable sign mechanism for stores, service stations, etc., that eliminates the usual painting and repainting of signs with the changing of prices.

A still further object of this invention is to provide a changeable sign having manually rollable belts that are yieldingly held in any position in which they are placed.

A still further object of our invention is to provide a changeable sign with indicia marked belts secured to rollers that yieldingly prevents the belts from undesirable unwinding on the rollers, and holds each of the belts in a taut condition between their two ends.

A still further object of our invention is to provide a sign that may be easily supported for observation from a point inside a building or from a point outside the window of the building.

A still further object of this invention is to provide a changeable sign that is refined in appearance, durable in use, and economical in manufacture.

These and other objects will be apparent to those skilled in the art.

Our invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in our claims and illustrated in the accompanying drawing, in which:

Fig. 1 is a front view of our sign ready for use.

Fig. 2 is a rear view of our changeable sign and shows the operating mechanism.

Fig. 3 is a side view of our sign device in use.

Fig. 4 is a vertical cross-sectional view of a portion of our sign taken on line 4—4 of Fig. 2.

Fig. 5 is a vertical cross-sectional view of a portion of our changeable sign and is taken on line 5—5 of Fig. 2.

There is hardly any business that uses information signs that does not have to be continually changing the signs from day to day to correspond with the changing prices of the commodities being sold. This is especially true of grocery stores and meat markets. When prices change, and they do change almost every day, it is necessary to get new signs painted, but this takes time and when the sign is finally available for use it is considerably after the price has changed. Also, this painting and repainting of signs is quite expensive. We have overcome such objections, as will be hereinafter appreciated.

Referring to the drawing, we have used the numeral 10 to designate the flat base board of our sign made of any suitable material. Near the lower edge of this base board 10 are three pairs of spaced apart slot openings 11, 12, and 13, as shown in Fig. 1. The space on the base board above these slots may be used for writing any desired indicia such as the name of the commodity to which the price sign applies or the type or brand of the commodity.

Although we have shown the slots 11, 12, and 13 positioned near the lower edge of the base board 10, obviously they may be arranged at various points on the board 10 and in various relationships to each other.

Secured to the back of the board 10 are three vertical ribs 14, 15, and 16. These three ribs are spaced apart and the pair of slot openings 11 are positioned between the ribs 14 and 15, and the pair of slot openings 12 are positioned between the ribs 15 and 16 as shown in Fig. 2. The numeral 17 designates a vertical rib spaced apart from the rib 16. This rib 17 is somewhat shorter in length than the ribs 14, 15, and 16. The pair of slot openings 13 are positioned between the ribs 16 and 17 and these two slot openings of the pair of slot openings 13 are closer together than the slot openings that make up the pair of slot openings 11 and 12. All of the slot openings extend transversely of the longitudinal axis of the ribs. The numerals 18 and 19 designate two roller shafts journaled in the ribs 14 and 15. These shafts are spaced apart and have the pair of slots 11 between them. The numeral 20 designates a belt or ribbon element having its two end portions rolled onto and around the two shafts 18 and 19, respectively. This belt has indicia such as numerals, character strokes, or letters on its side adjacent the board 10, and has its portion residing between the two shafts passed through one of the slot openings 11 and passed back through the other slot opening 11, as shown in Fig. 5. By this arrangement the face of the belt having the indicia on it will be observable between the two slot openings 11 from a position in front of the sign as shown in Fig. 1.

By rotating either of the shafts 18 or 19 the belt will be moved through the slot openings 11, bringing different indicia to the face of the sign for observation. By manually rotating the shaft 18 to the left the belt will be moved upwardly and by manually rotating the shaft 19 to the right the belt will be moved downwardly.

The numerals 21 and 22 designate two similar roller shafts but journaled in the ribs 15 and 16. These shafts 20 and 21 have the pair of slot openings 12 between them and also a belt 23 arranged in the same manner as the belt 20, except that it passes through the slot opening 12, whereas the belt 20 passed through the slot openings 11. This belt 23 is designed to have indicia upon it the same as the belt 20 and is operated and observed in the same manner. The numerals 24 and 25 designate two roller shafts journaled in the ribs 16 and 17. These shafts are spaced apart, but at a distance less than the distance between the slot openings that make up the pair of slot openings 13. By this construction the slot opening will lie in a plane outside of the two shafts 24 and 25, respectively, as shown in Fig. 4. The numeral 26 designates a belt or ribbon having its two end portions wound on the shafts 24 and 25, respectively, with its portion resting between the two shafts passed through one of the slot openings 13 and then back through the other slot opening 13. This belt 26 is designed to also have indicia on its face in the same manner as the belts 20 and 23 and is operated and observed in the same manner. The numeral 27 designates a knob element on each of the shafts 18, 19, 21, 22, 24 and 25 to facilitate their individual manual rotation.

By the shafts 24 and 25 being more closely spaced apart than the shafts 18 and 19 or the shafts 21 and 22, two results are obtained, i. e., room is provided for the handle elements 27 on the two shafts 21 and 22, and the belt 26 is held more taut between the two shafts 24 and 25 and the shafts are also thereby held to a certain extent from undesirable rotation after the belt has been placed in proper position. The reason for this tautness of the belt 26 is that it must extend from the shaft 24 upwardly and inwardly to the upper slot 13, then downwardly to the lower slot 13, then upwardly and outwardly to the shaft 25. This tortuous path of the belt tends to discourage its movement at all times.

To further prevent the undesirable rotating of the shafts 18, 19, 21, 22, 24, and 25 and the resulting unwinding of the belts and their looseness between the slot opening through which they extend, we have provided flexible resilient brake elements 28. We use one of these brakes 28 between the shafts 18 and 19, one between the shafts 21 and 22, and one between the shafts 24 and 25, as shown in the drawing. These brake elements are bowed in their centers to provide the necessary spring tension and each of their ends are bent to engage first, the portions of the belts wound around the rollers, and secondly, to engage the portions of the belts between the shafts and the slot openings. Due to the bow construction of these brake elements they have a tendency to spread, thereby frictionally engaging the belts at each side of their slot openings and to operatively engage the shafts by engagement with those portions of the belts wound around them. These brake elements, therefore, keep the belts tightly wound around their shafts and taut between the slot opening through which they pass. This insures the flat and neat appearance of the sign by holding the belts tight onto the face of the sign between the slot openings.

If desired, the lower face portion of the sign may be covered with a sheet 29 of transparent material, as shown in the drawing. This makes a somewhat more finished appearance to the sign and prevents the indicia sides of the belts from getting soiled as the sheet 29 loosely covers the sign over the slot openings. In the drawing, we have shown the slot openings and shafts parallel with each other and horizontally arranged. Obviously, they may be differently arranged on the board 10 than that shown.

Any greater or lesser number of belts may be used. If only one belt is used, the indicia on the belt will no doubt be quite extensive and if the same relates to numerals, these numerals will propably run from "1" to a comparatively large designating numeral. When two belts are used for the displaying of numerals for price purposes, each of the belts should have numerals on them from "0" to "9". To obtain the numeral or combination of numerals desired, it is merely necessary to rotate the proper shaft or shafts until the numeral or numerals appear on the face of the sign, as shown in the drawing. When three belts are used, one of the belts may have designating characters on it such as the cent sign, dozen, or each.

One of the advantages of our sign is in its hanging or supporting mechanism which makes possible the placement of the sign almost any place inside a building, with either its face or back to the wall or window, or it may be supported on a counter. This is accomplished by securing one or more clips 30 to the upper marginal edge portion of the sign. To each of these clips is secured an ordinary rubber vacuum cup 32. This vacuum cup or cups, as the case may be, are hingedly secured to the clips by having a small pin 33 journaled in the clip or clips.

By this arrangement, the vacuum cup 32 can be moved to a position back of the sign board 10 to engage a surface 34, as shown in Fig. 3, where it is desired that the face of the sign be observed from a point inside the building, or the vacuum cup can be swung to a position in front of the board as shown by dotted lines in Fig. 3, where it can engage the transparent window or like and the face of the sign can be read from a position outside of the building. On the end of each of the clips 30 that are to the back of the sign, we have provided a hook portion 31 which may serve for a variety of purposes such as aiding in the support of the vacuum cup 32, as shown in Fig. 3, for the hook engagement on a cable or like, or a supporting member for propping the sign on a table or like.

Some changes may be made in the construction and arrangement of our improved changeable sign without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claims any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

We claim:

1. In a sign, a substantially flat member having two parallel spaced apart slot openings, two rotatably mounted spaced apart shafts operatively journaled on one side of said substantially flat member, an elongated flexible element having its two end portions wound on said two shafts respectively and its portion extending between said two shafts extending through one of said slot openings and then back through the other slot opening, indicia on said elongated flexible element, and a spring bow member with its two ends bent to form wedge angles having said end portions frictionally engaging those portions of said flexible elongated element that are in close prox-

imity to said shafts and extending away from said shafts; said bow free of engagement with said belt on said shafts except at its two wedge ends and bowed away from that portion of said belt between said two shafts.

2. In a sign, a substantially flat member having parallel spaced apart slot openings, two rotatably mounted spaced apart shafts operatively rotatably mounted on one side of said substantially flat member, an elongated flexible belt element having its two end portions wound on said two shafts respectively and its portion extending between said two shafts extending through one of said slot openings and then back through the other slot opening, indicia on said elongated flexible belt element, and a detachable spring bow member with its two end portions each bent at an angle extending unsupported between said two shafts bowing outwardly and away from that portion of the belt between said two shafts and having its two ends frictionally and wedgingly engaging the under side of said belt element where it approaches said two shafts respectively.

3. In a sign, a base member, two rotatably mounted spaced apart shafts on said base member, an elongated belt element having its two end portions wound on said two shafts respectively, indicia on said belt element, and a detachable spring bow member extending between said two shafts with its center portion bowing outwardly from and out of engagement with said belt element and its two ends bent inwardly for frictionally engaging portions of said belt element between said two shafts and also portions of said belt element wound on said two shafts respectively.

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