

**QUALIFYING EXAMINATION
FOR REGISTRATION AS PATENT AGENTS
[U/S.126(1)(c)(ii) OF THE PATENTS ACT]**

WRITTEN TEST

17 November, 2004

PAPER – II **"DRAFTING AND INTERPRETATION OF PATENT
SPECIFICATION AND OTHER DOCUMENTS".**

TIME - 2½ HOURS

TOTAL MARKS-100

(Question 1 is compulsory. Marks are indicated against in each question)

- Q.1** Two joint applicants (1) Mr. Ramakrishnan Ayyar, W-555, Southampton, London, U.K., British National and (2) M/s. Ramsons (India) Ltd, W-55, West Patel Nagar, New Delhi 110 009, an Indian Company, who have filed the following Patent Applications in U.K. for substantially same invention
- (i) 09759/03 on 20.11.2003; (ii) 05219/04 on 20.05.2004 the inventors of which are
- (1) Alfred Kemintz, M 505, Churchill Street, Liver Pool, U.K., a British National and
- (2) Sunil Kumar Brar, 102, Lokamanya Avenue, Vasant Nagar, New Delhi -100 012, India, an Indian National, want to protect the invention in India.
- Considering you as a registered Patent Agent, the applicants have instructed you to file the Patent Application on the latest possible date.

[70]

Prepare all the necessary documents along with the covering letter stating and enclosing the required documents including a format of the cheque for the fees and PA.

Details of the invention are given below.

We have developed a manually operated device for digging or excavating holes or trenches whereby the soil can be removed from the hole or trench with a minimum of difficulty.

In one form the invention resides in a device for digging holes comprising a pair of digging members connected together and each fitted with a handle so that movement of the handles in one direction moves the digging members towards each other and movement of the handles in the opposite direction moves the digging members away from each other.

Preferably the digging members are pivotally connected together so that movement of the handles away from each other moves the digging members apart to the fully opened position whilst movement of the handles towards each other moves the digging members to the fully closed position.

contd.....2/-

: 2 :

The invention will be better understood by reference to the following description of one specific embodiment thereof. We are also enclosing a drawing showing the embodiment of the invention.

In this embodiment, each of the digging members 4 is shaped in a manner somewhat similar to a normal long-handled digging shovel but are dished rather more than usual, as is best seen in Fig.3 of the drawings. The digging members come to a point 5 on the cutting edge as in a normal long-handled digging shovel and the points are flared outwardly so that they come together over a portion of the periphery thereof as is best seen in Fig.4 of the drawings. The shanks 6 of each of the digging members are pivotally connected together by means of a pin 8 for rotation about a substantially transverse axis and are fitted with sockets 6a in which the ends of wooden handles 7 are positioned. The shanks are bent slightly and cross at the pivot point so that when the device is in the closed position, the handles lie close together and are substantially parallel. A stop 10 is fixed to one of the shanks 6 to limit the opening of the digging members.

Whilst the invention has been described with particular reference to one specific embodiment thereof, it is not limited thereto. Many modifications are possible.

For example, the handles may be formed from tubular steel sections or other suitable material and the shanks formed integral therewith instead of being formed integral with the digging members. Also, the cutting edge of the digging members may be serrated or toothed to assist in cutting into the ground. The pin pivotally connecting the two components together may be removable so that two components may be separated and used as individual shovels. The stop 10 may be replaced by any other means for limiting the opening of the digging members.

In use, the digging members are moved apart and then driven into the ground with a downward thrust of the arms. The handles are then moved towards each other to close the digging members and the device lifted vertically. The soil clamped between the two digging members is withdrawn from the hole and can be deposited where required. In heavy soil it may be necessary to shake and twist the digging members to break the soil away on the sides, which have not been cut, by the digging members. Also, the soil may be loosened by a levering action by holding one digging member hard against the wall of the hole and rotating the other back and forth on the pivot.

The device enables a person to dig a hole more quickly and easily than with a conventional shovel and in most circumstances is more effective than earth auger in that it can readily remove such obstacles as roots and stones. The device is also very effective for removing soil from holes dug by other means.

Whilst the device is suitable for digging holes, it may also be used for excavating trenches and the like without the need for the operator to climb down into the trench. It may also be used in a horizontal position for tunnelling under buildings, paths and the like.

Drawings enclosed herewith.

Contd.....3/-

: 3 :

OR

We have developed an improved process for the production of benzene dicarboxylic acid from xylene wherein the reactivity of carboxybenzaldehyde byproduct is enhanced by use of a suitable concentration of a cobalt catalyst and process conditions without adversely effecting the conversion of xylene and selectivity to the benzene dicarboxylic acid product. The carboxybenzaldehyde impurity in the product is therefore almost eliminated in this process, thereby eliminating the requirement of another purification process step downstream of reactor. The catalyst activator is used in very small quantities compared to the conventional processes. Further, use of bromine catalyst is avoided i.e. catalyst does not contain bromide promoters or organic promoter in molecular proportions.

The subject process comprises the use of substantial proportion of a cobaltous salt from 5.0 to 25.0 mole percent of xylene feed as the catalyst. The acid component of the salt is chosen from acetate, propionate, butyrate or phthalates, isophthalate, terephthalate and the like. The initiator is used in the substantially reduced quantity as compared to the quantity of the initiators used in the conventional processes and is selected from acetaldehyde, tolualdehyde or ketones such as butanone, methyl ethyl ketone etc. in proportions of 0.01 to 1 mole per mole of the metal salt mixture used as the catalyst. The specific xylene isomer is oxidized with air or, oxygen at a pressure of 5 to 80 kg/cm² and temperature of 100°C to 130°C in the presence of acetic acid solvent for a period ranging between one hour and six hours. The solvent to xylene weight ratio is ranged between 4 to 20. The said reaction mixture is then flashed to room temperature and pressure to remove volatiles like water and unreacted xylene and some other compounds, which is followed by cooling to 20°C-40°C and filtering off or centrifuging out the crystallized crude product. The crude benzene dicarboxylic acid product is at least 97% pure with only traces of carboxybenzaldehyde. The product is purified to at least 99% by re-crystallization from a suitable solvent like methanol, ethanol water, acetic acid and the like. The dehydrated filtrate containing the solvent, catalyst and intermediates is re-cycled after adding makeup amounts of catalyst, solvent and the initiator.

The reaction is carried out in a 300 ml autoclave made of stainless steel provided with a mechanical stirrer, a gas delivery tube, a reflux condenser, a thermometer pocket and a rupture disc. The autoclave is electrically heated and has internal cooking coils. The system operates as a batch reactor. The exit gases passes through an ice cooled trap and then bubbled through cold (-20°C) toluene to trap any carry over m-xylene.

Contd.....4/-

: 4 :

The conversion of xylene is nearly total (98-100%) and the selectivity on recycle basis to dicarboxylic acid achieved is more than 98% based on xylene reacted. The carboxybenzaldehyde as impurity in the product is eliminated or, reduced considerably.

The invention is described in the following examples by way of illustrations only and should not be construed to limit the scope of the invention.

Example

21.2g m-xylene, 150g glacial acetic acid, 5.0g cobaltous acetate and 1.2g 2-butanone were charged into a 300°C stirred stainless steel autoclave. Oxygen was bubbled at the rate of 100 cc/min. through the sparger tube and the mixture was oxidized at 125°C at 35 kg/cm² pressure. Sparging 100 cc of O₂ per minute through the contents for four hours after which the reaction mixture was allowed to flash to 35°C at 1 atm. pressure, cooled and then centrifuged. The solid crude product obtained was 29.1g and contained 98.5% isophthalic acid, 1.4% M-toluic acid and only about 100 ppm, 3-carboxybenzaldehyde. The filtrate containing 3.6g organic product consisting of 80.3% m-toluic acid, 12.5% isophthalic acid and 7.2% unidentified components is recycled. The crude product on crystallization from water yielded 28.5g, 99.9% isophthalic acid with less than 15 ppm, 3-carboxybenzaldehyde.

Q. 2 Answer any three of the followings (each question carry equal Marks) [30]

- a. Your client from Pune instructed you to file a provisional specification. Before filing, he wanted to know the detailed future course of action by you and the Patent Office (with time limits) as provided in the Patents (amendment) Act, 2002 from the date of filing till the grant of Patent. Write a short note to him for his query if the case proceeds unopposed after advertisement of acceptance of complete specification.
- b. Your client M/s.Hero Cycle, 55 Cross Road, Ludhiana an Indian Company informed you after six months from the date of filing a provisional specification in India of his interest in protecting the invention in some other countries through PCT filing. Advice him stating the procedure followed documents required and fees to be paid if such act is to be done.
- c. Your client's M/s. XYZ Ltd., 2-5 Kasumigseki 3, Chrome, Cheyoda-KU, Tokyo, a Japanese Company's application was filed on 01.10.1999. It's acceptance was advertised in Official Gazette on 20.02.2004 bearing a six digit No.193456. No opposition notice was filed. You inform the client the procedure of sealing of the patent with time frame and the total amount of fees to be paid for sealing. Also inform the client about renewal fees to be paid to keep the patent alive for its full term.

Contd.....5/-

: 5 :

- d. Your client from Ahmedabad has filed a patent application with provisional specification on 15.01.2002. On 11.01.2003 he informed you that he is not able to file the complete specification and will be able to file it on or around 15. 10. 2003 (i.e. 21st month from filing the provisional). But he is fearing that some relevant document is available with the public on 15.10.2002. Under these circumstances you advise your client about the action to be taken to protect his interest.
- e. Your client's invention "A process for manufacturing a substance 'X' has a patent in India in force from 01.01.2000. Afterwards he finds some improvement over the process of manufacturing the substance 'X' disclosed in the complete specification filed in the main invention and seeks your advice for its protection. Suggest him the convenient and economic way of protecting the invention giving the fees structure for the grant of patent including the maintenance fee for full term and the term of the Patent.
- f. Your client 'X' from Tamilnadu has submitted a patent application with complete specification prepared in Tamil language by Fax on 01.06.2003 at the Patent Office Chennai and filed English translation and request for examination with fee on 30.06.2003. But another applicant 'Y' has filed a Patent application, with complete specification in English and Request for Examination with fee, for the same invention on 10.06.2003 at the Patent Office Chennai. Analyse who will get the Patent. Assuming that Patent application of 'X' is abandoned u/s.21 and the Patent application of 'Y' is accepted and will be notified u/s. 23 on 11.12.2004. Write down the action to be taken by you for protecting the interest of your client 'X'.
- g. A natural person has filed a Patent application accompanied by provisional specification followed by complete specification and requested for examination in 15th month. Then he desires to transfer his rights to a company discuss the procedural details with fee to be paid.

[END]

TOTAL NO. OF PAGES: 5+1* = 6

* Drawing

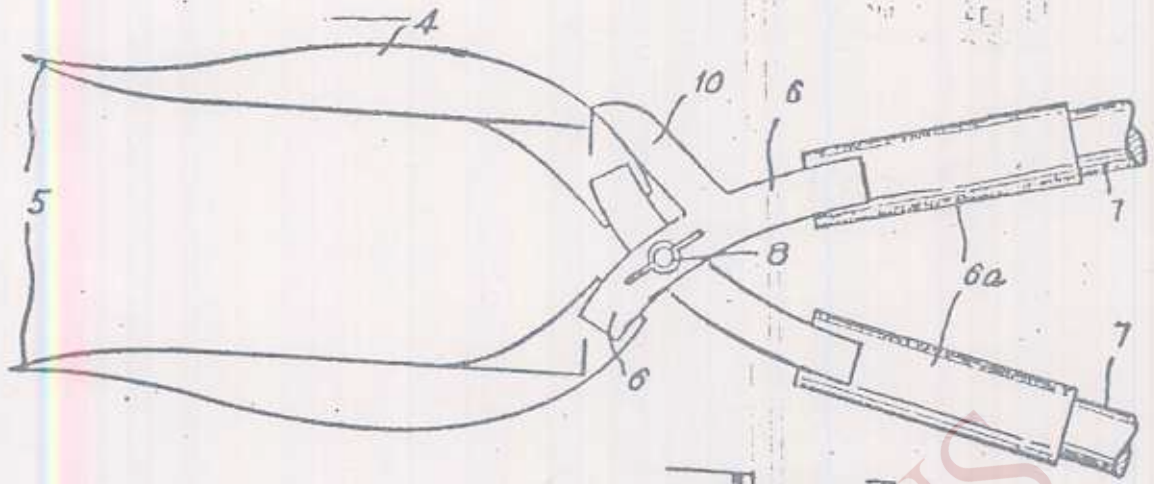


Fig. 1,

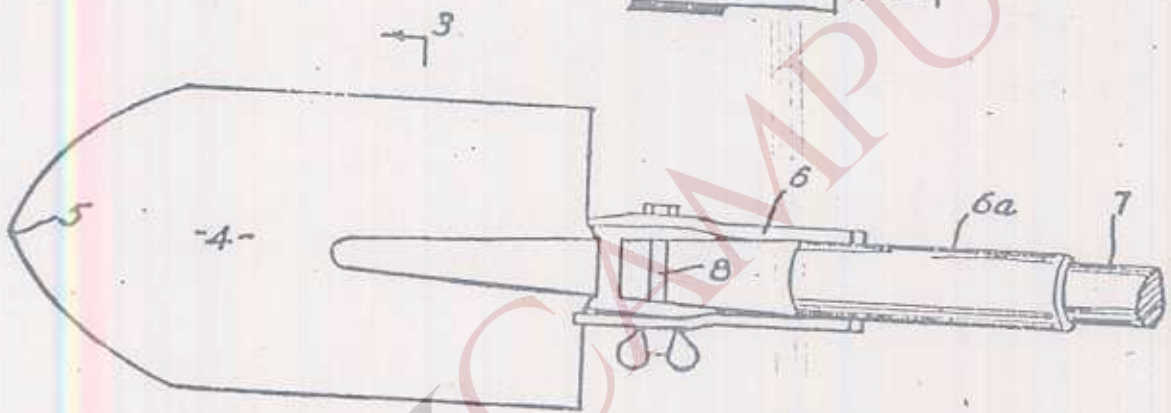


Fig. 2,

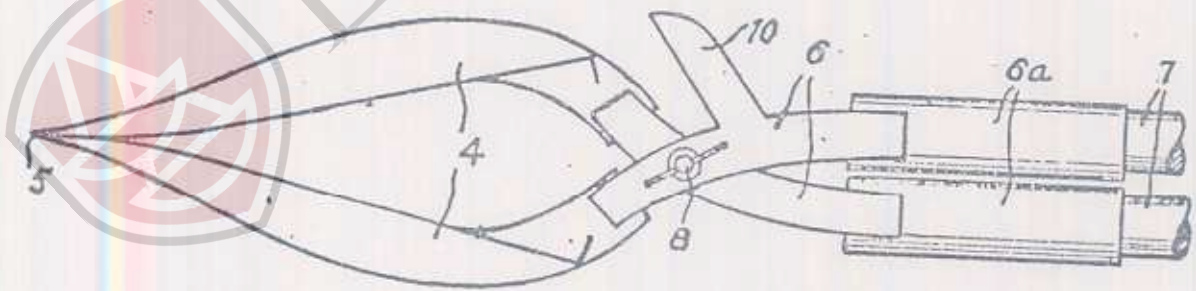


Fig. 4,

Fig. 3,

