MODEL OF THE MONTH:

Lightship

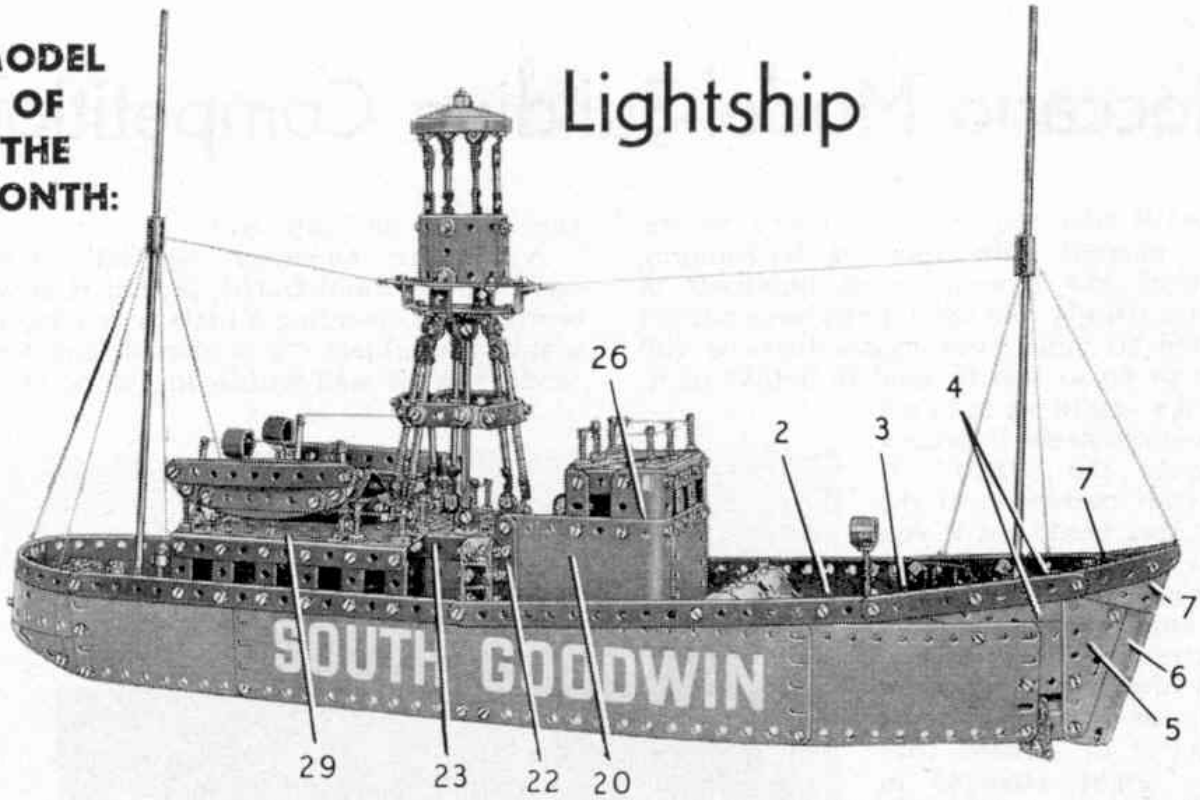

Fig. 1. An attractive model of a modern Lightship that should prove a popular subject with all lovers of ships.

MOST model-builders are frequent visitors to their local Meccano Dealers, and the fascinating display models shown by them have aroused widespread interest. One of the most popular of the display models distributed recently is based on a modern lightship, and we have received many requests for constructional details of it. This month a modified form of the model is included as our "Model of the Month" subject, and a general view of the Lightship is shown in Fig. 1 on this page.

Our model is based on a modern lightship and includes many details of the actual vessel. For convenience of construction, the assembly of the model can be divided into two main stages. These are the construction of the hull and the assembly of the superstructure. The two units can be pre-assembled and bolted together, and then the model can be completed by adding the mast, winch and deck fittings.

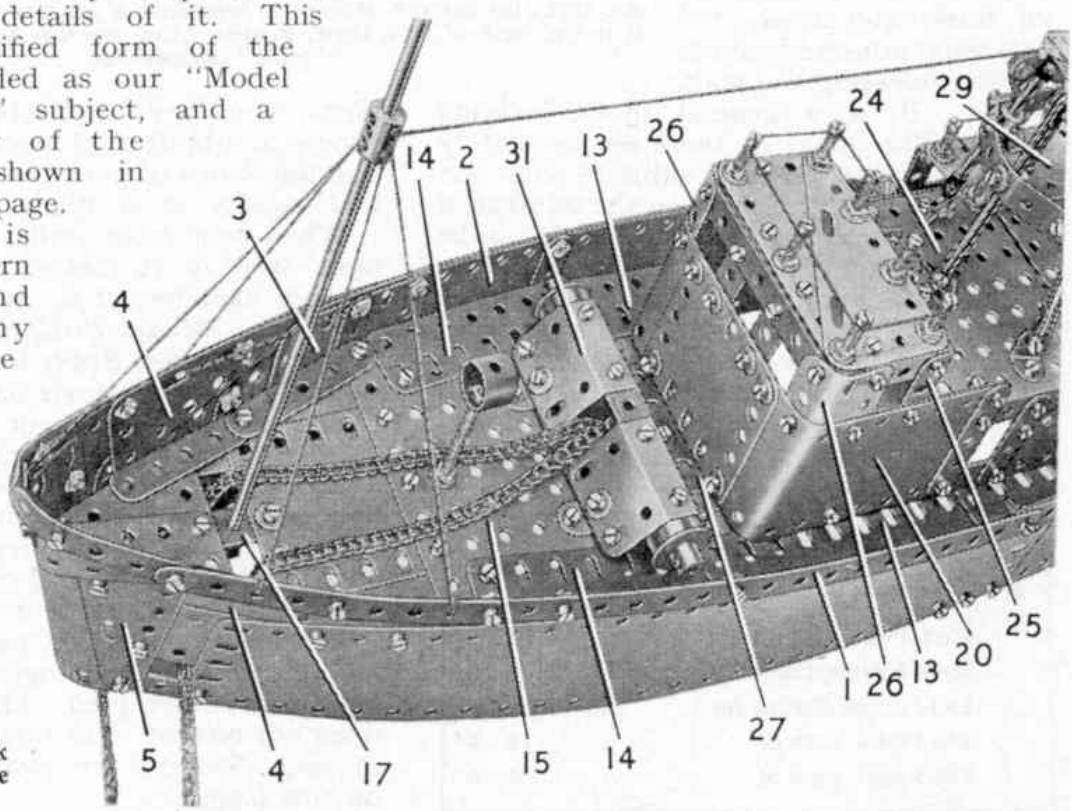

Fig. 2. The fore-deck and bridge structure of the Lightship.

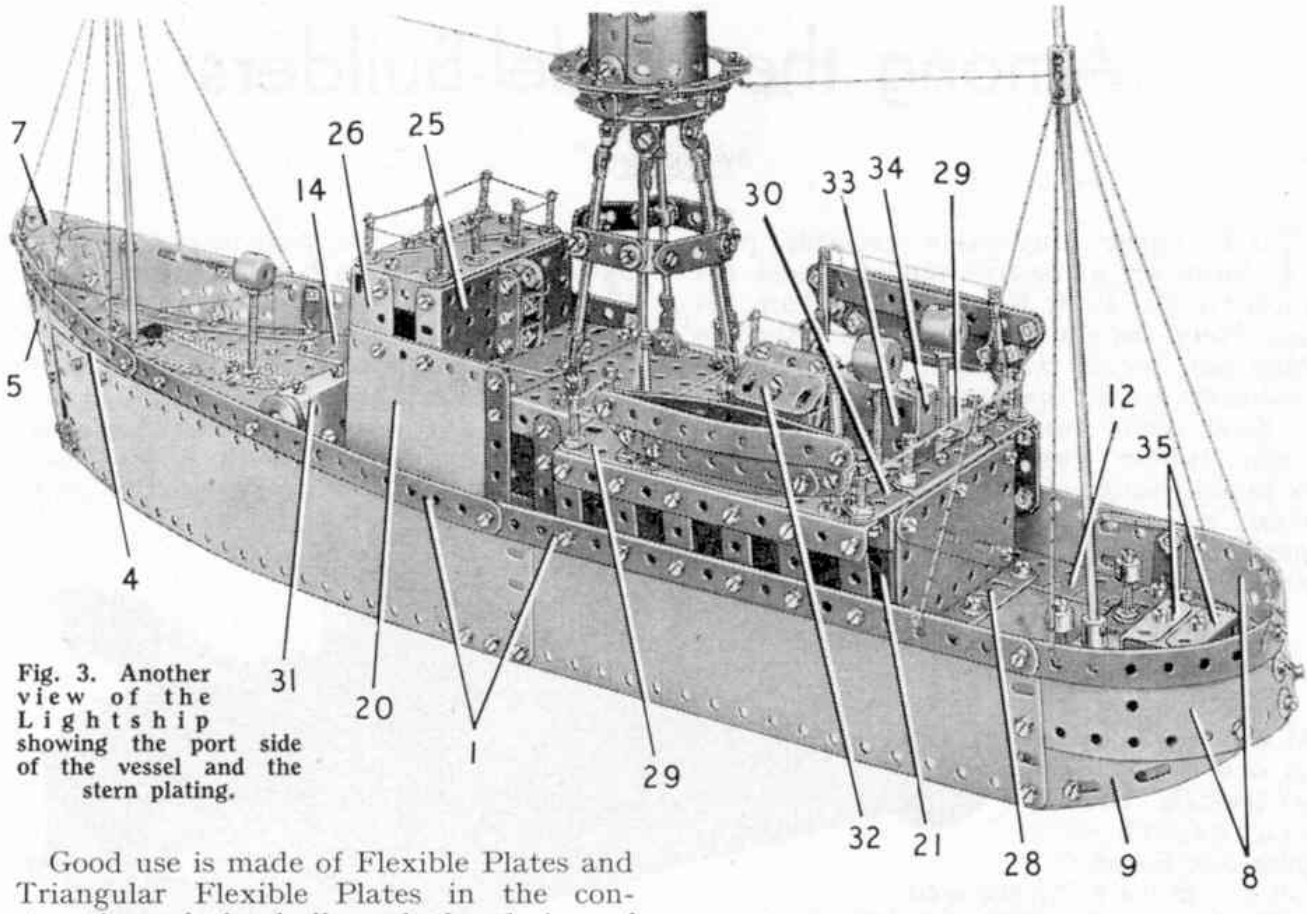

Fig. 3. Another view of the Lightship showing the port side of the vessel and the stern plating.

Good use is made of Flexible Plates and Triangular Flexible Plates in the construction of the hull, and the design of the light tower is noteworthy for the use it makes of Rods and Rod and Strip Connectors. The model illustrated is not fitted with a working light, but those who wish to have one can easily fix a small bulb holder, with a low voltage bulb, inside the lantern chamber. The bulb can be operated from a dry battery of suitable voltage housed inside the hull. Suitable bulb holders and bulbs can be obtained from most electrical and radio dealers.

Full instructions for building the Lightship and a list of the parts required can be obtained by writing to the Editor, enclosing a 2d. stamp for postage. The main Meccano Agents in Canada, Australia, New Zealand, South Africa, Ceylon and the United States have copies of the *current* "Model of the Month" instructions, and readers living in these countries can obtain copies of the Lightship instructions by writing to the appropriate Agents, enclosing suitable stamps for return postage.

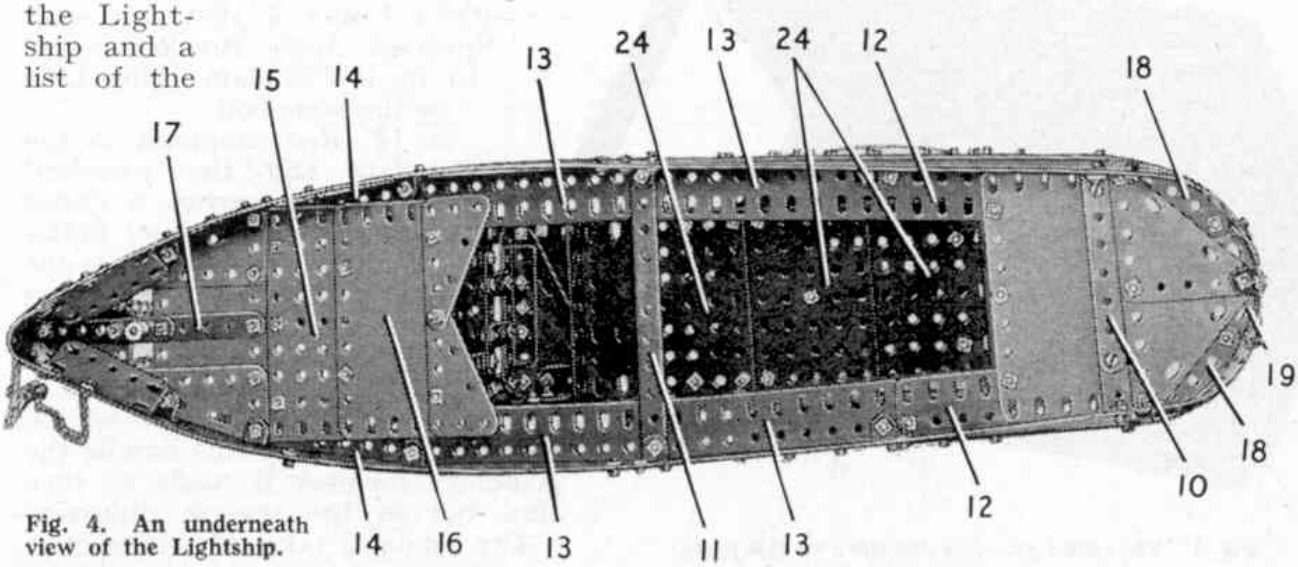

Fig. 4. An underneath view of the Lightship.

MODEL OF THE MONTH

LIGHTSHIP

Illustrated in the April 1957 issue of the "Meccano Magazine"

Construction of the Hull

The side of the hull seen in Fig. 3 consists of a 12½" x 2½" and a 9½" x 2½" Strip Plate overlapped two holes. The lower edges of these Plates are strengthened on the inside by a 12½" and a 9½" Strip, and the upper edges are strengthened by two 9½" Strips 1. Towards the bow the side is extended upward by a 5½" x 1½" Flexible Plate 2, a 2½" x 1½" Flexible Plate 3 and a 3½" x 1½" Triangular Flexible Plate 4. A 3½" x 1½" Triangular Flexible Plate 5 is bolted vertically to the Plate 4, and is connected to the 9½" x 2½" Strip Plate by two 2½" x 1½" Flexible Plates. The lower one of these is bent inward slightly to form the hawse hole for the anchor chain. The upper edge of the Triangular Plate 4 is strengthened by a 4½" Strip.

The main section of the side seen in Fig. 1 consists of a 12½" x 2½" Strip Plate with a 5½" x 2½" Flexible Plate at the stern arranged to overlap the Strip Plate by three holes and a similar Flexible Plate at the bow overlapped two holes. The side is strengthened by Strips and is extended at the bow by Flexible and Triangular Flexible Plates arranged in exactly the same way as the side already described.

The sides are connected at the bow by a curved 3½" x 2½" Flexible Plate 6 and two curved 2½" x 1½" Triangular Flexible Plates 7. The upper edges of the Plates 7 are strengthened by two curved 2½" Strips. At the stern the sides are connected by two curved 5½" x 1½" Flexible Plates 8 edged at the top by 4½" Strips. A 3½" x 1½" Triangular Flexible Plate 9 is bolted in position on each side. The lower edge of the stern is strengthened by two 3" Strips and a 2½" Strip arranged inside the Plates. A 3½" Strip 10 is attached to 1" x ½" Angle Brackets fixed between the sides at the stern.

Details of the Main Deck

The deck is supported by four 1" x ½" Angle Brackets and a ½" x ½" Angle Bracket on each side. The 1" x ½" Angle Brackets are attached by bolts through their slotted holes level with the upper edge of the side, and a 5½" Strip 11 is fixed to two of the Angle Brackets between the sides. On each side of the hull a 4½" Flat Girder 12, two 5½" Flat Girders 13 and a 3½" Flat Girder 14 are fixed to the lugs of the Angle Brackets. A 4½" x 2½" Flat Plate 15, a 4½" x 2½" Flexible Plate 16 and two 2½" x 1½" Triangular Flexible Plates are bolted to the Flat Girders. The Flat Plate 15 is extended forward by a 2½" x 2½" Flexible Plate and two 3½" x 1½" Triangular Flexible Plates. The deck at the bow is completed by two 2½" x 1½" Triangular Flexible Plates supported by a 5½" Strip 17, leaving two holes in the deck to accommodate the anchor chains.

The deck at the rounded stern is formed by a 4½" x 2½" Flexible Plate and two 2½" x 2½" Triangular Flexible Plates bolted to the Flat Girders 12 and to a 4½" Flat Girder fixed across the hull between the ends of the Flat Girders 12. Two 2½" Curved Strips 18 connected by a 2½" Stepped Curved Strip 19 are bolted to the Triangular Flexible Plates and are connected to the stern by an Angle Bracket.

The Bridge and Deck House

The side of the deck house and bridge superstructure seen in Fig. 1. consists of a $2\frac{1}{2}$" x $1\frac{1}{2}$" and a $5\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plate bolted together and extended forward by a $4\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plate 20. The lower edges of the Plates are strengthened by a $9\frac{1}{2}$" Strip, and a 2" Angle Girder 21 and a $2\frac{1}{2}$" Strip 22 are fixed in position. A $7\frac{1}{2}$" Strip 23 is bolted between Girder 21 and Strip 22. A ladder attached to this side is formed by four Double Brackets bolted between two 2" Strips. The side seen in Fig. 3 is similar to the one described above but the $2\frac{1}{2}$" x $1\frac{1}{2}$" and $5\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plates are overlapped two holes to leave a gap to represent a doorway.

The sides are connected by three $3\frac{1}{2}$" x $2\frac{1}{2}$" Flanged Plates 24 that form the light deck, and these are extended forward by two $2\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plates that complete the deck up to the rear of the bridge. The rear of the bridge is a $3\frac{1}{2}$" x $2\frac{1}{2}$" Flanged Plate 25, and it is connected by two $1\frac{1}{2}$" Angle Girders to a $2\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plate 26 on each side. The Plates 26 and 20 are curved as shown and a $2\frac{1}{2}$" x $2\frac{1}{2}$" Flexible Plate is bolted between the ends of the Plates 20 to form the front of the bridge. A $3\frac{1}{2}$" Strip is fixed between the upper corners of the Plates 26 and a $2\frac{1}{2}$" Angle Girder is attached to this Strip. The roof of the bridge is formed by two $3\frac{1}{2}$" x 2" Triangular Flexible Plates bolted to the $1\frac{1}{2}$" and the $2\frac{1}{2}$" Angle Girders. The window frames are formed by $1\frac{1}{2}$" Strips.

Two $3\frac{1}{2}$" x 2" Triangular Flexible Plates are bolted to the Girders 21 to form the rear of the deckhouse, and one of them is fixed to a $2\frac{1}{2}$" Angle Girder attached to one of the Flanged Plates 24.

The bridge and deckhouse superstructure is attached to the main deck by a $2\frac{1}{2}$" Angle Girder 27 at the front and a $3\frac{1}{2}$" Angle Girder 28 at the rear. A $5\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plate 29 is fixed at a slight angle to each side of the Flanged Plates 24, so that it corresponds to the shape of the hull. The front end of the Flexible Plate is bolted in place and the rear end is supported by a 2" Slotted Strip 30 attached to the deckhouse. The Flexible Plate is edged by a $5\frac{1}{2}$" Angle Girder and this is connected to the hull by six $1\frac{1}{2}$" Strips.

The Lamp House and its Tower.

The lamp tower isformed by six $3\frac{1}{2}$" Rods fitted at each end with Rod and Strip Connectors. These are bolted to Angle Brackets fixed to two of the Flanged Plates 24 and they are connected by Angle Brackets to a six hole Wheel Disc. A Face Plate is attached to the Wheel Disc by $\frac{3}{8}$" Bolts, and four $\frac{1}{2}$" Reversed Angle Brackets bolted to the Face Plate support a ring of four $2\frac{1}{2}$" Stepped Curved Strips. The Curved Strips are connected by Angle Brackets to a cylinder formed by two $5\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plates rolled into a circle and overlapped ten holes. Four Rod nd Strip Connectors bolted to the cylinder are fitted with $1\frac{1}{2}$" Rods, and further Rod and Strip Connectors on the upper ends of these Rods are connected to Angle Brackets bolted to a Wheel Flange. The lamp is capped by a Conical Disc and a Collar attached by a $\frac{3}{4}$" Bolt to a Wheel Disc fixed to the Wheel Flange by the same bolts as the Angle Brackets.

Arrangement of the Deck Fittings

Each of the masts consists of an 8" and a 5" Rod joined by a Coupling. The foremast is supported in a Double Arm Crank and the aft mast is mounted in a Rod Socket. The ventilators are Chimney Adaptors held by nuts on Screwed Rods, and the handrail supports are $\frac{3}{4}$" Bolts, each of which is fixed in place by two nuts. Cord tied to the Bolts forms the rails.

The winch assembly 31 consists of two $2\frac{1}{2}$" x $1\frac{1}{2}$" Flexible Plates connected by two $3\frac{1}{2}$" Strips and a $3\frac{1}{2}$" x $\frac{1}{2}$" Double Angle Strip. A $4\frac{1}{2}$" Rod is passed through the lugs of the Double Angle Strip and is fitted at each end with a $\frac{3}{4}$" Flanged Wheel. The winch is attached to the main deck by three Obtuse Angle Brackets.

Each of the lifeboats is formed by two $4\frac{1}{2}$" Strips curved slightly and connected by a Fishplate at each end to a 4" Curved Strip. A 3" Strip is bolted to the Curved Strip as shown. Each lifeboat is suspended by Cord passed through Cord Anchoring Springs on $1\frac{1}{2}$" Rods, which are supported in Rod and Strip Connectors attached to the deck by Angle Brackets.

The hatchway 32 consis s of four 1" x 1" Angle Brackets bolted together to form a square. Two $1\frac{1}{2}$" Flat Girders are connected by Obtuse Angle Brackets and are attached to the square by further Obtuse Angle Brackets. To one end of the structure a 1" x $\frac{1}{2}$" Angle Bracket is bolted and this supports a Channel Bearing 33. The complete assembly is attached to the deck by an Angle Bracket and by the lower lug of a 1" Reversed Angle Bracket 34 fixed to the rear end of the Channel Bearing.

Two $1\frac{1}{2}$" Angle Girders 35 and two $1\frac{1}{2}$" x $\frac{1}{2}$" Double Angle Strips are bolted to a $1\frac{1}{2}$" Flat Girder, one of the bolts being used also to fix a $\frac{1}{2}$" Reversed Angle Bracket in place. The lower lug of the Reversed Angle Bracket is used to attach the structure to the deck.

PARTS REQUIRED

2	of	No.	1
6	"	"	1a
2	"	"	1b
2	"	"	2
8	"	"	2a
5	"	"	3
4	"	"	4
12	"	"	5
6	"	"	6
20	"	"	6a
12	"	"	9
1	"	"	9b
2	"	"	9d
2	"	"	9e
4	"	"	9f
4	"	"	10
11	"	"	11
27	"	"	12
4	"	"	12a
13	"	"	12b
11	"	"	12c
2	"	"	13a
2	"	"	15
1	"	"	15a
6	"	"	16

8	of	No.	18a
2	"	"	20b
1	"	"	24a
1	"	"	24c
356	"	"	37a
290	"	"	37b
84	"	"	38
1	"	"	40
2	"	"	48
1	"	"	48b
4	"	"	53
1	"	"	53a
2	"	"	55a
13	"	"	59
1	"	"	62b
2	"	"	63
3	"	"	81
2	"	"	89b
2	"	"	90
5	"	"	90a
1	"	"	94
4	"	"	103
3	"	"	103c
2	"	"	103d
3	"	"	103h

1	of	No.	109
18	"	"	111
16	"	"	111a
4	"	"	111c
2	"	"	111d
1	"	"	124
5	"	"	125
1	"	"	137
1	"	"	160
3	"	"	164
4	"	"	176
1	"	"	179
1	"	"	187a
14	"	"	188
6	"	"	189
2	"	"	190
1	"	"	190a
4	"	"	191
2	"	"	192
1	"	"	196
2	"	"	197
24	"	"	212
6	"	"	221
2	"	"	223
6	"	"	224
4	"	"	225