This invention relates to apparatus for the storage, display and dispensing of articles of merchandise.

A dispensing unit constructed in accordance with the invention includes a plurality of vertical magazines arranged one behind another, each magazine having at its upper end a dispensing opening through which the uppermost article in the stack bears; the plate 16 has less horizontal depth than the packet, so that the front end portion of the packet is exposed for gripping and drawing horizontally forwardly between the plate 16 and the upper end of the magazine. The depth of the gap between the plate and the top of the magazine is preferably such as readily to accept the thickness of one packet P but not the combined thickness of two packets P.

The magazine sleeves 10 and the upper plates 16 are mounted in a frame which is grid-like in plan but step-like in end elevation. The frame comprises a plurality of parallel, vertical, wooden transverse members 18 extending the full width of the apparatus and a plurality of side members 20 supported by the transverse members 18. Each of these side members 20 consists of a bar of timber having horizontal, longitudinal grooves in its sides, and each glass plate 16 is supported between a pair of adjacent side members 20, the lateral marginal portions of the plate 16 being slidably received in the grooves in the side members 20. Each side member 20 is extended rearwardly, through a slot in the adjacent transverse member 18, and is secured at its rear end by a dowel to the next transverse member 18 to the rear. Between the last mentioned pair of transverse members 18, the groove in the side member 20 receives and supports an outwardly directed flange 22 at the upper end of the magazine sleeve 10. Each side member 20 therefore plays its part in supporting the glass plate 16 of one magazine and the sleeve 10 of the adjacent magazine to the rear. This does not apply, of course, to the side members which support the glass plates in the rearmost row A. The above described construction is clearly illustrated in the drawings. In FIGURE 3, for the sake of clarity, the magazine in row B is shown with the piston 12 omitted and the magazine in row C is shown with the sleeve 10 and the piston 12 completely omitted. This construction also allows units of different sizes to be built up using many standardized parts. For example, the side members 20 (except for those along the two sides of the apparatus) are all of the same cross-section and so can conveniently all be cut from uniform stock.

In order to prevent accidental withdrawal of the glass plate 16 with the articles, there is provided a small metal catch 24 attached to the front end of each side member 20, which catch is notched and loosely mounted so that it can be raised against gravity to bring the notch in register with the groove. Alternatively the catch may be fixedly secured so that the glass plate 16 must be pressed downwardly to clear the lower edge of the notch. The glass plate 16 is of course readily removable for refilling the magazine from above.

The unit can advantageously be mounted at the end of a counter, where it is readily accessible to the counter assistant, or against the wall. The unit is extremely compact and allows use to be made of the space below counter level which is often wasted and which is always a bad display position. At all times the top packet in each storage column is fully exposed to view and is readily accessible for withdrawal. Upon withdrawal of any packet the next packet in the same column is immediately displayed to view and made available for withdrawal.

While one particular form of dispensing unit has been described above by way of example, it is to be understood that the invention is not limited to the details thereof, many variations and modifications being possible within the scope of the appended claims.

For example, in one modified form of the invention the single spring 14 for urging the piston 12 of each magazine is replaced by three aligned, coil compressing springs of substantially equal length but different diameters, which are arranged to telescope partially one within another. The uppermost spring is mounted at its lower end in a cup, which is, in turn, received inside the upper end por-
tion of the second spring, this spring abutting the under-
side of an outward flange at the upper end of the cup.
The lower end of the second spring is received in another
flanged cup received in the upper end portion of the third
or lowest spring. The third spring may also be supported
in a similar cup. The depth of the cups is approximately
one third of the free length of each spring, so that when
each spring is fully compressed, to about one third of its
length, the “dead” space taken up by the three springs
is little more than the space taken by a single spring, and
is only about one third of the space required by a single
spring of the same (combined) stroke, thereby allowing
more efficient use to be made of the overall length of the
magazines. The cups also serve to restrain the springs
from buckling, and may render any additional guide tube
or the like unnecessary. This arrangement is illustrated
diagrammatically in FIGURE 6.

Another form of the invention employs a zig-zag leaf
spring, which requires very little dead space when fully
compressed. A spring of this form may however require
guide means.

Each of the last two described forms of the invention
is particularly useful when the apparatus is required to be
mounted horizontally upon a wall, since it allows the
projecting length of the magazines to be minimized.

I claim:

1. A storage display and dispensing apparatus com-
prising a plurality of vertical magazines arranged in a
series one behind another, each magazine having at its
upper end a dispensing opening through which the upper-
most article of a stack of articles in the magazine can
be horizontally withdrawn, the magazines of said series
being successively taller with their dispensing openings
at vertically staggered levels to allow an article to be with-
drawn forwardly from one magazine across the top of the
adjacent magazine to the front, a frame for supporting
said magazines, said frame comprising a plurality of
transverse members extending transversely to the direction
in which said articles are to be withdrawn and a plurality
of side members extending transversely to said transverse
members, one side member being positioned on each of
two opposite sides of each magazine, each side member
being provided with a horizontal slot opening toward a
magazine, said slots extending horizontally from a posi-
tion at the top of one magazine along the sides of the
taller adjacent magazine whenever a taller adjacent maga-
azine exists, a vertical tube forming part of each maga-
zine, said tube being open at its upper end to receive a
stack of said articles and provided at said upper end with
outwardly extending projections seated in the slots of the
side members extending along the sides of that magazine,
a translucent plate forming the top of each magazine
located in those slots of the side members which are posi-
tioned at the top of that magazine, and means for urging
a stack of articles in each tube upwardly toward said
translucent plate.

2. Apparatus as claimed in claim 1, wherein said side
members comprise uniform bars formed with grooves con-
stituting said slots.

3. Apparatus in accordance with claim 1, wherein the
means urging the articles towards the upper end of the
stack comprises a spring urged piston.

4. Apparatus in accordance with claim 3, wherein the
piston is urged by a single coil compression spring which
is prevented from buckling by means of a telescopic tube
assembly coaxial with the spring and secured at its upper
end to the piston.

5. Storage and dispensing apparatus comprising a
plurality of elongate magazines, each adapted to house a
stack of articles, said magazines being arranged side-by-
side in rows, one row behind another, each magazine hav-
ing a dispensing end and being positioned between two
overlapping pairs of opposed side members, each pair of
which brackets two adjacent magazines, is provided with
facing slots and extends transversely with respect to said
dispensing ends, a tube extending longitudinally of the
magazine and open at the dispensing end, said tube hav-
ing outwardly directed flanges which engage in the slots
of one of said pairs of opposed side members, a plate of
transparent material slidably received in slots of the other
of said pairs of opposed side members, the end of said
tube and said plate defining a dispensing opening, and
resilient means for urging said stack of articles against
said plate, said dispensing openings of said magazines
in one row facing towards the row in front and being
positioned beyond the dispensing ends of the magazines
in the row in front.

References Cited by the Examiner

UNITED STATES PATENTS

181,834 9/1876 Goehring _____________ 312—71
2,083,843 6/1937 Hicks _______________ 312—71
2,128,781 8/1938 Lister et al. __________ 312—45
2,435,104 1/1948 Solomon _____________ 221—37
2,503,741 4/1950 Johnson ______________ 224—15
2,841,206 7/1958 O'Brien ______________ 248—403
3,039,758 6/1962 Gratzmuller __________ 267—1

CLAUDE A. LE ROY, Primary Examiner.
J. F. FOSS, Assistant Examiner.