Repealed with savings by Ord No 7 of 1930. Section 28.

CHAPTER 72.

PETROLEUM AND INFLAMMABLE LIQUIDS.

[No. XX of 1916.]

[21st August, 1917.]

Short title.

1. This Ordinance may be cited as the Petroleum and Inflammable Liquids Ordinance.

Interpretation.

2. In this Ordinance, unless the context otherwise requires,—

"petroleum" includes petroleum, dangerous petroleum as herein defined, oil fuel as herein defined, kerosene oil, rock oil, Rangoon oil, Burmah oil, paraffin oil and their products, any oil made from petroleum, coal, schist, shale, peat, or other bituminous substance, methylated spirit, ether and carbon bisulphide, and any product of or mixture containing them, and includes any other inflammable liquid declared by the Governor in Council by Proclamation in the Gazette to be subject to the provisions of this Ordinance;

"dangerous petroleum" means petroleum which, when tested in the manner hereinafter prescribed, gives forth an inflammable vapour at a temperature below 85° Fahrenheit;

"oil fuel" means petroleum which, when tested in the manner hereinafter described, does not give forth an inflammable vapour at a temperature below 130° Fahrenheit;

"licensed building" means any building, tank with pipe lines, or other erection licensed by the Governor, for the storage of petroleum, oil fuel, or dangerous petroleum, as the case may be.

IMPORTATION.

Mooring of vessel with petroleum on board.

3.—(1) Every vessel, punt, or lighter, carrying a cargo consisting wholly or in part of petroleum, and every vessel carrying a cargo consisting wholly or in greater part, of petroleum, shall, from the time the vessel enters any port in

the colony, until it goes out to sea, or from the time when any petroleum is placed on board of the vessel until it goes out to sea or until the petroleum is moved from on board, conform to the directions in respect of the place at which it is to be moored issued by the harbour master or other proper officer of the port, specially for that vessel. The directions shall be in writing and shall set out the reasons for them.

(2) If any vessel as specified in the preceding subsection is moored in any place in contravention of the directions issued under this section, the owner or master thereof shall be liable on summary conviction to a penalty not exceeding one hundred dollars, and the harbour master or officer may cause the vessel to be removed, at the expense of the owner or master thereof, to the place conforming to the directions, and all expenses incurred in the removal may be sued for and recovered by the harbour master or officer against the owner or master. Penalty.

(3) This section shall not apply to petroleum contained in the supply tanks or bunkers of vessels the motive power of which is obtained from petroleum.

4.—(1) No dangerous petroleum shall be introduced into the colony except in steel barrels or metal drums, so constructed and packed as to prevent any leakage of the petroleum contained therein and in accordance with regulations made under the provisions of this Ordinance. Restrictions on importation of dangerous petroleum.

(2) Everyone who contravenes this section shall be liable on summary conviction to a penalty not exceeding two hundred dollars. Penalty.

STORAGE.

5.—(1) The Governor may from time to time provide a place (to be called a petroleum warehouse) in the city of Georgetown, and in the town of New Amsterdam, or in any other place or places, for the storage of petroleum, and may provide a separate warehouse or warehouses for dangerous petroleum. Appointment and regulation of petroleum warehouses.

(2) A petroleum warehouse shall be under the charge of the officer (with other officers and servants under him) from time to time appointed by the Governor.

(3) The Governor may from time to time issue a licence for any building, tank with pipe lines, or other erections, to be used for the storage of petroleum, oil fuel, or dangerous petroleum, as the case may be.

(4) A licensed building shall be under the charge of the person from time to time appointed by the Governor.

Charges for storing petroleum in petroleum warehouses.

6. There shall be charged upon all petroleum, or on any kind thereof, stored in a petroleum warehouse, over and above any duty due thereon, storage at the rates from time to time fixed by the Legislative Council, and the storage shall be paid before the removal of the petroleum from the warehouse.

General provisions as to storage of petroleum.

7. All petroleum imported into the colony shall when landed be removed from the wharf where it is landed within seventy-two hours, and shall be stored in a petroleum warehouse or licensed building, but this provision shall not apply to petroleum for immediate transit from the port of arrival to other places in the colony, or to petroleum transferred to another vessel, or to oil fuel in transfer through pipe-lines to a licensed building.

Marking petroleum and access to petroleum store.

8.—(1) Each lot of petroleum, other than oil fuel, stored in a petroleum warehouse or licensed building shall be stored separately, and shall have a distinguishing mark, and shall be so packed that an account may be taken of it as often as deemed necessary or expedient.

(2) The owner of the petroleum, or his agent, shall have free access to a petroleum warehouse, while it is open for the receipt or delivery of petroleum, to examine and inspect the petroleum and, subject to the regulations made under section twenty-nine of this Ordinance, to take all necessary precautions for preventing leakage and waste.

Transfer of owner's interest in petroleum whilst in petroleum warehouse.

9. Anyone having petroleum in a petroleum warehouse may transfer his right, title, or interest therein to any other person, who shall have the same powers and liabilities in respect thereof as the original proprietor, and every transfer shall be notified in writing by the proprietor to the officer in charge of the warehouse.

Restrictions as to sale and storage:

10.—(1) Any building desired to be licensed under this Ordinance for the storage of petroleum shall be constructed in accordance, and shall conform in every way, with specifications and regulations framed under this Ordinance.

(2) Petroleum shall not be kept for sale in any larger quantity than fifty cases, or four hundred and twenty-five gallons, in any one store, shop, or other building,

within the city of Georgetown or the town of New Amsterdam, except in a petroleum warehouse or licensed building.

(3) Petroleum in any larger quantity than one hundred gallons shall not be kept for private consumption in any premises in Georgetown or New Amsterdam or in any area prescribed by the Governor in Council by order in the Gazette, otherwise than in a licensed building:

Provided that the quantity of petroleum contained in the tank of any motor car, or other motor vehicle, or motor vessel, kept in those premises shall be excluded from the computation of the total quantity allowed to be kept under this sub-section. Proviso.

(4) Dangerous petroleum shall not be kept for sale by any person whether by wholesale or retail nor be stored in any place in Georgetown or New Amsterdam or in any area prescribed by the Governor in Council by order in the Gazette unless it is stored in a petroleum warehouse or licensed building.

(5) Any petroleum kept in contravention of this section or of the regulations framed under this Ordinance may be forfeited, and in addition thereto the occupier of the place where that petroleum is kept shall be liable on summary conviction to a penalty not exceeding one hundred dollars for each day whereon petroleum is therein kept in contravention of this section and in addition, if he is licensed to sell petroleum, to the forfeiture of the licence; Penalty.

(6) This section shall not apply to petroleum contained at any time in the tank of any motor vehicle or motor boat.

11.—(1) Petroleum shall not be received into or delivered from any building licensed under this Ordinance for the storage of petroleum, other than a tank for oil fuel, except between the hours of half past six o'clock in the forenoon and six o'clock in the afternoon, except with the permission of the Comptroller. Hours of delivery.

(2) If any petroleum is delivered contrary to this section the licensee of the building shall be liable on summary conviction to a penalty not exceeding five hundred dollars. Penalty.

12.—(1) No lighted candle, lamp, or lantern, or naked light of any kind, no electric light with wandering lead, and no match, shall be at any time by day or night No light to be taken into, nor smoking allowed in, any warehouse or licensed building.

taken into a petroleum warehouse or licensed building, under any pretence or for any purpose whatever.

(2) Smoking shall not in any circumstances, be permitted in any petroleum warehouse or licensed building.

Penalty.

(3) Anyone contravening the provisions of this section shall be liable on summary conviction to a fine not exceeding five hundred dollars or to imprisonment for a period not exceeding six calendar months.

Use of machines for the manufacture of gas from petroleum:

13.—(1) When it appears to the Governor that any machine for the manufacture of gas from petroleum, or for the use of petroleum as fuel, is so constructed that the use of the petroleum is unattended with material risk or danger and that the premises in which the machine is kept are so situated and constructed that a licence under this Ordinance may be granted consistently with public safety, the Governor, if he sees fit, may grant a licence under his hand to have and to use, upon the premises to be specified in the licence, for the purpose of manufacturing gas by the machine, or for the use in the machine of petroleum as fuel, any quantity of petroleum not exceeding a limit to be specified in the licence.

(2) The licence shall contain a full description of the machine intended to be used and of the premises where it is situated, and shall specify the time during which the licence is to be in force.

(3) There may be annexed to the licence any conditions as to the time of use of the machine, the mode or manner in which the petroleum is to be stored, and any other matters which the Governor thinks necessary for diminishing the risk from explosion or fire, and the premises so licensed shall be subject to the same control and inspection as any other licensed buildings under this Ordinance.

(4) Any licensee who violates any conditions of a licence issued under this section may have his licence forfeited and shall be liable on summary conviction to a penalty not exceeding two hundred and fifty dollars:

penalty: Proviso.

Provided that in any proceedings under this Ordinance against any person having a licence under this section, in computing the quantity of petroleum which the licensee is authorised by the licence to have and use upon his premises, the quantity contained in the machine in respect of which the licence is granted shall be excluded from the computation if the quantity of petroleum contained in that machine does not exceed the limits specified in the licence.

TESTING OF PETROLEUM.

Notification by consignee of arrival of petroleum and procuring of samples for testing.

14.—(1) As soon as the Comptroller of Customs ascertains, either from the ship's manifest or in any other manner, that a vessel entering a port in the colony, is laden or partly laden with petroleum for importation, he shall cause not less than three samples to be taken of each brand or quality of the petroleum, and shall transmit them to the government analyst or other person authorised by the Governor under this Ordinance to test samples, in order that they may be tested.

Testing and certifying samples;

(2) Within twenty-four hours (Sundays and public holidays excepted) of the receipt of the samples, the government analyst or other person authorised as aforesaid shall test them, and certify in duplicate to the Comptroller of Customs, in the form contained in the first schedule hereto, that they as tested by him do or do not, as the case may be, consist of dangerous petroleum.

first schedule.

Effect of certificate that petroleum is dangerous.

(3) If the Government analyst or other person authorised as aforesaid certifies that the samples do consist of dangerous petroleum, the Comptroller of Customs shall transmit one copy of the certificate to the owner of the petroleum from which the samples have been taken, and that petroleum shall be considered to all intents and purposes as dangerous within the meaning of this Ordinance.

Taking samples of petroleum from warehouse or licensed building to be tested.

15.—(1) The officer in charge of a petroleum warehouse or licensed building may cause samples to be taken of any petroleum stored in the warehouse or licensed building, whether samples of it have been already tested or not, and transmit the samples to the government analyst, or other person authorised as aforesaid, to be tested, and the government analyst or that other person, shall thereupon test them and certify to the officer in charge of the warehouse or licensed building in the form contained in the first schedule hereto, that they do or do not, as the case may be, consist of dangerous petroleum.

first schedule.

(2) If the government analyst or other authorised person aforesaid certifies that the samples do consist of dangerous petroleum, the officer in charge of the warehouse or licensed building shall transmit one copy of the certificate to the owner of the petroleum from which they have been taken, and that petroleum shall be considered to all intents and purposes to be dangerous petroleum within the meaning of this Ordinance.

Case of vessel with petroleum requiring quick despatch.

16. Whenever a vessel arrives at any port in the colony laden or partly laden with petroleum for importation and requiring quick despatch, the Comptroller of Customs may, notwithstanding the provisions hereinbefore contained, permit that petroleum to be landed and stored in a petroleum warehouse or licensed building under the supervision of the officer in charge thereof, in a part thereof to be set apart for the storage of petroleum stored under this section, and all petroleum so stored shall for the purposes of this Ordinance be considered as if it were on board the vessel from which it was landed, but shall, within seventy-two hours (Sundays and holidays excepted) after being stored, be dealt with under the provisions of this Ordinance affecting the testing and importation of petroleum.

Mode of determining temperature of flashing point; second schedule.

17. The temperature at which petroleum gives off an inflammable vapour shall, for the purposes of this Ordinance, be tested in the manner set forth in the second schedule hereto, and a model of the apparatus for testing petroleum shall be deposited at the government laboratory in Georgetown.

Appointment of persons authorised to test petroleum.

18.—(1) The Governor may appoint any fit and proper person as authorised to test petroleum under this Ordinance, and may at any time cancel the appointment, and shall cause to be published in the Gazette the name of everyone so authorised.

(2) That person shall, on the publication, be a person authorised to test petroleum under this Ordinance.

MISCELLANEOUS PROVISIONS.

Seizure of petroleum kept for sale in contravention of the Ordinance.

19. Any petroleum imported, kept, offered, or exposed for sale, contrary to the provisions of this Ordinance, shall be liable to be seized by any officer of customs, commissary of taxation, or member of the police force, and when proved to have been imported, kept, or offered or exposed for sale, may be adjudged by any magistrate to be forfeited.

Taking of samples of petroleum for testing purposes.

20.—(1) Any officer of customs, commissary of taxation, or member of the police force, or any other person appointed for the purpose by the Governor, may, at any reasonable time during the day, enter any premises and inspect and take samples of all petroleum there kept, or offered or exposed for sale therein, and may submit the samples to the government analyst or other the person authorised to test petroleum under this Ordinance.

(2) When a sample is taken under this section the person taking it shall then and there divide it into three parts, each part to be marked and sealed.

(3) He shall then deliver or cause to be delivered one of the parts to the owner of the petroleum, another of the parts to the government analyst or other the person aforesaid, and keep the third part for (if need be) future comparison and production in court.

Appointment of officer to take charge of licensed building.

(4) The Governor may appoint any person to be for the purposes of this Ordinance the officer in charge of any building, tank, or erection, licensed for the storage of petroleum, and that officer shall, at all reasonable times, have access to the licensed premises for the purpose of inspecting them or the storage of petroleum there or taking samples thereof or of taking samples of the petroleum in the same manner and for the same purpose as in the preceding sub-sections of this section.

Certificate of government analyst as evidence: first schedule:

21.—(1) On the hearing of any complaint or information for an offence against this Ordinance, the production of a certificate in the form prescribed by the first schedule hereto, signed by the government analyst or other person authorised to test petroleum under this Ordinance, shall be sufficient evidence of the facts therein stated, and no proof need be given of the signature or official character of the person so authorised:

Proviso.

Provided that the magistrate shall, on the request of the defendant and on his depositing the amount of the costs thereby occasioned, refer the certificate, if it has not been given by the government analyst, together with the part of the petroleum retained by the person taking the sample, to the government analyst for his certificate, and the provisions of this section shall apply to that certificate.

(2) If the person who has tested the petroleum is called as a witness at the request of the defendant, the defendant shall, unless the magistrate otherwise expressly orders, be liable to pay all costs occasioned by his being so called.

(3) The part of the petroleum retained by the person taking the sample shall be produced in court.

Search warrant:

22.—(1) Any magistrate or justice of the peace may, on reasonable cause assigned upon oath before him, issue a warrant under his hand for searching in the day time any

house, store-house, warehouse, shop, cellar, yard, wharf, or other place in which petroleum is suspected to be kept contrary to this Ordinance.

(2) All petroleum found to be kept contrary to this Ordinance, and also the vessels or other receptacles in which it is kept, shall be immediately seized by the searcher, who shall, unless the Governor otherwise directs, with all convenient speed after the seizure, remove it and the vessels and other receptacles in which it is contained to a petroleum warehouse or licensed building, and may detain them until it is adjudged, on a hearing before a magistrate, whether they shall be forfeited.

(3) The searcher, seizer, or person in charge of the warehouse or licensed building shall not be liable to any action for the seizure or detention, or for any loss or damage which happens to the petroleum or the vessels or other receptacles otherwise than by his wilful act or neglect :

Proviso.

Provided that where any petroleum is seized under this section proceedings for forfeiture thereof shall be commenced within seven days after the seizure.

Forfeiture of petroleum where quantity in excess is kept.

23.—(1) If in any place there is an excess of petroleum over the quantity permitted by this Ordinance or by any licence issued hereunder to be kept there, the whole of the petroleum there may be forfeited, and the person occupying or using the place shall be guilty of a contravention of this section unless he proves that he did not know, and could not with reasonable diligence have known, of that excess.

(2) If, in any place for the sale of petroleum, petroleum other than fuel oil is found in a receptacle which is not uninflammable, the receptacle and its contents shall be forfeited, and the person occupying and using the place in which petroleum is so found shall be guilty of a contravention of this section unless he proves that the failure in so keeping the petroleum was entirely without his negligence or fault.

(3) Everyone guilty of a contravention of this section shall be liable on summary conviction to a penalty not exceeding twenty dollars for every day on which the contravention occurs.

Penalty.

Disposal of forfeited petroleum.

24. Any petroleum forfeited under this Ordinance, together with the vessels or other receptacles containing it, shall be dealt with as the Governor directs.

Assault on person acting under this Ordinance.

25. Everyone who assaults, molests, or obstructs any person acting under this Ordinance shall be liable on summary conviction to a penalty not exceeding one hundred dollars.

Penalty.

Protection.

26. Everyone acting under the provisions of this Ordinance or of any regulation made under it, shall be entitled to the protection afforded by the Justices Protection Ordinance.

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Procedure.

27. All prosecutions and proceedings for fines, forfeitures and penalties under this Ordinance and for breaches of any regulation hereunder, may be instituted and conducted under the Summary Jurisdiction Ordinances by any harbour master, officer of customs, commissary of taxation, member of the police force, or person appointed by the Governor under this Ordinance.

Regulations.

28.—(1) The Governor and Legislative Council may make, alter, amend, or revoke regulations for any of the purposes of this Ordinance and for any of the following purposes:—

(*a*) the general management and regulation of petroleum warehouses and licensed buildings, and the duties and conduct of any person or persons in charge thereof or employed therein;

(*b*) the landing, receiving, depositing, guarding, delivery, and removing from one place to any other place, of any petroleum;

(*c*) the amount or quantity of any petroleum not exceeding one hundred gallons that may be kept by any private individual upon his own premises or any premises hired or occupied by him, and the conditions and requirements for the storage thereof;

(*d*) the amount or quantity of any petroleum that may be kept in any licensed building, the specifications for and the nature of the buildings, and the surroundings and situation of the premises, wherein those substances may be stored, and the nature, size, and capacity of the receptacles, including tanks with pipe-lines, within which petroleum may be stored or transported in, into, or upon those premises, and the due and proper inspection of all buildings, pipe-lines and premises;

(*e*) the sale by dealers of petroleum whether by wholesale or retail, including the quantity or amount permitted to be sold, the packages in which it shall be contained and the persons to whom the packages may be sold;

(*f*) the conditions upon which, the persons to whom, and the premises for which, any licence required under the provisions of this Ordinance may be issued.

(2) There may be annexed to the breach of any of the regulations any penalty, not exceeding two hundred and fifty dollars, the Governor in Council thinks fit.

Saving as to certain oils for lubricating purposes and spirits.

29. Nothing in this Ordinance shall be held to apply to oils which do not give off an explosive vapour, when tested in the manner hereinafter described, at a temperature below 200° Fahrenheit, or to spirits other than methylated spirit, or to dangerous petroleum not used for burning and contained in closed bottles or cans each containing not more than forty ounces.

SCHEDULES.

FIRST SCHEDULE.

(Sections 14 (2), 15, and 21.)

Certificate of Test of Petroleum.

I hereby certify that I have tested the samples of petroleum marked nos. forwarded to me to be tested at on the day of , 19 , and that those samples* consist of† , within the meaning of the Petroleum Ordinance.

Dated this day of , 19 .

(Signed) *A.B.*

Flashing point of sample, no. 1
Flashing point of sample, no. 2
Flashing point of sample, no. 3

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* "Do" or "do not," as the case may be.

† "Dangerous petroleum" or "oil fuel," as the case may be.

The flashing point need only be given when the sample is certified as consisting of dangerous petroleum, or of oil fuel.

SECOND SCHEDULE.

(Section 17.)

Directions for testing petroleum.—Specification of the test apparatus.

The following is a description of the details of the apparatus :—

The oil cup consists of a cylindrical vessel of 2 inches diameter, 2^2 inches height (internal) with outward projecting rim 5/10 inch wide, $\frac{3}{8}$ inch from the top, and $1\frac{7}{8}$ inches from the bottom of the cup. It is made of gun-metal or brass (17 B.W.G.) tinned inside. A bracket, consisting of a short stout piece of wire bent upwards and terminating in a point, is fixed to the inside of the cup to serve as a gauge. The distance of the point from the bottom of the cup is $1\frac{1}{2}$ inches. The cup is provided with a close-fitting overlapping cover made of brass (22 B.W.G.) which carries the thermometer and test lamp. The latter is suspended from two supports from the side by means of trunnions upon which it may be made to oscillate ; it is provided with a spout, the mouth of which is 1/16 inch in diameter. The socket which is to hold the thermometer is fixed at such an angle, and its length is so adjusted, that the bulb of the thermometer, when inserted to its full depth, is $1\frac{1}{2}$ inches below the centre of the lid.

The cover is provided with three square holes, one in the centre, 5/10 inch by 4/10 inch, and two smaller ones, 3/10 inch by 2/10 inch, close to the sides and opposite each other. These three holes may be closed and uncovered by means of a slide moving in grooves, and having perforations corresponding to those on the lid. In moving the slide so as to uncover the holes the oscillating lamp is caught by a pin fixed in the slide, and tilted in such a way as to bring the end of the spout just below the surface of the lid. Upon the slide being pushed back, so as to cover the holes, the lamp returns to its original position.

Upon the cover in front of and in line with the mouth of the lamp, is fixed a white bead, the dimensions of which represent the size of the test flame to be used. The bath or heated vessel consists of two flat-bottomed copper cylinders (24 B.W.G.) an inner one of 3 inches diameter and $2\frac{1}{2}$ inches height, and an outer one of $5\frac{1}{2}$ inches diameter and $5\frac{3}{4}$ inches height ; they are soldered to a circular copper plate (20 B.W.G.) perforated in the centre, which forms the top of the bath, in such a manner as to enclose the space between the two cylinders, but leaving access to the inner cylinder. The top of the bath projects both outwards and inwards about $\frac{3}{8}$ inch, that is, its diameter is about 6/8 inch greater than that of the body of the bath, while the diameter of the circular opening in the centre is about the same amount less than that of the inner copper cylinder. To the inner projection of the top is fastened, by six small screws, a flat ring of ebonite, the screws being sunk below the surface of the ebonite to avoid metallic contact between the bath and the oil cup. The exact distance between the sides and bottom of the bath and of the oil lamp is $\frac{1}{2}$ inch. A split socket similar to that on the cover of the oil cup, but set at a right angle, allows a thermometer to be inserted into the space between the two cylinders. The bath is further provided with a funnel, an overflow pipe and two loop handles.

The bath rests upon a cast iron tripod stand, to the ring of which is attached a copper cylinder or jacket (24 B.W.G.) flanged at the top and of such dimensions that the bath, while firmly resting on the iron ring, just

touches with its projecting top the inward-turned flange. The diameter of this outer jacket is 6½ inches. One of the three legs of the stand serves as support for the spirit lamp attached to it by means of a small swing bracket. The distance of the wick holder from the bottom of the bath is 1 inch.

Three thermometers are provided with the apparatus, one for ascertaining the temperature of the bath, and the other two for determining the flashing point. The thermometer for ascertaining the temperature of the water has a long bulb and a space at the top. Its range is from about 90° to 190° F., the scale (in degrees of Fahrenheit) is marked on the ivory back fastened to the tube in the usual way. It is fitted with a metal collar, fitting the socket, and the part of the tube below the scale should have a length of about 3½ inches, measured from the lower end of the scale to the end of the bulb. The thermometer for ascertaining the temperature of the oil is fitted with a collar and ivory scale in a similar manner to the one described. It has a round bulb, a space at the top, and ranges from about 55° to 150° F., it measures from the end of the ivory back to the bulb, 2¼ inches. A thermometer similar in construction but graduated from 85° F. to 212° F., is provided for use with oils which give off inflammable vapours at temperatures above 85° F. The pendulum provided with the apparatus is two feet in length from the point of suspension to the centre of gravity of the weight.

Directions for preparing the sample for testing and for preparing and using the test apparatus.

1. *Preparing the sample for testing.*—About ten fluid ounces of the oil, sufficient for three tests, are transferred from the sample bottle into which the sample has been drawn to a pint flask or bottle, which is to be immersed in water artificially cooled until a thermometer introduced into the oil shows a temperature not exceeding 60° F.

2. *Preparing the water-bath.*—The water-bath is filled by pouring water into the funnel until it begins to flow out at the over-flow pipe. The temperature of the water at the commencement of each test, as indicated by the long bulb thermometer, is to be 140° F., and this is attained in the first instance by mixing hot and cold water, either in the bath or in a vessel from which the bath is filled until the thermometer which is provided for testing the temperature of the water gives the proper indication; or the water is heated by means of a spirit lamp (which is attached to the stand of the apparatus) or by a gas burner, until the required temperature is indicated.

3. *Preparing the test lamp.*—The test lamp is fitted with a piece of cylindrical wick, of such thickness that it fills the wick-holder, but may readily be moved to and fro for the purpose of adjusting the size of the flame. In the body of the lamp, upon the wick, which is coiled within it, is placed a small tuft of cotton wool, moistened with petroleum, any oil not absorbed by the wool being removed. When the lamp has been lighted, the wick is adjusted by means of a pair of forceps or a pin, until the flame is the size of the bead fixed on the cover of the oil-cup; should a particular test occupy so long a time that the flame begins to get smaller, through the supply of oil in the lamp becoming exhausted, three or four drops of petroleum are allowed to fall upon the tuft of wool in the lamp from the dropping bottle or pipette provided for the purpose. This can be safely done without interrupting the test. Where gas is available, a small gas jet may be used in the place of the oil lamp.

4. *Filling the oil-cup.*—Before the oil-cup is filled, the lid is to be made ready for being placed upon the cup, *i.e.*, the round bulb thermometer is to be inserted into the socket (so that the projecting rim of the collar with

which it is fitted, touches the edge of the socket) and the test lamp is to be placed in position. The oil-cup having been previously cooled by placing it bottom downwards in water at a temperature not exceeding 70° F., is now to be rapidly wiped dry, placed on a level surface in a good light, and the oil to be tested is poured in without splashing until its surface is level with the point of the gauge which is fitted in the cup. The lid is then put on the cup at once, and pressed down, so that the edge rests on the rim of the cup.

5. *Application of the test.*—The water-bath, with its thermometer in position, is placed in some locality where it is not exposed to currents of air, and where the light is sufficiently subdued to admit of the size of the entire test flame being compared with that of the bead on the cover. The cup is carefully lifted without being shaken, and the test lamp lighted. The thermometer in the oil cup is now watched, and when the temperature has reached 76° F. the operation of the testing is to be commenced, the test flame being applied once for every rise of one degree.

If the oil-cup is provided with the automatic (Pensky's) arrangement for opening and shutting the slide, the clockwork is wound up by turning the knob from left to right, and set in motion by pressing the trigger.

If the slide is intended to be moved by hand, it should be drawn open slowly and shut quickly. The exact time to be observed in this operation is regulated by the swing of the pendulum supplied with this form of instrument. The opening of the slide should take the time of three oscillations, the shutting of the slide the time of the fourth oscillation of the pendulum. (By one oscillation is meant the passage of the ball of the pendulum from the greatest distance from the vertical on the one side to the greatest distance on the other.)

If a flash comes at the first application of the test flame (at 76° F.) or at any point below 83° F. the operation is to be repeated with a fresh portion of the oil which is cooled down to 60° F. before being placed in the cup. The first application of the test flame is made when the oil has reached 70° F.

In repeating a test, a fresh sample of the oil must always be used, the tested sample being thrown away.

If no flash takes place at 76° F. the operation is repeated at every degree of rise of temperature until the flash occurs, or until a temperature of 85° F. has been reached.

If the flash takes place at any temperature below 85° F. the temperature at which it occurs is to be recorded. The fresh portions of the sample are then to be successively tested in a similar manner and the results recorded. If no greater difference than 2° F. exists between any two of the three recorded results, the average of the three results is the flashing point of the sample. In the event of there being a greater difference than 2° F. between any two of the results, the series of tests is to be rejected, and a fresh series of three similarly obtained and so on, until a sufficiently concordant series is furnished, when the average is to be taken in the manner already described.

If a temperature of 85° F. has been reached without a flash occurring, the testing officer shall certify that the samples do not consist of volatile petroleum; provided that when all or any of the petroleum on board a ship or in possession of a dealer is declared by the master of the ship or the consignee of the cargo or by the dealer, as the case may be, to be of one uniform quality, the petroleum shall not be certified as volatile if the samples selected from the petroleum have their flashing points, on an average, at or about 83° F., and if no one of those samples has its flashing point below 80° F.

If the petroleum is oil fuel or oil ordinarily used for lubricating purposes and is declared to have its flashing point at or above 130° F. the test shall be continued as follows :—

The oil-cup is to be removed from the water-bath and the temperature of the water in the water-bath is to be reduced to 85° F. by pouring cold water into the funnel (the hot water escaping by the over-flow pipe). The air chamber is then to be filled to a depth of $1\frac{1}{2}$ inches with water at a temperature of about 85° F., the oil-cup is to be replaced on the water-bath, and the spirit lamp attached to the water-bath is to be lighted and placed underneath.

The test flame is then to be again applied from 86° F. at every degree of rise of temperature until a flash takes place or until a temperature of 200° F. has been reached.

If a flash occurs at any temperature between 86° and 200° F., the temperature at which it occurs must be certified as the flashing point of the sample.